

MECHANICAL INVENTIONS.

Mr. Thomas G. Glover, Jr., of Bedford, Ind., has patented a light-running hand car that may be easily handled. It is designed for the use of section men and other employes of railroads.

Mr. George W. Dudley, of Waynesborough, Va., has patented a novel saw filing and setting machine, designed especially for saws having a straight row of teeth, and it comprises novel features which cannot be clearly described without engravings.

Mr. Charles S. Peach, of North Adams, Mass., has patented an improvement in ring spinning frames, the object of the invention being to prevent the threads from throwing out and interfering with each other, and to equalize the tension and draught on the thread, whereby the yarn will be wound on the bobbin equally hard and close at top and bottom.

Mr. Heinrich Seck, of Frankfort-on-the-Main, Germany, has patented a preparatory bolting machine so combined with a fine dressing machine that it serves for separating the husks, bran, and coarser particles from the meal, and for sorting the meal itself into different degrees of fineness at one operation.

Mr. Cyrus S. Stevens, of Lowell, Mass., has patented a machine for filing straight and circular saws. The invention consists in certain features of construction and combination for obtaining the necessary movements of the files and the requisite adjustments of the saws.

Mr. Alanson Cary, of New York city, has patented a machine for manufacturing metallic barbed ribbon for the wire used for fences so as to give to such a wire a barbed edge. The invention consists in a machine combining a reciprocating head carrying the cutters, a feed bed, and die plate, feeding rollers, and an intermittent feed motion, whereby the ribbon is fed forward beneath the cutters, and the operation performed rapidly without waste of material.

Messrs. John E. Best and William E. Higgins, of Arlington Heights, Ill., have patented an improved thill coupling jack for compressing the rubber in a thill coupling to allow the thill eye or coupling bolt to be readily inserted.

An improvement in machines for depositing fine and powdered substances in uniform quantities in packages, has been patented by Mr. James McCrodden, of New York city. The machines are so constructed that they may be readily adjusted for forming larger or smaller packages. They are convenient in operation, filling the packages quickly, and allowing them to be readily inserted and removed.

Mr. Winfield S. Reeve, of Riceville, Iowa, has patented an improvement in trimming shears for blacksmiths' use. The invention consists in connecting the cam lever with the movable jaw by a slotted plate, so that the operator may stand behind and over his work, thus being enabled to cut to a line.

NEW STEAM BOILER.

Our engraving represents an improved compound steam boiler patented by Mr. Robert R. Hind, of Kohla, Hawaii, Hawaiian Islands. It is designed especially for utilizing cane trash or bagasse, or any other light fuel. These boilers have been largely introduced in the Hawaiian Islands, and have earned a reputation for being very economical steam generators, and exceedingly well adapted to any fuel supplying a long flame.

The boiler is composed of a single flue or Cornish boiler, A, and a multitubular boiler, B, placed end to end, leaving a space, C, between them. These boilers are connected together at the top by a steam drum, D, and at the bottom by circulating pipes, E.

