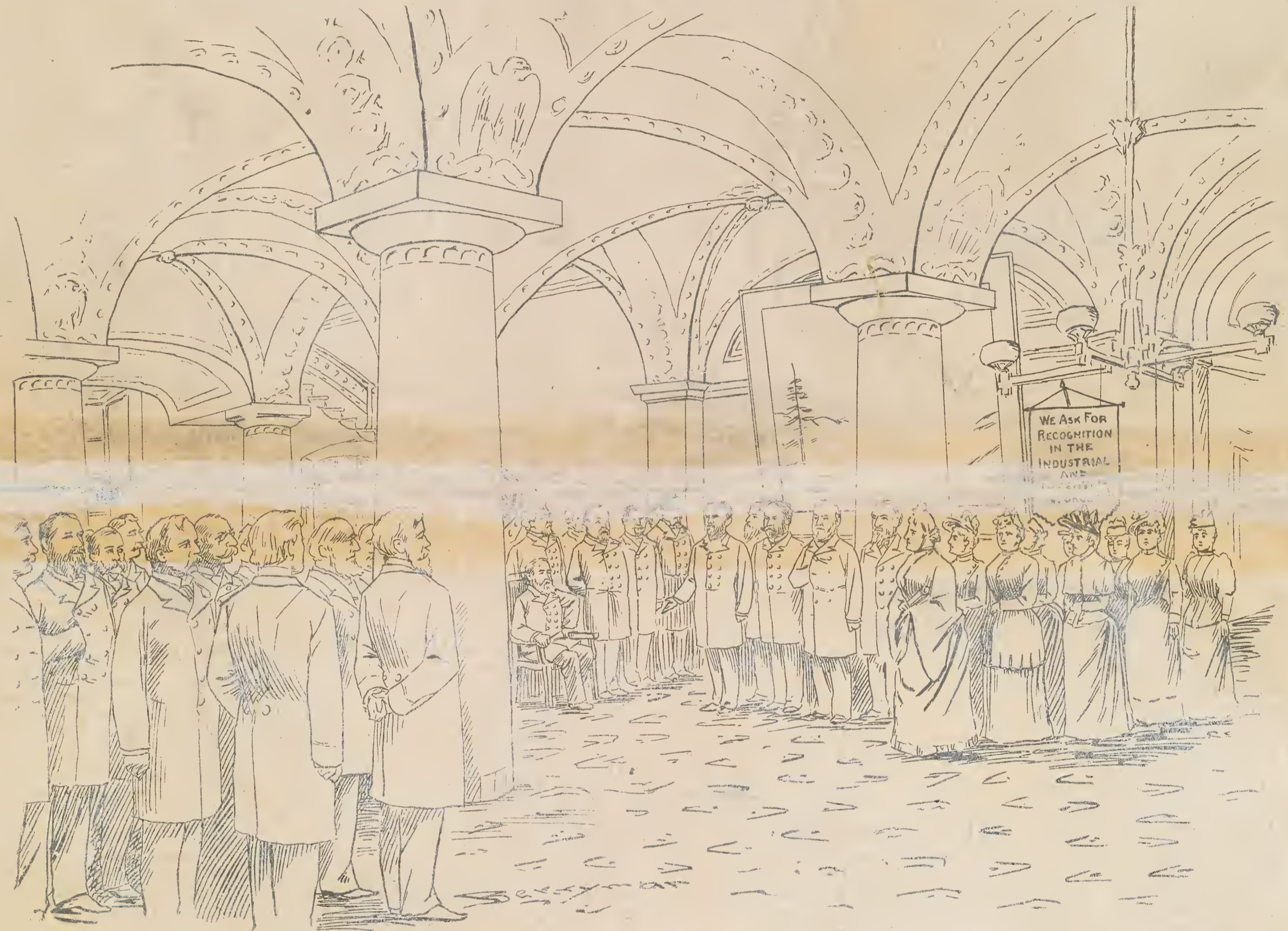




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WASHINGTON, D. C., APRIL, 1890.

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WOMEN AS INDUSTRIAL AND INVENTIVE FACTORS PLEAD FOR RECOGNITION AT THE CONVENTION OF THE PATENT CENTENNIAL, APRIL 8th, 9th, AND 10th, 1891.

GREETING.

The "Woman Inventor" greets the members and visitors of the Patent Centennial Convention and presents this number, the first ever published and devoted to the cause of woman inventors of this country.

Its aims and objects are to aid, elevate, and dignify the industrial and inventive women of the United States; to advocate more just and equitable laws; to help them to obtain their just demands and protection from State and National legislatures; to urge the reduction of fees payable to the United States Government, and, in view of the surplus of a million of dollars to the credit of the United States Patent Office, of which \$250,000 accumulated during the past year, we ask the United States Government to encourage inventors by granting to them besides the patents medals, premiums and monetary aid to perfect their inventions.

We ask, also, of our strong Government, to be just and extend its protection to women inventors, and at its ex-

pense prosecute those who infringe or fraudulently obtain their inventions.

We also ask for women inventors that a spacious hall be set aside in the present Patent Office and be exclusively used for the exhibition of women's inventions, their models, and that descriptive and illustrated catalogues be printed and distributed free to all who apply for the same. We ask, also, that none but women be employed in that department of exhibition and publication.

We extend our sisterly hand to the women inventors, and to those who intend to enter the inventive field; we promise to them advice and aid in their pursuits of usefulness, and bespeak for ourselves their good will and hearty co-operation to aid us in this new enterprise which will benefit them as well as ourselves.

We also ask for the co-operation of the successful inventors and manufacturers of patented articles, who to-day are reaping the golden harvest, to contribute some of their bountiful worldly goods to enable us to disseminate the

useful information contained in the columns of the "WOMAN INVENTOR."

WOMEN'S INVENTIONS.

