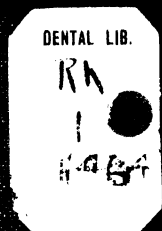
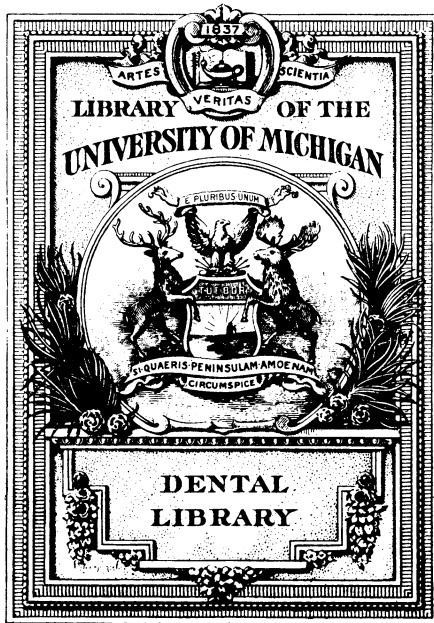


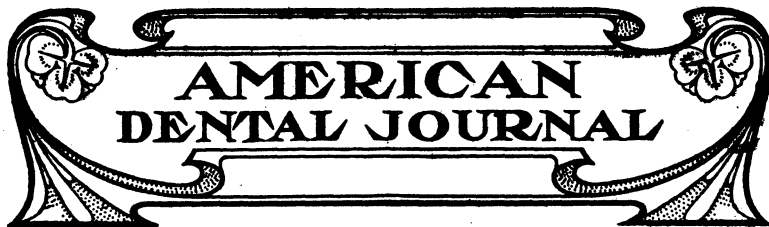
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**TABLE OF CONTENTS.**

**Progressive Course of Practical Instruction**

Orthodontia, By J. N. McDOWELL, D. D. S.	685
Prosthetic Dentistry, By B. J. CIGRAND, B. S., M. S., D. D. S.	691
Dental Therapeutics, By GEORGE W. COOK, B. S., D. D. S.	696
Operative Dentistry, By R. B. TULLER, D. D. S.	701

**Original Contributions**

Toothsome Topics, By R. B. TULLER, D. D. S.	704
"Dental Science and the Commonwealth," By B. J. CIGRAND, B. S., M. S., D. D. S.	710
Somnoform versus Other General Anaesthetics, By DR. W. R. RATHBONE	716
What Will Probably be the Dental Educational Standard for the Coming Decade? By CHARLES C. CHITTENDEN, D. D. S.	719
Osler on Teeth	728

<b>Editorial</b>	708
<b>Society Announcements and Reports of Meetings</b>	731
<b>Miscellaneous</b>	734
<b>Personal and General</b>	737
<b>Want Ads</b>	740
<b>Index to Advertisers</b>	741

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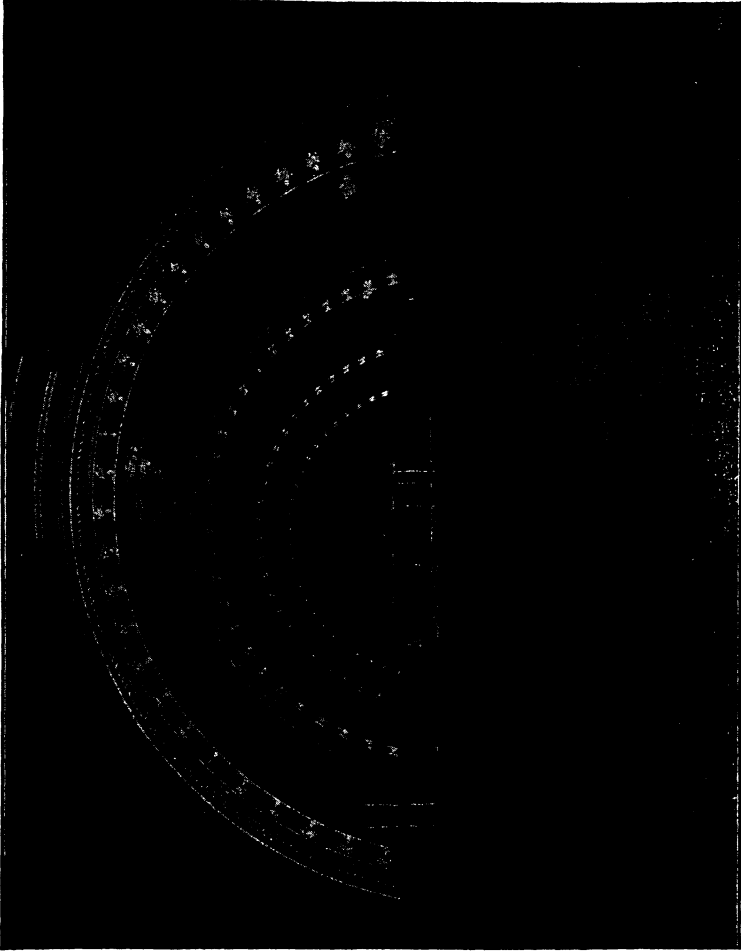
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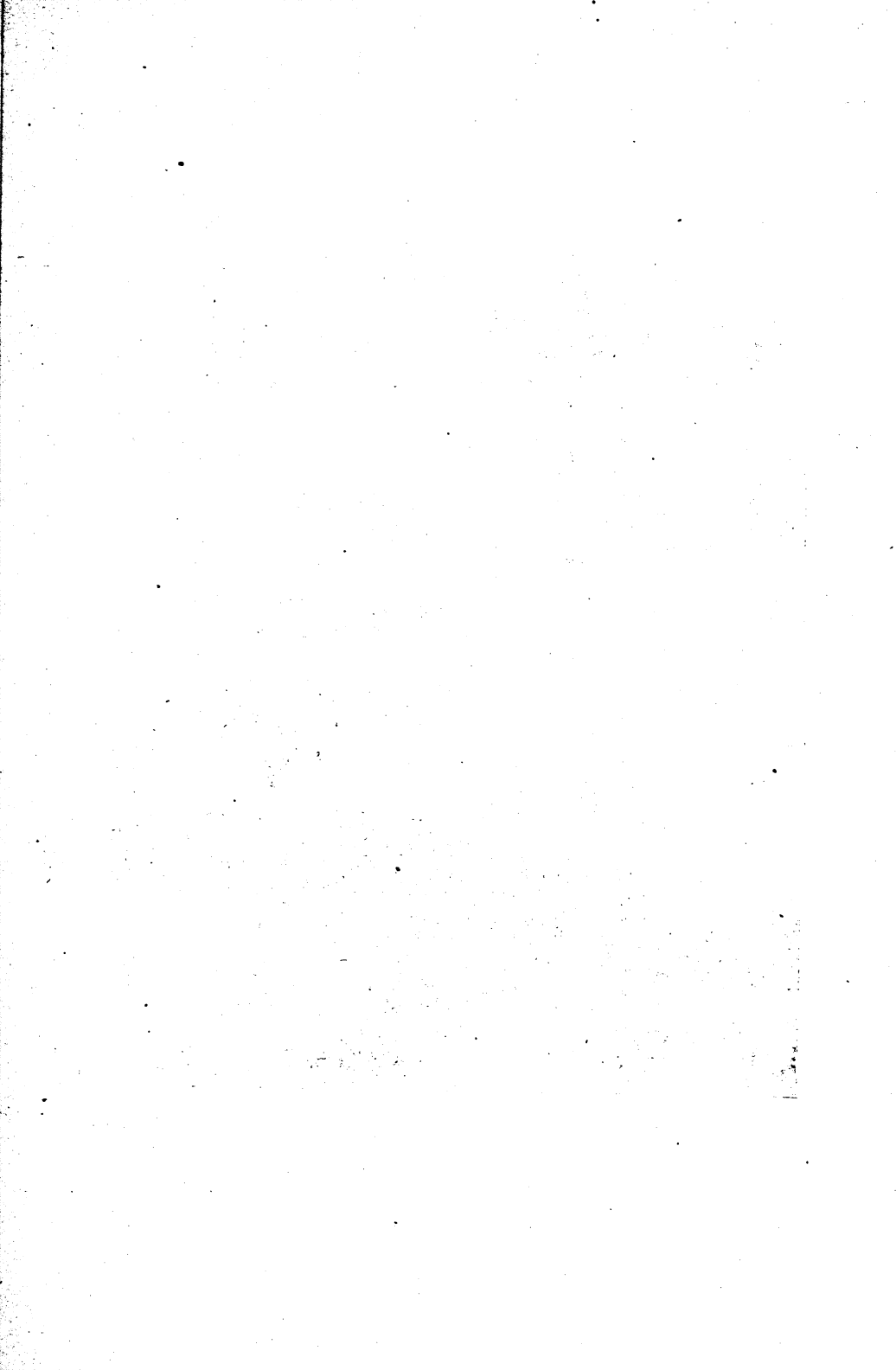
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# PROGRESSIVE COURSE OF PRACTICAL INSTRUCTION

## ORTHODONTIA.

BY J. N. M'DOWELL, D. D. S.,  
PROFESSOR OF ORTHODONTIA, COLLEGE OF DENTISTRY, UNIVERSITY OF  
ILLINOIS.

### CHAPTER XII.

#### RETENTION.

In last month's article we began the treatment of cases of malocclusion. It is my intention to consider the retention of the cases treated in each article. But on account of its importance, before we consider the retention of individual cases, it perhaps would be best



Fig. 1.

for us to consider the fundamental principles of retention in an article devoted exclusively to the subject.

Retention is the science of holding teeth which have been moved into place by mechanical assistance, to prevent them from returning to their former position. Successful retention is an art in itself. Too much stress can not be laid upon this subject. The springing pressure of the alveolar process; the tension of the fibers of the periodontal membrane; the proper contact of the sloping plane of one tooth with another and the time required for redeposit of bony structure around the teeth moved, are important considerations in retention.

## PERIDONTAL FIBERS.

The springing pressure from the process is well illustrated in the case of moving out of a tooth with a jackscrew, where only the short time of four to eight days may be required. True absorption is a slow process and is the result of months of pressure. Instead of



Fig. 2.



Fig. 3.



Fig. 4.

any actual absorption taking place in moving of a lateral in a week with a jackscrew, there is only a bending of the process before the tooth, followed by a slight stretching of the fibers on the distal surface of the root. In those cases where retention of the teeth is necessary we find the greatest tension from the peridental membrane. The time required for the detachment of the peridental membrane, as the result of pressure prior to absorption of the bone, varies from two to six weeks, but the usual time required is about ten to twelve days; the time required for the reattachment of the fibers varies from two months to one and a half years, the usual time being about one year. In case several teeth are moved and rotated into alignment, or if only one tooth is moved a considerable distance, absorption of the bony structure and attachment of the fiber takes place as soon as sufficient pressure is applied to set up a good physiological action.

The physiological change which takes place after the movement of the tooth is finished necessitates the use of a retainer which will hold the tooth or teeth in place as nearly stationary as is practical until sufficient time has elapsed for the tooth or teeth to become firm in the new position by a complete deposit of bony structure around it.

## SLOPING PLANES OF THE TEETH.

Another important consideration in retaining teeth is proper contact of the sloping planes of the teeth. More failures occur from a lack of this mutual contact support than from any other reason. If teeth are aligned in the anterior part of the upper arch and retained without touching the lower anterior teeth there will, sooner or later, be a reoccurrence of the malposition of the teeth. If an incisor in the upper arch is moved out from lingual, being rotated in



the moving and then retained without occlusional contact, being too short to come in occlusional contact with the lower, it will, as a rule,

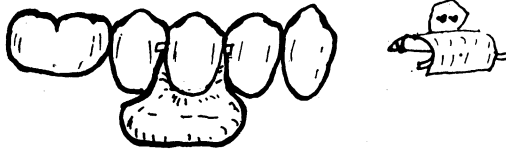


Fig. 5.

return partially or completely to its former position when the retainer is removed.

The movement of a lateral outward from lingual occlusion so short a distance without rotation and into such good occlusional contact as in Fig. 1 would not necessarily require a retainer more than three or four weeks, the occlusional contact holding it in position.

#### MATERIAL FOR RETENTION.

In retaining the majority of cases, the author uses two retainers—that is, a temporary and a permanent retainer. The temporary



Fig. 6.

retainer is made of German silver and the permanent one of gold. The reason for the two retainers is that many times it is necessary to modify the first retainer, and to remove a retainer of any size made of gold means to destroy its finish and usefulness. It is also necessary

to make the first retainer heavy, so that the teeth may be held firmly in the new position and be used in mastication until sufficient physiological changes have taken place for the teeth to become fairly firm in their new position. This temporary retainer is then removed and a new and much lighter retainer of gold is made and cemented on and allowed to remain for six months to two years, as the case may



Fig. 7.

require. Occasionally a retainer may have to be worn for many years.

The retention of Fig. 1, which is a lingual view of the case treated with a jackscrew in last month's issue, can be made by band-



Fig. 8.

ing the lateral and soldering two spurs on the labial surface so that one rests on the central and one on the cuspid. (Fig. 2.) If there is a tendency to rotate, the spur can be left long enough to place a rubber wedge underneath one end to rotate back into position; the wire can then be bent into position with the pliers, as in Fig. 3. The band can be pinched on the lingual surface and a wire soldered directly across the lateral if desired. (Fig. 4.) In almost every case it is better to move the teeth a little further than desired and then hold them in that position from one to three weeks with the appliance used in correcting the malocclusion. Then, when the appliance is removed, the tendency of the tooth, or teeth, is to settle back into a position that is about normal.

Teeth that have been moved, rotated, etc., are bound to move a little from stress of mastication. When the appliances are removed from the teeth that have had persistent pressure on them for many months, it usually takes some time to make a good, efficient retainer, especially if many of the teeth have been involved in the movement. It is best to remove all the appliances and put on the retainer all in one day if possible.

In those cases where sufficient space has been made for bridge-work the author often suffered annoyance from the time usually required for making the bridgework. There is no better retainer than bridgework, but often the time between the taking of the impression

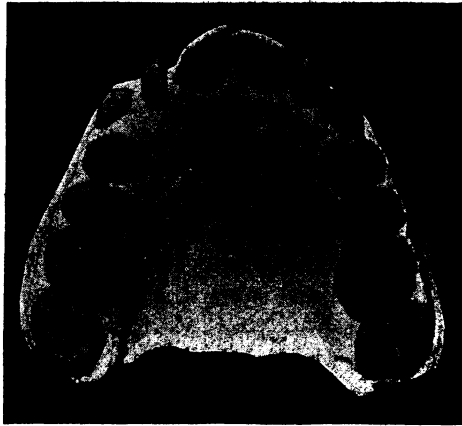


Fig. 9.

and the making and putting on of the bridge allows the teeth to move sufficiently to prevent the application of the bridge. The author of late has used the following method of retaining the space until the bridge is ready to put on: An impression is taken as soon as the appliance is taken off. A die and counter die is made from Mallot's metal. A piece of German silver, gauge 28, is swaged to fit the space at this point. A tooth is fitted and then soft soldered to the plate. (Fig. 5.) This is worn until the bridge is finally put on. Fig. 6 shows a third bicuspid of this kind put in to act as a retainer until the bridge was made.

## RETAINING ROTATED TEETH.

It is in rotated teeth that the great antagonizing force from the tension of fibers of the periodontal membrane is encountered. Many times, especially when the roots are a little irregular, necessitating plowing through bone as well, the rotating of teeth, especially some cuspids, is very difficult. Finally, after weeks and months of wearing appliances, pulling and tugging at these teeth, they are sufficiently rotated, but if they are not properly retained they return in a week

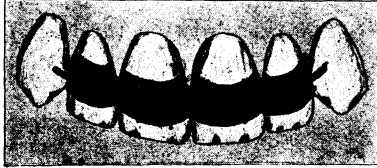


Fig. 10.

or two to the former position. In rotated teeth it is best to allow the appliance used to rotate to remain on at least three weeks; then retain with stationary retention. There is no better form of retainers for rotated teeth than making bands for the teeth on each side of the one rotated and soldering the bands together. (Fig. 7.) In B. Fig. 8, instead of using the band and spurs it is best to use the three bands as in Fig. 7.

In case of Fig. 9, where both centrals and laterals have been rotated, it is best to use the bands soldered together, with spurs resting on the cuspids from the lateral bands. The spurs not only keep the laterals from rotating, but force the cuspids into normal position as they erupt. (Fig. 10.)

(To be continued.)

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## PROSTHETIC DENTISTRY.

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## CHAPTER XXX.

The eagerness evidenced regarding methods calculated to either preclude the possibility of repair work, as well as ideas intended to make reparations easy, is fully expressed in the communications received asking that this phase of bridge work be continued; hence the coming months will add to this character of prosthetic work.

Diagram H represents the Dr. Brown method described in Chapter XXX. We reproduce it with the Roach method.

In 1897 Dr. Roach read a paper before the Chicago Dental Society advocating greater pains in the lingual contour of our artificial teeth. He stated that by his method the artificial substitute was not a hindrance to the speech, but gave the tongue a normal territory, besides the fractured porcelain could be readily replaced. The centrals were so constructed as to accurately fit a dove-tailed groove in a gold backing (Figs. 3 and 2) and the crown could be soldered to the post which has attached to it a metal disk covering the trimmed end of the root. (Fig. 1.) By this method the porcelain is not subjected to the fire, since the porcelain crown is cemented to the metal backing.

I have sought in this issue to further the use of teeth possessing the principle indicated above.

Dr. F. E. Roach, of Chicago, has kindly supplied me with the finished cases so I can carefully study the principles involved in his method of construction. His idea makes it possible to give us a removable facing for the incisor teeth. He assures us that little time is required to adapt the case and that when the method is fully understood the work progresses with facility. By means of the accompanying illustrations the simplicity of the work is readily seen.

A. Is an incisor tooth with stout double-headed pins, one of which is longer than the other.

B. The backing, manufactured and supplied already contoured,

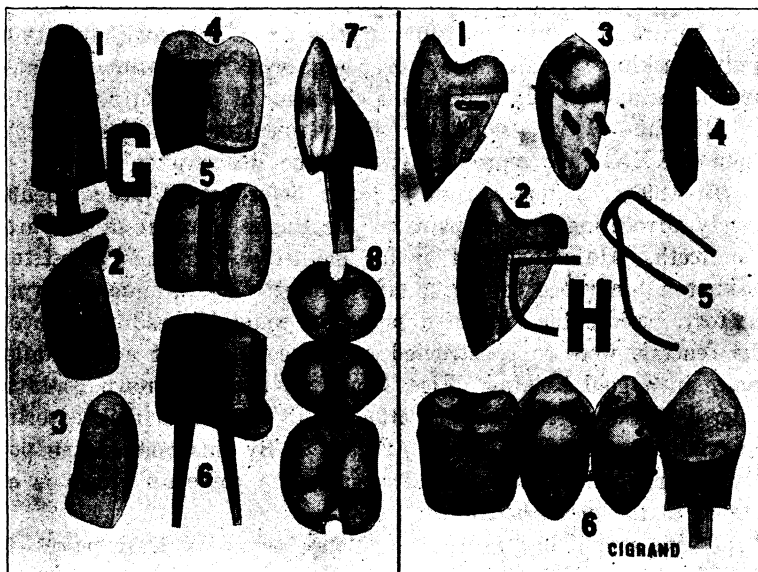
and with slot to receive the pins of the tooth. The space behind the slot is filled with oxyphosphate cement.

C. The cap is fitted at the root with root post soldered thereto.

D. The incisor root without band.

E. A finished cuspid crown. The application or not of a band is entirely at the discretion of the operator.

It will be noticed that the slot in "B" is enlarged at one end to allow the large pin heads to enter—the longer pin entering first.



The tooth is slid into position after the recess behind the slot is filled with cement.

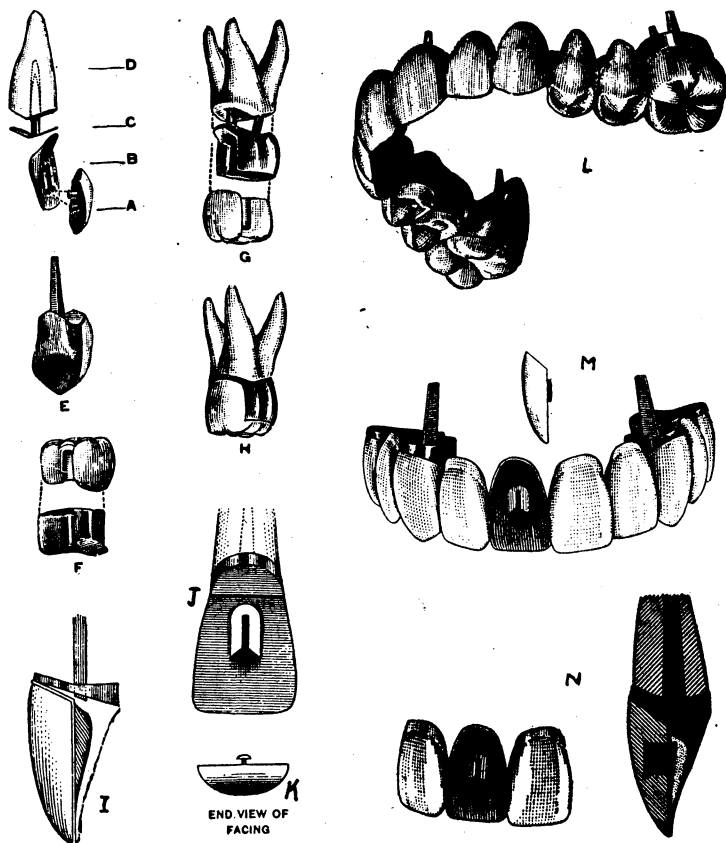
When the cement has set the tooth can only be removed by breaking it.

In case of a fracture the cement is readily drilled out, as the slot is accessible and presents no complications.

The application of the system to posterior teeth is equally simple, and the strength of the work when finished is all that can be desired.

Platinum box backings are supplied in a variety of sizes to suit the teeth and various forms supplied.

- F. Shows a box backing as supplied, and a molar tooth to fit.  
 G. Shows the application of same to a molar root.  
 H. The finished crown. Porcelain cemented.  
 Bicuspid are mounted in the same way.  
 I. Shows a complete crown.  
 J. Anterior view of backing.



Dr. Roach briefly summarizes its advantages as follows:

1. The teeth are removable; they are attached after the whole of the metal work is completed.
2. A bold and natural contour is obtained by the shape of the metals, dispensing with the use of excessive quantities of solder.

3. Great economy of both time and material.
4. Immense strength of the work when completed. No danger of a side strain springing off the anterior teeth.
5. Artistic effect, porcelain only being exposed to view.
6. All joints are absolutely sound.

These facings and backings are in the market if you have not as yet experimented with them do it without delay; every appliance or method which makes your work more aesthetic, your labor easier, or saves your time, is worth a trial at least.

It will be well to call attention to the methods of attachment.

The facings may be set with gutta-percha, cement, very thick chlora-percha or chlora-vulcanite. Preference is given gutta-percha if properly handled. It may be a little hard to work at first, but a little practice in its use will bring the desired results. Do not heat it red hot and try to force facing to place the first time, but heat slowly and repeatedly, forcing a little further each time until in place.

I would think it good practice to vulcanize the first case, i. e., bake the porcelain teeth into position. It will not interfere with method as given, and will be more substantial.

In case of repair, apply heat until gutta-percha softens, and then with pliers force it out toward the incisal edge.

Paint the surface of backing next to facing before investing or soldering, with a creamy solution of whiting, to prevent solder from flowing on this surface.

Hard wax to hold backings in place when removing facings, and if facing does not come away easily when fitting, warm it slightly and put a drop of sticky wax on it. This will aid in getting a hold on it.

In constructing cope for crown be sure to cut root short as possible and set post so that it will project lingually.

Never burnish backing over incisal end of facing. Allow it to project straight out slightly longer than the facing, so that when facing is set permanently it can be finished flush with edge.

It is unnecessary to bevel the incisal edge of anterior facings for the purpose of protection. The teeth are strong enough to stand the stress in the majority of cases. If, however, it is desirable to do so, it may be done to a considerable extent without interfering with the adjustment of facing. Molars and bicuspid are made so that a greater bevel may be made without interfering with the adjustment.



A record of the mold you use should be kept, so that in case of repair you can order a duplicate facing by number.

Figs. I and J represent the later patterns of the Roach method; Figs. L, M and N show the completed case.

The advocate of this method gives us a splendid list of advantages:

"1st. Facings can be ground at any point and the backings readily adapted to it, making it possible to always obtain perfect joints between facing and backing.

"2d. There are no clumsy, unfinished surfaces, especially at the incisal edge, where it is so desirable to have a smooth tapering finish.

"3d. The gingival extension of backing makes an easy and sure means of obtaining perfect joints between facing and cope in crown work.

"4th. The gingival extension acts as a stay and guide in making crowns without investment.

"5th. The strength of dummy facings is greatly increased by means of the gingival extension.

"6th. The attachment of facing is so arranged that there is a cushioned seating of facing which very materially reduces the liability of breaking.

"7th. A natural and uniform lingual contour is produced with a minimum amount of solder.

"8th. Simplicity and almost universal application."

If any of our readers have invented a method covering this phase of prosthetic work we will gladly examine the specimens and give the process consideration.

(To be continued.)

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## DENTAL THERAPEUTICS.

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PROFESSOR OF ORAL SURGERY, DEARBORN MEDICAL COLLEGE.

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## CHAPTER XXXII.

In the former discussion of the methane series we studied their combination with other chemical agents, and, as we have seen, the narcotics of this group are in many respects the same in their pharmacological action. Any one who has had the least experience in administering any of this group can not fail to recall the various stages of semi-unconsciousness, manifesting many times the confused ideas that attend, at short intervals, with considerable excitement. From this stage they pass into unconsciousness and possibly remain in this condition until death.

In some of these compounds the second stage is more profoundly marked than it is in some of the others. It might be said, however, that in some of these compounds this secondary stage may be altogether absent on account of the above named condition. A theory was advanced that these agents would cause stimulation of the nerve cells, and in the course of time these nerves would become completely paralyzed. As a matter of fact there is every evidence that a very different condition takes place. What probably happens is that the functions of control are lessened, while the centers of motion are but little affected, and if they are affected they are raised above that of normal. This question will again be referred to under the head of alcohol.

It has been pretty satisfactorily worked out that the depression of the central nervous system is produced by the various changes taking place in the cerebral circulation. At one moment the circulation is increased, while in the next there is a depressed circulation of this part of the body, for instance, like that condition in anaemia which brings about the starving of the nerve cells. Experiments on the frog showed that when the blood of the brain had been replaced by a salt solution (which, of course, would render the brain incapable of obtaining nutrition), and chloroform was administered as an anesthetic, the same condition was produced as in the animal that was anesthetized, while circulation in the grain was normal. These ex-

periments undoubtedly go to prove that the methane series act upon the nerve cells, or rather upon the neurons, instead of acting directly upon the cerebral centers. Binz's theory was that these changes take place as the result of coagulation of the protoplasts. This theory, however, has not been borne out by microscopic examinations of these cellular elements, but on the other hand, this microscopic study has rather proven that the depressed condition might possibly be due to an irregular distribution of the chromatine substance in the nerve cells.