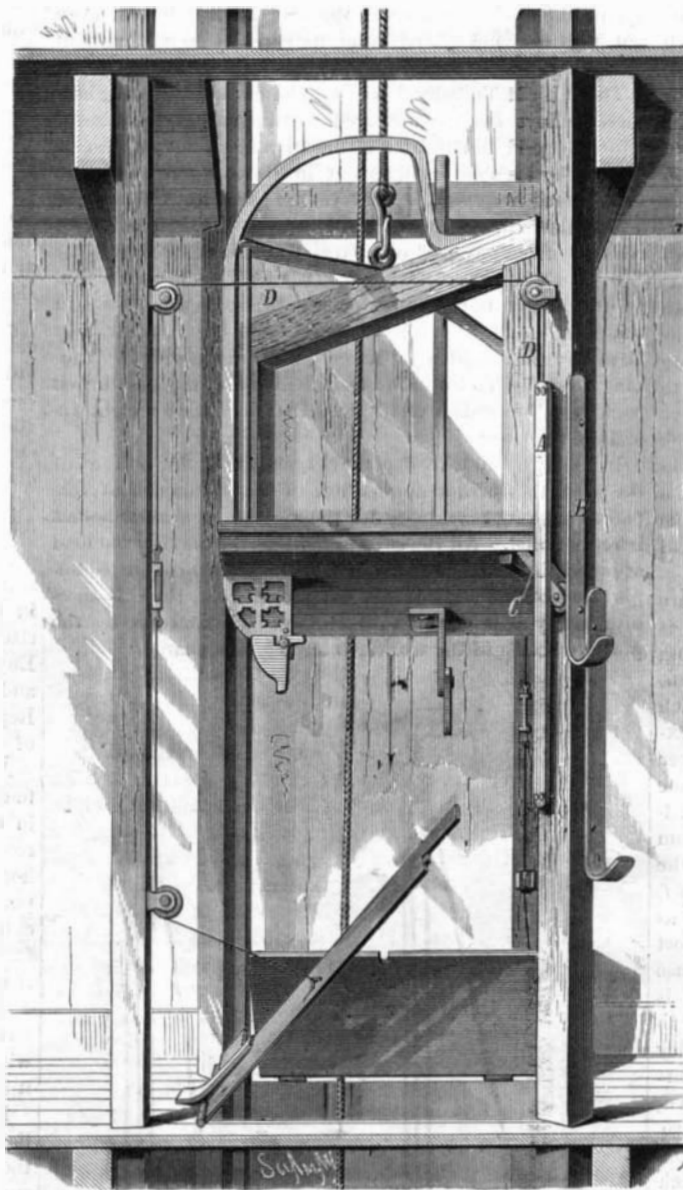
The boiler, A, is set directly over the furnace with its forward end over the grate. The products of combustion and flame follow the direction indicated by the arrows, passing through the single flue of the boiler, A, across the space, C, and through the tubes of the boiler, B, to the chimney. A portion of the heated gas and flame is made to circulate under the boiler, B, before passing to the chimney. This boiler is highly spoken of by owners of sugar

plantations in the Hawaiian Islands, and we have no doubt it might be profitably employed in saw mills, planing mills, and in manufactories relying on waste and on light fuel for generating steam.

The inventor would be pleased to correspond with any one desiring further information in relation to this boiler.

IMPROVEMENT IN HATCHWAYS.

The annexed engraving shows an improved device for opening and closing hatchway covers or doors as the elevator approaches, passes through, and recedes from the floor

**IMPROVED HATCHWAY.**

either upon its ascent or descent. The engraving shows the elevator descending, and the doors being opened preparatory to the descent of the elevator through the floor. When the elevator ascends, the bows attached to the top open the covers, and they close gently by their own gravity after the elevator passes, the trip dogs employed in opening the doors acting as checks or counter weights; but when the elevator descends a more difficult problem is encountered, and it is this that the invention shown in the engraving is more particularly intended to meet.

Upon one of the guide posts there are two guides, A B, for receiving vertically sliding trip-dogs, C, to which are attached ropes, D, connected with the covers, one being attached to each cover and running over pulleys, so that as

the dogs are engaged by the elevator in its descent the covers will be raised. There are two inclined guides, projecting from the bottom of the elevator to insure the complete opening of the covers.

The trip dogs, C, have sufficient weight to nearly counterbalance the covers, so that but little force is required to operate the mechanism. As the elevator descends the trip dogs are pushed down until they are released at the lower ends of the guides, when the covers will be open and will be kept open by the elevator until it passes that floor, when they will follow the rounded bows at the top of the elevator and close automatically. The inventor informs us that architects and mechanics who have examined the invention pronounce it perfectly practicable. It may be placed upon any elevator without making any alterations in the hatchway.

The expense of the application of this device is very light. It makes no difference which way the doors are made to open, this mechanism will operate them. The frames in which the dogs work can be placed both on one of the elevator guide posts, one on each guide post, or on separate posts built especially for them. The working attachments are alike in size for all hatchways, thus making the cost very much less than where it is necessary to make the working parts of different sizes according to the size of the elevator.

The small wire cables or chains used in operating the covers is provided with a turn buckle to take up the slack in case they stretch. The whole contrivance is so simple that the engineer in charge of the elevator can always keep everything in perfect working order.

Hooks can be arranged to fasten the doors up, if necessary. This will not interfere in the least with the working of the elevator car. This is an advantage over other automatic hatch covers, because in some cases, when a door is broken or in any way out of order, the elevator cannot be worked until the damage is repaired.