How many woman's inventions are hidden under the names of fathers, husbands, brothers and sons we cannot, of course, know, but it is by no means unlikely that many thousands of such concealments exist in the lists of patents granted. It is still more probable that suggestions of women have helped many a man to the development of patentable devices, and it is a known fact that the loving faith of a good wife has kept up the courage and her industry supplied bread for the poor inventor in thousands of instances, while he has struggled on towards success or failure—towards happiness or despair. As woman has become more and more prominent in all departments of business, she is naturally making a better showing in the records of the patent office. The 4,000 patents now stand-

ing to her credit will soon be multiplied by ten, and the fame and fortune annually reaped by inventors will be more equitably divided between the sexes. It would be scarcely permissible to close this article without a reference to the obligations of woman to invention. Her life has been relieved of most of its drudgery by patent devices. The woolen mill, the cotton gin, the sewing machine, the laundry machinery for the laundry and the dairy, mechanical appliances for doing all the hard work of urban or rural homes—these have opened up a new and better life for to-day. Other inventions, such as telegraphy, the typewriter and the telephone have created new occupations for thousands of women, while inventions in music and art have made home embellishment possible to even the poorest sewing girl. The new times are better than the old in all respects, but in no other direction is the improvement so marked as in the change wrought in the home life of woman.

The Woman Inventor.

PUBLISHED MONTHLY.

CHARLOTTE SMITH,
EDITOR AND PUBLISHER.

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WASHINGTON, D. C., APRIL, 1891.

The Patent Centennial celebration, beginning April 8th, and ending April 10th, will be presided over by the President of the United States. Never before in the history of the United States will there be so many distinguished inventors, scientists, scholars, and illustrious men assembled together to celebrate the achievements of the inventive genius of the American inventors. The eminent men who will participate in this Centennial celebration extend to the women of the United States their hospitality and invites them to attend the celebration of the Centennial in Washington, D. C., April 8th, 9th, 10th. The Centennial Committee extends the hand of welcome to the Woman Inventors and the Industrial Women of the United States to co-operate with them, and accords them the same privileges as man in this celebration.

Mrs. Nancy M. Johnson, is the inventor of the first ice cream refrigerator in this country. Before her invention, ice cream was made by a spoon, constantly kept stirring up the cream. She devised the crank, and got out a patent for her invention in the year of 1843. She afterwards sold the right of her patent for \$1,500. She lived in Washington all her life and died in 1890, at the ripe old age of ninety-five years.

THE WOMAN INVENTOR will publish in future numbers a complete list of all the women inventors whose names can be obtained, with notice of their invention, patent, number and date. Correspondence invited on this subject.

The object is to compile a history of the women inventors of the United States.

Hon. Samuel Fisher, while Commissioner of Patents, once said, "Any sketch of American inventions would be imperfect which failed to do justice to the part taken by women."

Senator Platt, of Connecticut, is one of the most earnest defenders of the American Patent law in the United States Senate. He delivered what is conceded to be the most able speech in the history of the United States Patent Office on the floor of the Senate ever made in Congress. He is also a sincere friend of women inventors as well as industrial women.

THANKS! THANKS!

In our efforts to furnish a complete official list of the women inventors of the United States and Great Britain, we have been aided by U. S. Commissioner of Patents, Hon. Charles Eliot Mitchell; Chief John W. Babson, of Gazette division U. S. Patent Office; J. B. Marvin, chief of Draftsmen division U. S. Patent Office. To Mr. A. Scott, assistant chief of Draftsmen division, and Mr. Berryman, who kindly aided in getting up the design of THE WOMAN INVENTOR, we are much indebted for many courtesies extended to us.

We recommend the New York Daily Tribune as the most advanced and reliable daily paper published in the United States. Its columns are always advocating questions relating to the elevation of women through education and its editorials ably discuss and advocate industrial pursuits to women.

Up to 1820 no one seems to have entertained the thought that female education was of sufficient consequence to make it in any way desirable that an institution should be endowed for the purpose of making the education of women commensurate in thoroughness with that of men.

The Washington Post, independent in politics, faultless in style, newsy and bright in every particular, is one of the best morning papers published.

A Memorial and Petition

TO THE MEMBERS OF THE CENTENNIAL CELEBRATION.

While many of the most important inventions the world has ever known, has been taken out by women, the proportion of female inventors, is much less than male inventors, it arises from the fact that woman has not had the same opportunities to acquire an industrial education that man has had. And those that have succeeded have done so only by their own self reliance and indomitable will power. Inventions are the result of much consideration and freedom of thought, and any restriction reacts on inventive genius. Deprived as woman is of her political power, and the obstacles thrown in her way; she has to face the contempt and scorn of her sex, while man looks on her as an intruder on his domain.

All this has a tendency to hamper her, woman's inventive genius. How does the law recognize women? If she be married, her husband can take out the patent in his own name and sell her invention for his sole benefit, give it away or refrain her from using it, and she has no remedy before the law. It is only a little over a quarter of a century since the first State in this Union protected a married woman in the use of her own brain property. Is it any wonder then, that woman is not equal with man as an inventor. Invention develops new industries and provides employment for multitudes of people, and adds millions of revenues to governments. But man is still unjust to women even in this progressive age of a boasted civilization.

Let us hope with the dawn of a new century, that unjust wrongs will be righted, and that man will broaden the boundaries that have heretofore separated the barriers of woman's inventive genius from man's. Let us enter a new era with a new civilization.

We look to man for a new development to encourage woman's inventive power and mechanical genius, in the United States.

Shall we look in vain? As there are five million self-supporting industrial women in this country, and thousands out of these who only want opportunities in life to develop their inventions or industrial genius as co-equal bread-winners with man. Therefore in behalf of woman as wage-workers and inventor. I appeal to you gentlemen of this Convention of Inventors and Manufacturers, to aid the industrial women of the United States, by recognizing the passage of more liberal laws towards women.