A hypothesis has been set forth that the dendrites, which are small filaments or prolongations of nerve cells, produce a ramified mass extending from one nerve cell to the other and during consciousness these prolongations are in constant communication with one another, but in normal sleep, as well as the unconscious condition produced by anesthetics or narcotics, these filaments contract, leaving no communication between the various cells of the nerve tissue. While this condition is really a hypothetical one, still there is some reason, from a microscopic examination, that such a condition might possibly exist. In the central nervous system there is an indication that the changes produced by some members of this methane group have in a general way the appearance of the tissue in normal sleep.

In the previous discussion of this subject we have shown how nearly many of these compounds are similar to that of others, but as a rule they are generally divided for therapeutic differentiation into three groups. The first group is that belonging to alcohol. The second group are those which belong, or perhaps we might say, are classed, as the general anesthetics, and the third group are those which are designated as narcotics. This last named group are also designated as hypnotics. It should not be forgotten, however, in the discussion of this group that there can be no definite and well defined line between any one of this series, for in many respects their pharmacological actions are very much like each other. An illustration might be given as to how nearly one group may act like that of another; for instance, chloroform and ether might be administered in small quantities and thereby bring about a tendency for the individual to pass easily into sleep, and in this way it would act as a hypnotic or narcotic.

It may be said that one member of this series known as the

methane compounds has been known to exist and, in fact, has been more or less involved in the history of medicine almost from ancient times. We have reference here to alcohol, and more especially to ethyl alcohol ( $\text{CH}_3 \text{CH}_2 \text{OH}$ ). In medicine this agent has had a variable career, at times being extensively used while at other times very much condemned. The impurity of the preparation, with other conditions which developed in the manufacturing of the agent, have been justly condemned in many instances. Alcohol is one of the products of the breaking down processes in substances like sugar, and especially those sugars found in various kinds of fruits. Their fermentation processes which bring about the formation of alcohol are usually of carbohydrate substances and are easily broken down.

In fermentation like that of the manufacturing of wine and beer there is but little alcohol. If the percentage of alcohol is to be increased in these spirituous agents above that of  $2\frac{1}{2}$  per cent it can only be accomplished by a process of distillation, and then the percentage can be raised to 30 or 60 per cent. Through this distilling process the non-volatile constituents can be removed. Spirits are not merely mixtures of water and alcohol but contain a number of constituents, the chemistry of which is not well known, but they evidently belong to the ethereal group. These are principally the constituents that are present in various whiskeys. Pure alcohol is obtained from whiskey, or any of these agents containing alcohol, by repeated distillation.

The medicinal properties of alcohol depend upon three things: first, its action locally as an irritant; second, the effects it produces upon the central nervous system; third, its value as a food stuff. When applied to the surface of the body alcohol has an irritating effect, but is not as irritating as many other agents used as local irritants. When applied in a weak solution its irritating properties are most likely due to the drawing out of the water from the tissue cells. If applied in a more concentrated form it will produce an itching sensation, and when a 60 or 90 per cent solution is applied it has a burning sensation, attended with pain, heat and redness. In many particulars its effect is very much like that of the volatile oils. Alcohol has a peculiar and beneficial action on the surface of the body in removing certain bacterial forms that may be present in the sebaceous ducts, in which they may be retained by certain exudates of the skin, and on account of this action it is quite universally used

in the preparation of certain parts of the body for operation. It has also been applied to ulcers and certain other unprotected abraded surfaces of the skin. Here applied in a 40 per cent solution it is beneficial in removing the extraneous matter and also has a stimulating effect, thus increasing cell proliferation and being beneficial in producing a healing process to injured tissue. Alcohol applied to the mucous membrane, especially in anything like a concentrated form, acts as an irritant, with an unpleasant sensation. This effect will be continued in the throat and stomach if it is swallowed in anything like a strong solution. Our "toothsome topics" friend recommends two fingers in a glass the form of whiskey and in this form large quantities of alcohol can be disposed of.

The action of alcohol upon the central nervous system differs very widely in different individuals. It would hardly be worth the while to describe the effects this agent has when taken internally in the form of whiskey or other drinks. It produces, as you all know, a feeling of confidence and brings about good fellowship among the various members of the human race that cannot be produced by any other means; and the power both physically and mentally upon the cerebral nerve centers has been the subject of experiments and observation through many generations of people. When it is taken to excess the face becomes flushed, the eyes brighter, pulse increased, the stages of self-control is partially lost and the will power has been very much diminished.

Two views have been set forth as to the effect that alcohol has on the nervous system. Binz and his followers say it is a depressing action upon the nerve cells, while Schmiedberg and Bunge claim that the action is directly upon the central nervous system. The discussion of these two theories has previously been alluded to, and if one is interested in the subject matter they can easily find the original papers of these authors and carry the subject into the realms of research far beyond the province of this discussion. The writings of Schmiedberg and Binz are beyond question some of the most interesting literature pertaining to pharmacology that has ever been written, and it would pay anyone to study this subject from the standpoint of these two authors. The question is a most difficult subject to settle, for it has been shown that the movements, be they ever so simple, are the results of a combination of motor and inhibitory impulses by the action of this agent upon the brain. The strength of

the measurements of these impulses has been carried out by experimenters and offer some of the most difficult problems in biological research. The advocates of the action of alcohol as a stimulating agent point to the many brilliant speeches of persons who are intoxicated, which in their mind fully demonstrates that there is an increased cell activity of the brain centers when the agent has been taken up to a certain point.

Intellectual work done by persons under the influence of alcoholic stimulants has been measured by a large number of research workers. While no definite means has been established whereby it is possible to obtain a true working hypothesis of the amount of work that can be accomplished, still at the same time Kraepelin has shown that the intellectual power is weakened under the influence of alcoholic stimulants. According to his views the agent will weaken certain parts of the brain centers while certain other parts may be stimulated, and in this way accomplish a little more work than would otherwise be accomplished if the alcohol had not been taken.

(To be continued.)

#### **TO PREVENT RECURRENT SEPSIS IN ROOT CANALS.**

Clean and sterilize canal, dip a finely cotton wrapped broach into tincture of iodine and then into finely powdered tannic acid and introduce to the apical end of the canal. Absorb any excess of iodine with cotton, wipe the canal with absolute alcohol and fill. It is the exception for teeth so treated to give further trouble.—*Tri-State Dental Quarterly*.

#### **BRIDGE ATTACHMENT TO VITAL ANTERIOR TOOTH.**

Drill three holes in the lingual surface of the tooth, care being taken to make them parallel, two at the incisal edge, the third in the lingual prominence close to the gingival margin. If the bite is close, either release the lingual surface of the superior tooth or the incisal edge of inferior teeth. Take impression in plaster. Pour Melotte's metal die, swage backing of 32 gauge pure gold, place on tooth, burnishing it to place; with pointed instruments punch holes in backing at places indicated and insert proper length of platinum post, which need not be over one thirty-second of an inch. Warm a piece of sticky wax and press against backing with pins in place, and when cold remove, invest and solder "to taste."—Dr. A. M. Flovel in *Pacific Gazette*.

**OPERATIVE DENTISTRY.**

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BY R. B. TULLER, D. D. S.,

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DENTAL SURGERY.

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**CHAPTER XXXIII.**

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**BLEACHING TEETH.**

The process of bleaching teeth is, in many instances, a very simple one; that is to say, the technic of the operation is usually simple, though painstaking care must be exercised in every step. As the causes of discoloration or pigmentation are several and of varying persistency, according to the chemical changes that have been going on in the chamber of the tooth, varying degrees of success are obtainable in bleaching.

Usually the cause of discoloration is a recently dead pulp or a disintegrating one, together with infiltration of deleterious external substances through a cavity of decay, and again by the unwise introduction of discoloring agents in treatment of the root canals, as in selecting antiseptics that have staining properties instead of equally efficient ones without those properties.

In some instances teeth have become so infiltrated with stain by the injudicious use of remedies used in root canals that little or no success is attained in efforts to bleach, and these things must be taken into consideration when bleaching is contemplated; and patient should be advised that positive good results are not always certain.

A vast improvement can be made, however, in a great majority of cases if the method employed is good and properly carried out.

In the first place all surface stains and deposits must be removed. Then the tooth, together with its neighbor on either side, must be isolated by the rubber dam, after which the teeth should be cleansed well with alcohol. When the opening into the chamber and roots is secured, the interior should be washed out with alcohol, which removes debris that is frequently the prime cause of discoloration by simply reflecting through the translucent tooth.

Now, bleaching, it must be understood, should not be undertaken until all treatment required to render the tooth aseptic has been done

and roots permanently filled. No attempt at bleaching should be made with an open apex. It is desirable, however, to have the bleaching agent reach as much of the interior of the tooth as possible, hence if roots have been filled full the removal of a goodly portion is indicated, to be refilled, of course, after the bleaching, but preferably with the same light cement that is used to fill the chamber.

Three per cent dioxygen will have some effect in restoring the correct shade to some discolored teeth, the process being to repeatedly saturate the interior of the tooth.

A 25 per cent strength is more efficient, and especially the more the tooth needs bleaching. With 3 per cent dioxygen at hand, it is easy to secure 25 per cent in a very few moments by evaporating or boiling down to about one-eighth of the quantity. This should be done, however, in a glass test tube rather than in a metal receptacle, and it should be remembered that a 25 per cent solution is somewhat escharotic if it comes in contact with lips, face or fingers; and clothing should always be protected when using any of the peroxide of hydrogen preparations, as it takes out color and eats holes into fabrics.

The bleaching process may be carried out until the tooth is a few shades lighter than its fellows with a certainty that the shade will deepen when again in its natural habitat, the fluids of the mouth.

It is well, usually, to allow the tooth to go for awhile with a temporary filling, provided it is absolutely sealed against ingress of external fluids and agents, for a repetition of the bleaching process may be in order. Not, however, if the first has been as effectually done as it should be and under proper conditions.

Teeth being translucent, the discoloration is often due only to the presence of the dead dark mass of pulp, the removal of which, with the efficient washing out of debris, is quite sufficient to bring back a natural color, and particularly when the contents of the chamber have been changed from a dark mass to a light one, i. e., cement.

Dr. John P. Buckley, of Chicago, a good authority, gives the following method for bleaching:

The dam is placed over the tooth and adjacent teeth. A thin platinum band is wrapped around the tooth to be bleached and white gutta-percha warmed and used to form a pocket about the cavity.

By the use of a small gold or platinum spoon, some sodium dioxide is placed in the cavity and forced some distance up the root canal with a glass instrument. Distilled water is now dropped into



the cavity and a piece of platinum held over the cavity to force the generated oxygen into the dentine. After sufficient time to allow the oxygen to work, the cavity should be washed and dried, and the operation repeated if necessary.

Should it be found impossible to remove the pigment mechanically with water, a 3 per cent solution of sulphuric acid may be used to chemically dissolve it, after which wash with water and let dry, preferably without using hot air. Now burnish a paste of precipitate of calcium phosphate and distilled water into the lower third of the root and against all exposed dentine. Make a base for final filling, using light colored cement.

There are other processes of bleaching that may be quite as efficient as what has been given here, but deposited pigment is the cause of real discoloration and the first thing to do is to get rid of all that may be by mechanical processes—removal of debris with canal instruments and washing—and then if that is not sufficient, follow with the chemical remedies as above described; and the peroxide of hydrogen preparations, in the experience of the author, are easy and decidedly efficient in many cases. Persistent cases need more persistent treatment, and no doubt some cases will be met with where the tooth has become so completely infiltrated as to resist all efforts that may be consistently employed on a tooth in its place in the mouth.

(To be continued.)

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# ORIGINAL CONTRIBUTIONS

## TOOTHsome TOPICS.

BY R. B. TULLER.

Fun.

Funomina.

Funomina of baking porcelain.

We had a meeting last month with a certain Indian, Dr. John Quince, as essayist.

Of course, every one knows if we had John Quince we had a good paper, and a good fellow (I know this to be so of my own free will and accord), but he is not a good Indian, for he is not dead—not yet.

The paper presented was the result of conclusions drawn from a protracted series of tabulated experiments in fusing dental porcelain.

Of course, there was funomina in it, but we did not know just how much, nor whether chemical or physical, though the Encyclopedia Britannica, which we know by heart, says: "The making of pottery (porcelain) depends upon the *chemical change* that takes place when clay (*kaolin*) is heated by fire.

The meeting was large, the hall being overcrowded. The discussants of the paper were Drs. John Nye, John Buck, John Nye, John Buck (interrupted by John Quince), John Crux, John Proth, John Buck, John Nye, John Q. closing.

A few others butted in who were not of the symbol John, but the majority did not wish to display their ignorance of chemistry, the trend of discussion being in that direction from the start.

John<sub>1</sub>, on account of his affinity for John Q., lavished the usually deserved compliments upon the author in the usual courteous manner, plus calorified air in this case, because he, John<sub>1</sub> was captured by a tribe of Hoosier Indians several times and hopes to be again. He said the paper had demonstrated clearly that the fusing of porcelain was a chemical change. This was in the light of a discovery concerning the question whether the change was chemical or merely physical, though Britannica had it all settled long ago.

John<sub>2</sub> said there was no question at all but what the change was physical, because it was plain to any one that chemical change could not take place except in the presence of elements subject to chemical change (note the logic). Of course, he said, if those elements were present, the change would be physio-chemical. See?

John<sub>1</sub> said, "Well, that's just what I said; the change is chemico-physical."

John<sub>2</sub> then replied, "That is not the way I understood you. Of course, in the beginning of the process we have hydrogen monoxid present, but if one is at all versed in calory he will understand that it is driven off early in the process. If not, look out for bubbles; but that don't cut any ice in this question of chemical change."

John<sub>1</sub>: "How about calor? Don't that cut any ice? Seems to me the gentleman is getting mixed." (By the way, I will explain to the *common* fellows that calor means heat.)

John<sub>2</sub> replied, "I still contend that my position is right."

John<sub>1</sub> replied to that that John<sub>2</sub> did not fully understand the argument that he, John<sub>1</sub> made. "I simply contend that there is chemical change in fusing porcelain as well as physical."

"So do I," responded John<sub>2</sub>. "There is physio-chemical change."

"Well, that's what I have been saying. We agree, but you don't seem to grasp the fact," answered John<sub>1</sub>. Here Dr. Cupidicus butted in and said that he thought both discussants were mixed. He said, "I consider myself as being conversant with the subject—whatever it is—and calor," he said, "if at the proper altitude, would cause the mix (porcelain) to have a tendency to globulate. This tendency to globularity is a feature of other things than porcelain. The evidence is clear to me every day. I was once a child and they say I was then homely, though of normal proportions. (The Doctor will have his little joke.) But for many years I have been a hot member of the dental profession, and have become rather rotund. I have given some thought to this chemistry—or whatever it is under discussion—and I know whereof I speak. I know, too, something of hydrogen monoxid on the side, and I agree with the gentleman that it will make bubbles under certain conditions. The essayist knows it, as do other Indians of his tribe, and as many of us know here in our beautiful city by the lake. This fact has been emphasized a good many times and I can not see the use of prolonging the dis-

cession of it. The evidence of what I say is before you. It is as plain as the nose on a man's face."

Here John<sub>3</sub> butted in, and said he knew he was the man alluded at as having demanded evidence of assertions made at a previous meeting by John<sub>1</sub>. Said evidence, he said, had been promised but had not yet been forthcoming.

Here John<sub>1</sub> side-stepped by saying he had at different times consulted and advised the essayist, John Q., in his protracted experiments, and the evidence he had to present was embodied in the paper, though under the John Hancock of John Quince. This was the tabulated evidence, but as something more convincing, he drew from his pockets, where he had them concealed, two bricks and threw them—or, rather, threw in a few remarks as he handed them to the audience. They were of porcelain, about as big as beans.

John<sub>3</sub> was by no means convinced and allowed that he knew a whole lot about porcelain that the other Johns did not know, and he didn't propose to enlighten them, either.

John<sub>4</sub> was modest and had to be called out. He made a few remarks pertinent to the subject and returned to his seat.

Then the the other Indian from Indiantown, who followed the trail in with John Q., was called upon, and he endorsed some things that John Q. had said, but more particularly what Dr. Cupidicus had said about hydrogen monoxid. He knew more about it since he came to Chicago than before, but, personally, he said, he could put forth but a lame argument, as was indicated by the fact that he was on crutches three sizes too short for him. An Indian on crutches is one of the symptoms of civilization, though the attempt is crude on short crutches. He admitted that he was not a real "good Indian," but came near being one under the benign influence of our lake, and John<sub>1</sub>.

Some one whose name escaped our stenographer arose at this point and expressed the thought that the audience would be more edified if the discussants confined themselves to the funomina of the paper, and not so much the lake on the side—of our city.

The president said that reference to the lake was pertinent to the subject, as it was largely hydrogen monoxid, and without which we could not work porcelain, nor build a high-ball.

At this a gentleman in the front row sprang to his feet and said he would like to know what all this talk about hydrogen monoxid

was. "Every man in this room," he said, "knows enough about chemistry to know that the lake is not hydrogen monoxid, but  $H_2O$ ; pure and simple; and they know, too, that when you heat that up high enough you drive off the  $H_2$  and leave the O (Oh!); and if that isn't a chemical change I don't know what is. Let us have common sense!"

Another man said use  $C_2H_6O$  and avoid bubbles. I don't know about that, and the essayist didn't enlighten us.

At this point a stranger arose and said the subject had been handled like clay in the potter's hands and much light had been thrown on the difficulties of making inlays and any man who, after listening to the paper and the discussion could not go out and make inlays without difficulty had better quit the business.

As the argument had been somewhat heated and overdone, a motion to pass the subject was carried and John Quince proceeded to close the discussion; and if John<sub>1</sub>, John<sub>2</sub> and John<sub>3</sub> had not interrupted he would have done so.

The meeting—some 300 being present—then adjourned to the College Inn, where the usual banquet provided each month by our president, was partaken, and funomina of baking was forgotten, and hydrogen monoxid +  $C_2H_6O$ , 2½ per cent, and malted, was served in steins.

(Topics every month.)

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#### PRACTICAL HINTS.

An excellent tool for trimming around plain teeth in vulcanite work may be made from a broken Gates-Glidden drill by sharpening it to a long, thin point. With it the gums may be festooned and all particles of vulcanite be removed from between the teeth.

A small brush-wheel with a single row of moderately stiff bristles is excellent for polishing around plain teeth in vulcanite work. If wet soap is applied to the bristles they will retain the wet pumice and cut like a knife. Soap rubbed on a felt buff-wheel will retain the wet pumice, causing it to cut much faster and considerably lessening the time and labor of polishing an artificial denture.—Frederick C. Brush, *Dental Review*.



# EDITORIAL

THE subject of dental fees has been written and discussed considerably in dental societies. Some very excellent thoughts on the matter have been put forth with a sort of statistical report of the fees and incomes of professional men generally. Some extraordinarily fees have been received by some of the members of the dental profession, but these large fees are the exceptions and not the rule.

In the discussion of this subject in the dental society, and in private conversation with many dentists, we are much inclined to think that there is a large difference between the fees of men who are classed as reputable practitioners; yet when a comparative estimate is made with regard to methods and modes of expenditure, cost of living, and the like, the practitioner who is not boastful of his enormous fees, lives and has about as many comforts as those who, according to their own statement, get much larger fees. It is a fact that these large fee men are, at times, found to be as poor as those whose incomes are never mentioned.

No correct statement can be obtained as to the actual fees made and collected by the practitioners who are constantly boasting of the prices they get, because it has been proved that the fees they get and those they say they get, are sometimes very different. In this connection one should remember that, he who boasts to his fellow practitioner about his fees and income shows himself not only extremely imaginative, but to be uncultivated and of very common origin. And by these men many times the public judges the entire profession; for an individual who is not capable of entering into and adhering to a truthful conversation with his fellow practitioner, can not fail to show to the general public his vulgar mannerisms, and thereby give many times the impression that the profession is uncultivated and unfamiliar with good breeding.

It frequently happens that the so-called reputable practitioners of dentistry discuss with their patients their superiority over their brother practitioner, and are constantly telling them how they have been selected as the only member of their profession capable of performing certain operations, or of discussing problems pertaining to

the technical skill of the dental profession, such as inlay filling or the successful treatment of pyorrhea, etc. Anything that tends to lower a member certainly lowers the profession as a whole.

There is no question that the application of an art to certain biological phenomena, called disease of the human body, is, in a vast majority of instances, unappreciated and many times unpaid for, in the sense of a good legitimate fee consistent with the skill and knowledge that is put forth to produce the most permanent results to those who receive such service. There are some good reasons why the public does not hold the profession in high esteem, and none seems to suggest itself as being the most likely one, other perhaps than that the profession lacks true cultivation. Especially is this true among those who are supposed to stand at the head of the profession.

The expression that filling teeth is the poetry of operative dentistry could never have been formulated in the mind of C. N. Johnson had not his mental processes been cultivated to look beyond the mere mechanics of such an operation and beyond the compensation that is to be derived from such services. It was the man's sincerity and depth of vision that made him see the poetry bound up with the potential energy in that natural product called gold. Yet he is not suffering for the necessities of life. This is an indication that the cultivation of the mind along with a technical training is one of the essentials in raising the public opinion of the profession and in making them comprehend the highest and best in our calling. Frankness and sincerity of purpose will do more to raise the fees of the dental profession than hours of discussion on the floor of our dental society.

A fee for an operation in a dental chair is a personal matter between the patient and the operator and can only be settled by them, regardless of all that has been and may be said upon the subject in a general way. There is one thing certainly true: the majority of the members of the dental profession receive a smaller remuneration for their services than the members of any other skilled profession that is known; especially is this true in large cities, where we take into consideration the expense that is necessary for comfortable and well lighted offices, and for the other necessary equipments, always very expensive and which must constantly be replaced by new and more improved kinds, all of which are of the greatest importance in the practice of dentistry.

G. W. C.



## Abstracts and Selections

### INSTALLATION DAY ADDRESS.

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#### "DENTAL SCIENCE AND THE COMMONWEAL."\*

BY B. J. CIGRAND, B. S., M. S., D. D. S., AT UNIVERSITY OF ILLINOIS.

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"Something over one hundred years ago, while the American colonies were struggling for freedom, a fleet of Frenchmen came to lend their aid to an oppressed people. Among these compatriots was Joseph LeMaire, a dentist, who shortly became the personal and professional friend of Washington. In 1781, while the colonial troops were in winter quarters, LeMaire obtained a commission from General Washington to teach dentistry to those of the army who desired a course. Thus from the hands of General Washington came the order 'to teach dentistry.'

"This was the beginning of the instructional career of our profession in America. About forty of the soldiers availed themselves, and six became practitioners. Today we number upward of fifty recognized colleges, publish more than 200 dental periodicals and have a dental population of 26,000.

"The art and science of dentistry during the past half century has surpassed in progress that of any other vocation, and today it stands among the learned professions. To this happy era in our calling the American dentist has liberally contributed. The glory of establishing nearly all the potent elements of dental progress is the cherished record of the American practitioner.

"It would be foreign to the purpose of my paper to recite to you the evolution of dental construction or detail the processes relating to dental technique or progress of digital dexterity as it pertains to our profession, hence will confine my remarks to dentistry as it pertains to the people in general, particularly from an American point of view.

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\*Address delivered by Dr. B. J. Cigrand, Dean College of Dentistry, University of Illinois. Occasion, installation of Edmund J. James as president of State University.



"It might well be said that it is the most exact, or demonstrable of professional callings. There is less of the speculative, and hence it excludes the factor of assumption or presumption, since, like surgery, it deals with material and adds to or displaces matter, being either æphretic or prosthetic.

"Its dominion is, indeed, apparently constricted and does not involve great human or physical territory, but its relationships are of



DEAN B. J. CIGRAND  
OF THE COLLEGE OF DENTISTRY OF THE  
UNIVERSITY OF ILLINOIS.

so diverse and complicated a character as to involve parts and organs quite remote from the lower third of the face.

"That our teeth depend largely upon our mental and physical condition none will in this twentieth century deny, and that in turn our mental and physical conditions are most decidedly affected by the

condition of the dental organs can be demonstrated; and in this chain of dependence we recognize that all organs or parts of organs are influenced by the surrounding physiological circumstances, and these are acted upon primarily by the food we eat, the vocation we follow and the climate we live in.

"Dentistry has contributed to the common weal some of the most cherished comforts of human life and lent factors to the development and progress of the human family.

"To LeMaire Americans owe the knowledge of implantation and transplantation, the principle which has led to the wonderful physiological phenomena of engrafting of new tissue.

"The first anatomical museum was founded by Dr. Peale, also distinguished for having painted the famous picture of Washington.

"To Miller we owe the knowledge of hundreds of forms of bacteria. He gave us light on cell physiology and evolved the scientific etiology of dental caries.

"Dr. Atkinson took the speechless child, and, after restoring the cleft in the palate, taught the world that where distortion of features and muteness of voice existed, both could be displaced by beauty and eloquence.

"To Dr. Horace Wells we owe the practical application of nitrous oxide, the finding of which has done more to relieve humanity of its sufferings than any score of other discoveries. Humanity owes so much to this dental genius that he deserves a statue in every center where medicine or dentistry is taught. Sixty years ago, October 18, 1845, Dr. Morton, a dentist of Boston, chemically demonstrated the sleep-producing qualities of ether, and two years later Dr. C. T. Jackson gave us chloroform. Dentists have since produced five general and fourteen local anesthetics.

"Mother Medicine fully recognizes the balm brought through these agencies to the afflicted and distressed. These dental practitioners have made it possible for your cosmopolitan centers to possess the beautiful marble lined surgical amphitheaters of today, and have thus opened the way to cranial and internal surgery; they have taken from the operating room the hitching post and straps and bequeathed in their stead 'the vapors of sweet dreams.'

"A noteworthy service of our calling has been the system of post-mortem identification.

"In recent years the dental aspect in determining definite in-

formation on bodies whose flesh have been subjected to the change-producing elements of fire, water or time, the dental record of the oral cavity has proclaimed the identity. In criminal annals this form of exact registration has resulted in untold good, leading to the capture of the criminal immediately after the identification of the victim, for without the latter, the former could scarcely be anticipated. Again in the innumerable railroad accidents and public building calamities, as well as steamer disasters and theater conflagrations, the dental surgeon is indeed rendering great aid to the saddened, stricken friends and relatives. In the Iroquois theater horror more than 300 dead were given a family burial because of the dental record.

"The first instance where a body was given dental identity resulting in personal identification happened in this country something less than a century ago.

"The great patriot and hero, Paul Revere, devoted much time to the prosthetic division of dentistry. He constructed metal base dentures and was much interested in carving and designing artificial teeth.

"When the remains of the patriot and soldier, General Warren, were removed from Bunker Hill battlefield to their present resting place, it was Paul Revere who made the identification, recognizing the partial denture which he had constructed some years previous to the general's death, and minutely described his remaining natural teeth.

"Those who are making a study of the science of neurology are free to admit that dental lesions and oral disturbances inaugurate a variety of mental disorders. Neurotic disturbances having their origin in dental irritation do not receive the attention they merit. The dental factors concerned in reflex pains which may be traced and treated in the mouth are surprisingly numerous. Recent investigations point to the fact that in our State asylums are patients suffering a temporary dementia and various forms of neurasthenia, who, in truth, require only dental attention to be relieved. Physical exhaustion, suspended consciousness and other morbid mental states are too frequently induced through neglected oral circumstances. Why not have dentists appointed in these institutions to care for the distressed? Nor does this disorganized dental condition relate to asylums alone. The penal institutions as well are disregarding the comforts which dental science could render.

