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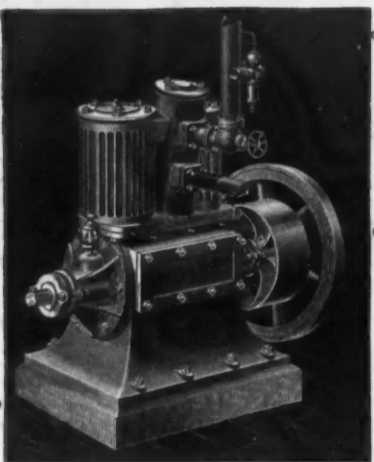
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 manufacturers. The capacity of the mill is six tons per day, hardly
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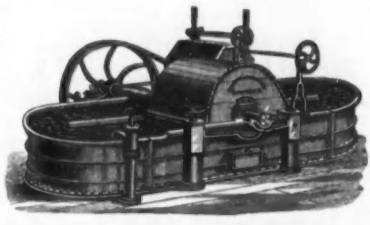
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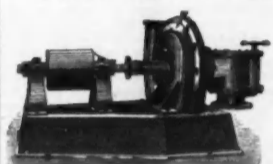
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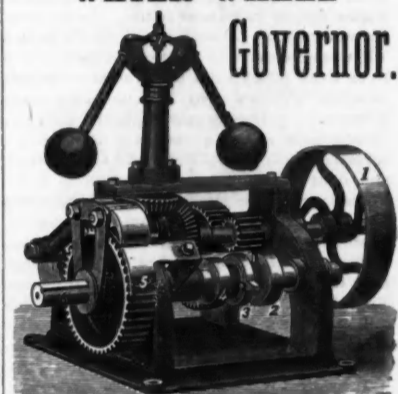
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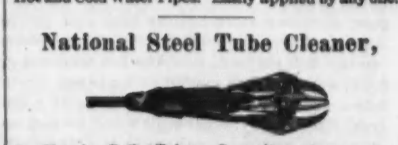
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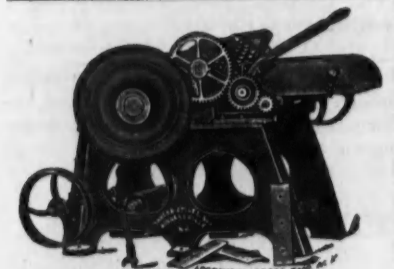
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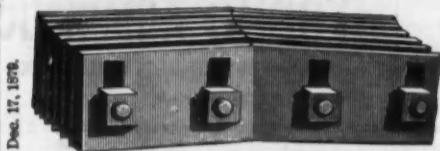
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Seamless, Rounded Corners,
CURVED HELL.
RUNS EASY,
STRONG AND DURABLE,
EMPTIES CLEAN.
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New York Office and Salesroom,
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Elevator Improvements.

The illustration represents a new form of safety attachment for an elevator, which, it is said, actually does what its name indicates—provides a safety appliance which will guard against all accidents arising from the too sudden dropping of the car, either by the running away of the machinery, breaking of the rope, or other similar accidents. It is made by Clem & Morse, 411 and 413 Cherry street, Philadelphia, Pa.

The mechanism by which the platform is stopped, in case the rope breaks or an excessive speed is reached, consists of a pair of toothed cams, which are partly rotated, so as to engage in the wooden sides of the guides and hold the platform at any point. These are operated by bell cranks attached to what may be called a table. This table is nearly the whole size of the elevator platform, and is made of half-inch poplar. It is supported on straight steel rods attached to the outer edges. These springs are so adjusted that the table is practically without

given speed has been exceeded. In Clem & Morse's own establishment the vertical guides are lined on each side with heavy strips of ash. In the experiments noticed, the teeth usually scored the ash for an inconsiderable depth. Of course, with a heavy weight they would be pressed in perhaps one-eighth of an inch or more. The cams on both sides of the car are on one shaft, and near the centre are the rock-shaft attachments for turning them. It would seem that this apparatus actually provides a device by which safety may be assured, and if attached to a car would prevent injury, not only by actual breakage of a rope, but would prevent those accidents which sometimes take place where the winding machinery gives way, allowing the car to fall, and yet the rope on the drum keeps up sufficient tension to prevent the gripping devices from acting. It would obviate those cases where the governor rope breaks or fails to act. Clem & Morse apply it not only to ordinary freight, but also to passenger elevators of all descriptions. It does not require any considerable alteration of either

and sometimes serious accidents occur in this way, a general smash-up usually resulting when this happens, and even if catching does not take place there is generally a very unpleasant jar as the car passes the guide.