Your memorial petitions that you recommend that a room be set aside in the present Patent Office, to be used exclusively for the benefit of Women Inventors, that therein be exhibited models of the women inventors only, that the same be properly labelled, giving full particulars of each invention together with the full name and residence of the women inventors; that yearly or monthly a revised descriptive catalogue describing said inventions be published by the United States Government and the same be free for distribution; and that women exclusively be employed in said room and in the compilation of said catalogue.

Your memorialist also petition that your honorable body recommend a reasonable reduction in the fees now collected by the United States Government for the granting of patents, as well as the preliminary costs for filing caveats and the examination of papers and other documents.

Your memorialist is actuated in making this reduction in consequence of the inability of the majority of inventors applying for patents to defray the present high ruling rates; besides it is a well known fact that there is for the present a surplus to the credit of the United States Patent Office of nearly a million of dollars, and the net earnings of 1890 alone have contributed towards said surplus nearly a quarter million of dollars.

When the Patent Office was created by statute, it was the intent to fix such a sum which would compensate the Government for filing fees and granting of patents to make the office self-sustaining, a revenue to accumulate a surplus of the magnitude of that now existing was never contemplated nor desired.

From the originally intended fees for filing a caveat, other fees comprising almost everything within the realm of its operations are now exacted from the inventor at every step.

CHARLOTTE SMITH.

President Woman's National Industrial League of America.

WHY I BECAME INTERESTED IN WOMAN INVENTORS.

LETTERS FROM EX-COMMISSIONER'S PATENT OFFICE.

As editor and publisher of the "Inland Magazine," published in St. Louis, in 1875, the following case came under my observation, which I regret to state is only one of my similar hundred ones, and which best illustrates the position of the industrial women, whom I have the honor to represent.

Not wishing to give too much publicity to the memory of the parties, I shall designate her as Miss Mary S.—who came to me in consequence of an article published in my Magazine on the practical occupations for women and their position as inventors at that period. Miss Mary S.—was a handsome young woman of about twenty-four years, very intelligent, but sadness in her expression; her history as told by her; she was the daughter of an inventor, which in those days was synonymous to being a "crank," for he was a man who was only capable to devise new inventions; but being a man of no financial ability, besides intemperate at times, was obliged to part with his inventions for the paltry sum of five or ten dollars. Of course under such mismanagement, his family was soon reduced to destitution, his wife died and left two young girls, the youngest was put into a charitable institution and Mary S.—was working at three dollars per week in a dry store. She had all her father's inventive genius. She patented in a lawyer's name a valuable invention, which has since proved a grand financial success, and yet she received in full payment the sum of five dollars for her invention.

Her reason for not patenting the same in her own name, was that if it had been known the invention of a woman, it would have been regarded as a failure.

After her father's death she kept on to work and completed several inventions and sold them to agents in New York, Washington and St. Louis. She lived in an attic room, furnished only for the necessities of life, and the only tools she had I presented to her at Christmas, in 1878, it was a boy's tool-chest. In 1880 she died.

Miss Mary S.—furnished the brains for man to create wealth, when he himself had not the genius to invent, but only the craftiness and cunning to take away the products of that woman's inventive labor. Miss Mary S.—is dead, her secrets, her genius, her skill are buried with her.

She implored me before she died to see that in the future justice was done to women inventors; and as I resided in Washington, and could do so much for my sex, I have been creating public opinion, as well as demanding justice for women as bread-winners, women as creators of wealth; women as industrial factors, for the past twelve years.

I have done but my duty for hundreds similarly situated as Mary S.—I know that women need only encouragement to develop the often inherited genius from their fathers, as in the case of Miss Mary S.—, who no doubt through coming in contact with her father's ideas could have obtained wealth and fame, had she known how to go to work, but her life's journey was blasted because she had not the opportunities to develop her genius.

She sold to agents, sixteen different inventions of her own, perfected and executed thirty seven different inventions that her father had commenced, but never completed, and yet she died a pauper.

On my arrival in Washington in 1879, I commenced to investigate the progress of Women's Inventions. After many trials for want of information from the Patent Office, I finally appealed to the then Commissioner of Patents Mr. Marble. He gave orders to have lists to be kept of the inventions by women, at my solicitation. I was referred by him to Mr. Babson, who now holds the position he then held in the Patent Office. He assured me that it was a most difficult task to obtain the names of women inventors, for they would generally give only their initials and he informed me also that they could not furnish to me a list for want of clerical help. Mr. Marble left the office and Mr. Butterworth was appointed in his stead, under him I found the same difficulties.

When Mr. Montgomery was appointed

Commissioner, I renewed my efforts to obtain the list and names of women inventors. The work of compiling the same at my solicitation, was begun under Mr. Montgomery, but he soon resigned and the work was neglected for a couple of years.

I called upon his successor, Mr. Hall seventeen times and urged the compilation. I was again told that the clerical force was too limited to perform that duty. I appealed to Congress and appeared before the committees on appropriations and obtained the necessary assistance as the following card explains.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
DRAFTSMAN'S DIVISION,

FEBRUARY, 14, 1890.

DEAR MADAM: The work of compiling "Women Inventors" occupied four clerks about ten days. The cost of printing 500 copies, was about \$300. Enclosed please find Ex. Townsend's reply to the "World" articles, and a copy of the Official Gazette containing the Commissioner's Report.

Very respectfully,

J. B. MARVIN.

CHIEF OF DRAFTSMAN'S DIVISION.

The following letters explain what perseverance will accomplish. I am much indebted to Ex-Commissioners Marble and Montgomery, for aiding me in the government compilation of Women Inventors of the United States. It is also due to the courtesy of Patent Commissioner Mitchell, that I can present a complete classified list of Women Inventors of the United States, since July 1, 1888 to March 1, 1891, the whole number being 537.

CHARLOTTE SMITH,
EDITOR "WOMAN INVENTOR."

WASHINGTON, D. C.,
MARCH, 30, 1891.