"The general surgeons of today are awakening to the importance

of our professional services. In patients awaiting operations involving the elementary systems, the necessity for normal and healthy conditions in the mouth is most essential. The most successful operation would be endangered by even the presence of diseased dental pulp and should there be an ulcerated area or suppurating surface superinduced by a distressing tooth, the life of the patient would be threatened. Hence surgeons who are alive to these responsibilities before performing these specified internal operations do not neglect an examination of the oral cavity. The patient receives the services of the dental surgeon, thus assuring every precautionary measure.

"As further evidence of good to the general public, I cite the statement of Dr. Joseph Kidd, of London, an eminent English physician and specialist, who attributes the cause of the prevalence of appendicitis to ill attention to the teeth and indifference to the laws of perfect mastication. In this view the medical profession is offering some hope and suggestion which is truly scientific.

"The morbid influence due to deranged digestion has attracted attention on this side of the Atlantic in the form of the recent book by Arthur MacDonald, specialist in the bureau of education at Washington, D. C. He attributes much of our crime to illness, to abnormal health, and classes distressing and diseased oral parts as a frequent cause of domestic crime. He calls attention to the fact that the poor in our great cities, where crime so frequently flourishes, receive practically no medical, surgical or dental aid, and the depressed and suffering mortals wear out their physical and neural energies in the great fight against pain. The result is an exhausted, ill-tempered mind, lacking the normal control and unable to carry the burdens of excruciating pain. The victims frequently, through perverted judgment, commit most desperate crimes.

"Fifty years ago such a statement would have been treated with derision. This emphasizes the necessity of greater care of the dental organs and augments the importance of the science of dentistry.

"Why are not the poor of our great metropolitan cities provided with better attention by the physician, surgeon and dentist? These people are burdens of the body politic and an ounce of prevention would be better than the pound of cure. Later we have them at greater expense as tenants of the county hospital, the poor farm, the industrial institution, the asylum or the dispensary. Would it not be wiser, more charitable and Christian-like to provide at State ex-

pense a method looking to the care of the worthy poor? Today, Germany, recognizing the importance in this direction, has in Strassburg, Berlin, Dresden and all large cities instituted public dental infirmaries, where government appoints dentists to care for the teeth of the worthy poor, the government providing the institution with all necessary instruments, appliances and material.

"The children of our public schools should have like opportunities and the colleges of dentistry would gladly, without cost, provide lecturers and clinicians.

"The Government at Washington is awakening to the welfare of the soldiers and sailors and the common weal is strengthened because of it. Congress will be asked to pass a bill creating naval dental officers. This would add a group of new and useful officers to the American navy in the interest of comfort, health and efficiency of our naval forces. The Government should continue in this humanitarian direction. Last year in a single county in our State 818 infants died from convulsions during the period of dentition. If this same ratio prevails throughout Illinois, what startling figures we could count! And yet this is but one of the many causes of death directly traceable to oral and dental disorders. It does seem that these facts, if known, would appeal to our legislator, who might appropriate a small sum for original research in this most fruitful and promising field.

"Aside from this death figure directly responsible from dental ailments, what is being done by the Government to encourage scientists to prosecute the study of diseases of infants? We may keep in mind the low birth rate of France—of what avail is a high birth rate with an encroaching and increasing death rate? President Roosevelt has called attention to the childless marriages—thanks for his drastic criticism—but he might have gone into this matter farther and added, 'Save the children that are born.'

"The United States annually spends millions of dollars in the department of agriculture in the hope of arresting the disease of swine, cattle and sheep. The Government provides scientists with the best of lenses to discover and decipher bacteria and agents of destruction to the animal and vegetable kingdom. But the human family is left to individual enterprise, and disease hovers at every doorstep in the form of consumption, dyspepsia and pyorrhea, allowing a death rate of a most alarming figure. The Government could well afford to publish fewer books on cattle and swine and devote a portion of this enormous sum to the redemption of the citizens' health.

"If the general public knew the status of affairs as pertains to our present meager means for prosecuting investigations into realms of direct concern to human life, if we could impress legislatures and even influence civic authorities with the fact that public funds should go for public good, we would have accomplished an invaluable good.

"Let the University of Illinois, her alumni and her friends, appeal to the legislatures for funds in this direction; give dental specialists an opportunity and the gain will all accrue to the general public—the common weal."

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### SOMNOFORM VERSUS OTHER GENERAL ANAESTHETICS.

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BY DR. W. R. RATHBONE, CUERO, TEXAS.

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Somnoform is the anæsthetic that many of us had the pleasure of seeing demonstrated at St. Louis last August, at the meeting of the Fourth International Dental Congress, by Dr. Floreston Aguilar, of Madrid, Spain.

In my practice I have had considerable experience in general anesthesia with chloroform, ether, nitrous oxide gas and somnoform. But recently I have used somnoform extensively and almost to the entire exclusion of all other general anesthetics. I believe it to be one of the most important clinical discoveries of modern times, and I have no hesitancy in saying I consider it far superior to any other anesthetic and would not now exchange it for any other for minor operations.

In 1844 Dr. Horace Wells, a dentist of Hartford, Conn., discovered the practical value of nitrous oxide as a true anesthetic, though its discovery as a gas was some time before this period. Dr. Wells immediately upon his discovery communicated it to others, and in conjunction with Dr. Riggs began a series of experiments with this new agent and continued it through his practice. But, owing to the bulkiness of the apparatus required, Dr. Wells cast about for some other anesthetic that would overcome this objection. Sulphuric ether was known to possess certain anesthetic properties, so Dr. Wells began experimenting with it, and in 1845 his experiments proved quite successful, and ether is today probably used as a general anesthetic more

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\*Paper prepared for the Texas State Dental Association Meeting at Austin, May, 1905.

than any other. Thus it will be seen that the world is today under obligations for nitrous oxide gas and sulphuric ether as anesthetic agents to Dr. Horace Wells, an American dentist. He died in 1848, but with his name will ever be linked the grandeur of his achievements.

Nitrous oxide has been the adopted anesthetic of the dental profession, but I believe somnoform will very soon largely supersede nitrous oxide gas.

Somnoform is the invention of Dr. G. Rolland, professor of anesthesiology and dean of the Dental School and Hospital of Bordeaux, France.

In teaching the theory of anesthesia Dr. Rolland soon found he had to devote himself to the practical application of his subject. His efforts were to get an anesthetic of quick and safe action and of sufficiently long duration, but by an agent which should be rapidly eliminated, that the patient should be able to leave the operating chair fully recovered in a short while. He thought of a mixture containing chloride of ethyl 60 per cent, chloride of methyl 35 per cent and bromide ethyl 5 per cent. The various constituents of somnoform, you will see, are all more or less well known anesthetic agents, some of them having been in use since 1827. But we should not on any account be skeptical as to its worth. The following law might be borne in mind: "The qualities of a mixture are entirely independent from the individual qualities of its components." Then, again the manner of compounding a mixture may bring about entirely different results.

Dr. Aguilar, of Madrid, in his paper before the Fourth International Dental Congress, says:

"In order that an anesthetic should enter the respiratory tract and act on the nervous centers, it must be in the gaseous form, and the rapidity of its absorption is in direct ratio to its degree of diffusibility. Thus the force which causes the blood corpuscles to become saturated with its narcotic vapors instead of oxygen, and therefore the action of the gas on the nervous system will be rapid in proportion to the rapidity of that saturation. Dr. Rolland presents the problem of anesthesia following in the propositions:

First—To produce anesthesia it is necessary that the tension of the anesthetic gas be superior to that of oxygen, so that it may, in a certain proportion, take the place of the latter in the pulmonary alveoli.

Second—The tension of the gas being proportionate to its volatility, the more volatile the gas the easier it can be made to take the place of oxygen.

Third—The ideal anesthetic, if such a thing would be possible, would be the one behaving in its conditions of entry, sojourn and of exit from the body in the same conditions as oxygen.

If we follow the course of oxygen in the body we see that the red blood corpuscles become charged with oxygen in the lungs during inhalation, and distribute it to the tissues throughout the body. The blood corpuscles have their period of activity during the course through the arterial system. When the oxygen has been given up, the corpuscles return by the venous system inert and dormant back to the lungs, where, by contact with oxygen, they resume again their former lost activity. Now, as about twenty-five or thirty seconds are necessary for a red corpuscle after leaving the heart to return to it, we can say that in this diagrammatic division of circulation in two parts, one arterial and the other venous, the action of the oxygen would last from twelve to fifteen seconds. Therefore, an anesthetic capable of being absorbed practically in the same manner as oxygen should produce its effects in fifteen seconds, and when the administrations be discontinued the anesthetic should be eliminated in proportion as the corpuscles of the blood come again in contact with the oxygen. This almost precisely is what takes place with somnoform.

Somnoform has a clean record, having been administered more than five hundred thousand times. No other anesthetic can show such a record.

In comparison with nitrous oxide, the average induction is very much shorter, while the duration is longer, thus allowing time for a better operation.

In nitrous oxide a cumbrous and expensive apparatus is required, while with somnoform the inhaler is very light and about one-fourth the cost.

It is the safest of all anesthetics because of its exceedingly rapid absorption and equally rapid elimination from the system, and its chief beauty is its absence of cyanosis, the patient maintaining a natural complexion through the entire administration.—*Texas Dental Journal*, July 1905.



**WHAT WILL PROBABLY BE THE DENTAL EDUCATIONAL STANDARD FOR THE COMING DECADE?\***

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CHARLES C. CHITTENDEN, D. D. S., MADISON, WIS.

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At the last meeting of this section at Atlantic City, in 1904, a symposium on dental educational standards was read, which was exhaustive and thorough in its character. In a paper presented at that symposium I had the honor to report chronologically the various facts as they had transpired during the current year concerning the attitude of the individual dental schools and the National Association of Dental Faculties toward the newly inaugurated four years' college course.

It had become apparent that a large number of the smaller and financially hampered schools were determined on returning to the three years' course.

This section at that time in its discussions expressed, in no uncertain terms, its entire disapproval of any such retrograde action.

Immediately following the meeting of this section came the annual meeting of the National Association of Dental Faculties at Washington, D. C., where the whole subject was gone over and discussed very exhaustively, with the final result that, by a close vote of twenty-four to twenty-one colleges, the four years' course was upheld. This occurred in the early part of June. Almost at once following the adjournment the *ad interim* committee began to receive the resignations from membership in the National Association of Dental Faculties of a number of schools which were opposed to the decision at Washington to continue the four years' course. These resignations created such a panic in the ranks of the colleges that the *ad interim* committee was finally induced to call a special meeting of the National Association of Dental Faculties to be held in St. Louis, July 18, 1904, whose sole purpose should be a reconsideration of the final decision made at Washington, the month previous, to continue the four years' course.

At this special meeting there were, of the fifty-one colleges in membership, twenty-eight represented. By a vote of 26 to 2 (being by a majority of one of the total membership) the four years' course

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\*Read in the Section on Stomatology of the American Medical Association at the Fifty-sixth Annual Session, July, 1905.

was revoked and a three years' course of thirty weeks in each year was adopted in its place. The public announcement of this distinctly retrograde step (taken by a bare majority of one of the membership of the college association) came as a distinct shock to the rank and file of the profession. There was no semblance of an offset in the way of increased standard requirements for admission to the college course to, in some measure, soften the baldness of the action. The outside world was simply made suddenly aware that the National Association of Dental Faculties, without waiting to graduate a single class or man under the vaunted higher educational system which that body had spent at least three years in elaborating, and had then declared to the world as absolutely necessary to properly fit the student for the dental degree, had, without explanation, struck its colors and surrendered. The one saving phase of the whole transaction was the fact that practically one-half of our colleges had been opposed to the change and had only acquiesced in it "to save the Faculties Association."

The examiners of the United States had been loyally standing behind and ready to protect the schools in their higher standards in every way. To them this bold retrogressive step called for immediate action. A blow had been struck, for commercial reasons only, at the established standards, and struck, too, by our National Association of Dental Faculties! All the schools of the better class had been obliged to yield to the inevitable and lower their standards—all save one, whose noble independence but makes the situation appear the more pathetic.

The annual meeting of the National Association of Dental Examiners was held late in August, 1904, at St. Louis. It was apparent, from the first news of the "retrogression," that something must be done to retrieve the situation before the world, and the examiners rose at that meeting to the occasion. The following report from the committee on colleges, preceded by a careful résumé of the entire situation, was unanimously adopted:

"Your committee would, therefore, recommend that this association establish at once, to go into operation not later than the opening of the school year 1905-1906, the educational requirements for admission to the dental college course of graduation from an accredited high school or its full equivalent, all examinations of credentials and equivalents to be placed in the hands of an acceptable appointee

of the State superintendent of public instruction where not otherwise provided for by law.

"In view of the present disturbed and unsettled conditions existing in dental educational circles, and with a belief in avoiding all unnecessary disturbances of standards at this time, your committee would further recommend that no change be made at this time in the present requirements of this association of not less than twenty-eight calendar months of college attendance for graduation."

By what had occurred the trust of the examiners in the ability of the college association to maintain good faith under certain exigencies was so badly shaken that all standing resolutions which in any way interfered were rescinded, and the committee on colleges was instructed to prepare a new list of recommended colleges, based on the acceptance by the individual schools of the standards declared in the above report. The work was to be done independently of the National Association of Dental Faculties.

After having spent many months in correspondence and careful conferences with many of our ablest teachers and scientists, the committee on colleges issued the following letter to the deans of this country, February 14, 1905:

"In consideration of the conflicting views as to dental educational standards which have existed for some time, the National Association of Dental Examiners at its annual meeting held in St. Louis, August, 1904, deemed it expedient and necessary for the upholding of such schools as sought to maintain the standards already published to the world as the minimum that should obtain, to declare what educational standards should be required by the State boards of examiners as a criterion of reputability of the schools seeking recognition of their output.

"This *ad interim* committee, which is also the committee on colleges, was instructed to inform all schools of the action taken, and directed to prepare a recommended list of colleges on the basis of the standards established at that meeting.

"Feeling fully the gravity of the duty imposed, this committee has expended much effort in striving to arrive at a basis of fairness to all interests concerned in carrying out its general instruction. The chief requirement established at St. Louis was that of "graduation from an accredited high school or its full equivalent" for admission to the classes of 1905-6.

In several schools and university departments this requirement is already in actual operation, and our committee finds a considerable number of other schools desiring to maintain it. All these, of course, will be placed on the recommended list. There are, however, other schools whose deans assert that to enforce at once this advance requirement would work a serious financial injury to their institutions.

The question of what would constitute a proper length of course for graduation from a dental college has always been left by the examiners to the colleges themselves, except that, after a school has announced to the public a certain course as necessary to properly fit a student for graduation, if it, for private or financial reasons, deliberately lowers its requirements in any particular, the question of good faith and reputability of that school becomes at once a matter for adjudication by every board in the country.

"We, therefore, acting on authority of, and, *ad interim*, representing the National Association of Dental Examiners, which is the advisory body of the various State boards in their official acts, respectfully request that you authorize the committee on colleges to place your school on the recommended list of colleges by the acceptance of the following educational requirements for students, viz.:

"For matriculation or registration, 'graduation from an accredited high school or its full equivalent, all examination of credentials or equivalents to be placed in the hands of an acceptable appointee of the State superintendent of public instruction where not otherwise provided for by law,' said requirements to be inaugurated not later than the beginning of the school year of 1906-7; and a college course for graduation optional with you for either four years of seven months each or three years of nine months each, this course requirement to be inaugurated the present year, 1905.

"It is to be expected that schools maintaining these standards will be protected in so doing by the several boards composing the National Association of Dental Examiners.

"It is the intention of this committee to prepare and to publish the recommended list of colleges not later than April 1 next, in order to give all schools the earliest opportunity to announce these standards to the public. Therefore information as to your decision is desired as early as possible.

"Very respectfully yours,

"COMMITTEE ON COLLEGES."

The responses have been quite general and, on the whole, unexpectedly satisfactory. It developed that a large number of schools were only too desirous for the establishment of an educational requirement at once reasonable and at the same time so sufficiently advanced as to not only retrieve the unfortunate back step of 1904, but also to place their schools on a permanent working basis so advanced as not to be liable to material change for several years to come. As one dean expressed it, "This higher standard places us in a position to go ahead with our business, and we will not have to change again unless the Faculties' Association goes one better. It has been this uncertainty as to what was coming or what we were going to do next that had troubled me most. Now I feel as though we had something definite before us."

And thus it has happened that, up to this date, the acceptances have far outnumbered the refusals and the new college list is still growing.

The *rationale* of the matter being that while the National Association of Dental Faculties may and has set minimum bounds of requirement for its members, it can not and never will undertake to prohibit any or all of its membership from placing their individual requirements as much higher as they may see fit. The only chance taken by the individual school in so doing is as to the ability of its product to compete successfully in the market with that of the schools retaining the lower standards.

The question, therefore, resolves itself to this: Will the examiners, with the power of law behind them, keep faith and redeem the pledges made by their authority and in their name by their chosen representatives, i. e., stand by and judicially maintain the advanced educational requirements established by the National Association of Dental Examiners at St. Louis in 1904?

The faith manifested by more than a score of our foremost schools and universities in the integrity and honor in the examiners in this respect would seem to be a harbinger of a new order of things which will be, at least, paramount to commercial success in the conducting of educational institutions.

If the hopes herein foreshadowed shall become realities, a new impetus will be given to dental education, a better class of minds will be attracted to our schools, and for many years to come there will be no further disturbance in preliminary educational requirements for entering our dental colleges.

## DISCUSSION.

Dr. F. L. Platt, San Francisco, said that a degree from a university is certainly commendable and necessary, but he thinks that it is hardly all that is required. A large part of dentistry is mechanical and must necessarily continue to be so. He believes that in addition to a university degree, if a young man is going to study dentistry, he should also attend a school of manual training. Dr. Platt has noticed that the students who have had some manual training do superior work. There must be a combination of these two kinds of training before one can become a good dentist. After a man has gained a knowledge of chemistry, physics, bacteriology and therapeutics, his training should be largely clinical. The greater part of dentistry can be taught by clinics, and Dr. Platt believes that each member of a class should be required to demonstrate his ability in the presence of others, and should not wait to learn to do this after he has acquired a degree. Experience in teaching operative technic has convinced Dr. Platt that so far as operative work is concerned, clinical instruction is far ahead of the lecture. He does not believe that dental colleges should be private corporations. Schools of law, medicine, theology and dentistry should be integral parts of State universities, with funds provided by the State and faculties paid by the State. At the end of the first six months, if a student does not display aptitude for the work, he should be advised to take up something else. Dr. Platt agreed with Dr. Carlton that a high school education is not sufficient. Dr. Platt attended a pedagogic meeting a year ago, and heard many people speak who were in favor of a four years' course in dentistry, but did not hear a single sound argument in its favor. He thinks that the course should be at least nine months a year and four years if necessary, but to make the course four years at the expense of cutting down the length of each year, is not advancing. Students who have five months' vacation will not graduate from college as well equipped as students who have only three months' vacation. Some argue that the students get so tired they need five months' vacation. Others argue that students ought to have five months to work to earn money to finish their course. Neither of these arguments is worth considering. If the course is to be lengthened, let it be made four years of nine months each. A plan could be adopted requiring a degree in arts and letters for admission,

as well as a manual school training, and then three years of good, earnest work would turn out good dentists.

Dr. M. L. Rhein, New York, said that possibly the colleges that have a six months' course are in the South, and they would have a six months' course whether it was three years or six. It has always seemed difficult to get Southern colleges to give any lengthy term. The tendency in the Northeast has been to increase the teaching term whatever the number of years. Dr. Rhein thinks the basis for dental education should be absolutely as high as that of medical education, and until that standard is reached dentists are below their true standard, and that is the only thing that keeps dentistry from being recognized as it should. It is the one thing that keeps students of the proper caliber from taking up this specialty. They do not care to place themselves on a lower plane than any of the other branches of medicine. This section should strive to make the requirements of dental education as high as that required for medicine, and to keep them up to that standard. Dr. Rhein thinks it impossible for a man to practice this branch of medicine without being thoroughly grounded in general medicine. The groundwork of medicine is recognized as being not only of value but of necessity, and while dentistry is a technical work, and while a technical school is of the utmost importance, without the scientific knowledge of medicine the dentist is at a loss to properly apply his technical knowledge.

Dr. A. H. Levings, Milwaukee, said that there are many subjects in the medical curriculum which would be of no use to the dentist, though a dentist must have some knowledge of the fundamental branches, such as chemistry, pathology, bacteriology, histology and therapeutics. He must have some knowledge of surgery and perhaps a smattering of medicine, but Dr. Levings thinks that the study of neurology, gynecology, obstetrics, dermatology, otology and allied subjects would be of no benefit to the dentist commensurate with the time spent in study. If the coming dentist were required to take a full course in medicine, he would have to spend an extra year in mechanical work, because the medical student's time is fully occupied. He can not complete the course of today in less than four years of eight or nine months each. Dr. Levings said that he has heard many say that the requirements should be put so high that but few dental students could meet them. The only consideration should be what is best for these prospective dental students. Dr. Levings appreciates

as much as any one that the more culture, refinement, education and mental training an individual has, the higher he can rise in his profession, and the more easily he can maintain himself, but it is not within the possibility of every prospective dental student or every prospective medical student to secure the standard. Such a course as is given now in dental colleges will train any man who has a high school education so that he can master all the problems pertaining to either dentistry or medicine. Those who have the time and money may take a medical and a dental degree, and before this an A. B. degree, and polish themselves as much as possible.

Dr. M. I. Schamberg, Philadelphia, said that it may take some time before dentists will reach a higher standard than that existing at the present time. To his way of thinking, there are two things of prominent importance in taking up this subject: one is the raising of the standard of the profession, and the second, which he considers even more important, is the placing of such men in the dental world as are able to render the best possible service to humanity. The financial status of the dental college should be absolutely ignored. It may be that the work of the stomatologist and the dentist will ultimately become separated before arriving at the desired goal. If that be the case, it will probably be best for humanity at large. Dr. Schamberg would prefer to see the various dental institutions under the control of State universities, so that the financial side of the question would not enter into it so much as the educational.

Dr. G. V. I. Brown, Milwaukee, said that in this question of dental education a distinct advance of some kind is wanted. The purpose of Dr. Chittenden's paper is to fulfill the crowning act of a long life that has been given freely to the upraising of the standard that before he dies something definite may be accomplished in the establishment of a higher standard of dental education. Dr. Brown said that he drew the resolution in the faculty association regarding the four-year term, and he has made more or less of a battle at different times for the four-year course. It is useless to discuss at this time the value of such a course because for the time at least it has been decided to be inadvisable. He believes that the additional year could be secured with less hardship to the schools and with more likelihood of its being practical than any other advance. He believes every argument that has been made about the mechanical side of dentistry, and that since there can not be a four-year course there



ought to be higher entrance requirements, and that the course should be at least nine months, or as near that length as possible. Dr. Brown is connected with schools in the South and in the West. He sees both sides of the question, but at the present time no plan has been suggested which is practicable for meeting the situation. When some one presents a plan which will carry with it a distinct advance, so long as it is an advance which will enable the colleges of the South, West and elsewhere to continue and to prosper, that plan will meet with approval, and when that time comes he has no doubt the examiners' and faculty associations will again be on a harmonious basis. Dr. Brown believes in the value of having dental colleges under State control, but even under this condition it is not all smooth sailing by any means. At this time it seems nothing beneficial can be accomplished by discussion alone.

Dr. H. P. Carlton said that he has never yet written a paper of this character nor spoken his thoughts along this line, that the discussion did not at once turn to the question of courses and years. He wants to establish foundation courses and to leave the length of courses and curricula out of the question. He hopes to live to see it proved that the dentist of the future is going to be a medical man. The more a man gets in brain development the better dentist he will be. A man can not be too broad and too scientifically trained to be a dentist.—*American Medical Journal*.

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#### SOLUTION FOR ETCHING PORCELAIN INLAYS.

Porcelain inlay workers usually undercut their inlays with a diamond disk, but for those who prefer to etch the back of the fillings with hydrofluoric acid the solution of hydrofluoric acid called "white acid" is valuable. Hydrofluoric acid makes a smooth etch. White acid makes a frosted etch. It can be bought under the name of white acid, but is much more efficient if freshly prepared and kept free from the air, as it has the property of absorbing moisture, which destroys its good qualities. It is prepared as follows: Make a saturated solution of ammonium carbonate in hydrofluoric acid, using a lead dish; evaporate to one-half its bulk. Add hydrofluoric acid up to original bulk and evaporate again to one-half its bulk. This solution should be kept in a gutta percha bottle. It will give a surface to the filling to which the cement will tightly adhere.—*Dr. Jos. Head, Dental Cosmos*.

**OSLER ON TEETH.**

In the general practice of medicine Dr. William Osler, recently of the Johns Hopkins University at Baltimore and now professor in the University of Oxford in England, probably ranks as the most eminent American physician in the world. To the public at large his chief distinction is due to an after dinner speech, in which he suggested that originality in thought or achievement was hardly to be expected from men over forty, and humorously added that the world might not lose much if a lethal dose of chloroform were administered to most men upon attaining the age of sixty; by the members of the noble profession which he adorns his genius and attainments have won him recognition as the foremost of general medical practitioners.

The very eminence of a physician who has attained such success in his profession is sure to attract a very considerable degree of attention to his public utterances on the part of the community at large, however apparently unimportant may be the occasion on which he speaks. To his professional prominence, however, there is added another powerful element of attractiveness in a public speaker—and that is the ability always to interest his audience from the very beginning in the subject of his address, for Professor Osler is not only a distinguished doctor, but a delightful talker.

When, therefore, Dr. Osler addressed the students of the Royal Dental Hospital of London recently on the occasion of the distribution of the prizes for the year, it was certain that his speech would be instructive and entertaining. Not only so, but it abounded with suggestions which are worth pondering on this side of the Atlantic as well as in Great Britain.

The traditions of dental art and science in England, said Dr. Osler to these London students in dentistry, were distinctly scientific. They would find evidence of this in the treatise entitled "The Natural History of the Human Teeth," by John Hunter, the great English surgeon and physiologist of the eighteenth century, all of whose writings, on the teeth or any other subject, Dr. Osler earnestly advised his hearers to read. Their vocation would necessarily make them specialists; but they could avoid becoming narrow specialists by the study of such works as Hunter's and those of other great men, and especially the researches of the ablest modern writers on comparative anatomy and bacteriology. Time enough would be found for these studies at all events in the earlier part of each student's career, and

the broadening influence of such reading and the consequent observation it would induce were incalculable.

Next, Dr. Osler pointed out the threefold relationship existing between the dental practitioner and his patients. The function of the dentist was, first, to relieve suffering; secondly, to increase the digestive capacity of his patients, and thirdly, to preserve the beauty of the human countenance.

There was no need of much comment on the duty to afford relief from pain. The other duties of the dentist called for ampler consideration.

Of these Dr. Osler regards the increase of the capacity to digest food as the more important. This end is to be attained by promoting mastication until the food is divided as finely as possible before it enters the stomach. Classifying the public into two great groups, the Bolters and the Chewers, Dr. Osler says it should be the aim of dental practitioners to convert the enormous percentage of Bolters into Chewers. He predicts that this task will not be easy of accomplishment in Great Britain, although perhaps more so than in the United States.

In this advocacy of thorough mastication as a potent agency in the preservation of health, Dr. Osler seems to approve the views put forward within the last five years in England by Mr. Horace Fletcher and by Sir Michael Foster, professor of physiology at the University of Cambridge, and in this country by Prof. Russell K. Chittenden of Yale College. "The adoption of the habit of a thorough insalivation of food," wrote Sir Michael Foster in 1901, "is found to have an immediate and very striking effect upon the appetite, making this more discriminating and leading to the choice of a more simple dietary, and in particular reducing the craving for flesh food. The appetite, too, is beyond all question fully satisfied with a dietary which has a total considerably less in amount than with ordinary habits is demanded."