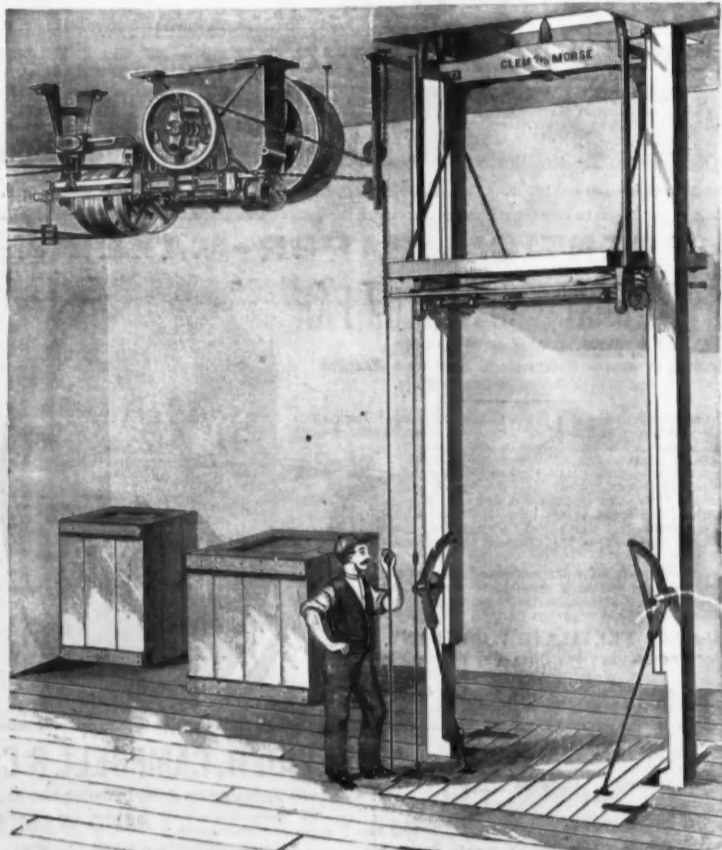
The guide-strip extends several inches above the floor before it is cut out to receive the door, and, as it is cut on a bevel, and the guide on the under side of the door on a similar bevel, the joint which is formed is very perfect. This opening at the back of the door while it is rising prevents, as we have said, a bit of coal or other rubbish from keeping the door from going flatly back into its place. With the old style of doors, when this happens, the descending car is often caught and held up long enough to allow the cables to slacken and snarl up by uncoiling from the driver. The second improvement consists in making the lever by which the door is opened in two parts, which are pivoted at the centre. These are connected by two slotted rods, which are clamped together by set-screws. By simply loosening these screws and lengthening or shortening the bar the angle of the bow can be changed in reference to the connecting rod. This enables the force through which the door is held back in place to be perfectly regulated, and in case of a settling of the floors, shrinkage of the wood work, or change in the relationship of the parts, the door can be quickly adjusted to keep its place perfectly while the car is passing up and down. Those who are familiar with

the constant movement found in even well-constructed warehouses will at once see the advantage of a movable arm in this position, as it enables the doors to be kept in perfect adjustment without the necessity of taking off the door and rod, and sending the bow to a blacksmith to have it drawn out or shortened, as it is necessary with doors which do not have this improvement. It is applicable in a great variety of situations, and seems to do away with a multitude of objections which have heretofore been urged against automatic work for hatchway doors.

The belt-shifting apparatus is automatic in its action, stopping the machine when the platform reaches its highest and lowest point of travel, and, by simply moving the rubber cushion-stops that are bolted to the shifting bars, it can be made to shift 3, 4 or 5 inch belts. The machine

is operated by straight and cross belts, and only the one required is moved when shifted on or off. The break acts on a separate pulley and adjusts itself by gravity as the leather wears down on face of break-shoe. The simplicity of its construction enables parties in remote sections to erect their elevators without the expense of having an experienced man sent out by the manufacturers.