MRS. CHARLOTTE SMITH,
DEAR MADAM: Your letter reached me this morning. You reminded me that while I was Commissioner of Patents, you called upon me with a request for the "Compilation of the List of Women Inventors," and that some work in that direction was undertaken under my instruction, in pursuance of your request, and you ask me to state, "if any other woman ever called on me for that information."

I remember very well the visits which you made for that purpose, and how earnest and persistent you were in urging the compilation. I could not state in detail what was done, because my recollection is that I was obliged to consult it almost (quite) wholly to assist you. I do not recall that "any other woman" ever called upon me for such information.

Very truly,

M. MONTGOMERY.

WASHINGTON, D. C.,
APRIL, 1, 1891.

MRS. CHARLOTTE SMITH,
DEAR MADAM: In reply to your letter, I beg to state that you are correct, it was during my administration as Commissioner of Patents, that you suggested to me the necessity of a compilation of the Women Inventors. I wish also to state that it was done at your suggestion.

You were the first woman, who during my administration asked me for that compilation, and I therefore appointed a clerk to compile the same.

Yours respectfully,
E. M. MARBLE.

To Matilda Joslyn Gage we are indebted for much information on the subject of "Women as an Inventor," in a most able and instructive article, and we have made many extracts from her papers published in the North American Review, some years ago.

We are under obligation to Mr. Du Bois, Editor of the "Inventive Age," for courtesies extended to us in giving a list of the women inventors that came under his observation. Mr. Du Bois, is a sincere friend of women inventors as well as the industrial women. Success attend "The Inventive Age," says "The Woman Inventor."

It is a handsome tribute to the inventive genius of American women that they have been granted patents that will compare financially with men. The royalty paid to some of those women inventors is as high as five thousand dollars per annum.

The difference between Great Britain the number of average patents taken out, and the United States are as follows: Great Britain about six thousand, while in the United States twenty thousand patents are taken out annually. And about 700 of the above are taken out by women.

Mrs. Kate Beard, Tyler, Texas, has invented a Hand Propelling Device for Sewing Machines. This new device has become popular here and sells well throughout the country.

WOMEN EMPLOYEES

IN THE PATENT OFFICE.

In the Patent Office, woman has slowly but surely secured recognition, at first in the clerical force and afterwards in the examiners work. This work covers the examination of applications for patent on all inventions, and before the patent is granted, a full understanding of difficult inventions is often required and then a search in the arts as found in foreign and domestic patents and in printed publications in our own and foreign languages.

Three women have risen to the rank of twenty Assistant Examiners, and all have gained these positions upon competitive examination.

Mrs. Anne Freeman was the first woman ever appointed First Assistant Examiner in the United States Patent Office, in the year 1872. She has been dead many years.

Miss Sarah J. Noyes, is the second woman appointed to a similar position. She first entered the Patent Office in 1873, and in 1874 she passed a successful examination and was appointed Second Assistant Examiner in 1874. She understands the mechanism of clocks and watches thoroughly. She again passed another examination and her class was at first clocks and watches. She is considered an expert on mechanical division by manufacturers and Patent Attorneys. She is First Assistant Examiner of the Electrical Division, and is the oldest First Assistant Examiner in the employ of the Patent Office. Her salary is \$16.00 per annum.

Miss Mable Hatch, stenographer for the law clerk, is the best posted woman in the country on Patent Law. Her salary is \$16.00 per annum.

Mrs. Virginia Nagle, is Fourth Assistant Examiner of the United States Patent Office in the division of fine arts, she has been in government office since 1870, and was appointed to present position 1883.

Mrs. Nettie Chapin, is also Fourth Examiner and has been in the Patent Office since 1878.

Mrs. Frank Lybrand, is employed in the division of Civil Engineering, and Miss Amelia Tyler in the class of Agricultural Implements. They are all considered as capable and intelligent examiners, and their work compared favorably with that of their brother examiners.

Two women are also found in the grade of Third Assistants. Mrs. Etta Chapman who has the examination of all applications for trade marks, and Mrs. Virginia Nagle in the class of fine arts. Besides these, who hold a more distinctive position as being employed in positions heretofore held exclusively by men, there are many capable and faithful women workers who hold positions requiring the exercise of judgement and skill.

Mrs. Catherine E. Lloyd, was born in New York, appointed to the Patent Office July 1, 1869, at a salary of \$700, she has been in continuous service since that date. In 1870 her salary was made \$900 by act of Congress. She received this salary for thirteen years and was promoted to \$1,000 in 1883 and to \$1,200 in 1884. She is a clerk in the Issue and Gazette Division and has been in the service for twenty-two years.

Another woman in the Patent Office deserves special mention, Miss Julia A. Wilbur. She was born in Rochester, N. Y., and was for sometime a teacher in the public schools. She served with great credit through the civil war, in hospitals and as missionary to and teacher of the freedmen in Alexandria, Richmond and Washington. This service she rendered with untiring devotion and without compensation from the government until 1869. The act of Congress mentioned, taking effect at this time, she applied for a clerkship in the Patent Office, and after quite as severe an examination as is now required by the civil service rules, she was considered competent. This amiable lady is beloved by all her associates and is still actively engaged in the discharge of her duties in the Issue and Gazette division of the Patent Office.

A PATENT OFFICE BUILDING.

The first thing to be recommended by the Centennial delegates is a building for the Patent Office exclusively. The Department of the Interior and its various branches occupy too much space in the building. The Patent Office is the only department in this government that is self-supporting, and has nearly a million dollars surplus in the Treasury. This, if no other reason, entitles the patrons of the inventors an ample building

for the sole use of the Patent Office, and the clerical and examining forces. There is no reason why any other department should occupy space in the Patent Office building.

To understand the magnitude and growth of the Patent Office, one has merely to refer to any recent annual report of the Commissioner of Patents, where are summarized, year by year since 1837, the number of patents issued and the income of the Patent Office. It is only necessary now to emphasize these figures by contrasting the figures of 1837, the earliest conveniently accessible, with those of 1890.