The report of Dr. Osler's address indicates that he did not discuss the methods whereby dentists are to induce their patients to practice *poltophagy*, as the doctors call minute mastication, from the Greek word *poltos*, meaning finely divided. In reference to this matter, it is interesting to note that a Cambridge anatomist, Mr. Hubert Higgins, who is an enthusiastic student of the subject, regards it as un-

desirable that the patient should count the number of mastications. Writing in the *Lancet* last spring, he said:

"Interest has been taken in the number of movements of the jaw made in the disposal of food. This shows remarkable variations, even in the same individual; they seem to depend on many different causes. Recently I observed that a kangaroo gave over eighty mastications to a piece of bread. In a case that digested starch with difficulty it was often over 150. Mr. Gladstone, it is said, was in the habit of attributing his strength to masticating his food from thirty to thirty-five times. An inquiring friend of mine had the curiosity to count the number at a dinner at Cambridge from the spectators' gallery and found that it was more often from sixty to seventy, so that in reality Mr. Gladstone was more poltrophagic than he knew. He did not count his mastications, therein showing his habitual wisdom. I feel that it can not be too much emphasized that there are numbers of cases in which attention to automatic acts is very decidedly harmful. So that this method, unless especially adaptable to certain cases, should be used with caution."

The dentist's duty to preserve the good looks of their patients by preventing the early decay of the teeth is, of course, the most obvious of all, and it is universally conceded that cleanliness is a most efficient means to this end. Constant admonition as to its importance, by dentists to their patients, followed by scrupulous attention to such instruction in the daily care of their teeth by the patients themselves, would doubtless tend greatly to reduce the prevalence of dental disease. Dr. Osler, however, would go much further than this. "All school children," he says, "should have their mouths and teeth inspected, and connected with every school board there should be a dental surgeon with a large salary, and he should make a routine inspection of those children and report upon them, and if their teeth were bad or dirty they should be told not to come to school until their teeth were attended to. The child with bad teeth is a danger in a school, and the teeth should be attended to and the country should pay for it."—*New York Sun*.



**SOCIETY OF DENTAL SCIENCE.**

The Society of Dental Science held a special meeting and dinner at the Jefferson Hotel in St. Louis November 24th, in honor of Dr. Alton H. Thompson, of Topeka, Kas. Dr. Thompson read a paper on "Dental Lesions Among the Ancient Peruvians, Mexicans and Moundbuilders."

The members and guests were Dr. Otto J. Fruth, president; Dr. E. E. Chase, secretary; Doctors and Mesdames George A. Bowman, Williard Bartlett, E. E. Haverstick, Heber Roberts, G. H. Wisthoff, Burton Lee Thorpe, Mrs. Blair, A. H. Fuller, Edward H. Angle, Edward A. Woelk, of Belleville, E. P. Dameron, Wiley Papin Blair.

**FRATERNAL DENTAL SOCIETY.**

The first annual clinic of the Fraternal Dental Society of St. Louis was held at the Barnes Dental College November 20-21. Lectures were conducted by Dr. Edward K. von Wedelstaedt, of St. Paul, Minn., on "Cavity Preparation." The discussion was opened by Dr. J. F. Wallace. Another lecture at 7:30 o'clock in the evening was delivered on "Methods and Principles of Packing Gold," with a discussion led by Dr. F. O. Hebrick.

About 300 attended the meeting. The officers of the society are: President, Burton Lee Thorpe; vice-president, E. P. Dameron; secretary, S. H. Voyles; treasurer, W. E. Brown; executive committee, W. L. Whipple, E. E. Haverstick and T. G. Donnell; advisory council, Adam Flickinger, George A. Bowman, Edward H. Angle, A. H. Fuller, William Conrad and D. O. M. Le Cron.

A banquet and smoker was given at the Jefferson Hotel. President Thorpe acted as toastmaster. Toasts were responded to as follows: Dr. E. P. Dameron, St. Louis; Dr. E. K. von Wedelstaedt, St. Paul; Dr. F. O. Hetrick, Ottawa, Kas.; Dr. J. D. Patterson, Kansas City, Mo.; Dr. J. P. Root, Kansas City, Mo.; Dr. Geo. D. Sitherwood, Bloomington, Ill.; Dr. Geo. A. Bowman, St. Louis; Dr. Craig M. Work, Ottumwa, Iowa; Dr. G. R. Crise, Manhattan, Kas.

**PEORIA DENTAL SOCIETY.**

The Peoria Dental society held a meeting November 7th. Clinics were performed by well known dentists and in the evening a banquet was given at the Hotel Fey.

The following was the program at the afternoon session :

Porcelain Inlay, High Fusing, S. S. W. body.....	Dr. J. D. Nicol, Peoria
Porcelain Inlay, Jenkins Method.....	Dr. A. G. Smith, Peoria
Colors and Oils.....	Dr. D. H. Baldwin, Peoria
Baking Artificial Gum.....	Dr. W. J. Weatherwax, Peoria
An Interesting Case.....	Dr. R. C. Willett, Pekin
Table Clinic.....	Dr. C. A. Wedge, Canton
Table Clinic.....	Dr. T. T. Smith, Canton

**SOUTHERN CALIFORNIA DENTAL ASSOCIATION.**

A difficult and unusual operation performed by Dr. Cave was described by him at the clinic of the Southern California Dental Association November 8th. It consisted of extending relief to a child who had been suffering with a "fixed" jaw and had been unable to eat since birth. The method used was to fix a lever which operated slowly in the jaws of the child until her jaws were pried far enough apart to enable her to masticate food.

At the closing meeting of the association the election of officers was held. J. D. Moody, of Los Angeles, was chosen to succeed E. L. Townsend. George A. White, of Santa Barbara, succeeds J. W. Neblett, of Riverside, as first vice-president, and W. C. Smith, of Pasadena, was succeeded by C. V. Dolittle, of Pomona, as second vice-president. Dr. Charles M. Benbrook and W. H. Spinks, of Los Angeles, were retained in the respective positions of secretary and treasurer.

The next convention of the association will be held in 1906 at Santa Barbara.

**MICHIGAN BOARD OF DENTAL EXAMINERS.**

At the last regular meeting of the Michigan State Board of Examiners in Dentistry, held at Ann Arbor, October 31 to November 4, the following officers were elected to serve for the ensuing year: President, Walter C. McKinney, Saginaw; treasurer, C. H. Oakman, Detroit; secretary, Albert L. LeGro, Three Rivers.

Reciprocity with Oklahoma was ratified. Michigan now interchanges with Canadian Northwest Territories, New Jersey and Oklahoma. Next meeting will be held at Detroit in May, 1906.

ALBERT L. LEGRO, *Secretary.*  
Three Rivers, Mich.



# MISCELLANEOUS

## ROUND THE WORLD

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TOWARD THE WESTERING SUN.

BY LEE S. SMITH.

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The interest manifested in this really great work is not, as many would naturally suppose, due to the great popularity of the author, but to its inherent worth as a literary and historic addition to the select library. We were especially impressed with one feature of Mr. Smith's book and that is the fact of its being up to date. He writes of things as they were when he saw them and not as they were when some other author saw them years ago. The book will also be of great value as a guide to future travelers. It has upward of 300 pages, is handsomely bound in cloth, and is published by Fleming H. Revell Company.

Mr. Smith also wrote "Through Egypt and Palestine" some years since, consenting to do so only upon earnest solicitation of his many friends. The success of his earlier efforts in a literary way paved the way for the new work and the AMERICAN predicts for the later book the success which its great value merits. Mr. Smith is widely known among the members of the dental profession all over the world and is as popular as he is well known. J. L. F.

### **PYORRHEA REMEDIES.**

Dr. Black says in the application of remedies for the treatment of pyorrhœa, no caustic remedies should be employed, except, possibly, when disinfection is to be accomplished. Stimulating antiseptics are always admirable and serve to stimulate cell-development and create repair tissue while keeping the wound free from bacterial interference. The mouth is not so liable to infection as other organs probably because the tissues are accustomed to the presence of bacteria and their toxic products, and have become immune in a measure. This fact indicates also that the pathologic manifestations of the gums must have other than a local cause, and we cannot expect to cure all cases of phagedenic pericementitis by local treatment, either medicinal or prophylactic.—*Register.*



**TO FACILITATE CLOSURE OF FLASK.**

Dipping a thin piece of rubber in a mixture of one part benzine to two parts alcohol before packing in making flask closure is a much easier operation and does not appreciably retard vulcanization. Close the flask with the additional aid of heat.—*Tri-State Dental Quarterly*.

**FOR SENSITIVE DENTINE.**

In shallow cavities I have good results from applying a few crystals of menthol, dissolving it in the cavity with a drop or two of absolute alcohol and then throwing a small steady stream of compressed air into the cavity until it is dry.—Dr. George Zellerbaum, in *Dental Register*.

**SUBDUING PLATINUM MATRIX.**

Platinum should be annealed at least three times. First, before using; second, after first burnishing; third, preparatory to final treatment, which should consist of only packing spunk in the cavity. If any burnishing with instruments is attempted just prior to the final removal of the matrix it will be found that it will spring. This is especially true when dealing with compound cavities.—Dr. W. A. Piper, *Dominion Journal*.

**SELF-TREATMENT.**

The country dentist may often save himself and his patient much trouble by ordering a gross of one drachm vials with corks. By giving the patient medicine and letting him make treatment himself at regular intervals or when pain prompts, much suffering can be avoided. Beeswax is a convenient sealing material in such a case. Of course, the dentist must give the later treatment himself. Claude B. Warner, Avon, Ill., *Tri-State Dental Quarterly*.

**QUICKLY MADE GOLD INLAY.**

The following method of making gold inlay in the occlusal surface of a molar was demonstrated by Dr. W. A. Fillman. After adjusting a good matrix he packed it full of moss fiber gold and removing the mass in the matrix flowed solder into the gold. He then replaced this work in the cavity readapted to the margins with burnishers and added more solder to proper contour. With care an investment is unnecessary.—*Northwestern Dental Journal*.

**CHAUTAUQUA SALUTE.**

The members of the Woman's Christian Temperance Union, assembled at Los Angeles, have decided that hereafter they will abandon the "Chautauqua salute," which consists of the waving of handkerchiefs by all of the assemblage. This action was taken on the advice of medical men, who stated that the waving of thousands of more or less soiled handkerchiefs in a confined space must be productive of disease. If the abolishment of the common form of communion cup and the adoption of the individual cup, a gratifying gain would be made in the sanitary and hygienic performance of religious ceremony.—*The Chicago Clinic.*

**TO AVOID MISFITS OF VULCANITE DENTURES OWING TO COMPRESSIBILITY OF PLASTER.**

Dr. J. H. Prothero, of Chicago, offers the following suggestion to enable one to avoid distortion of the mold while closing the flask and during vulcanization. 1. Use a good quality of plaster for both the model and investment. 2. Manipulate it so as to secure the greatest density with the least expansion. 3. Cut waste gates large enough to receive the excess of rubber and connect them with the peripheral margin of the matrix. 4. Avoid the introduction of a large excess of rubber, using interposed muslin and separating the case to determine the correct quantity. 5. Heat the case gradually and uniformly, preferably by means of dry heat. 6. Apply pressure slowly, allowing ample time for the rubber to find its way into the waste gates, reheating the case if necessary. 7. Place the flask above the water so the vulcanization may occur in the steam and not under water and prevent softening of the plaster.—*Tri-State Dental Quarterly.*

## PERSONAL AND GENERAL

**Moodey-Turner.**—Dr. G. R. Moodey of South Bend, Ind., and Miss Lillian Turner of Goshen were married November 11 at Elkhart.

**Dead Beat List.**—St. Louis physicians and dentists have made up a black list, and no pay, no cure will be their motto in future.

**Plying His Profession.**—Dr. L. S. Chenoweth, the Richmond dentist, who has been spending a day of each week plying his profession in Fountain City, will discontinue his visits here during the winter months.—*Richmond (Ind.) Star.*

**Ingalls-Robertson.**—Dr. Raymond Ingalls of Marion Park, Minn., and Miss Agness M. Robertson of Rushford, Minn., were married at the latter place November 30. Dr. Ingalls is a 1905 graduate of the University of Minnesota and is located at Harmony.

**Dentist Bankrupt.**—W. E. Walker, a dentist of Chatham, has filed a petition in bankruptcy in the United States district court, New York City, with liabilities of \$2,484 and no assets. He owes for dental supplies, \$934; beer, ale and whisky, \$410; cigars, \$207; clams, \$108; jewelry, \$132; furniture, \$125, and feed, \$60. He made an assignment on March 31, 1905, but he had no assets then.

**Dr. Puller.**—An article clipped from *THE AMERICAN* by the *Kansas City Dental Journal* gave credit to R. B. Puller. We will only rise long enough to remark that although the name may be appropriate to a dentist, it doesn't apply to our own genial associate whose real name is Tuller, R. B., for he is a pusher and sends his extractions to the specialist, as all good dentists in large cities should.

### REMOVALS.

Dr. J. T. Heverly from Cascade, Iowa, to Waterloo; Dr. J. M. Poland from Emmetsburg, Iowa, to Waterloo; Dr. H. B. Lehner from Kalkaska, Mich., to East Jordan, Miss.; Dr. Gillette Hayden, Columbus, Ohio, to Dresden, Germany; Dr. H. V. Taylor from Milwaukee, Wis., to Waukesha; Dr. A. R. Ebenreiter from Sheboygan, Wis., to Oskosh; Dr. John J. Curran from Chicago to Red Oak, Iowa; Dr. R. C. Houston from Omaha, Neb., to Red Oak, Iowa; Dr. W. T. Boyer from Ontonagon, Mich., to Marquette; Dr. W. I. Zyner from Center Valley, Pa., to Pennsylvania; Dr. Robert B. Schrock from Topeka, Ind., to LeGrange; Dr. Charles Harter from Hagerstown, Ind., to Greenville, N. C.; Dr. D. W. Clark from Hartland, Wis., to Prairie du Chien; Dr. J. W. Smith from Dexter, Mo., to Hopkinsville, Ky.; Dr. R. T. Jones from Dodgeville, Wis., to Milwaukee; Dr. O. B. Wood from Pine City, Minn., to Duluth, Minn.; Dr. E. S. O'Neil from Canton, Iowa, to Lennox.

**Germany and Bogus Diplomas.**—Owing to the fact that about 500 American dentists holding diplomas from Illinois dental colleges in Germany are in danger of having their licenses to practice in that country taken away because of the suspicion the government entertains regarding the legality of their diplomas and the character of the institutions from which they are graduated, Colonel Charles R. E. Koch and Dr. W. R. Lawrence were in Springfield to see Governor Deneen, State Superintendent of Public Instruction Bayliss and Attorney General Stead. Colonel Koch is chairman of the committee on law appointed at the annual convention of the American Dental Association, held at Buffalo this year, to ascertain if means can not be found to satisfy the German government in regard to this matter. The threatened action on the part of the German government is due to the charge that a number of dentists were granted bogus licenses to practice by a former state board secretary.

**Dr. Thomas Arrested and Given a Gold Watch.**—The following is part of an article which appeared in the Chicago Record-Herald December 4 and refers to Dr. G. A. Thomas, who was one of the very first dental laboratory specialists in Chicago and one of the early professors of prosthetic dentistry, being on the faculty of the American College of Dental Surgery, which was later absorbed by the Northwestern University Dental School:

Judge Merritt W. Pinckney sat on an unofficial case on Saturday night in which the facts have just come to light. His decision was that Dr. George A. Thomas, a member of the Chicago Athletic Association and treasurer of the Illinois Bowling Association, be condemned to wear for 100 years a massive gold watch bearing the names of fifty-four subscribing members of the C. A. A., together with Dr. Thomas' monogram and the Cherry Circle emblem.

Judge Pinckney was found presiding as toastmaster at a banquet and he immediately impaneled all the diners as members of the jury. Dr. Thomas then was installed in the center of the room, and Howard W. Harrington was appointed prosecutor, Attorney M. J. Agnew appearing for the defendant.

It was only then, in the wrangle between the attorneys, that Dr. Thomas found he was being made the victim of a practical joke, the policemen being C. A. A. members. The presentation of the watch followed the sentence of "guilty."

Dr. Thomas has been one of the most active workers in the C. A. A. on its athletic side, and is well known among bowling enthusiasts, having served for eight years as treasurer of the Illinois Bowling Association, a position he still holds.

**Round the World.**—Fred Ottofy, the young son of Dr. Louis Ottofy, a former Chicago dentist, now practicing in Manila, has just started from San Francisco on his second trip around the world. He is still in his early teens. He is not the ordinary runaway boy style, but just a keen, wideawake Chicago lad, whose father knows he is very well able to take care of himself and is letting him have his fill of travel for a year or so.

**Suggestion.**—Mrs. Elizabeth Conger Heaton is niece of the ex-minister to China, Edwin H. Conger. The lady is 23 years old, a beauty and a society favorite. She is the wife of a dentist and lives in Des Moines. The other night she played the part of "Blind Bertha" in a dramatization of Dickens' "Cricket on the Hearth." The play was presented by a church society club at a social. Mrs. Heaton put her whole soul into the part and

the audience were enraptured over her presentation of the character. Next day, while walking along the street, her sight suddenly vanished. She cried for help and had to be taken home. Physicians say that she is hopelessly blind, and it is all the result of suggestion.

**Sentenced to Prison.**—Convicted of forging and selling dental certificates admitting incompetent students to practice, Dr. Jacob H. Smyser, was sentenced December 7th by Judge Smyth to pay a \$300 fine and to the penitentiary under the indeterminate act.

Dr. Smyser was secretary of the State Board of Dental Examiners under Governor Tanner, and used his office, according to the evidence, to defraud the State. He was assisted by Edward Flynn, who was formerly an investigator employed by the dental board, who also was sentenced to the penitentiary and to pay a \$300 fine.

The two men were indicted in 1901 for conspiracy to defraud the State, a year after Dr. Smyser had resigned from the board. The discovery was made that a large number of dental students, who had not spent the requisite number of years at a dental college, were securing certificates. Several of the incompetent students located in Germany. Their incompetency attracted the attention of that government and complaint was made to the Illinois authorities against sending the products of "diploma mills" there.

The investigation which followed showed that Dr. Henry Messenger, 4712 South Ashland avenue, had been reported to the State board by Flynn as not possessing a license or certificate. Dr. Messenger was able to show that he had paid Flynn, as the agent, \$10 for a temporary license, and had followed this up by a payment of \$150 for a permanent license, which was recorded. There was evidence that the record had been erased from the books of the county clerk.

It was brought out during the trial that Dr. Smyser would send to the other members of the board, who lived in the southern part of the State, blank licenses and they would sign them for his use, giving him the authority to distribute them. It was shown that the license to Messenger was issued in December, 1900, three months after Dr. Smyser had resigned as secretary.

**Battenberg's Bill.**—Whether Prince Louis of Battenberg pays his dentist's bill of \$1,000 for eleven hours or not there is ample precedent in the charges of a Philadelphia dentist, Dr. Evans, of Paris, to crowned heads for bills of this size. In London a charge of \$25, or 5 guineas, for an hour in the dentist's chair, is familiar and has been charged to patients with no title to sovereignty but that which American citizenship confers. At this rate, a charge of a little less than \$100 an hour for eleven hours' service has its fair precedent. Prince Battenberg was doubtless unprepared for this charge; but there is much in American dentistry to surprise a European, whose teeth are the worst cared for the world over and the worst served by dentists. If royalty has its privileges it has also its responsibilities. If a man turns to millionaire patrons for his dentist he must expect a dentist who makes millionaire charges. A professional charge, even from a dentist, never seems high when the tooth is aching. The shrill merriment which will rise over the Battenberg bill from two continents is on the whole a heavier

charge than paying the bill would have been. If \$1,000 dentists bills are rare, so are princes' teeth. Nor when it is remembered in how serious a plight a dental surgeon would be placed who made a mess of a patient as distinguished is a high charge surprising. The importance of all these exceptional cases for both physician and patient is that a frank arrangement is not made in advance. A difficult and perhaps perilous attendance lasting eleven hours is an operation for which a man with exceptional skill has a right to charge. Nor for exceptional cases of special difficulty—the prominence of a patient counts as part of the risk—are dentists' bills running into the hundreds for plain people as rare as Prince Louis may think.

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INDEX TO ADVERTISEMENTS.

	Page
Acestoria .....	14
Adams Mouth Prop.....	41
Adrian Spear Rutherford.....	84
American Cabinet Co., Two Rivers, Wis.....	18
American Hard Rubber Co., New York.....	16
Antidolar Mfg. Co., Springville, N. Y.....	17
Antikamnia Chemical Co., St. Louis.....	22
"Bargains".....	28, 24
Burke's Dental Specialty Co.....	25
Buffalo Dental Mfg. Co.....	5
Caulk, The L. D. Co., Philadelphia, Pa.....	29
Chicago College of Dental Surgery, Chicago, Ill.....	42
Clark, A. C. & Co., Chicago.....	65
Croselmirre & Ackor Co., Newark, N. J.....	32
Crocker, Samuel A. & Co.....	44
Dayton Dental Supply Co., Dayton, O.....	32
Dee, Thomas J. & Co., Chicago, Ill.....	31
Dental Suction Co., Loudonville, O.....	23
Dentists' Card Account System.....	49
Dentists Supply Co., New York.....	52 to 61
Donaldson Flask.....	6
Electric Sterilizer Co., St. Paul, Minn.....	41
Excel Chemical Co.....	4
Extraordinary Offer.....	7
Frink & Young.....	8
Goldsmith Bros., Chicago, Ill.....	Outside Back Cover and 21
Green Chemical Company, Dr., Ionia, Mich.....	40
Hall & Ruckel, Sozodont.....	00
Hall, W. R. & Son.....	85
Hare's Dental Device Co., Dr.....	27
Higgins Dental Mfg. Co., Bellevue, O.....	11
Hisey Dental Mfg. Co., St. Louis, Mo.....	35
Hull Carbolated Dental Disk.....	50
Indiana Dental College, Indianapolis, Ind.....	41
Ivory's Specialties.....	28
Jennelle Chemical Co.....	17
Kirkwood Mfg. Co.....	15
Kress & Owen Co., New York.....	00
Lambert Pharmacal Co., St. Louis.....	000
Lauderdale Annealer.....	2
Lauderdale Crown System.....	48
Lavoris Chemical Co., Minneapolis, Minn.....	9
Lennox Chemical Co.....	0
Lindon Cereal Coffee Co., Benton Harbor, Mich.....	43
Louisville Dental Laboratory & Mfg. Co.....	47
Michigan Drug Co.....	50
Mounted Carborundum Points.....	47
Mammoth Exposition.....	3
National Dental Improvement Co., Mt. Vernon, O.....	27
Nelms, Henry & Sons, Philadelphia, Pa.....	64
Oakland Chemical Co.....	Second Cover
Paragon Dental Mfg. Co. Racine, Wis.....	25
Peck Correspondence School, Minneapolis, Minn.....	740
Permanco.....	45
Pustolene, J. A. Sprague.....	43
Randall Faichney Co.....	33
Ritter Dental Mfg. Co.....	18
Sanitol Company.....	1
Shenkenberg, Eugene, Racine, Wis.....	37
Smith, Lee & Son, Pittsburgh, Pa.....	10
Somnoforme, E. de Trey & Sons, New York.....	62, 63
Spear-Marshall Co., Chicago.....	12
Standard Dental Mfg. Co., New York.....	30
Steere, Geo., Chicago.....	16
Sterion White Alloy Co., Chicago, Ill.....	36
Strout, J. M., Portland, Maine.....	22
Sup-Re-Nol.....	42
Tenax.....	41
Teague Supply Co., Augusta, Ga.....	51
Twentieth Century Teeth.....	52 to 61
University of Illinois.....	19, 20
Webster Dental Co., Buffalo, N. Y.....	88
Wedglock Tooth Co.....	26, 46
Windsor Dental Company, Chicago.....	16
Williams, J. A.....	87, 89



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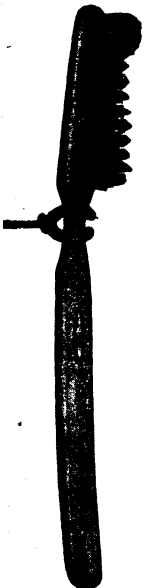
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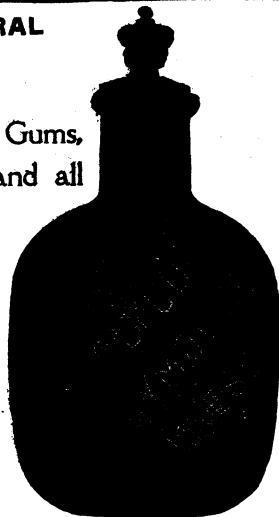
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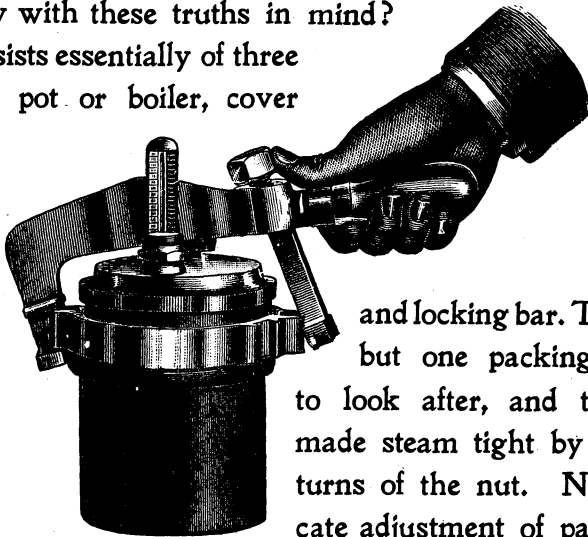
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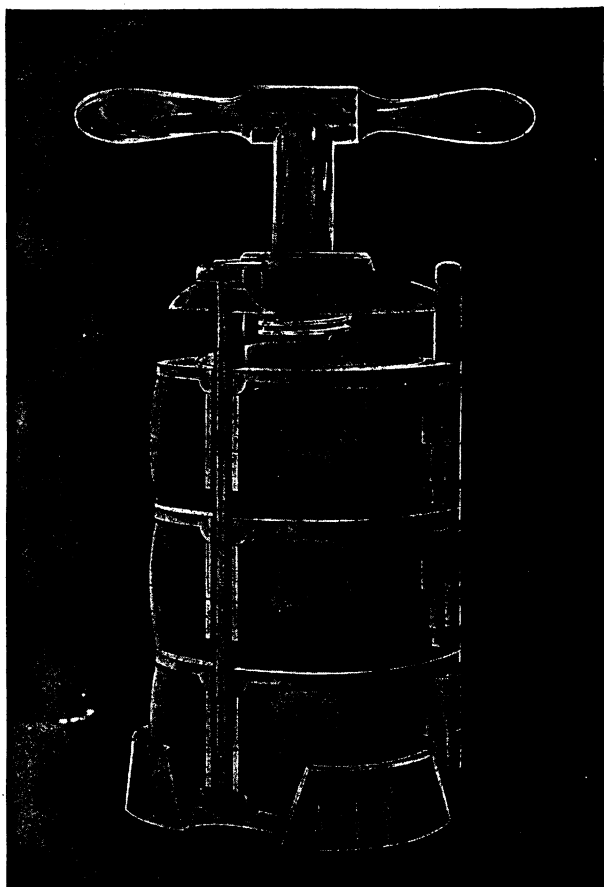
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will shortly be required to fill the demand, while within a year it will outrank every other magazine in this country. "The best, no matter what it costs," is the motto of its editors, therefore it will be in Cosmopolitan that you will find the writers of world-wide reputation; the matters on which they write will be questions on public tongue; its fiction will be masterpieces of pen-craft; its whole contents will set the standard for magazine perfection. We cannot tell to-day who will be its contributors, for to-morrow's

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# Our Extraordinary Offer

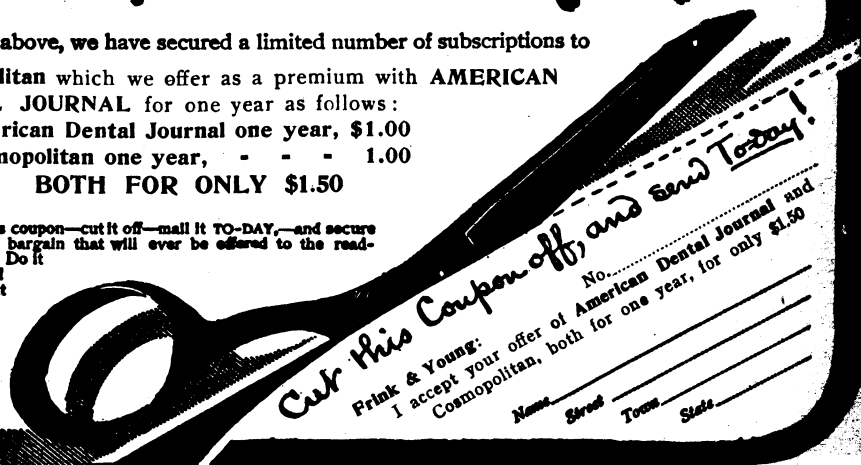
As noted above, we have secured a limited number of subscriptions to Cosmopolitan which we offer as a premium with AMERICAN DENTAL JOURNAL for one year as follows:

American Dental Journal one year, \$1.00

Cosmopolitan one year, - - - 1.00

**BOTH FOR ONLY \$1.50**

Fill out this coupon—cut it off—mail it TO-DAY,—and secure the greatest bargain that will ever be offered to the reading public. Do it to-day, SURE! We also want agents to work this great proposition for us.