The Albro-Hindley screw gearing used in these elevators is cut very accurately on the special machines built for the purpose by Clem & Morse, and the principle is such that the worm or screw has a full bearing on every thread, which gives increased strength, lessens the friction by distributing over a large bearing surface, which enables better lubrication and gives the elevator a smoothness of motion impossible to obtain with the straight screw.



weight, and may be said to float in the air beneath the platform. If this table is raised, even a short distance, the cogged cams are, by means of the bell-cranks, turned so that their teeth catch the guide-posts, and the downward motion of the platform itself forces them in until the motion is entirely arrested. In case the rope breaks or the platform starts downward at a speed above that for which the apparatus is set, the pressure of the air on the floating table forces it upward and the teeth engage, and the main platform is stopped within a space so small that it is scarcely worth measuring.

Experiments have been made with the apparatus, where care was taken to measure the actual distance of the fall, and it is said that the car was arrested within a quarter of an inch of the point where the rope was cut. Whether the car be run loaded or empty, the effect is the same, the teeth taking hold exactly in proportion to the weight of the platform. By adjusting the straight springs which hold the floating table in position, provision may be made for running the elevator at any desired speed, or for tripping the gripping mechanism when any

elevator or guides, the only requirements being that there should be sufficient clearance to enable the toothed cams to get a bearing on the edges of the wooden guides.

The automatic hatch doors attached to these elevators seem to be superior to almost anything else which has yet been produced, combining advantages of the most marked kind, while escaping many of the inconveniences of the ordinary forms.

The first of the improvements to be noticed is the improved automatic door-joint. It consists of so arranging the joint or hinge on which the door is hung, and the breaks in the guide timber that the door, in rising, makes the guide continuous from top to bottom without break, and at the same time enables the door to close without leaving any opening at the back. The post at bottom of recess that receives the door is cut away, so that any dirt or obstruction may naturally roll out, and in doing so, if it falls upon the door itself, will, as the door rises, roll off and escape below without jamming. A door hung in the ordinary manner leaves a break of several inches in the guide-strip when it is raised into a vertical position, and the guide of the elevator car is very likely to be caught in this opening,

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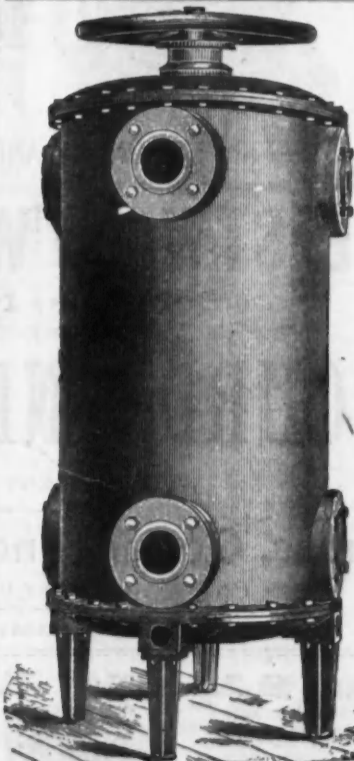
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"5,401,441 Passengers were carried over the Erie Railway in 1881. Of this vast number, only two were killed—one by falling from the platform of a car on which he insisted on standing, and the other in jumping from a train while in motion."—*New York State Engineer's Report for 1881.*

No better evidence than the above need be wanted that both of these objects are secured to the traveler who purchases his ticket over the