In 1837 there were granted 436 patents, and \$29,289.08 paid in for fees, and \$33,506.98 expended.

In 1890 there were granted 26,292 patents, and \$1,340,372.06 paid in, and \$1,099,297.74 expended.

COLORED WOMAN INVENTOR.

Ellen Eglin, of this city and a member of the Woman's National Industrial League invented a clothes-wringer. She sold the invention to an agent for the sum of \$18.00 in 1888. The wringer is a great financial success to the present owner. When asked by the writer why she sold the invention so cheap after giving months of study to it, she replied, "You know I am black and if it was known that a negro woman patented the invention, white ladies would not buy the wringer; I was afraid to be known because of my color in having it introduced in the market, that is the only reason." I am working on another invention and have money to push it after the patent is issued to me, and the invention will be known as a black woman's to. "I am looking forward to exhibit the model at the Woman's International Industrial Inventors Congress to which women are invited to participate regardless of color lines."

RECENT PATENTS TO WOMEN

Among the more recent patents taken out by women the following list are a few of the during the past years.

Out of a list of twenty all were married women and mothers of families except one.

It will be seen from this that the matrimony and household cares does not in the least interfere with the inventive genius of women.

Auntie Geller, of Troy, N. Y. invented a very useful "surgical splint," and a "meat broiler." She followed the vocation of nurse and saw the necessity of an improvement in the surgical splints in use, and exercising her inventive genius produced a "splint" which has real merit. Also in the preparation of meats for invalids she saw that the broilers were not constructed properly to preserve the flavor and the juices of the meat, and she successfully produced a boiler.

Mrs. E. J. Austin, Carthage, N. Y. to aid in supporting herself and family, became a canvasser for a number of patent medicines, doing well in this employment finally patented two articles "The Magic Fluid," and "The Gold and Silver Surprise Paste."

Mrs. Harriet Randal, Powersville, Mo. taught in the public schools for four years and in 1869 married Mr. John G. Randal, and some years later went to reside with him near Pottersburg, Kansas. At this place she invented a "Provision Safe," which is used as a refrigerator. It is so constructed as to prevent the entrance of insect and is a useful piece of household furniture. Mrs. Randal is now living near Powersville, Mo., and is the mother of three children.

Helen C. Blanchard, of Philadelphia, Pa. native of Portland, Maine, Sewing Machine—Blanchard Over-Seem Sewing Machine Company.

THE ARLINGTON.

The Banquet at the Arlington Hotel on Friday evening, April 9th will be a memorable affair, and one of the most magnificent entertainments ever gotten up in Washington.

Through Madam De Coudray's invention of the mankin, a knowledge of physiology has been much more widely diffused than would otherwise have been possible.

The number of female medical students entered at Paris this term is 114, of whom 90 are Russian, 12 French and 8 English, with 1 American, 1 Austrian, 1 Greek and 1 Turk. The number of students of the Women's Medical College of Philadelphia is 194.

The Duchesse d' Uzès, not content with having played an important part in politics, nor of being the most accomplished horsewoman in France, craves the honors of authorship. A play written by the Duchess was represented recently before a brilliant and aristocratic audience.

Ancient and Modern

FOREIGN WOMEN INVENTORS.

Aristotle, was the first European writer to mention silk, yet it was not until a thousand years after his time, that the secret of its manufacture became known to the West. The result of this invention by woman, has grown to be one of the greatest industries of this country. The United States is the largest consumer of silk in the world during the year of 1888. We imported twenty-two million dollars of the raw material, etc., for the manufacture of silk in this country.

Ancient tradition accords to women the invention of those arts most necessary to comfort, health, wealth, and most promotion of civilization. Several Empresses of China have been worshiped because of their inventive genius. While the most ancient Chinese writers, accord the invention of spinning to Yao, wife of the fourth emperor, and the discovery of silk to Si-ling-chi, wife of the Emperor Hoang-ti, four thousand years before the birth of Christ. The goddess of silk worms, Si-ling-chi, is still worshiped in China as a remembrance of this woman's invention.

Gauze, was the invention of Pamphili, a woman of Cos. She afterwards introduced a transparent fabric, known to Roman ladies as silk gauze or "The Woven Wand." Madame Bessani, a humble working woman of Italy, was accorded by the Italian Minister of Commerce, letters of patent for Venetian Point Lace, which is a source of immense revenue to Italy.

To Mheural Nisa or Nourmahal, the world is indebted for the cashmere shawls, which is of such great commercial value to India. To her is also due the invention of a perfume known as Otur of Roses. A temple is built to her memory known as the "Light of the World," by her husband Jerunyibe, the conqueror.

While wood carving, which is so well adapted, is a branch of industry to women. The invention of wood engraving, is due to twin brother and sister, at Ravenna Italy, in the thirteenth century.

The discovery of cotton is attributed to the mother of Inca, who taught the Peruvians its use.

The first record of a Woman's Invention in Great Britain, is due to one Sarah Jerom, who was granted the first patent No 87, to woman October 31, 1635 for an Engine for cutting timber into thin pieces for making band-boxes. She was again granted another Patent for improvement of the same invention October 20, 1638. The second patent, No. 182, was to Rebecca Croxton, July 30, 1675, for Weaving Point Lace.

The fourth patent was to Mary Marshall, No. 235, July 3, 1684, for making, staining, and coloring stuff to resemble tapestry hangings."

Jane Vanef, patent No. 560, December 15 1737, "point hoops for convenience of ladies when entering coaches or chairs."

Elizabeth Taylor, patent No. 782, December 6, 1762, "tools, etc., for making blocks, sheaves, and pins."

Ann Robinson, patent No. 839, February 6, 1766, "silk mitts and gloves."

Sarah Harrington, patent No. 1,100, June 24, 1775, "taking and reducing shadows for likenesses etc."

Mary Howson, patent No. 1685, June 9, 1789, "for stills and boilers."

Johanna Hempel, patent No. 1,776, October 16, 1790, "porous pottery."