**Cut this Coupon off, and send Today!**

Frank & Young:  
I accept your offer of American Dental Journal and Cosmopolitan, both for one year, for only \$1.50

Name \_\_\_\_\_ Street \_\_\_\_\_  
Town \_\_\_\_\_ State \_\_\_\_\_

..TRY..

# LAVORIS

when treating

## Pyorrhoea Alveolaris

SPONGY,  BLEEDING  OR  
SENSITIVE GUMS   

and NOTE THE  
RESULTS...

Free Samples by Express  
(charges prepaid) to

DENTISTS and PHYSICIANS

---

LAVORIS CHEMICAL COMPANY

MINNEAPOLIS, MINN

U. S. A.

# The Weber Double Bowl



Nobody else ever has made as good a spittoon as the Weber Special. Nobody ever will make as good a one as the Weber Double Bowl. It has all the good and none of the bad points of all the others.

It has taken us five years to perfect it.

It is the best looking thing ever made for dental purposes. It is also the most practical.

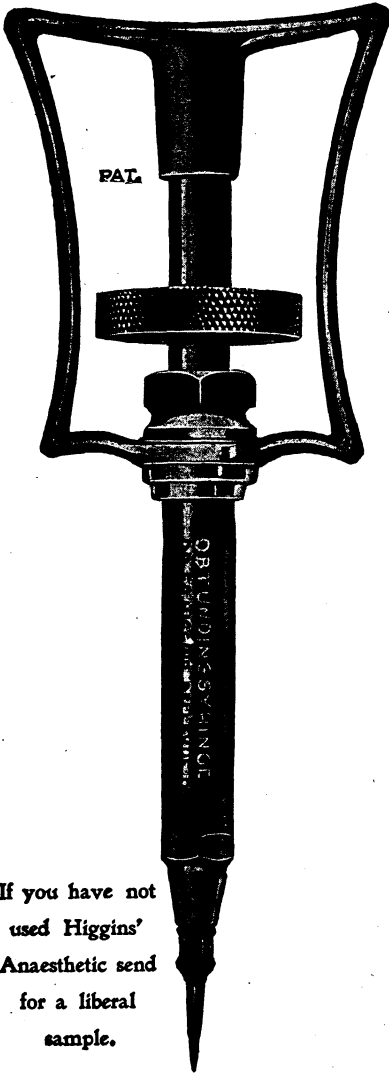
See it and compare with others before you buy anything else or you'll be sorry.

Advance circulars are ready.

**LEE S. SMITH & SON**  
**PITTSBURG, PA.**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# HIGGINS' OBTUNDING HYPODERMIC SYRINGE



If you have not used Higgins' Anaesthetic send for a liberal sample.

Price in satin lined leather case, with six burrs, six points, and four bottles solution, \$12.00

ARE YOU INTERESTED,  
If not, Why not,  
HAVE YOU TRIED IT,  
If not, Why not,



HIGGINS' Obtunder is an acknowledged success and will do all we claim for it.

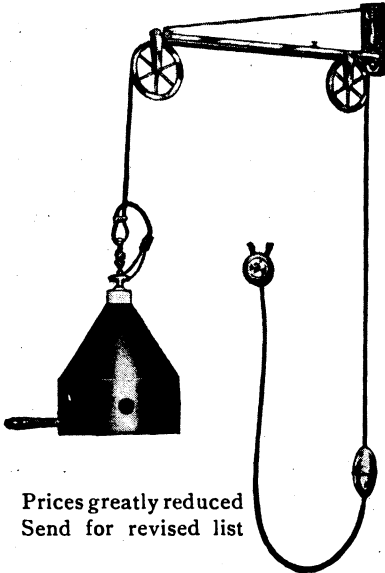
It will Obtund sensitive dentin and live nerves may be extracted without pain.

Write us for particulars at once.

THE HIGGINS' DENTAL MFG. CO., BELLEVUE, OHIO.

By mentioning the AMERICAN DENTAL JOURNAL, when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# The "Leucodescent" Therapeutic Lamp



Prices greatly reduced  
Send for revised list

A PHYSICIAN recently wrote: "Mrs. H. called me up night of Sept. 18th, with ulcerated molar that was dead. Removed filling and gave some relief. Advised her to see dentist first thing in the morning. She did so; dentist removed pus and gases and prepared tooth for refilling. She came again in agony. Applied 500 c. p. lamp close to face. All pain and soreness disappeared in **three minutes** by my watch. She went to her dentist next day; had the tooth filled; reported to me every day for two weeks and no return of pain or soreness."

The "Leucodescent" is made in three intensities for office and hospital service—300, 400 and 500 c. p.; also a "Portable Leucodescent," 200 c. p., which can be attached to any electric light socket.

Doctor, may we send you the "Leucodescent" BULLETIN each issue—free?

Is indispensable to the modern scientific equipment of the progressive dentist.

Its rays (always available at a moment's notice) are **anodyne, antiseptic, antiphlogistic**, and absolutely safe—"no burns." By far the most successful treatment of

## PYORRHEA

is found in the "Leucodescent" rays (of 200 to 500 c. p. intensity); a quality of Light Energy whose spectrum cannot be obtained from low-power lamps (50 to 100 c. p.)

The treatment of all **inflammatory, neuralgic and septic** conditions of the buccal cavity has been revolutionized by the use of the "Leucodescent."

## The "MIDGET" \$14.99

A Portable Radiant Heat Lamp with parabolic reflector; consumes ONE ampere and is identical with others of this type on the market sold at \$40. *But it is not of the "Leucodescent" type.*



**Spear-Marshall Co., Republic Building, Chicago**

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# TIME WILL TELL



¶ Time settles *every* question.  
 ¶ The question of reliable workmanship in our furniture is settled by our twenty-five years of prosperity in the business of building furniture.  
 ¶ It enters into the construction of all our Dental Cabinets and Benches and makes *them* stand the test of time for unequalled convenience and elegance. ¶ Ask for our catalog and name of nearest dealer.

## MECHANICAL CABINET No. 14

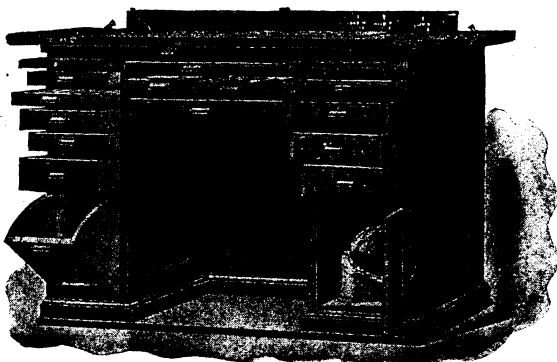
¶ Ideal for laboratory work in the Operating Room. The Roll Curtain locks automatically all but the waste drawer. When opened it disappears at the back. You turn the ends down to increase the working surface, and they cannot obstruct the light. The top is of Oak, with a marble slab. ¶ This Cabinet has a place for a lathe, if you use foot power. It has a convenient place for all tools and supplies used in the laboratory.

PRICE: QUARTER-SAWED OAK, \$60.00  
 MAHOGANY, \$70; BELLOWS, \$5 EXTRA

## CABINET No. 55

¶ No. 55 is excelled by no other Dental Cabinet in workmanship and finish. Every piece of wood in it is selected with special care. Quarter-sawed Oak, in Golden, Weathered and Flemish finishes, and Mahogany are carried in stock.  
 ¶ The numerous drawers and compartments calculated to accommodate all instruments and supplies, are nicely finished inside, and have Birdseye Maple bottoms, where not lined with Cabinet cloth. ¶ There is no finer combination of convenience and beauty for the price.

PRICE, QUARTER-SAWED  
 OAK, \$115.00  
 MAHOGANY, \$130.00



# THE AMERICAN CABINET CO.

## TWO RIVERS, WIS.

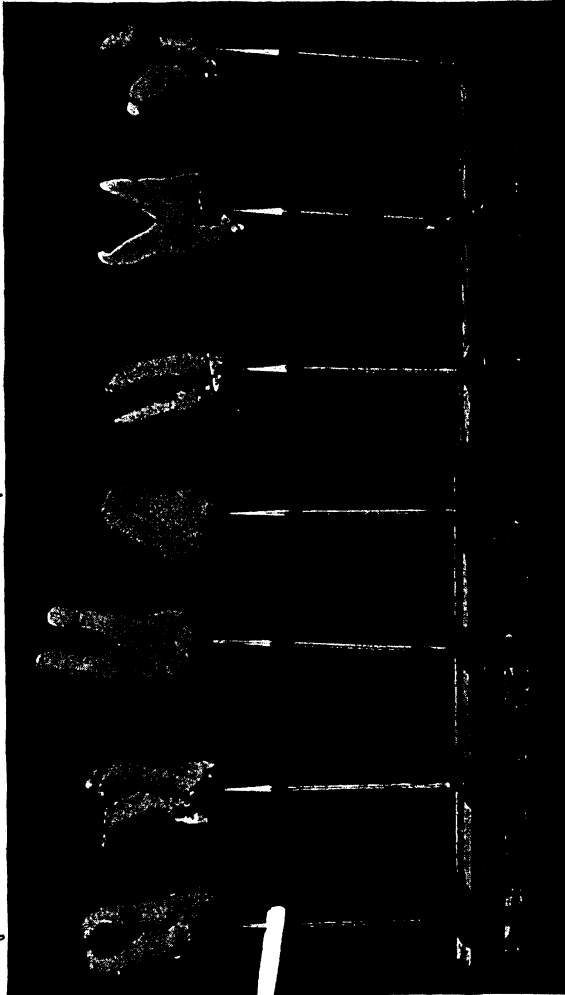
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# ACESTORIA

THE ONLY LOCAL ANTISEPTIC ANESTHETIC FOR PAINLESS  
EXTRACTION OF TEETH, AND ALL MINOR SURGICAL OPERATIONS

Impacted Wisdom extracted for Mrs. Dr. Heather, of Chicago  
Note how I had to cut away the Mesio Occlusal aspect.



Note the ice tong shape

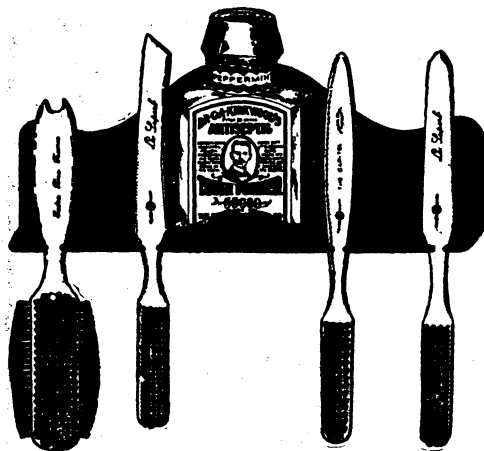
Extracted for Dr. Q. W. Green, M. D., by Dr. Lelan Otis Green,  
Chicago. Acestoria being employed.

Impacted Wisdom.

**NOTE**—The Editor of this Journal use and recommend Acestoria.  
If you cannot procure Acestoria from your dental depot, order direct from

**DR. L. O. GREEN, 100 STATE ST., CHICAGO, ILL.**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



# Holidays are Coming!

**Get Ready  
for Them!**

**DENTISTS:**—Remember your patients and friends and they will remember you. Give them something they will appreciate and which will make them long remember you. It will be effective for you and get for you the desired results—increased business. Give them an appropriate present from a Dentist:—

*A Bottle of absolutely the best Tooth Powder made and a Patent Holder holding the Powder and Four Brushes, with your Name conspicuously mounted thereon.*

To say the least, they are a useful convenience. Our holders are put up in three colors and four sets of colors; they are handsome and durable. A set of nickel-head screws accompany each holder, insuring its going up. It goes up where each member of the family and friends, in washing their hands or cleaning their teeth, see it; they are confronted with your name, business and location.

*It is cheap:*—15 cents each; 13 cents dozen, or 156 for \$24.00; 6 dozen, \$12.00; 3 dozen, \$6.00. A deposit must accompany all orders to cover cost of mounting name and to insure delivery. Send all remittances direct to

**DR. KIRKWOOD, DENTIST**

HOURS, 8-5 SUNDAYS, 9-12

Phone Ashland 622 849 Walnut St., Chicago

**THE DR. KIRKWOOD MFG. CO.**

849 Walnut St., Chicago.

**P. S.—You Will Find It The Best Paying Investment Ever Made.**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# "GOODYEAR CROWN" DENTAL GUM

ORDER FROM DENTAL SUPPLY HOUSES OR THE MANUFACTURERS  
**AMERICAN HARD RUBBER CO.** 9, 11, 13  
Mercer Street **NEW YORK**



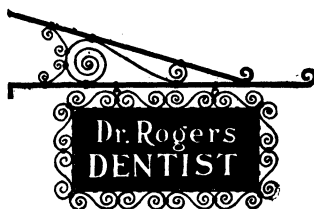
**HAND ENGRAVED BRASS SIGNS.**

Enameled Name Plates and  
House Numbers. Gold and  
Silver Glass Letters.

*Send for Price List.*

**GEO. STEERE,**  
260 Clark St., Chicago.

**Signs and Sign Letters**  
For Windows and Board Signs.



**METAL SWING SIGNS.**

## THE WINDSOR DENTAL CO.

Manufacturers of the  
**CORRUGATED FELT AND RUBBER TOOTH BRUSH**  
SOLD ONLY TO THE DENTAL PROFESSION



The Retail Price for the Rubber Brush, \$ .50. Price per dozen, \$3.50

The Retail Price for the Felt Brush, 1.00. Price per dozen, 5.50

The Felt Brush has 12 felts for each handle and are interchangeable with the Rubber Brush Handle.

Samples Mailed Free on receipt of 35c. for the Rubber Brush.

Samples Mailed free on receipt of 50c. for the Felt Brush.

**WINDSOR DENTAL CO., 195 Wabash Ave., Chicago, Ill.**

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## The One that Satisfies.

Feels safe in using WAITE'S.

I like Dr. R. B. Waite's Local Anaesthetic. I feel that I run no risk to my patients or myself in using this preparation. I have great confidence in its antiseptic virtues.

Dr. R. E. WARE, Shelby, N. C.

One of the many from Canada.

I can say with emphasis that Dr. R. B. Waite's Local Anaesthetic is the best after twenty-five years' practice, during which time I have tested about everything on the market.

Dr. J. F. GUERIN, Whitewood, N. W. Ter.

Indispensable as Gold.

I have been using Dr. R. B. Waite's Local Anaesthetic for years and have yet to meet with the patient who finds fault. It is as indispensable as gold in my practice.

J. W. McVICAR, D. D. S., North Branch, Mich.

Gums Heal Like Magic.

I can honestly say "Dr. R. B. Waite's" is the only perfect Anaesthetic of all that I have ever used. Not a single case of sloughing or toxic effect whatever. I have extracted over fifteen teeth for different ladies at one sitting and their gums healed like magic. I feel I could not practice without it.

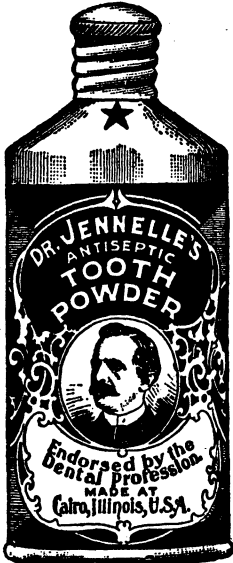
Dr. W. H. O'BANNON, Brewton, Ala.

**The Antidolar M'fg Company,**

Springville, Erie Co., N. Y.



At Depots or from the M'rs.



## DR. JENNELLE'S Antiseptic Tooth Powder

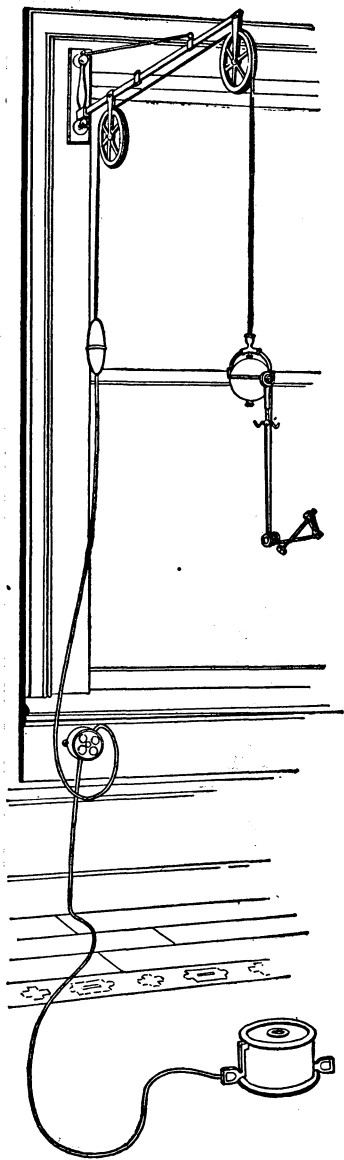
AN EXCELLENT PREPARATION  
FOR CLEANSING THE TEETH.

SAMPLES SENT ON APPLICATION TO.

JENNELLE CHEMICAL CO,

CAIRO, ILLINOIS

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# COLUMBIA

## Cord Suspension, All Cord Electric Engine for Alternating and Direct Currents

We have adapted our famous suspended type Columbia Electric Dental Engine so as to operate the Doriot or any other All Cord Hand Piece.

The Cord driven hand pieces are now recognized as the ideal means of transmitting power to the bur. They entirely avoid that unsteadiness of motion or so-called backlash common to all flexible, cable-driven hand pieces. It is well known that this steadiness of motion lessens the pain and patients will often speak of it.

In this new type all cord engine we have made some welcome improvements. The number of guide pulleys has been reduced by half; twisting of the cord about the arm has been prevented; a support on the engine arm receives the hand piece when not in use and holds it within easy reach. These improvements, combined with the well known qualities of our motors and foot controllers, place this engine beyond competition.

Catalogue  
Free on Request  
Send for it

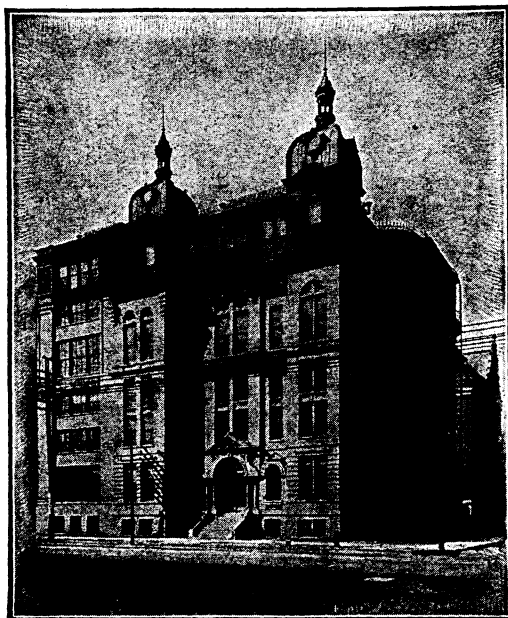
**The Ritter Dental Mfg. Co.**  
**Rochester, N. Y.**

C824

When Writing for information or literature address Dept. N.

# College of Dentistry University of Illinois

DENTAL DEPARTMENT OF STATE UNIVERSITY



**EQUIPMENT** of entire University, \$3,320,000.00. Dental and Medical Departments—\$625,000.00.

**BUILDINGS.** The University has twenty-four large structures. The Dental School is a six-story edifice, and covers one-fourth block.

**TEACHERS.** The University proper has 387 instructors. The Dental Department has 43 instructors and associates.

**ATTENDANCE.** From 758 students in 1891 the U. of I. now numbers upward of 3,500. Attendance has tripled in two years, making the University fourth in rank of State Universities. The Dental and Medical Departments together have 1,000 students

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COLLEGE OF DENTISTRY

*University of Illinois.*

**ATTENDANCE.** From 758 students in 1891 the U. of I. now numbers upwards of 3,500. Attendance has tripled in two years, making the university fourth in rank of State Universities. The Dental and Medical Dep'ts together have 1,000 students.

**SUPPORT.** The great and wealthy State of Illinois liberally provides for its maintenance, the State Legislature at this session granting \$734,000.00. Besides the government at Washington annually sends an appropriation of \$25,000.00.

**EXPENSES.** The operating expenses of the entire University were a trifle less than \$400,000.00; the Dental and Medical Budget more than \$100,000.00.

**PROFESSORS.** In the Dental School: Cigrand, Cook, MacDowell, Gallie, Custer, Eckley, Dittmar, Buckley, Jones, Powell, Roach, King, Steele, Burkholder, Zappfe, Carpenter, Patton, Bishop, McCauley Brothers and Hewett.

**COMFORT.** The Dental and Medical buildings are both modern—built for college purposes—possessing electric elevators, and all appliances required to make the laboratories, class-rooms and infirmary complete.

**LOCATION.** The Dental and Medical Departments cover a block—Harrison, Honore, Congress and Ogden Ave. bounding the properties. This point is the centre of the greatest Medical and Dental community on earth, yielding unsurpassed clinical advantages.

**RECOGNITION.** The Dental Dep't has membership in National Dental Faculties Association.

**POLICY.** Theory and practice receive equal consideration. When at the college call on Dr. C. E. Jones, Sec'y.

*For further particulars address the Dean,*

**B. J. CIGRAND, B. S., M. S., D. D. S.**  
**Cor. Harrison and Honore Sts., Chicago, Ill.**

M. Goldsmith

ESTABLISHED 1867

S. Goldsmith

# ...Goldsmith Bros...

REFINERS AND ASSAYERS

63-65 Washington Street,

CHICAGO

## Bullion

BOUGHT AND SOLD

## Plate

## Sold,

## Solders

### WHY

use inferior material when you can purchase the best?

All orders filled by return mail.

### PRICE LIST

14 K Solder.....	\$ 65
16 " " .....	75
18 " " .....	85
20 " " .....	95
22 " " .....	1 00
Coin " .....	1 00
18 K Gold Plate.....	85
20 " " .....	95
22 " and Coin Plate.....	1 05
24 " Gold Plate.....	1 10
Clasp Metal.....	90
Clasp Wire .....	1 05
Platinized Gold.....	1 10
18 K Gold Wire.....	95
20 " " .....	1 05
24 " " .....	1 20
Platinum, Sheet or Wire.....	Market Price
Platinum Solder.....	1 25
Columbian Cement, Per Box.....	1 25
Columbian Alloy, per oz.....	2 00
Columbian Alloy, 3 oz for \$5.00, 7 oz.....	10 00
Silver Solder, per oz.....	1 00
Cylinder Gold, per ounce.....	\$26.50 Per 1-2 ounce..... 13 25
Cylinder Gold, per 1-8 ounce... 3.50 Per 1-32 ounce.....	1 00
Foil Gold, per ounce.....	25 00
Foil Gold, per 1/2 ounce.....	12 50
Foil Gold, per 1/4 ounce.....	3 25
Burs, per doz. \$1.00. Enamel Cross Cut.....	1 50
Broaches Barbed, per doz.....	1 00

GOLD AND PLATINUM CUT TO PATTERN WITHOUT EXTRA CHARGE

### TESTIMONIALS

GENTLEMEN:—We are much pleased with your goods; please forward me \$20.00 worth 22 karat gold.

WELLSBORO, PA.

A. B. EASTMAN.

GENTLEMEN:—Received \$72.68 in gold plate for scrap sent you and am glad to say I received more than I expected.

BEATRICE, NBR.

J. S. MCCHENNEY.

GENTLEMEN:—Enclosed find money order for \$13.35 for which please send us 10 dwt. 22 karat gold, 3 dwt. 20 karat solder. We are well pleased with the color and working quality of the plate sent us.

AURORA, ILL.

BELL & CURRIER.

GENTLEMEN:—Enclosed find check for 40 dwt. 18 karat solder. I like your solder and will use it exclusively hereafter.

EVANSVILLE, IND.

M. M. HAAS,

GENTLEMEN:—The gold plates received from you proves to be the finest working gold that it has been my pleasure to manipulate. I feel that my efficiency has been increased 25 per cent by using such gold.

PANA, ILL.

[NO. D. REID.





"It didn't hurt a bit!"

## WHY?

His Dentist gave him



"Antikamnia & Codeine Tablets"

## When to Use Them

### FIRST

To ease the nagging and shooting pains while operating; to quiet the nerves, and prevent the headaches and nausea which frequently follow operations, administer one Antikamnia & Codeine Tablet every hour. Give one before beginning operation

### SECOND

One Antikamnia & Codeine Tablet given before and another one after extracting a tooth, will stop pain and allay irritability

### THIRD

When a painful cavity exists, or a nerve or root is exposed, administer internally one or two Antikamnia & Codeine Tablets and fill the cavity with the powdered tablet, or apply it freely about the gums

### FOURTH

For toothache, earache and facial neuralgia, administer one Antikamnia & Codeine Tablet every two hours until relieved

FOR SAMPLES AND LITERATURE, ADDRESS

The Antikamnia Chemical Company St. Louis, Mo., U. S. A.



Patented December 29, 1896.

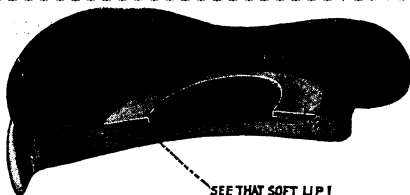
required. The band is so thin and polished that when removed the fillings are knuckled together. They need no finishing at the point of knuckling. Sent to any part of the United States on receipt of P. O. order for \$3.