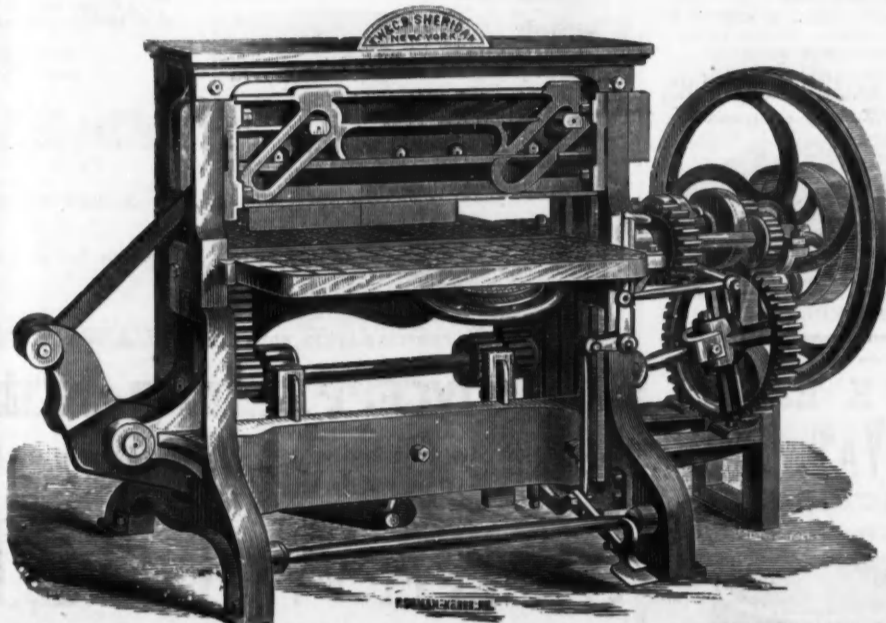
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HOLYOKE, Mass., February 2, 1882.
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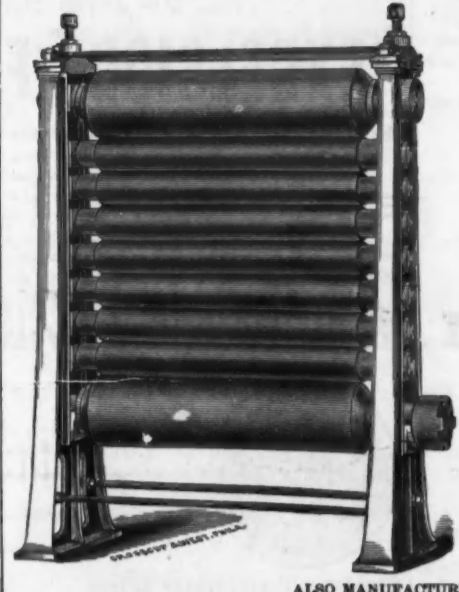


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 Signature of the Judge.

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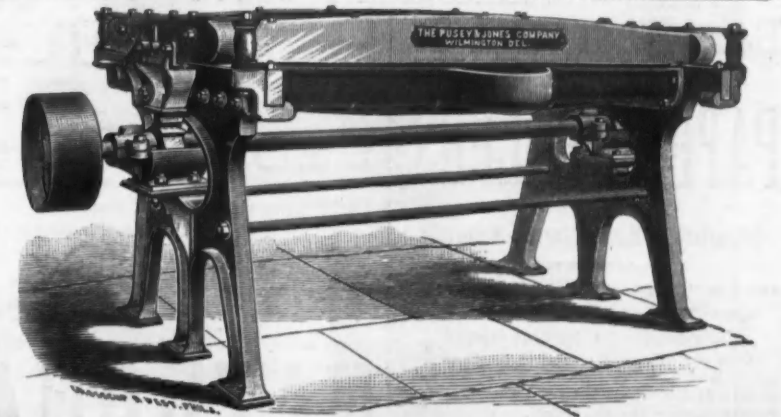
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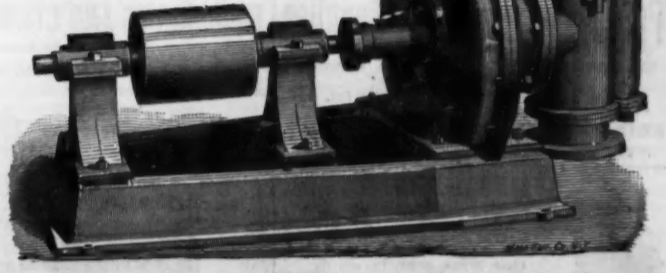
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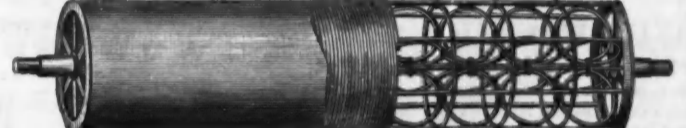
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