Francis Willoughby, patent No. 1,855, February 27, 1792, patent for "thrashing grain."

Henrietta Caroline Bentley, patent No. 2,005 August 7, 1794, "invalid bed."

Ann Wilcox, patent No. 2,362, December 2, 1799, "playing cards."

It will be seen from the above accurate list, that during the 16th and 17th centuries, but 13 patents were granted to women, and all of them of the most practical character, except perhaps "playing cards," and they depend entirely on how they are played whether for amusement or for dishonest revenue.

A FEW RECENT INVENTIONS.

Mrs. Kendall, the great English actress, is the inventor and patentee of a lamp and candle shade, from the sales of which she derives a handsome profit.

To Mademoiselle Bihéron, a Prussian governess, recently invented a new fulminate for needle gun cartridges.

A Swiss woman has just invented a watch for the blind, on the dial of which the hours are indicated by twelve projecting pegs, one of which sinks every hour.

Our Patent Agency Department.

TO THE WOMEN INVENTORS OF THE WORLD.

There has been organized under the auspices of the Woman's National Industrial League of America, as may be seen by the foregoing resolutions, a new department, whose object it is to promote and encourage the interest of female inventors of the world, many of whom possess the genius and capability of our best male inventors, but who lack the encouragement of an interest in their behalf, an interest which has heretofore been partially, if not wholly neglected. It needs but this lively interest to develop in the women, especially of America, the tact, the skill, the genius, the capability and the interest in mechanical and other arts, from which they have been heretofore practically ostracized. However, in the past few years it will be found that the advance strides of women in the various arts have been wonderful, and this without any encouragement, what then would be their advance with every encouragement of their interest.

How many men and women of to-day, have made millions by some simple but meritorious invention, which might, or might not have required much time or study to accomplish, as a matter of fact, the inventions from which the most money has been derived, have been some simple devices such as the "return ball," a child's toy which every one knows, a wooden ball, with a rubber attached and from which the inventor derived an immense fortune. Again there is the little two ball clasp which nearly every lady has upon her pocket book. And again the little puzzle "Pigs in Clover," which caused such a sensation not many years ago and made for its inventor an ample fortune and so on. We might cite fifty such simple inventions which have made their inventors rich.

Then why do not the women of the day enter this new field of industry, in which so many men have become wealthy and gained for themselves reputations which shall be handed down from generation to generation.

There are many arts open to women as in nature where they have been successful over the men. Why cannot they rival Edison, Bell, or Franklin, we have the genius, but it requires development and encouragement, hence let us do both to develop this genius by encouraging one another.

CHARLOTTE SMITH.

THE INVENTION OF BELLOWS.

It is difficult to place the invention of bellows, as it is stated that they were used in Egypt in the time of Thothmes III, 1490 B. C., and are represented on a tomb bearing the name of that Pharaoh, probably as emblematic of his character. Our common bellows, consisting of two boards joined by a piece of leather, was early known to the Greeks and Romans. Strabo falsely ascribes the invention to Anarcharis, the Scythian, who was co-eval with Solon. Wooden bellows were known in Germany in the sixteenth century, but the name of the inventor is not known.

Miss Nellie F. Shedd, is designated as the first Assistant Commissioner by many of the employees in the Patent Office. Her appointment dates back to 1869, her present appointment from 1886. She is perfect in figure, with bright expressive face that lights up in conversation, she dresses well and in good taste and is entirely unassuming in her manner, but of a positive character.

Miss Shedd is supposed to know every detail of the inside workings of the vast amount of business transacted in the Patent Office. She is thoroughly practical and at a moment's notice from the Commissioners she has to furnish the most minute information in connection with the office. The Commissioner of Patents dictates his wishes to her, and she executes them, as she is a stenographer, and is authority on Patent Law rulings etc. Miss Shedd's salary is \$1,800 per annum. She receives the highest salary of any woman in the Patent Office. All Patent Office employees respect her as a woman who has won her position by her own individuality and ability. All the different Commissioners of Patents, whom she has served, pay the highest tribute to her executive ability. She is a credit to her sex, and the Patent Office.

Mrs. Ida May Ferris, Osage City, Kansas in July last, secured letters patent on a very useful invention called "Breast and Abdominal Bandages."

The Patent Office History.

April 1891, the Patent Office will be one hundred years old. It was the work of Thomas Jefferson, who was an inventor himself. The English, to their credit, did not destroy the Patent Office when they captured Washington during the war of 1812. Before 1836 it was in embryo, and there was but little system, but in that year the first commissioner was appointed, but a fire unfortunately destroyed over 2,000 models and many valuable papers. Many of the models were replaced in after years. There was another fire in 1877, which made sad havoc in the model room, where there was an accumulation of over 200,000, made of wood as dry as tinder, and only needing a spark. This loss awakened the authorities to the benefit to be derived from photolithograph, which has grown to be an immense business, as nearly 25,000 patents are granted every year. The applications come in to the commissioner by the scores every day. The financial clerk then collects \$15 for the entrance fee, and then puts the model on its course through the office and complaints are many that this process is rather slow. If the drawing is defective, the inventor is notified. After examination, if the device is found patentable, the examiner forwards the papers to the issue division, where they are arranged and sent to their respective divisions. There are thirty subjects of invention, divided into eighty-eight classes, and assigned for examination to the thirty examining divisions of the office. The patent is then allowed, and the inventor notified of its allowance upon receipt of \$20, the final fee. The drawings are then lithographed and the specifications printed. The voyage is a long and tedious one, sometimes requiring years.

A NEW DEPARTURE TO ENCOURAGE INVENTORS.

At the last monthly meeting of the Woman's National Industrial League of America, the following resolutions were unanimously adopted:

Whereas: For years past the necessity of having a patent agency which should devote its entire time and interest to the benefit of female inventors of the world has become a reality.