Address

DE. J. M. STROUT, Dentist, 457 1/2 Congress St., Portland, Me.

### The Improved Universal Matrix Carrier

It is simple, plain, reliable and antiseptic; quickly attached to any sized tooth without change of band. It is made to carry the thin steel ribbon matrix, which can be easily forced between the teeth. You have a smooth finished surface when band is removed. In knuckling fillings, especially gold, it is just what is



SEE THAT SOFT LIP!

Manufactured only by

DENTAL-SUCTION CO.

39-41 MAIN ST., - LOUDONVILLE, O.

## THE PERFECTION FLEXIBLE SUCTION

COLORADO COLLEGE OF DENT. SURG.  
DENTAL DEPT. UNIVERSITY OF DENVER  
Denver, Colorado, Oct. 20, 1905.  
Dental-Suction Co., Loudonville, O.

Gentlemen,—I am in receipt of your box of Flexible Suctions. Those that we have used have proven to be great. They certainly are a great help in the retention of plates. I am yours truly,

W. G. Snyder, Sec'y.

Ask your dealer for the Perfection Flexible Suction. Price the world over \$1.00 per box of six, with full directions.

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# BARGAINS

## CHAIRS

1 Morrison, good condition.....	\$35.00
1 Iron Archer .....	10.00
1 Old Style Mechanical Case .....	20.00
1 Gould Chair, newly reupholstered.....	35.00
1 Wilkerson, newly reupholstered and nickel plated.....	70.00

## CABINETS

1 R. & R. No. 9.....	\$25.00
1 American Cabinet Company's No. 51 Mahogany, used as sample only, price new \$80.....	45.00
1 American Cabinet Company's No. 54 in Oak, used as sample only, price new \$85.....	65.00
1 Harvard Cabinet; new, \$100.....	65.00
1 Harvard Cabinet; new, \$70.....	40.00
1 Columbia Cabinet (sample).....	65.00

## ELECTRIC FURNACES

1 Custer .....	\$25.00
1 Peck, newly rewound .....	25.00

## ELECTRIC LATHES

1 Berry, good condition.....	\$20.00
------------------------------	---------

## ELECTRIC ENGINES

1 Motor & Rheostat .....	\$10.00
1 Victor Motor and Foot Box, never used .....	35.00
1 Victor Motor and Foot Box (round), second hand.....	20.00
1 Complete Mason Electric Engine for direct current, including No. 7 hand piece, used one year.....	45.00

## ENGINES

1 S. S. White, No. 7 hand piece.....	\$20.00
1 Clark Engine, complete with instruments, new.....	30.00
1 Simms Water Motor and Controller, No. 3.....	28.00

## DULCANIZERS

1 Hood & Reynolds, Ann Arbor.....	\$10.00
1 S. S. W. Cross Bar.....	8.00
2 Whitney two case .....	each, 8.00
1 Whitney two case .....	6.00
1 Eagle, used six weeks.....	14.00

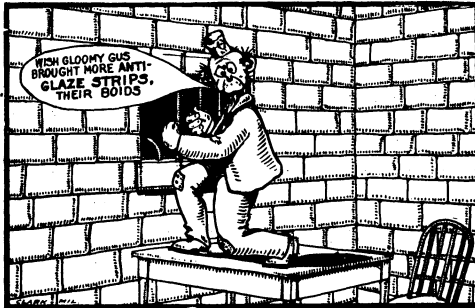
## BARGAINS—Continued.

1 Bonwell Electric Mallet, with 20 points.....	\$10.00
1 Lewis Abscess Syringe, with one gold point.....	1.50
1 Lathe Head and Stand.....	4.00
1 Lathe Head .....	2.00
1 B. D. M. Co. Gold Melting Outfit.....	1.50
1 Turner Burner; new, \$4.00.....	2.00
1 Turner Burner; new, \$6.00.....	4.00
1 Bryant Bridge Repair Outfit.....	1.75
1 S. S. White Engine Mallet; new, \$12.00.....	5.00
1 Bonwell Engine Mallet, for slip joint.....	5.00
1 Abbott Automatic Mallet .....	2.50
1 Abbott Automatic Mallet .....	3.00
1 Pneumatic Mallet, at .....	2.50
1 Yaeger Mouth Lamp, for 110 volts.....	3.50
1 Battery Mouth Lamp .....	2.50
1 Justi Bracket .....	6.50
1 Meyer's Dental Obtunder .....	6.00
1 Hurd Outfit, complete, with two cylinders and 200 gallons gas..	20.00
1 Holmes Table, new, in Oak.....	20.00
1 Kress & Werntland Seamless Crown Outfit .....	10.00
1 S. S. White Bridge Repair Pliers; new, \$3.00.....	2.00
1 Single End Mallet .....	2.00
1 Detroit Mallet .....	2.00
1 Hayatts Celluloid Press.....	5.00
2 Pneumatic Mallets, at .....	3.50
1 Bosworth Aut. Mallet .....	3.00
Large number of Forceps, all makes.....	1.50
Large number of long handle pluggers, new, at 50% discount.	
1 Sharp Furnace .....	10.00
1 Lewis Gasometer, with 100 gals. gas.....	25.00
1 Contra Angle Hand Piece, for slip joint.....	4.00
1 No. 7 Hand Piece, for slip joint .....	4.00

Lot of small instruments,  
Excavators, Burnishers, Scalers, etc., half price.

## FRINK & YOUNG.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



If Happy says they're "Boids" they're certainly worthy of your consideration. Gloomy says they're like "Maud," they're a *wonder*, and recommends them for their price,

30 Cents a Box  
\$3.50 a Dozen

Our Other Specialties:

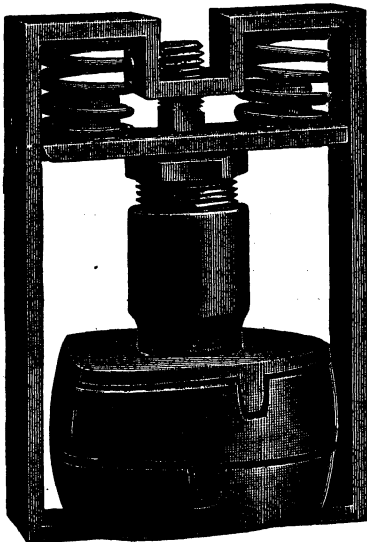
PARAGON DISKS, 10, 50, and \$1.25 a box in all Grits and Sizes  
PARAGON NEW DEPARTURE CEMENT (all colors) \$1.50  
BROACHES, either Straight or Spiral, at \$1.00 a dozen

FOR SALE BY ALL DEALERS OR DIRECT

**PARAGON DENTAL MFG. CO.**

Originators and Sole Manufacturers of ANTI-GLAZE STRIPS & DISKS

RACINE, WISCONSIN, U. S. A.



Just pack your case Compress does work inside Vulcanizer.

The Latest and Greatest Advance  
in Operative Procedure

**BURKE'S FROALDEHYDE**  
**MUMMIFYER—CEMENT**

INSURES PAINLESS EXTERPATION of nerve in 30 to 60 seconds (New Procees), with immediate filing of tooth at one sitting.

**ADVANTAGES**—No pain, no after effects, no discoloration of tooth substance (based upon four years observation). Canals and pulp chamber hermetically sealed. Rapidity of procedure does away with the rubber dam in most cases. Lasting appreciation of patients enables good remuneration.

If your fellow practitioner has already ordered, it will be to your interest to order today by P. O. Order, Express Order or Bank Draft.

Price \$1.50

We do not put out a thing unless that thing is the best in its line.

**The Burke Dental Specialty Co.**  
Benton Harbor, - - - Mich.  
Lock Box 1145

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

**"The  
Tooth  
That's**



**Locked  
to  
Place"**

(PATENTED)

After five years' test of the **Wedglock** teeth in actual practice we have placed them on the market with the full assurance that they are the best teeth for crown and bridge work that have ever been offered to the profession.

All the objectionable features of soldering direct to facings have been eliminated and many good features added.

The **Wedglock** also possesses many advantages over other detachable facings, some of which are as follows:

Facings can be ground at any point and backing easily adapted, making it possible to always obtain perfect joints.

Cushioned seating of facing, which reduces liability of breakage.

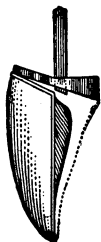
More natural and uniform lingual contour. Natural, smooth taper at incisal edge.

No investment is required in crown work.

No special instruments are required.

Simple and universal in application.

Less solder is required, and the



**COST IS JUST 1/2**

FACINGS,	-	-	-	25 CENTS
BACKINGS,	-	-	-	75 CENTS

Our facings are made by one of the best tooth manufacturers in the country, and our backings are pure gold or platinum. In short, the **Wedglock** tooth is mechanically perfect and the workmanship and materials used are the very best.

**WEDGELOCK LABORATORIES.**

Do you send your crown and bridgework out? If so, why not get the best? Wedglock Facings are the best, and we know how to make them up. Let us make up your next case for you. We charge no more than you'll pay for the old soldered facings, and the results cannot be compared. Incisors, \$2.50. Bicusps and Molars, \$3.00. All materials furnished.



**The Wedglock  
Tooth Co.**

12th Floor, Trude Building,

**CHICAGO**



By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

**DR. HARE'S IMPROVED REVERSIBLE  
"MOUTH PROPS" AND "ARTICULATORS"**

ARE INDISPENSIBLE IN THE WORK OF EVERY UP-TO-DATE DENTIST

The full set of these valuable instruments consists of three pieces and are highly polished, durable and handsomely nickel plated.

The instrument designed for operation on the front teeth is called the "Front Prop," and that for the molars, the "Back Prop," the latter being made in two sizes, the larger for adults and the smaller for children.

The advantages to be derived in the use of these instruments may be briefly summarized as follows:

- 1st. The jaws of the patient are held apart, allowing the operator both hands in his work.
- 2nd. The tongue, lips and cheeks of the patient are prevented from interfering with the work.
- 3rd. The member operated on is shielded from the moisture of the breath and flow of saliva, and the use of the rubber dam is dispensed with.
- 4th. The gums, lips, cheeks, tongue and other organs of the mouth are protected from injury by accident in the use of instruments or chemicals.
- 5th. Operations are more rapidly and successfully performed with their assistance.

The "ARTICULATOR" is equipped with all the movements of any other on the market, and in addition thereto has an adjustment that enables the operator to raise the heel of the plate on a level or parallel with the front plate, and thus to secure a perfect articulation, impossible with other articulators.

**PRICES.**

Front Mouth Prop (nickel plated).....	\$1.50
Back Prop, large size (nickel plated).....	2.00
Back Prop, small size (nickel plated).....	2.00
Full set of Props.....	\$4.00
Articulator.....	\$1.50

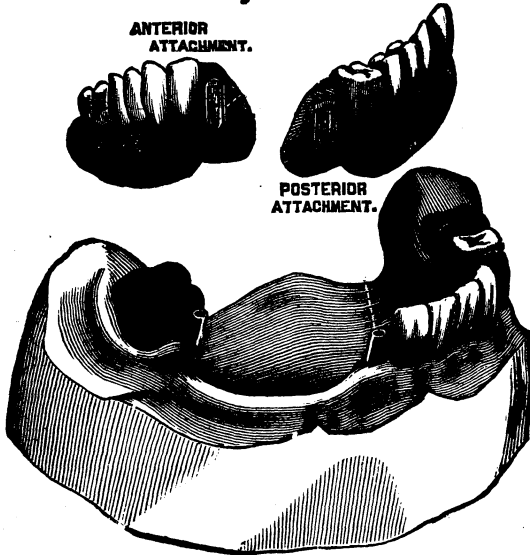
For better description of the instruments, write for our Illustrated Catalogue. Mailed free on request.

**DR. HARE'S DENTAL DEVICE CO.**

INCORPORATED

DANVILLE. - - - - - ILL.

**Four Undeniable Reasons why the Condit  
System should be used**



It occupies but little space. it holds the work firm. The work can easily be removed for cleansing and repair. The work is easy of construction.

Write for the descriptive pamphlet NOW. while you think of it.

**National Dental Improvement Co., - - Mt. Vernon, OHIO**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# The Ivory Root Seat Swager

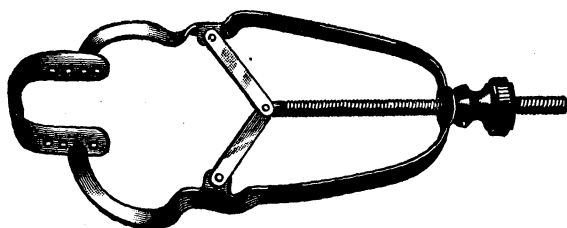


Price, 4 Cups and Holder, \$200.

Fully Described in Circular.

## Ivory's Matrix Retainer No. 1

PATENTED APRIL 1, 1890.



No. 1 Small



Wide Band



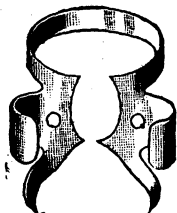
Narrow Band



Price with one dozen Bands, \$2.00 Bands, per dozen 25c.

## IVORY'S COTTON ROLL CLAMPS

PATENT AUG. 26, 1890



Bi C'tn Roll

### MOLAR and BICUSPID

PRICE FOR EITHER MOLAR OR BICUSPID \$1.00

Headquarters for Rubber Dam Clamps of every description and every purpose. Send for Catalogue. . . .

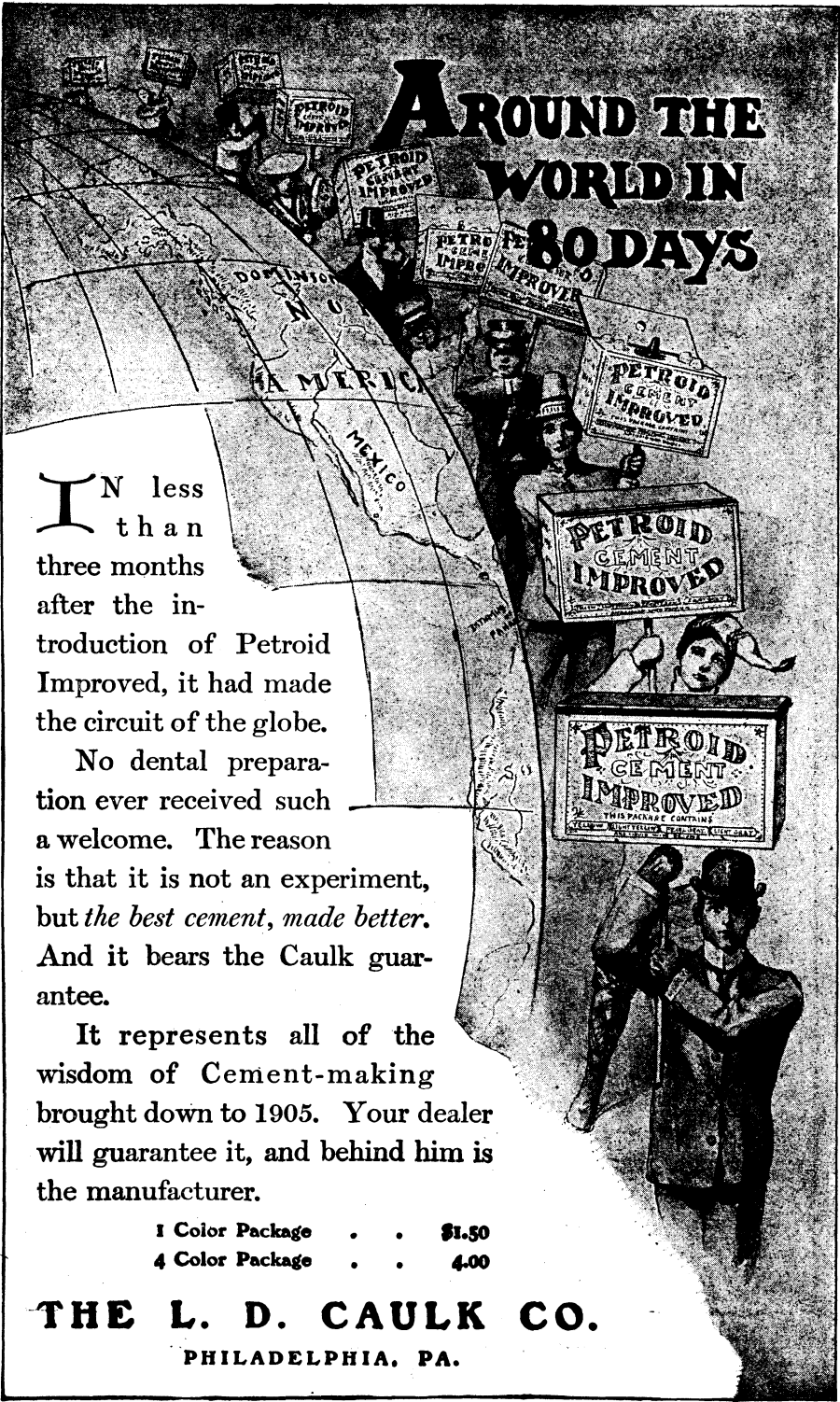
## IVORY'S SPECIALTIES

FOR SALE BY YOUR DEALER OR DIRECT

J. W. IVORY, Manufacturer, 51 N. 10th St. Philadelphia, Pa.

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# AROUND THE WORLD IN 80 DAYS



IN less than three months after the introduction of Petroid Improved, it had made the circuit of the globe.

No dental preparation ever received such a welcome. The reason is that it is not an experiment, but *the best cement, made better*. And it bears the Caulk guarantee.

It represents all of the wisdom of Cement-making brought down to 1905. Your dealer will guarantee it, and behind him is the manufacturer.

- 1 Color Package . . \$1.50
- 4 Color Package . . 4.00

**THE L. D. CAULK CO.**  
 PHILADELPHIA, PA.



NEW MANAGEMENT  
NEW MOULDS NEW SHADES  
IMPROVED PORCELAIN TEXTURE

STANDARD DENTAL  
MANUFACTURING CO.'S

**NEW "RIB-ANCHOR"**  
**PINLESS TEETH**

(TRADE MARK, REGISTERED)

See that "RIB"

**A Strong  
Anchorage;  
A Dove-  
Tailed Rib  
Anchored  
in the  
Rubber.  
Can't Pull  
Off.**

*It is  
"O.K."*



*It  
Holds*

**Can't Pull Off**

**Prices of the New "Rib-Anchor" Pinless Teeth:**

(PLAIN RUBBER TEETH ONLY.)

1x14.....	\$ .50	23x14.....	\$ 10.00
11x14.....	5.00	100x14.....	35.00

Address all orders to

**Standard Dental Mfg. Co.**

109 W. 42d Street, <sup>(Third Floor)</sup> New York

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



# ATTENTION!

THOMAS J. DEE & CO.'S

QUALITY AND PRICES  
SHOULD RECEIVE YOUR

# ATTENTION!

YOUR ORDERS WILL  
RECEIVE OUR PROMPT

# ATTENTION!

PRICE LIST:

Gold Foil, 1/8-oz.....	\$ 3 25
Gold Foil, per oz.....	25 00
Gold Cylinders, 1/8-oz.....	3 50
Gold Cylinders, per oz.....	26 50

14K Solder, per dwt.....	\$ 65
16K Solder, per dwt.....	75
18K Solder, per dwt.....	85
20K Solder, per dwt.....	95
Coin Solder per dwt.....	1 00
22K Solder, per dwt.....	1 00
18K Gold Plate, per dwt.....	85
20K Gold Plate, per dwt.....	95
22K Gold Plate, per dwt.....	1 05
24K Gold Plate, per dwt.....	1 10
Coin Plate, per dwt.....	1 02
Clasp Metal, per dwt.....	90
Clasp Wire, per dwt.....	1 05
Platinized Gold, per dwt.....	1 25
18K Gold Wire, per dwt.....	95
20K Gold Wire, per dwt.....	1 05
24K Gold Wire, per dwt.....	1 20
Platinum Sheet or Wire, per dw.....	Market Price
Platinum Iridio Wire, per dwt.....	" "
Pure Silver, per oz.....	" "
Perfection Alloy, per oz.....	1 50
Pure Zinc, per oz.....	10
Pure Tin, per oz.....	07
Pure Copper, per oz.....	05
Burs, per doz.....	75

  
J.&O.G.

**THOMAS J. DEE & CO.,** GOLD AND SILVER REFINERS  
67-69 Washington St., Chicago

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

FRINK & YOUNG:—

We think your Standard Alloy the best we ever used. It retains its original color and does not black the hands in mixing.

C. P. JONES, Cairo, Ill.

# PLATINUM

Cable Address, Ackmlre.  
New York Long Distance Telephone 1608-Grammercy.  
Newark Long Distance Telephone 1078.

**Croselmire & Achor Co.**

**PLATINUM, GOLD AND SILVER REFINERS**  
PLATINUM IN SHEET OR WIRE FOR ALL PURPOSES  
PLATINUM SCRAP PURCHASED

New York Office  
10 EAST 234 STREET

Works and Main Office  
42 WALNUT STREET  
NEWARK, N. J.

## “DAYTON BROACHES”

(INDESTRUCTIBLE)

ARE THE BEST. THEY CAN NOT BREAK



STRAIGHT

They are Efficient



SPIRAL

Do You Use Them?



TAPERED

Price, all styles, all sizes, \$1.00 per dozen

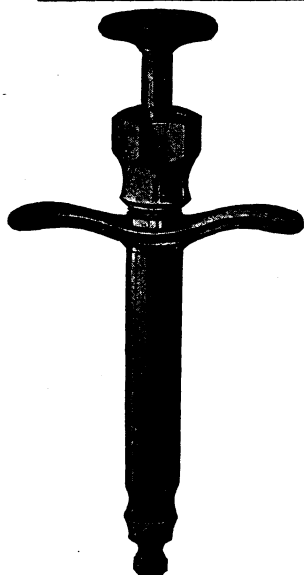
**DAYTON DENTAL SUPPLY CO.**

S. W. Cor. 5th and Jefferson Sts.

DAYTON, O.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

## The Imperial Dental Syringe



The persistent demand for a powerful unbreakable Anaesthesia Syringe, sufficiently large to treat several teeth at one filling, and strong enough to be economical, leads us to offer the

### NEW IMPERIAL SYRINGE

shown in cut. Made of extra thick metal; hexagon syringe cap, funnel shaped for filling, with especial durable packing, piston rod extra small to give compound pressure; fitted with extension rod, large button and strong, well shaped (new) finger bars—giving a feeling of comfort to the operator. A wrench supplied with each syringe to tighten packing and eliminate leakage.

No Waste of Anaesthetic. No Waste of Time. No Waste of Money on Repairs.

Price, Imperial No. 830, in paper box, with wrench, \$2.00



## DENTAL NEEDLES

Do You Want a Dental Needle . . . . .  
That Will Not Leak? . . . . .  
That Will Not Break? . . . . .  
That Will Cut Rather Than Tear? . . . . .

Do You Want a Dental Needle That Will Permit Making an Injection Almost Without the Knowledge of The Patient? . . . . .

IF SO, INSIST UPON HAVING THE

**R.&B. RAZOR EDGE, POLISHED POINT DENTAL NEEDLE**

Insist upon seeing the trade mark **R.&B.** on the hub before purchasing.

Price Per Dozen, - - - \$1.50

**THE RANDALL-FAICHNEY COMPANY,**

**BOSTON,**

Sole Manufacturers

**MASS.**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# Adrian Spear Rutherford

289 PLEASANT AVENUE, NEW YORK CITY

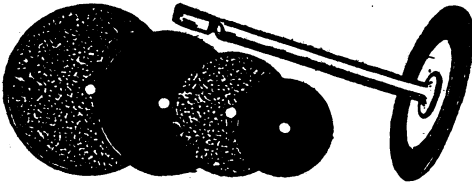
Rutherford's "Low Heat" Modelling Compound, white or pink, takes a sharp, clear impression, does not warp or shrink, and is ELASTIC. Price 38c. per  $\frac{1}{2}$ lb. box.

Rutherford's Sticky Wax STICKS. Price 35c. per box of 18 sticks.

Rutherford's temporary stopping may readily be inserted in, or removed from the most sensitive tooth, and ALWAYS makes a tight seal. Price 50c. per oz.

If you have not had a circular relative to our crown flasks, metal tooth forms, swedgers, and other crown goods, drop us a line. The goods are for sale by all the leading dealers, but should you not be able to obtain them, send us the price and we will forward the goods by return mail.

## Hall's Carborundum Rubber Disk's



These disks are made thin and flexible about the same in thickness as paper disks, but more durable; having a hard rubber backing, which admits of more pressure and rapid cutting. The grit with which these disks are made is the celebrated new abrasive CARBORUNDUM, which is noted for its remarkable hardness and keen cutting qualities. The disks are particularly useful for trimming natural teeth and roots, for Caps,

Crowns and Bridges; also for grinding Porcelain Crowns, Inlays, enlarging spaces between teeth, etc. By reinforcing the disk with a full size washer, a very thin and perfectly rigid side cutting disk is obtained, which has all the advantages of a solid wheel without the liability of breaking from side pressure.

**Price, 40 cents per package.**

### HALL'S ABRASIVE WHEELS (Pat. Applied For)

Is a new grinding wheel for dressing off rough surplus rubber, just after removing the plate from the vulcanizer. Cuts very fast, much superior to files or scrapers. It is made of numerous layers of emery paper, which may be removed one at a time when worn out, exposing a fresh layer for further use. Is very solid and durable; its narrow, convex edge, will fit any part of a plate. Two sizes, 1 and 1 3/8 inches diameter. **Price 15 and 20 cts. Each**

### HALL'S WHITE METAL BARS RIBBED

One of our bars put in a lower or partial rubber plate will double its bending strength. Our strengthening bars are made of a superior quality of metal, very stiff and strong, with cross ribs. Prevents them drawing through the rubber. We can justly claim them to be the best bars on the market.

**Price, 75 cents per box.**

**WM. R. HALL & SON** 115 North 17th Street  
Philadelphia, Pa.

Goods sent postpaid on receipt of price in Post Office or Express Order.

THE PEER OF LOCAL ANESTHETICS

ALVATUNDER

HIGHEST AWARD AT ST. LOUIS

"SOLD ROUND THE WORLD"

BY GOOD DEALERS AT THE FOLLOWING PRICES

1 OUNCE	\$ .75.
2 OUNCE	1.50.
10 OUNCE	5.00.

MANUFACTURED ONLY BY

THE HISEY DENTAL MFG., CO.

ST. LOUIS, U.S.A.

**DR. A. C. HEWETT'S**

**Sterion  
White Alloy**

**PROPHYLACTIC  
PRESERVATIVE  
UNSHRINKING  
GERM PROOF**

**Sterion White Alloy Co.  
1111 Masonic Temple  
CHICAGO**

YOU TAKE NO CHANCES  
WHEN YOU BUY  
"PEERLESS"  
STRIPS

PEERLESS  
LINEN FINISHING  
STRIPS GIVE ONE  
RESULT... SUCCESSFUL  
HAVE ONE HIGH STANDARD  
QUALITY - ONE PRICE  
MANUFACTURED ONLY BY  
EUGENE SCHENKENBERG.