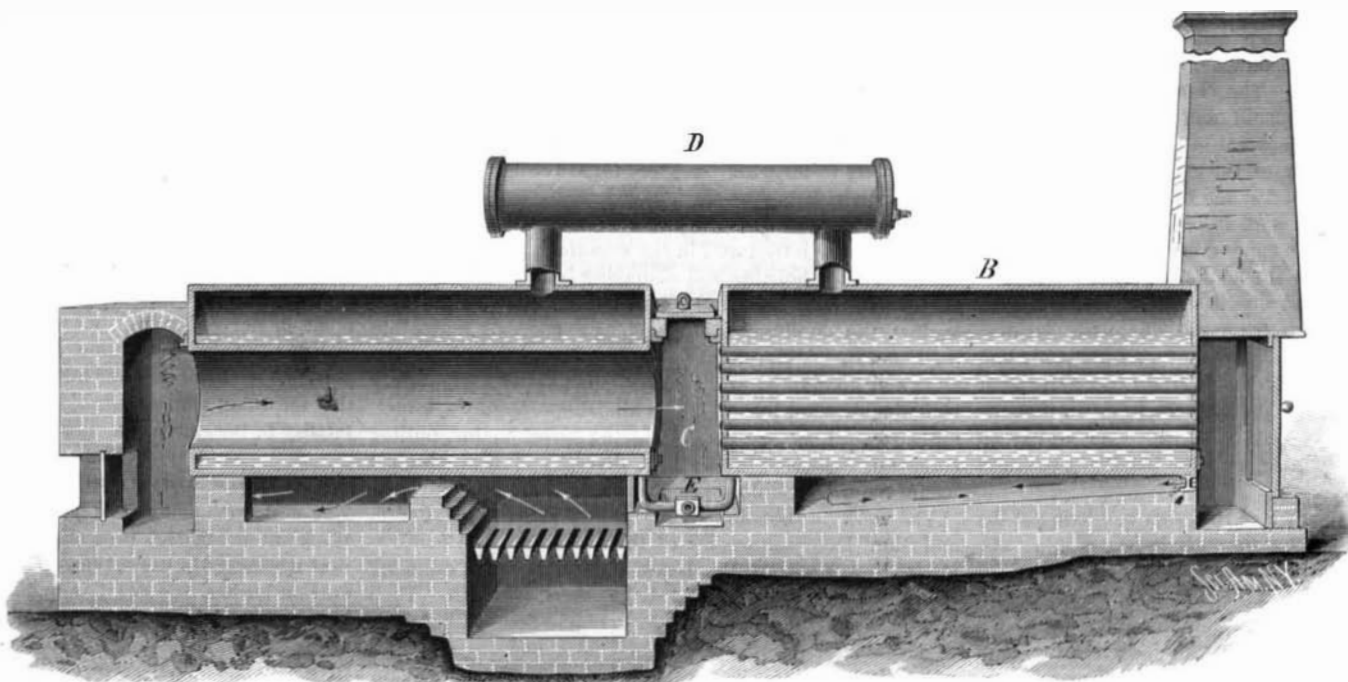
For further particulars address the inventor and owner, W. H. K., 75 University Place, New York city.

Elevators.

We have in New York city several thousand elevators; they are used in almost every large and prominent establishment. In the post office building there are fourteen, and it is only a few weeks since that the principal one of these, as far as the knowledge of the public goes, and the one most used by the outside crowd, suddenly fell to pieces. It was a hydraulic elevator, the car being held upon a column of water. This was considered the best and safest of all, and yet the few persons in it at the time of the mishap barely escaped with their lives. Scarcely a month has elapsed since the accident at Fall River, by which Mr. Sevey was killed, and Mr. Crowley died since of his injuries. Since that time there have been eleven elevator accidents, and some one has been injured each time. What is still more alarming, all the elevators except two had safety appliances, and yet in every instance the car or cage fell to the bottom of the well.

Our city is famous for its cloud-seeking buildings. Ground is high, and story after story is added to make room for immense stocks of goods. Elevators duplicated and quadrupled afford easy access to the upper floors. This mode of conveyance is absolutely necessary, and cannot be dispensed with until some better method is discovered. It is idle to speak of safety appliances. We have had too many such catch-penny contrivances. We had a safety fire ladder some months ago by which two noble firemen were killed at the first experimental test in this city. What we need

is something that will prove safe under all circumstances. What that will be we do not know, but our merchants who build warehouses a hundred feet high should interest themselves in providing for the absolute safety of the tens of thousands who daily use their elevators. Secretary Sherman, while in town last week, had a conversation with Postmaster James, when the latter urged the necessity of having more and better elevators in the post office building. The Secretary expressed himself heartily in favor of the pro-

**HIND'S COMPOUND STEAM BOILER.**