Therefore it is resolved: That there be organized under the auspices of this association, a patent agency, whose purpose shall be to promote and encourage the interest of women inventors of this and other countries.

Be it further resolved: That the said patent agency shall be called The Woman's National Patent Agency, and that copies of these resolutions be sent to the woman inventors of the world, and all those interested in their progress; for whose benefit it is organized, and whose patronage we solicit. Further, that the charges made by this agency shall be as cheap as that of other patent solicitors practicing before the Patent Office, and that such charges shall not be demanded until the allowance of the case, upon notice of which, all payments are expected promptly.

By this method of doing business, every applicant is assured that the agency will put forth every effort to the prosecution of her case, inasmuch as, a failure to attend properly to the prosecution of the case, will be the agency's loss as well as that of the inventors.

And again, an inventor may often feel that she has a novel and useful invention and applies for a patent through some unscrupulous patent attorney who leads the applicant to believe that she has a valuable invention, which after the expenditure of considerable money in fees, the office refuses to grant a patent for.

Or on the other hand an applicant might go to a perfectly honest attorney, who after submitting your invention thinks you have a good thing, and tells you so, however after having spent considerable time and money you find you can procure no patent from the office.

We do not blame the attorney in this case he has given you his opinion, and honestly, but he, like all the rest of us, is unable to decide, just what ground the Patent Office will take in the matter. Therefore, under our system you have no attorney's fee to pay until you have discovered whether or not you will be accorded patent protection for your invention.

Clever draughtswomen are in demand by dry goods houses to make pen and ink sketches of gowns, furs and the like. Women are specially adapted to this profession, and we are only surprised that more women have not entered this occupation.

HISTORY OF PATENTS GRANTED

TO WOMEN IN THE UNITED STATES FROM 1809 TO APRIL, 1891.

The first official record of a woman's invention in the United States, was to one Mary Kies, who received a patent May 5th, 1809 for "straw weaving with silk or thread." The second invention six years later was to Mary Brush, corset patented July 21, 1815, from that time to the present writing seventy-four improvements in corsets have been patented by women. From 1815 to July 10, 1840, nineteen patents have been granted to women, and from 1840 to 1860, but thirty-nine patents were issued. The largest number during any one year was in 1857—six patents were issued. From the year 1860 to 1870, two hundred and sixty-one patents were granted to women. From 1870 to 1880, 897 patents were taken out by women. And from July 1, 1888 to March 1, 1891, 537 patents have been issued to women.

We can enumerate among the long list of Women Inventors the following, a partial list. Spinning machine capable of running from 12 to 40 threads; a rotary loom doing three times the work of an ordinary loom; a chain elevator; screw crank for steamships; a fire escape; a wool feeder and weigher, one of the most delicate machines ever invented, and of incalculable benefit to every wool manufacturer; a portable reservoir for use in case of fire; a process for burning petroleum in place of wood and coal for steam generating purposes; an improvement in spark arresters, to be applied to locomotives; a danger signal for street crossings on railways; a plan for heating cars without fire; a lubricating felt for subduing friction (the last five all bearing upon railroad travel); syllable type, with adjustable cases and apparatus; machine for trimming pamphlets; writing machine; signal rocket used in the navy; deep sea telescope; method of deadening sound on elevated railroads; smoke burner, bag folding machine, etc. Many improvements in sewing machines have been made by women—as a device for sewing sails and heavy cloth quilting attachments; the magic ruffler threading a needle when the machine is running; an adaption of machines for sewing leather, etc. This last was the invention of a practical woman machinist, who for many years carried on a large harness manufactory at New York city. The deep sea telescope, invented by Mrs. Mather and improved by her daughter, is a unique and important invention, bringing the bottom of the largest ships to view without the expense of raising them into a dry dock. By its means wrecks can be inspected, obstructions to navigation removed, torpedoes successfully sought for, and immense sums annually saved to the marine service. A machine which, for its complicated mechanism and extraordinary ingenuity, has attracted much attention both in this country and Europe, is that for the manufacture of satchel bottom paper bags. Many men of mechanical genius long directed their attention to this problem without success. Miss Maggie Knight to whom this machine is due, it is said refused \$50,000 for it shortly after taking out her patent. Miss Knight has since invented a machine doing the work of thirty persons, in folding bags, and herself superintended the erection of the machinery at Amherst, Mass.

The straw weaving industry of the United States owes its origin to Miss Betsy Metcalf, who in 1798 made the first straw bonnet ever manufactured in this country. Within twelve years after the discovery of this invention, the State of Massachusetts alone produced half a million dollars worth of straw goods. That State now produces six million hats and bonnets annually. A great deal of straw is manufactured in other States.

Another remarkable invention is by Mrs. Mary E. Walton, for deadening the sound of car wheels. She lived near the elevated railroad in New York, and was greatly annoyed by the sound of the roaring trains passing her house. The most noted machinists and inventors of the country had given their attention to the subject without being able to furnish a solution, when, but a woman's brain did the work, and her appliance, proving perfectly successful, was adopted by the elevated railroads, and she is now reaping the rewards of a happy thought.

It was a California woman, who invented a baby carriage, which netted her over \$50,000; while Mrs. Catherine Greene, the wife and widow of Washington's ablest officer, is due the honor of inventing the cotton gin, which is one of those distinctively American inventions, the value and importance of which have been recognized by the whole industrial world. She was the wife of Nathaniel Greene,

and a native of Rhode Island and familiar with the working of the anchor forge belonging to her husband's father, the idea came to her while visiting her Georgia plantation to lessen the labor of cleansing cotton. When this difficulty was solved, she permitted Eli Whitney, to claim the patent through fear of ridicule, because of her high social position. General Greene died soon after, leaving Mrs. Catherine Littlefield Greene, a widow, in an independent position, yet she feared public censure notwithstanding the conception of the cotton gin, was Mrs. Greene's ideas. A small model was made so perfect in its construction that all succeeding gins have been based upon it. Mrs. Green married a Mr. Miller, who induced her to retain a subordinate interest in her own invention.