PEERLESS STRIPS -  
AS GOOD AS GOLD

IT IS CERTAINLY JOY FOR  
THE DENTIST WHO FINISHES  
HIS FILLINGS WITH "PEERLESS"  
STRIPS SEND FOR SAMPLES  
941 LASALLE ST  
RACINE, WIS

## Pulps Capped Successfully

### CARBOL EUGENOL CEMENT

has been saving exposed and almost exposed pulps for over ten years. Its use by 2,000 Dentists in the United States, with complete success. Carbol Eugenol Cement *will not mummify the pulp*, restores health and vigor. An imitation of natural dentine, slightly porous, sets not too hard, is a mild, soothing stimulant, reduces an inflamed pulp to normal condition almost immediately, can be placed over the pulp without the use of rubber dam and will set under the saliva. A perfect germicide; will keep in any climate and never lose its efficacy.

### AS A ROOT FILLING

It has no equal, mix thin, pump into canals and force gutta percha canal point through it. The canals will always remain aseptic, even when coming in contact with the fluids of the mouth. If small particles of pulp are left in canals, CARBOL EUGENOL will preserve them.

### IN PORCELAIN INLAY WORK

a little *Carbol Eugenol Cement* placed in the cavity for half hour before setting inlay, seals the tubules, reduces the sensitiveness and prevents the Oxyphosphate having any effect on the pulp. Guaranteed to be as represented or money back. PRICE, \$1.00. Ask your dealer for it or send direct to

**J. A. WILLIAMS, D. D. S.**

Manufacturer

Fort Wayne,

-

-

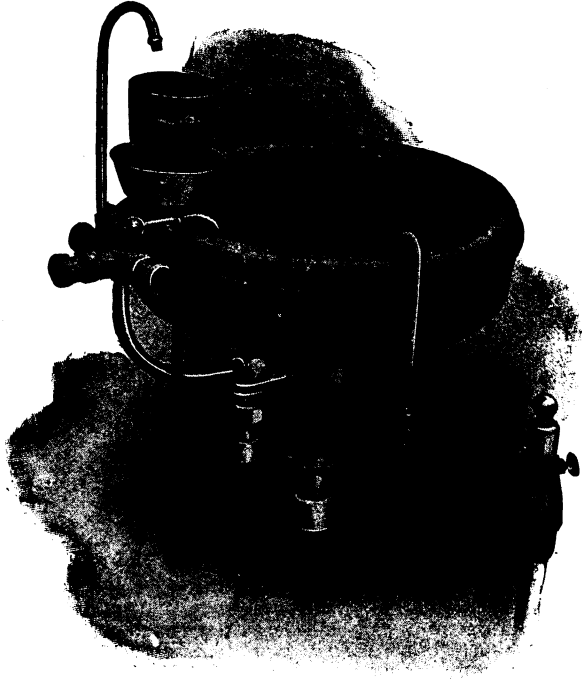
-

Indiana.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal,



WEBSTER'S FOUNTAIN SPITTOON.



The above cut does not do full justice to our "New" Fountain Spittoon.

We have in the manufacture of this Spittoon embodied some new and valuable features, notably among them the automatic valves, which are so constructed as to work **positive** every time, cannot get out of **order** and do not have to be **repacked**. No **depressions** in bottom of bowl for dirt to settle in. No **holes** in bottom to **leak** or **weaken** the bowl. Bowl can be taken out, if desired, in **one minute**, by simply loosening one screw. And lastly, the simple and **perfect** way it is constructed.

It is manufactured in our **own factory**, under our personal supervision, by the most **competent** workmen that can be had.

It is made in the best **lead metal glass**, in beautiful Dark Green, Ruby Red, or Clear Glass, and is guaranteed for one year.

**PRICES**

Complete, for Wall Bracket, or any Chair, excepting High Low Gould and Crown.....\$40.00  
 When Stand, High Low Gould, or Crown Chair Arm is wanted, extra ..... 5.00

Send for Descriptive Catalogue.

MANUFACTURED BY

**THE WEBSTER DENTAL CO.,**

566 Main Pstreet, - - - - - BUFFALO, N. Y.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# TRIOLIN

## A Speedy and Sure Cure for Alveolar Abscess

### A Preventative and Cure for Acute Pericementitis and for the Immediate Disinfection and Filling of Putrescent Root Canals

It instantly deodorizes and disinfects all decomposition, no matter how offensive; destroys and neutralizes all poisonous gases arising from decayed animal or vegetable matter.

#### DIRECTIONS

Secure free access to root canals—wash out debris with hot water. The rubber dam can be adjusted and cavity flooded with Peroxide of Hydrogen—rake contents of canal gently with broach. Bubbles of gas form, bringing debris to surface. Soak up and repeat until the gas ceases to form (BE CAREFUL NOT TO FORCE PUTRESCENT CONTENTS OF CANAL THROUGH APICAL FORAMEN.)

Place a shred of cotton on a broach—dip in sulphuric acid (muriatic acid or Aqua Regia will answer the same purpose, and will only slightly corrode a steel broach.) With pumping motion enlarge the canal or canals, washing out frequently with a solution of bicarbonate of soda, until apex is reached. Work Triolin liquid thoroughly through canals, and if tooth is tender to touch, dress canals with cotton saturated with Triolin liquid, and seal in tooth for two or three days. One or two treatments will usually remove all soreness. Then mix Triolin liquid and powder. Pump into canals. Force canal point through it, and fill tooth. In cases where there is a fistulous opening, clean canal, pump Triolin paste through and fill at once. Cases where tooth is not sore and has never given trouble, root can be filled at once. Canals should be well dried after treating with acid and soda—before filling. As a root dressing, Triolin will be found to have no equal, being a thorough antiseptic and deodorizer. Where part of pulp has to be left in canal, Triolin mixed thick and worked into pulp will be found an Al mummifier.

If too much paste is mixed at one time, it can be saved and softened by the addition of a drop of liquid.

**Trade supplied—\$1.00 Per Package—Trade supplied**

If your dealer does not keep this, send to

**J. A. WILLIAMS D. D. S.**

Ft. Wayne,

IND.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

THE QUALITY OF A  
**Tooth Paste and Tooth Powder**

Should appeal to every dentist as one of the  
most important adjuncts to oral hygiene

---

**DR. GREEN'S ASEPTOLENE  
TOOTH PASTE AND TOOTH POWDER**

are highly antiseptic dentifrices, alkaline and astringent, contain no  
grit and impart to the mouth a sensation of freshness and cleanliness.

---

**CURES PYORRHEA IN ITS EARLIER STAGES**

---

Samples sent on application

This Company is composed of dentists and is run on the co-operative plan

Write for particulars

They will interest you

---

**DR. GREEN CHEMICAL COMPANY  
MANUFACTURING CHEMISTS  
IONIA . . . MICH.**

# Indiana Dental College

DEPARTMENT OF DENTAL SURGERY

UNIVERSITY OF INDIANAPOLIS

The twenty-seventh annual session begins October 2nd, 1905.

This space will not permit us to tell you much about it but a postal card inquiry will result in your receiving full information. Address the College,

131 E. Ohio Street,

Indianapolis, Ind.

All Progressive Dentists  
Sterilize. DO YOU?

OUR  
**ELECTRIC STERILIZER**



IS  
**DURABLE  
USEFUL  
ARTISTIC**

Made of spun copper.  
Has no joints, hence there  
can be no leakage. Weighs 3½ lbs.

Holds 6 pair of forceps, together  
with burs, broaches, clamps, etc.

Instruments easily removed by  
means of a dipper.

Receptacle in cover for clamps,  
burs, broaches, etc.

Three heats can be maintained :

1st—A temperature of 210 ° F.

2nd—Boils slowly.

3rd—Boils rapidly.

No danger of burning out.

Costs about 7c. per day to run.

**ELECTRIC STERILIZER CO.**

ST. PAUL, MINN.

NEW YORK:  
239 Front Street.

HAMBURG:  
Brandstwte 4

TERRE HAUTE,  
November 1st, 1905.

Dear Doctor:

You are a professional man, and  
appreciate perfection. You wish to save  
time, secure exact results and please  
your patients.

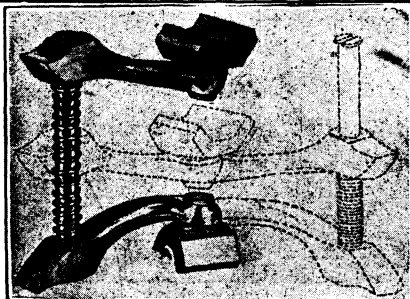
TENAX doesn't run down the throat,  
makes an exact impression, cuts and  
shaves easily, sets quick and doesn't  
stick to the teeth. For investment,  
TENAX dries at once, is absolutely true  
and sharp, doesn't check porcelain and  
cannot crack, contract or expand.

We do not ask you to buy TENAX.  
Ask any dental depot or salesman for free  
samples. Use TENAX on your most diffi-  
cult job. The leading dental jobbers will  
all tell you TENAX is perfect.

One pound of TENAX makes many  
pounds of impression and investment  
simply mixed with plaster of paris and  
water. Save money and your patients'  
patience.

Yours very truly,

TENAX DENTAL COMPOUND CO.



**THIS IS  
THE  
ADAMS  
MOUTH  
PROP**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# SUP - RE - NOL

(The Suprerenal Capsule Anesthetic)

For more than four years **Sup-re-nol** has been made from an unchanged formula, and during that time we have experimented with all the so-called solutions of the active principal of this drug, but have been unable to find one that is efficacious as an ingredient in combination with cocaine for local anesthetic in the sense with Sup-re-nol.

## IT IS THE ANESTHETIC

and is sold by all first class dealers all over the world.

PRICE: 1 OZ., 75c.; 5 OZ. \$3.00; 12 OZ. \$5.00

MADE ONLY BY

THE IDEAL CHEMICAL CO., St. Paul, Minn., U. S. A.

**SHAFER - PIERCE CO., Minneapolis, Minn.**

WHOLESALE AGENTS FOR THE UNITED STATES AND CANADA

## Chicago College of Dental Surgery

DENTAL DEPARTMENT VALPARAISO UNIVERSITY.

FOUNDED IN 1880

2420 GRADUATES

HAS CONTINUED UNDER THE MANAGEMENT OF ITS FOUNDERS SINCE ITS ORGANIZATION.

THE TWENTY-FOURTH ANNUAL COURSE OF INSTRUCTION WILL  
BEGIN OCT. 4, 1905, ENDING ABOUT JUNE 1, 1906.

INSTRUCTION IS COMPLETE IN EVERY DETAIL.

THE CLINICAL MATERIAL IS ABUNDANT, WHILE THE COLLEGE BUILDING AND ITS  
EQUIPMENT OFFER UNSURPASSED FACILITIES  
TO THE DENTAL STUDENT.

FOR CATALOGUE ADDRESS

**DR. TRUMAN W. BROPHY,**

DEAN

770 W. HARRISON ST.

CHICAGO, ILL.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

## PUSTOLENE CURES ABSCESSED TEETH AT ONE SITTING



"Trade Mark Registered"

J. A. SPRAGUE & CO.,

Sold by All Dealers

We guarantee Pustolene, if properly used, to cure an abscess or putrescent pulp at one sitting.

Pustolene has been thoroughly tested and is now used by more than 10,000 Dentists throughout the United States and Canada.

Pustolene is in paste form, always ready to use, and is composed of the most powerful germicides known, will not discolor the teeth and has a very pleasant odor.

Pustolene will, "if used as a pulp capper," relieve an aching pulp in a very few minutes and will return the pulp to its normal condition, there to remain permanently.

Pustolene has gained its reputation solely on its merits and has found its way to all parts of the Globe.

**FREE**—Upon request we will send free one sample and testimonials of Pustolene to any Dentist who has not had the pleasure of trying it.

Price \$1.00—\$1.25 in Canada and Foreign Countries

If your dealer does not have it, order direct and send us his name

PREPARED ONLY BY

Columbus, Ohio.

## A Financial Opportunity

**W**E are offering for public participation a **limited amount** of our capital stock at par value—**\$10.00** per share (fully paid and non-assessable), to expand our industry sufficiently to enable us to meet the **growing demand** for **LINDON CEREAL COFFEE**. This is a **bona-fide** opportunity to make your capital yield upwards of **20 per cent** per annum, payable in quarterly dividends on the first days of January, April, July and October. Our industry is managed by successful **business men** and **bankers**, and has been established several years and is no prospect. If you have **\$10.00** or more to invest, **write us** for **full particulars** and **free sample** of our product. Address

**LINDON CEREAL COFFEE CO., Benton Harbor, Mich.**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# THYMOXAL.

**A REMEDY for ABSCESSSED TEETH,  
FOUL ROOT-CANALS.**

**AN IDEAL ROOT-CANAL FILLING,  
MUMMIFYING PASTE.**

A preparation made up of solid, liquid and gaseous antiseptics and germicides. Its gases penetrate root-canals, no matter how tortuous. They creep from one canal to another, they pass through the ends of the roots and attack chronic abscesses and destroy them.

**THYMOXAL** purifies a foul root-canal, usually in a single treatment.

**THYMOXAL** fills root-canals perfectly.

It seals the apex of the root.

It does not contract, consequently liquids can not gain entrance to the root canals.

It is not soluble in water, nor is it soluble in the fluids of the mouth or system. When placed in canals for a root-filling it becomes as hard as chalk in forty eight hours, making it an ideal root-filling, soft enough to introduce a broach if necessary to remove it; hard enough to fill perfectly and permanently.

**THYMOXAL** has all the essentials of the fiercest **mummifying agent**. It is next to impossible for particles of nerve tissue to decompose, when its preservative and tanning ingredients come in contact with them.

**THYMOXAL LIQUID** is a powerful sterilizer of soft leathery decay covering live nerves in deep-seated cavities.

It makes dental work easy.

It is thoroughly scientific.

Put up in package containing large bottle of each, powder and liquid.

**FORMULA:** Formaldehyde, Creosote, Alum, Thymol, Oxide of Zinc and Glycerine.

**PRICE PER PACKAGE, \$1.25.**

**SAM'L A. CROCKER & CO.,**  
Sole Agents,

Nos. 35, 37 and 39 West Fifth St.,

CINCINNATI, O.

# PERMANEO ALLOY



PRICE

Per oz.

\$1.50

5 ozs.

\$6.50

Has

$\frac{1}{20000}$

of an inch  
Expansion

Is malleable and can be burnished over marginal edges. Will keep its color in any mouth in which gold will remain bright. Has very high crushing resistance.

Modified from a formula in use for thirty years. A perfect chemical compound made to conform to recent scientific investigations. As nearly perfect as chemically pure metals, skillful manipulations and scientific experimentation can produce.

## FRINK & YOUNG

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.





Are  
You  
Acquainted?

Are you acquainted with the advantages of the Wedglock Tooth in crown and bridge work? It looks natural in the mouth; no vulgar display of gold. You can always obtain perfect joints; no soldering direct to facings. In soldering you do not heat the tooth. No danger of checking or changing the color. Facings can be ground at any point. No investment in crown work. Crown and bridge work can be repaired without removing from mouth. Less liability of breakage. It is economical.

---

*The Wedglock Tooth is not only the best tooth ever offered to the profession for crown and bridge work, but it is superior to all other detachable facings.*

---

If you would like to become better acquainted WRITE

**WEDGELOCK TOOTH CO.**

**Trude Building,**

**CHICAGO.**

Publishers of the American Dental Journal, a monthly publication devoted to the progress of Art, Science and Literature of Dentistry. \$1.00 per year.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



## Odontolene

### The King of Local Antiseptic Anesthetics

The only local anesthetic that you can use in quantity without danger to your patient. Odontolene is boiled and sealed in air tight packages. No danger from infection, no sloughing, no bad after effects. Odontolene is guaranteed. If the results are not perfectly satisfactory your money will be refunded.

**One ounce 50 cents**  
**Five ounces \$2.00.**

Manufactured by Louisville Dental Laboratory & Mfg. Co.

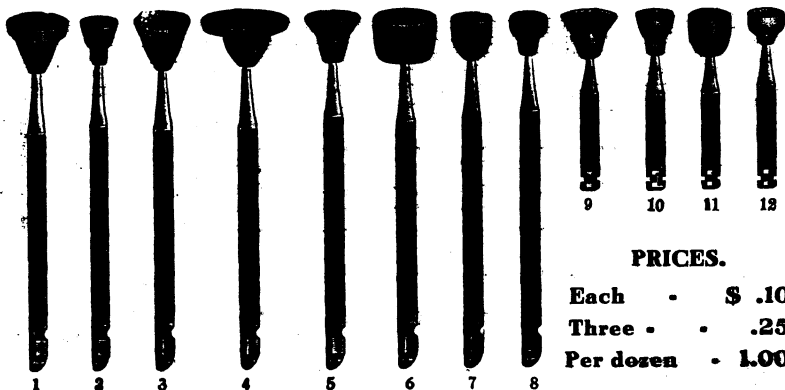
A trial ounce for 25 cents.

T. M. Crutcher, D.D.S., Mgr.

LET US SEND YOU OUR NEW CATALOG.

## Mounted Carborundum Points

Medium grit for grinding, suitable for gold fillings, crowns and porcelain. Firmly mounted and adaptable shapes.



### PRICES.

Each	-	\$ .10
Three	-	.25
Per dozen	-	1.00

**Frink & Young,** 607-608-609 Masonic Temple  
CHICAGO

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# The Lauderdale Crown System

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**Price**

**\$5.00**

*Patented May 12, 1902.*

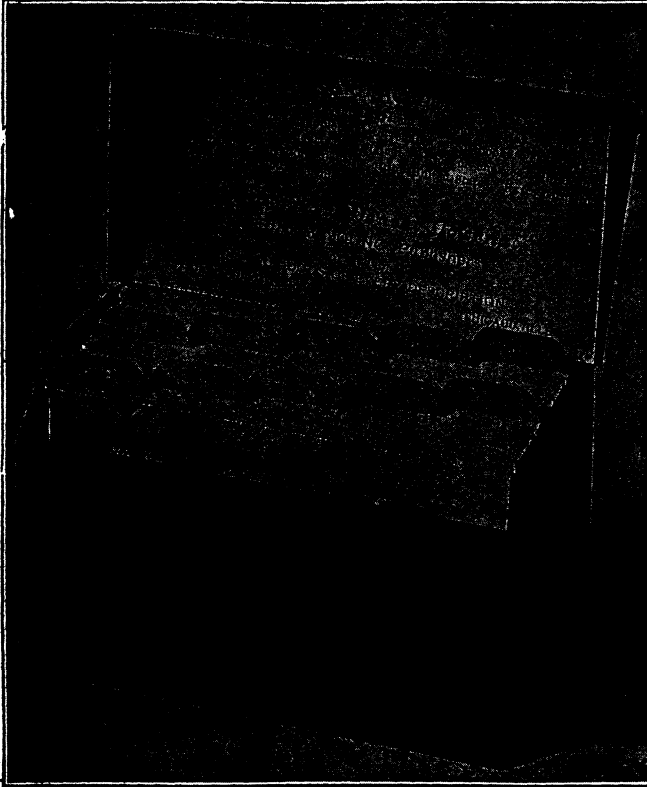
With this outfit you can alter the cusps to suit your case. Do away with metal counter-dies. Adjust backings perfectly. Accurately fit vulcanite dummies. Swage matrix for porcelain inlays. Construct shell crowns for anterior teeth. Construct metal dummy shells in one piece. Our booklet contains invaluable hints on this subject, sent on application.

---

**FRINK & YOUNG, . . . Sole Agents**

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# Observe This Cash Offer You Must Remit With Order



### To Every Dentist:

Send \$1.15 and this dentist's card account system will be sent to you free post paid with one year's subscription to the

### "American Dental Journal"

### To Our Subscribers:

If you send us \$1.15 for one year in advance "AMERICAN DENTAL JOURNAL" we will send you this card system free post paid.

Cards are 3 x 5 inches in size.

This card system is in general use. It contains two hundred account cards, with index complete.

Diagram of teeth on back of every card with symbols for recording.



Clearly explained by the cut shown here.  
Useful for records, neat and handy.  
A thorough system.  
"THE AMERICAN DENTAL JOURNAL"  
is the brightest, most original dental magazine published.  
Send the coupon with \$1.15.

**American Dental Journal**  
\$1.00 per year

The 18 cents is for postage on the card system

607-8-9 Masonic Temple  
CHICAGO.

CUT COUPON HERE  
"THE AMERICAN DENTAL JOURNAL"  
607-8-9 Masonic Temple, Chicago.  
Enclosed please find \$1.15, send the "JOURNAL"  
for one year and the card account system to  
Dr. \_\_\_\_\_

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## AMERICAN DENTAL JOURNAL

**ESTABLISHED FACTS** An indisputable and established fact is  
**INDISPUTABLE FACTS** that Queen Dentifrice saves from 75 to 90  
per cent of teeth from further decay.

The above statement has been fully demonstrated and proven among the patrons of Queen Dentifrice during the last six years.

If you would see a clean, healthy mouth, look for one who uses Queen Dentifrice. By oxidizing means bacteria is destroyed, nature reinstated. This preparation is formulated upon an entire new basis.

The ingredients are perfectly harmless—cannot in any way shape or manner be deleterious to the most delicate tissue. To give evidence of further proof of its genuineness please note the following,

COUNTY OF WAYNE,  
ANALYST AND TOXOLOGIST  
J. E. CLARK, M. D.  
DETROIT.  
PROFESSOR OF CHEMISTRY  
DETROIT MEDICAL COLLEGE.

Detroit, Mich., July 26, 1904

This is to certify that I have made a qualitative and quantitative analysis of a bottle of Dr. Dumas' Queen Dentifrice. I find the powder contains materials that will act as antiseptic, alkaline, astringent and detergent, and contains nothing dangerous or injurious, but acts beneficially, by hardening the Gums and deodorizing the mouth and teeth.

JOHN E. CLARK

IN POWDER OR PASTE

Samples and booklet on care of mouth and teeth sent on application.

Trade supplied by

MICHIGAN DRUG CO.  
DETROIT, MICH.

# THE HULL

Patented February 28, 1905

## Carbo. Safe Sided Dental Disk

Thin Safe Sided Disk that will cut on the edge and one side.

### ITS USES

Grinding teeth for crown and bridge work.

Separating Teeth in place of file, and any other work to be done where the approximal surface of one tooth is to be ground without injury to the enamel on the approximal surface of the next tooth.

Made in sizes  $\frac{7}{8}$ -inch,  $\frac{3}{4}$ -inch,  $\frac{5}{8}$ -inch. Price 75c. per doz.

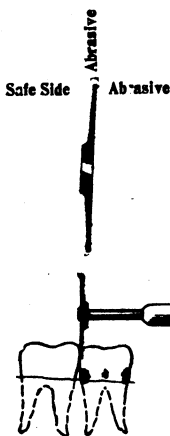
## THE HULL CARBO DENTAL DISK

Our regular thin disk that will cut on the edge and both sides.

Made in sizes,  $\frac{7}{8}$ -inch,  $\frac{3}{4}$ -inch and  $\frac{5}{8}$ -inch. Price 50c per doz.

At Dental Depots, or will send by mail assorted sizes on receipt of price.

R. H. HULL, 405 Main St., Worcester, Mass.



Why should you  
Subscribe to  
**Dental Hints?**

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- BECAUSE** It is the cheapest journal published.
- BECAUSE** It contains, in its "boiled down articles" as much actual pithy matter as the high-priced journals with their long articles.
- BECAUSE** Its contents are varied—professional, scientific, poetical and humorous.
- BECAUSE** It is the "biggest little thing" printed
- BECAUSE** It is the ideal journal for the busy dentist who desires short articles "full of meat."
- BECAUSE** Its policy is to keep the busy, hard-working dentist easily posted as to the very latest, up-to-date ideas and practice in dentistry.
- BECAUSE** It is worthy of your patronage and should have it.
- 
- 

**SUBSCRIPTION, PER ANNUM, 50c.**

**Sample Copy for the Asking**

**Teague Supply Co.**

**P U B L I S H E R S**

**AUGUSTA, GA.**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# THE STRONGEST IN THE WORLD



MANUFACTURED BY  
**THE DENTISTS' SUPPLY COMPANY**  
OF NEW YORK

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# "Twentieth Century" Teeth

## Plain Vulcanite Upper

(Chart for ordering 28s, 14s and partial sets)



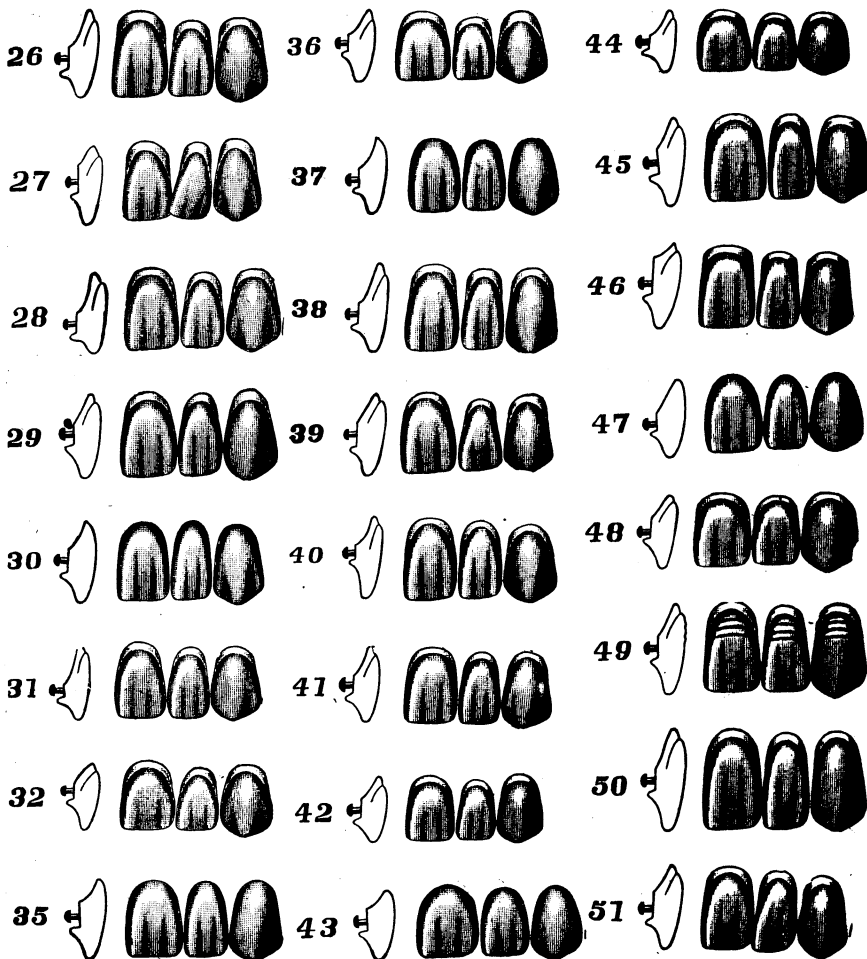
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# "Twentieth Century" Teeth

## Plain Vulcanite Upper

(Chart For ordering 28s, 14s and partial sets)