Mrs. Maria Beasley, of Philadelphia, turns out hundreds of ready made barrels in a day and levies on the shipping departments of the oil and sugar refineries eternal obligations as well as profitable royalties. Women are destined to play a larger part in the future in the history of American inventions, which is doubtless America's most important contribution to the history of the world. Mrs. Emma D. Mills, one of the most energetic advocates in New York of the introduction of women into occupations hitherto monopolized by men has just invented a patent typewriter attachment, has patented it in her own name and is now preparing to manufacture and sell it herself.

A horse shoe machine, which turns out completed shoes, was the invention of a woman; also the reaper and mower, the idea of which came into the brain of Mrs. Ann Manning, of Plainville, N. J., to whom is also accredited a clover cleaner. Mrs. Manning seems to have stimulated the inventive genius of her neighbors, for a few years after her mower and reaper was patented Mrs. Elizabeth Smith, of the same State, took out a patent for an improvement of this machine, being a device for changing the knives without stopping the wheels.

Miss Louisa McLaughlin, of Cincinnati, was the founder of the Rockwood pottery, and the discoveries made by her in glazing were first adopted there. A certain man seeing its value, took out a patent upon it, thus prohibiting its inventor from using the fruit of her own brains. She is president of the Cincinnati Pottery Club, which has twenty members, all women. Some are professional decorators, Miss Laura Fry being the best known; others are prominent society women.

Mrs. Mary E. Walton, has also taken out a patent for the United States and England, for a smoke burner, by this device all smoke from a fire, furnace, or locomotive is consumed, as also the dust caused by rally trains, and the offensive unhealthy odors emitted from factories gas works, etc. When in England, Mrs. Walton received the congratulations of the British officials for it, as one of the greatest inventions of the age.

Miss Geneva Armstrong, a young lady who owns a farm in Western New York, has invented a machine for feeding cattle on trains. She recently addressed a meeting of railroad men, before whom she has placed the invention. It is patented, and she hopes to have it adopted for use during the transportation of live stock.

Miss Helen Blanchard, a resident of Philadelphia, is a Maine girl, who has made a fortune through the invention of a simple "over and under" attachment for sewing machines. When she discovered the device, she had to borrow money to pay the first patent office fees. She now owns great estates, a manufactory and many patent rights that yield her a large income in royalties.

Mrs. Bailey, wife of the editor of the Utica Observer, has recently devised and patented an arrangement to be attached to hospital beds, by means of which a patient is enabled to raise and lower himself without the assistance of a nurse.

While a woman seventy years old has just taken out a patent for a sewing-machine needle that does not need threading. There is a beveled slot in one side of the eye through which the needle slips. It seems very simple and all who have seen it wonder why nobody thought of it before.

Dr. Josephine G. Davis, of New York City, has invented a portable device for sustaining and keeping from the shoulders a canvass or rubber covering, under which a hot air or vapor bath may be administered by means of a suitable lamp.

Mrs. D. M. Barer, of New Decatur, Alabama, has invented a new fire escape which

proves simple and effective. At a recent trial of it the persons descending let themselves down, it is said, as easily as if they had wings.

Mrs. Mary Lamont has patented a broom catch which is a neat and useful device. It consists of a block with means attached for supporting the handles of implements.

The New York women have been granted more patents than their sisters in any other State. The women of Massachusetts, Ohio, Indiana, and Wisconsin rank next in order.

An Ohio girl has invented a process by which a barrel of oil can be converted into ten thousand cubic feet of gas.

Miss Helen Blanchard has made a fortune through the invention of a simple attachment for a sewing machine.

Anna Connolly, of Philadelphia, has been granted a patent for a practical fire escape.

A street sweeper of great merit was devised and patented by a New York lady.

The novelist, Blanche Willis Howard, has patented a bath shoe.

A WORD OF ENCOURAGEMENT.

AMBITION, DISAPPOINTMENT, SUCCESS.

It is ambition which leads women and men to enter the career of an inventor's life. It is ambition which spurs them on during the many hours of trial; only too often finds its path obstructed by disappointment. It is ambition coupled with the lessons only too often learned by disappointments, which is only overcome by perseverance that leads to success.

Many a woman has tried to enter this field, faltered, discouraged has left the path; she by her ambition led on, found disappointment after disappointment, and at last gave up within the reach of her success. Friends and advisers only too often hold before her already dimmed eyes the spectre of those who have like her become discouraged and abandoned hope of success. These over-cautious philosophers—yes, meddlers with other people's business—have been only the stumbling block to success.

True, lots have failed who entered hopefully the field of an inventor's career; but what of that? Thousands fail in the banking business, just as many in other mercantile pursuits; all parties who sit down to write a book have not succeeded either to become poet laureates, nor have they amassed competency either. Children born in the lap of luxury, with riches untold possessed by their parents, have made failures in life and have died worse than poor.

All cannot be rich, nor need all be poor. Contentment is often found where riches are stranger. The inventor, poor as she may be, finds some happiness in the pursuit of her thorny path; hope leads her on and guides her step; the clouds of disappointment which hang drearily over her head have often not only a silver lining, but rays of gold, which only wait for a brave heart to push ahead and thus let them break through that dismal gray.

With every new morning the heart of the woman inventor, so full of doubt the night before, finds new hope kindling with itself. It is this hope which gives us the power to battle with life's uncertain fate; it is hope that brightens even our disappointments; it is hope and cheering news which our true friends bestow on us in our hours of trial; it is that hope which eventually leads on to success and the consummation of our longing wishes; it is that hope that we all cherish while life does last, and there is nothing so fatal to an ambitious woman's heart as when meddlesome persons continually hold before them the skeletons of the inventors who have fallen by the way. Let us all cheer on the the heavily laden heart of the embryo inventor; let us all aid her by word and deed, and although her ambition will stumble over some disappointment, she will ten to one reach that so much coveted success.