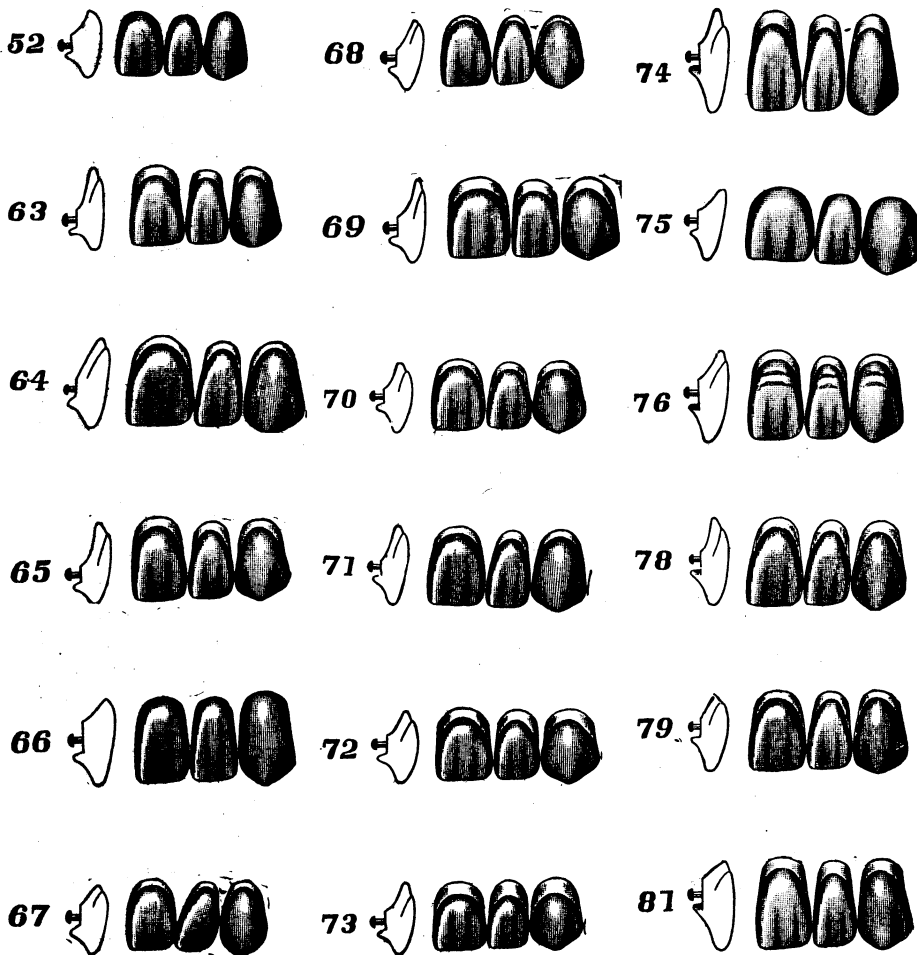


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# "Twentieth Century" Teeth

## Plain Vulcanite Upper

(Chart for ordering 28s, 14s and partial sets)



By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# "TWENTIETH CENTURY" TEETH

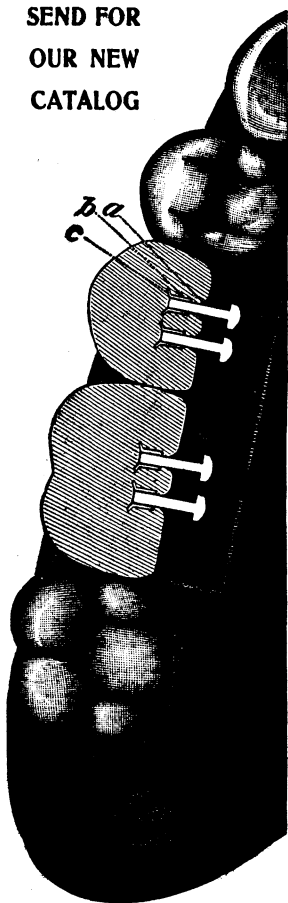
Have the Highest-Fusing Porcelain

(See DR. CAPON'S article in March, 1903, *Dental Brief*; also DR. WHEELER'S article in May, 1903, *International Dental Journal*)

**THE STRONGEST PINS**

(Proven by Dynamometric Tests)

SEND FOR  
OUR NEW  
CATALOG



**THE MOST EXCELLENT  
MOULDS AND SHADES**

Compare the porcelain texture of "Twentieth Century" Teeth with that of other teeth and you will find it to be unexcelled by even its highest-priced competitor. Thousands of testimonials received from the dental profession prove that the "TWENTIETH CENTURY" PORCELAIN commands the admiration of all who examine it. In strength, translucency and "natural" blending of shades it is unequalled. "TWENTIETH CENTURY" PORCELAIN is as superior to the texture of other makes of teeth—especially cheap teeth, in which IRON PINS ARE BAKED in one operation—as the finest HAVILAND CHINA is superior to COMMON POTTERY. Platinum is the only metal that can be satisfactorily BAKED in high-grade porcelain. "Twentieth Century" Teeth have the HIGHEST-FUSING PORCELAIN. We bake in the porcelain only pure platinum; then solder the pins securely to it. The SOLDER HOLDS; the PORCELAIN IS NOT DISCOLORED.

The cut shows an enlarged sectional view of two teeth of a rubber plate ground down to expose the pins and their anchorage in the porcelain. The depression at *a* shows how the rubber flows in and around the pin, so as to protect the pin at its weakest point. The rubber forms a cushion, and under extraordinary strain will yield sufficient to avoid the fracture of the porcelain.

Other teeth that have pins BAKED IN and have no rubber cushion will always break when subjected to excessive strain. "Twentieth Century" Pins do not break; they give—just as did the reed when the blast uprooted the great oak.

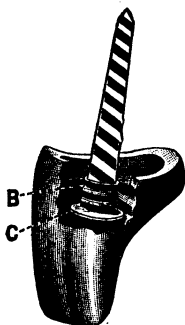
The porcelain hugs the pin between *a* and *b*, and adheres firmly to the platinum anchorage *c*. This platinum anchorage *c* is baked in the porcelain in the same way as platinum pins are baked in. The platinum anchorage is completely imbedded in the porcelain of "Twentieth Century" Teeth and cannot be removed without smashing the tooth.

Five years of uninterrupted success has proven that the above statements are FACTS. "Twentieth Century" Teeth are not in the class of cheap teeth. Exclusive of platinum, they cost more to make than any other teeth in the world. They are now used by a majority of dentists throughout the civilized world.

**THE DENTISTS' SUPPLY COMPANY OF NEW YORK**

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

# "Twentieth Century" Crowns

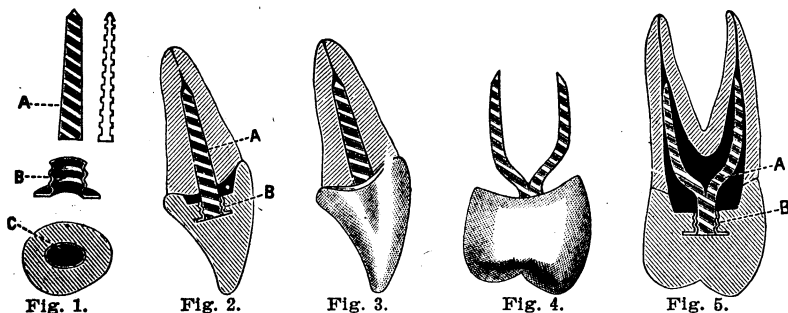


These crowns are usually supplied with fixed posts, but when so ordered they may be obtained with the posts separate. In the latter form, the Crowns may be readily ground to fit the root and the post afterward cemented in place. A more secure attachment may be obtained, however, by fixing the post with gold or silver solder to the platinum shell which is baked in each Crown.

In most cases the Crowns with fixed posts are desirable, as the maximum of durability is obtained by the form of the post and the nature of its anchorage in the porcelain.

The post is elliptical in shape, more slender than, but exceeding in strength and rigidity, the average platinum post. Its form and size renders comparatively easy its adaptability to the root canal.

The cup-shape of the Crown where it meets the root permits ready adaptation with minimum grinding, and also provides a recess for cement.



In Fig. 1 of the above illustrations, **A** is an enlarged drawing of the side and edge views of the post, which is roughened to provide a secure attachment with cement. **B** is an enlarged sectional view of the platinum anchorage which is haked in the porcelain. Note the corrugations in the side and the flange at the base, which securely hold the anchorage in the porcelain. **C** is the end view of a crown, showing shape of the cavity for the post. The anchorage **B** makes a complete lining of the post cavity in the crown.

Fig. 2 shows a sectional view of incisor root and crown in position. Note the platinum anchorage **B**, which extends from the bottom of the cavity to the surface of the crown. The post **A** is securely soldered to this anchorage **B**.

Fig. 3 shows incisor crown fitted to a root.

Fig. 4 shows bicuspid crown with its split post divided and shaped for a bifurcated root. All of the bicuspid crowns have split posts which may readily be used for either double or single roots.

Fig. 5 is a sectional view of the bicuspid crown in position on the root.

The addition of the new and improved forms, the effective anchorage of the post and the superior porcelain texture of these Crowns recommend them to the most discriminating dentists.

# "TWENTIETH CENTURY" CROWNS

**AN ASSORTMENT OF 100 IN A CASE, 35.00  
IN SMALLER QUANTITY, EACH, 40 CENTS**

These crowns are made of the finest porcelain texture, have the strongest post, and are supplied in the most excellent variety of moulds.

All of the Bicuspid Crowns have split posts, so that they may be readily divided, and shaped for bifurcated roots.

The strength of the post is greatest where the most strength is required; it is anchored securely in the porcelain, and its shape renders it easily adapted to the average root canal.

We have absolute confidence in these Crowns. Our confidence is based on our knowledge of their construction and the reports of dentists who are using them exclusively. We believe they have advantages not found in any others. But we want you to determine for yourself whether they merit their use in your practice.

## HERE IS OUR PLAN

Sign this order for 100 Crowns on 30 days' approval. If they are satisfactory, keep them and pay \$5.00 a month. If unsatisfactory, after 30 days' trial, return the Crowns not used and state what is wrong. We want to know their faults as well as their virtues.

You shall be the judge.

**SIGN AND SEND US THIS ORDER NOW**

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## The Dentists' Supply Company,

109 WEST 42d STREET, NEW YORK, N. Y.

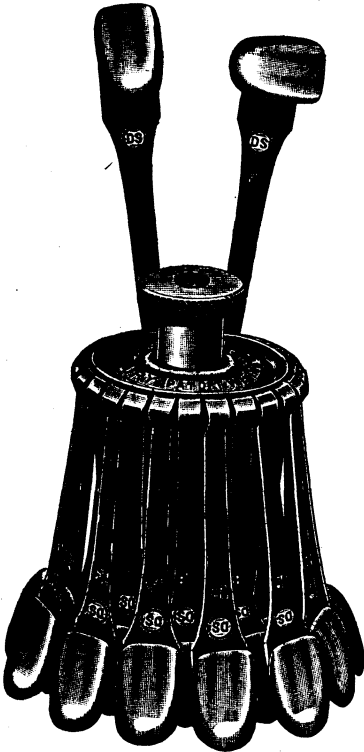
Please send me a case of 100 "Twentieth Century" Crowns on approval. I agree to pay \$35.00 for them in monthly installments of \$5.00, or return the Crowns within 30 days.

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# The "TWENTIETH CENTURY" SHADE GUIDE



**W**E invite particular attention to the "natural" appearance and the exquisite blending of the colors of our respective shades.

The samples of each individual color of all of the "Twentieth Century" Shade Guides have been made from the same "mix," or batch of porcelain, thereby lessening the possibility of variation in the shade of the corresponding samples.

The mechanical features of the "Twentieth Century" Shade Guide embody several notable improvements. The shade bars are regulated by the thumbscrew in center of the ring. Loosen the screw, and the Guide will collapse; spread the Guide upon a flat surface, tighten the thumbscrew, and the shades will be held rigidly distended. Each sample tooth will revolve on its own pivot to any desired position, where it will be retained by the spring provided for that purpose.

The price of the "Twentieth Century" Shade Guide is One Dollar. One set of "Twentieth Century" Teeth will be given free to each Dentist who purchases a Shade Guide.

### To Any Dealer in "Twentieth Century" Teeth.

Enclosed find \$1.00, for which please send me a "Twentieth Century" Shade Guide and a set of "Twentieth Century" Teeth.

NAME .....

ADDRESS .....

.....

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

The Dentists' Supply Company  
of New York

Price List

In effect April 15th, 1905

KIND OF TEETH AND QUANTITY	QUANTITY PRICE	PRICE PER SET IN QUANTITY	PRICE PER TOOTH IN QUANTITY	CASH DIS- COUNT	NET CASH QUANTITY PRICE	NET CASH PRICE PER SET	NET CASH PRICE PER TOOTH
<b>"Twentieth Century"</b>							
<b>Plain and Gum Teeth for Rubber Plates.</b>							
1 x 14	\$ 1.00	\$ 1.00	.08				
11 x 14	10.00	.90s	.06s	3%	\$ 9.70	.88s	.06s
28 x 14	25.00	.89s	.06s7	5%	28.75	.84s	.06ss
58 x 14	50.00	.86s	.061s	5%	47.50	.81ss	.05ss
116 x 14	100.00	.86s	.061s	10%	90.00	.77ss	.05ss
<b>"Twentieth Century"</b>							
<b>Miscellaneous Plain Teeth Only</b>							
These Quantity Rates are based on an equal assortment of Centrals, Laterals, Canines, Bicuspids and Molars, right and left, being taken in each lot.							
100 Miscellaneous Teeth	7.00		.07	3%	6.79		.067s
200 " "	10.00		.05	3%	9.70		.04ss
1000 " "	85.00		.03s	5%	33.25		.08ss
Not exchangeable for full or partial sets.							
When the Miscellaneous Teeth are sold, with the bicuspids and molars excluded, and when any particular variety of Shades and Moulds are specified, <i>One Cent a Tooth is added to these prices.</i>							
<b>Improved "Twentieth Century" Facings</b>							
Single Teeth.....	.10						
110 Teeth.....	10.00		.09s	3%	9.70		.06s
295 " .....	25.00		.08s	5%	28.75		.06s
625 " .....	50.00		.08	5%	47.50		.07s
1335 " .....	100.00		.07s	10%	90.00		.06s
In ordering, specify "T.C." Facings.							

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**AMERICAN DENTAL JOURNAL**

*(Price List Continued)*

KIND OF TEETH AND QUANTITY	QUANTITY PRICE	PRICE PER TOOTH IN QUANTITY	CASH DISCOUNT	NET CASH QUANTITY PRICE	NET CASH PRICE PER TOOTH
<b>"New Departure" Facings</b>					
WITH SMOOTH BACKS AND PLATINUM PINS SOLDERED IN WITH GOLD.					
<i>Single Teeth</i> .....	\$ .25				
105 Teeth.....	25.20	.24	5%	\$ 23.94	22s
218 " .....	50.14	.23	5%	47.64	21s
455 " .....	100.10	.22	10%	90.09	19s
1429 " .....	300.09	.21	10%	270.09	18s
In ordering, specify "New Departure" Facings.					
<b>"Dentsply" Facings</b>					
WITH LONG PLATINUM PINS BAKED IN.					
<i>Single Teeth</i> .....	.16				
162 Teeth.....	25.11	.15s	5%	23.85	.14s
334 " .....	50.10	.15	5%	47.60	.14ss
715 " .....	100.10	.14	10%	90.09	.12s
2308 " .....	300.04	.13	10%	270.04	.11s
In ordering, specify "Dentsply" Facings.					
<b>"Twentieth Century" Crowns</b>					
WITH FIXED POSTS.					
<i>Single Crowns</i> .....	.40				
68 Crowns.....	25.16	.37	5%	23.90	.35s
100 " .....	35.00	.35	5%	33.25	.33s
148 " .....	50.32	.34	5%	47.81	.32s
323 " .....	100.13	.31	10%	90.12	.27s
<b>"Twentieth Century" Crowns</b>					
WITH POSTS SEPARATE.					
<i>Single Crown, complete</i>	.40				
68 " " .....	25.16	.37	5%	23.90	.35s
100 " " .....	35.00	.35	5%	33.25	.33s
148 " " .....	50.32	.34	5%	47.81	.32s
323 " " .....	100.13	.31	10%	90.12	.27s
<b>Extra Posts for "Twentieth Century" Crowns</b>					
<i>Each</i> .....	.05				

Our Porcelain Teeth are always exchangeable set for set or tooth for tooth, but the Miscellaneous Teeth are not exchangeable for full or partial sets.

**The Dentists' Supply Company**

109 West 42nd Street, New York, N. Y., U. S. A.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



# SOMNOFORME

THE IDEAL GENERAL ANAESTHETIC FOR DENTAL AND MINOR SURGICAL OPERATIONS



**SOMNOFORME TUBES OR CAPSULES**

Some of the **ADVANTAGES OF SOMNOFORME** over Nitrous Oxide

**NO CUMBERSOME APPARATUS.** The Somnoforme Inhaler can be easily carried in an ordinary coat pocket.

**RAPIDITY WITH WHICH ANAESTHESIA IS PRODUCED.** With Somnoforme, if given with the Somnoforme Inhaler, full anaesthesia is obtained in thirty seconds, or even less. Whereas with Nitrous Oxide Gas more than double this time is usually taken, and often even longer.

**PROLONGED DURATION OF ANAESTHESIA.** Even a small dose of Somnoforme given with the Somnoforme Inhaler produces an anaesthesia lasting at least twice as long as that obtained by the usual administration of Nitrous Oxide Gas.

**ABSENCE OF ASPHYXIA.** When Somnoforme is presented in the right manner the patient experiences none of the so-called "suffocating feeling" so often complained of when Nitrous Oxide is given.

**ABSENCE OF CYANOSIS.** Complexion perfectly normal under Somnoforme, which is certainly not the case with N<sub>2</sub>O.

**NO STERTOROUS BREATHING OR JACTATION OF THE LIMBS OF THE BODY.** This is of supreme importance in that the patient being quite placid, the dental surgeon is able to operate much quicker than is possible when Nitrous Oxide is employed. Besides, in cases of Nervous patients who insist on a friend being present, the advantages of the non-existence of the above symptoms are so obvious that they need not be mentioned.

**EASE OF ADMINISTRATION.** The successful administration of Nitrous Oxide and more particularly its nasal administration is more difficult and requires more experience in use than does Somnoforme.

We are fully convinced that before long **SOMNOFORME** will largely supersede Nitrous Oxide Gas, not only for dental and other short Surgical Operations, but as a preliminary Anæsthetic to Ether, Chloroform, etc., etc.

**SOMNOFORME** is sold in sealed glass tubes or capsules containing 8 c. c., the proper dose for one administration. It is also furnished in bottles of 60 grammes, sufficient for 15 to 18 administrations.

**COMPLETE DIRECTIONS ACCOMPANY EACH OUTFIT.**

Capsules, per box of ½ dozen.....	\$1.50
60-gramme bottle.....	2.00
Valve for bottle (used indefinitely).....	1.00

**SOMNOFORME** is sold by Dental Depots everywhere or may be ordered from

**E. de TREY & SONS, 28 S. 40th Street  
PHILADELPHIA, PA., U. S. A.**

American Selling Agents for The Somnoforme Co., Bordeaux. Additional literature furnished on application.

By mentioning the **AMERICAN DENTAL JOURNAL** when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

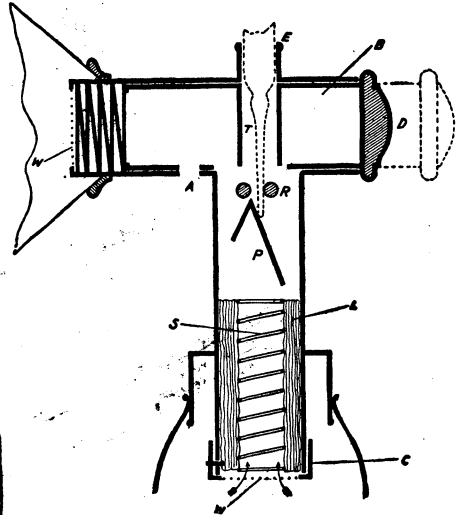
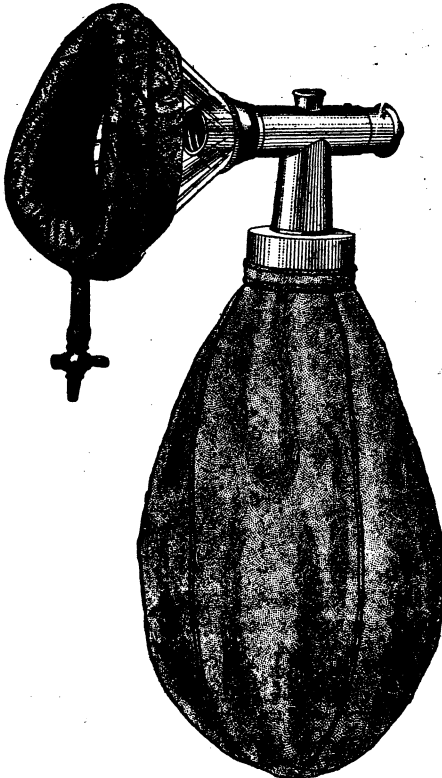
# SOMNOFORME

SHOULD BE ADMINISTERED ONLY WITH THE  
**SOMNOFORME INHALER**

(Dentists are cautioned against inferior substitutes)

SOLD BY ALL DENTAL  
 DEPOTS

PRICE \$15.00



(Patent applied for.)

Copyright of trade-mark "SOMNOFORME,"  
 applied for.

**THIS IS THE ONLY APPARATUS REQUIRED  
 TO ADMINISTER SOMNOFORME.**

Exhaustive trials of all kinds of Inhalers have been made with the view of selecting the one best suited for the purpose, with the result that the Somnoforme Inhaler illustrated herewith is the only one that combines all the principles essential for the proper and successful administration of Somnoforme. It has been tested in every conceivable manner, and can, without reservation, be recommended as absolutely perfect both from scientific and aseptic points of view. The Inhaler is simple in construction, cannot get out of order, can easily be kept aseptic, is unbreakable, and of convenient size.

A detailed description of the Inhaler, of its parts and of the method of handling it, accompanies each Inhaler.

At one end is the face piece with a pneumatic rubber pad and a transparent celluloid cone. At the other end is a rubber bag, the capacity of which is about two gallons. The face piece communicates with the bag through a short metal tube, shaped at right angle and having the proper openings for the supply of air and Somnoforme. It also contains the breaking device for the sealed glass capsules and a wire frame in spiral form (8), around which is wound the absorbent lint. The apparatus is built on the principle of administering anaesthetics by the so-called "closed method," air being excluded almost altogether during the administration of the anaesthetic. The free admission of air would retard the anaesthetic considerably, and more of the anaesthetic would be needed. Thus the patient would absorb a greater quantity of the anaesthetic, and his system would therefore have greater difficulty to throw it off once the administration is discontinued. To eliminate the air as much as possible means a considerable shortening of the time of induction. Therefore less of the anaesthetic is needed, and little of it is absorbed by the system. The danger is thus reduced to a minimum, and the possibility of sickness almost altogether removed.

Somnoforme is projected from the bottle straight into "e" and is absorbed by the line "f." If capsules are used, a slight pressure against the device "p" will fracture the neck of the tube, the broken particles of glass being prevented by the screens at "w" from entering the face-piece or the bag.

**E. de TREY & SONS, 28 S. 40th Street  
 PHILADELPHIA, PA., U. S. A.**

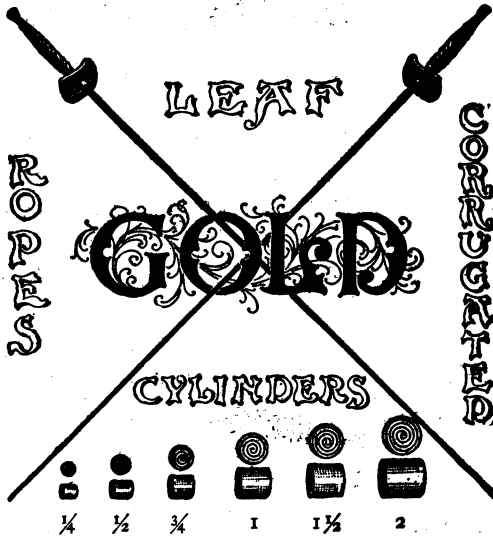
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Foils, Plate, Solder, Wire, Amalgams, etc.

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Advise your patients you can do and do painless dental operations by using the **Clark Correct Gas Apparatus**.

Local anæsthetics, or poisonous drugs are at best temporary, unsatisfactory and sometimes positively dangerous.

 **Prolonged Anæsthesia**   
**Prolonged Anæsthesia**

**and safe—without bad after effects. No  
Cyanosis. No Nausea. No Asphyxia.**

We have constructed a glass muffle, through which the gas passes; **stops the noise ordinarily made by gas coming from the cylinder**; detects leaky cylinders; modifies the temperature of the gas and gives you a very good idea as to how fast the gas is being given.

If you could examine the teeth of the first one hundred men you meet, how many would require the services of a dentist? We venture to say **75 per cent**, and the reason for **50 per cent** of this is, **afraid of the dentist**.

Partial anæsthesia can be secured and operations performed in a satisfactory manner, using this device that **cannot be done any other way**.

We will gladly send catalogue and testimonials from people that know because they have tried it.

Nitrous oxide gas is the safest known anæsthetic.

More dentists and physicians are using gas than ever before.

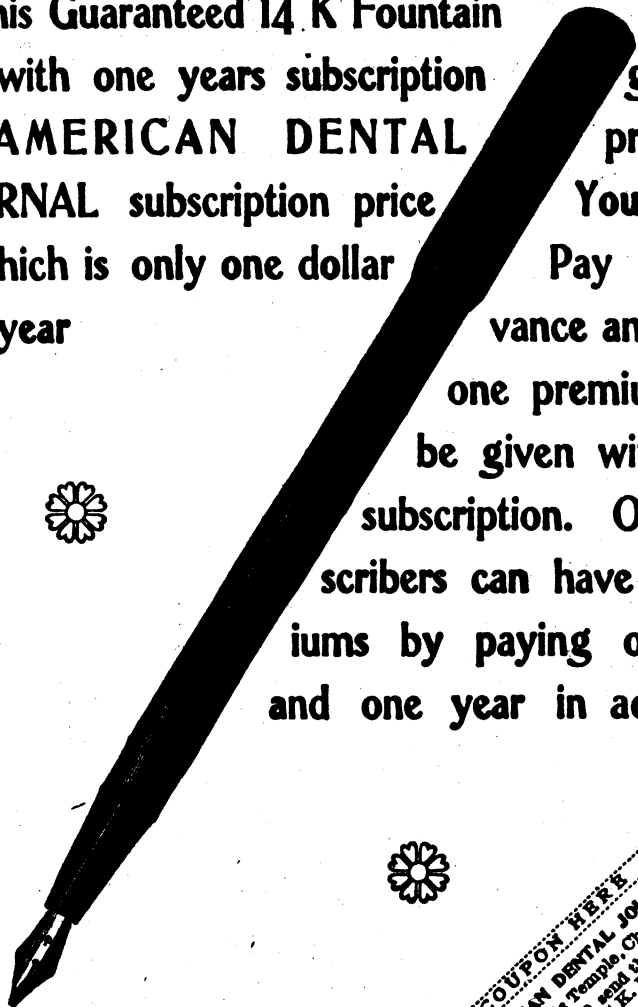
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ESTABLISHED 1867

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CYLINDER GOLD, per 1-2 ounce	-	13.25
CYLINDER GOLD, per 1-8 ounce	-	3.50
CYLINDER GOLD, per 1-32 ounce	-	1.00
FOIL GOLD, per ounce	-	25.00
FOIL GOLD, per 1-2 ounce	-	12.50
FOIL GOLD, per 1-8 ounce	-	3.25

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*Charleston, Mo.*

*Gentlemen:*—Enclosed find money order for \$13.25, for which send ½ ounce Cylinder Gold. Have been using your gold for two years and find it the most satisfactory of any I have ever used.

(Signed) Chas. W. Reed.

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*Gentlemen:*—Enclosed find \$30.00 for ounce Cylinder Gold, 3 dwts. 18 karat solder and 1 dwt. 20 karat solder. Am well pleased with your Cylinder Gold.

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