

New Inventions.

Carriage Springs.

The patent granted this week to Thomas Murgatroyd, Jr., of Smithville, C. W., relates to a class which it has been supposed by many offered no room for anything new to be accomplished. In this however they have shown themselves to be mistaken; there is scarcely a single machine, implement, or vehicle, that can be called perfect. There is plenty of room for improvement in every department of mechanism.

In this invention four springs are employed, two at the front and two at the back part of the vehicle, and these are so arranged with arms and levers that the load in the body of the carriage or wagon to which they are applied, rests equally upon them, and the only strain to which the axles are subjected, is a lateral one. Large springs, the length of the axles can be used, so that great elasticity is combined with their use, and the body of the carriage is scarcely moved from its proper position, by the wheels getting into ruts, or on passing over obstacles.

Improvement in Chimney Safes.

The accompanying engravings represent an improvement in arranging the flues and stove pipes of the tunnel of the common brick chimney, for which a patent was granted to Geo. B. Clarke, of Leonardsville, Madison Co., N. Y., on the 20th of February last.

Figure 1 is a front transverse sectional elevation, and fig. 2 is a perspective view of the improvement. The invention consists in providing a peculiarly shaped iron box, similar to a stove casting, for the lower part of the brick tunnel and setting, or suspending it between the timbers on which the chimney is to be built.

The box being about the size of the inside of the tunnel in diameter, is enlarged at its upper part by a broad rim or flange, on which the brick work is set. The rim extends beyond the brick outward, on all sides, and is slightly raised, to receive the rain water, which often runs down outside of the chimney. Small apertures are left in the mortar for the water thus collected to run into the box.

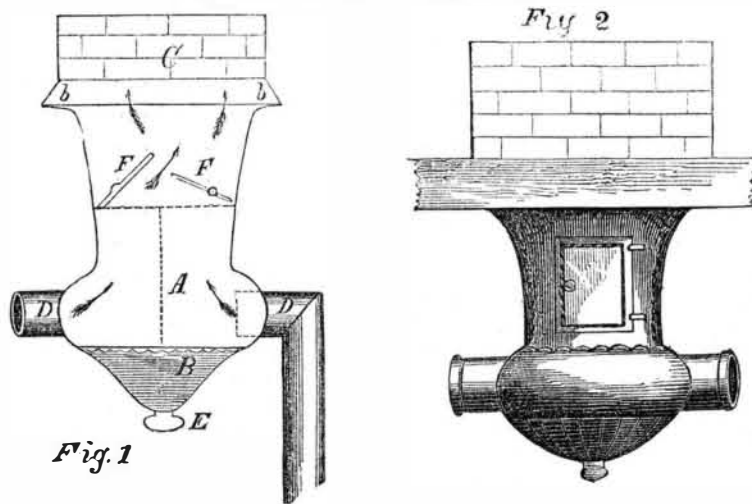
In figure 1, A represents the smoke box, which is open at the top, or highest part, where it connects with the chimney, C, the rims or flanges, *b b*, supporting the bricks above, and resting on a fire proof setting of masonry work between the timbers, thus extending the flue downward a suitable distance to permit the entrance of the stove pipes. The smoke box may be enlarged, as shown, where the tubes, D D, are attached to removable plates, so that the required space within is obtained for entering and securing the stove pipes. The tubes, D D, are cast with, and form a part of the removable plates not shown, which plates fit suitable apertures in the smoke box, and may be changed for tubes of such size as will fit any desired size of stove pipe. This arrangement of the tubes is essential, as the smoke box, when once set, cannot be removed without taking out a portion of the chimney. B indicates the depressed or conical shaped bottom of the smoke box. It is designed to prevent the injurious leakage of the ordinary chimney, as, in this arrangement, all the water caused by rain, the melting of snow or ice, with the ashes and soot within, will be collected, and remain without risk above the nozzle, E, through which all can be drawn out when necessary. It will readily be understood, that in addition to the arrangement shown for two stove pipes, two other pipes may be inserted in the rear or opposite side of the smoke box, thus rendering one chimney sufficient for hot-houses or large shops. For churches, school rooms, and halls having stone chimneys above, the door of the smoke box, when open, affords a perfect ventilation, as the draft of the chimney will remove the impure air, the door being arranged for the purpose of ventilation, as also for cleaning the flues and stove pipes.

Above the flues of the pipes, D D, are shown the dampers, F F, which are hinged on rotating rods passing through the rear or front side of the smoke box. The draft of the chimney may be regulated by opening or closing either, so as to have the required heat of the stove in use, without any waste of fuel. Or by closing both dampers on the dotted line, in case of accidental and violent burning of soot in the chimney, the fire may

be suppressed by thus closing the draft, after having quenched the fire in the stove. A simple form of dampers has before been used in the brick chimney; in the improved form they are here shown, no reasonable objection can be made to their use, as the door of the smoke box, opening above and below them, affords facilities for cleaning, repairing, or replacing them with new ones when required.

It may be proper to add, that in the new

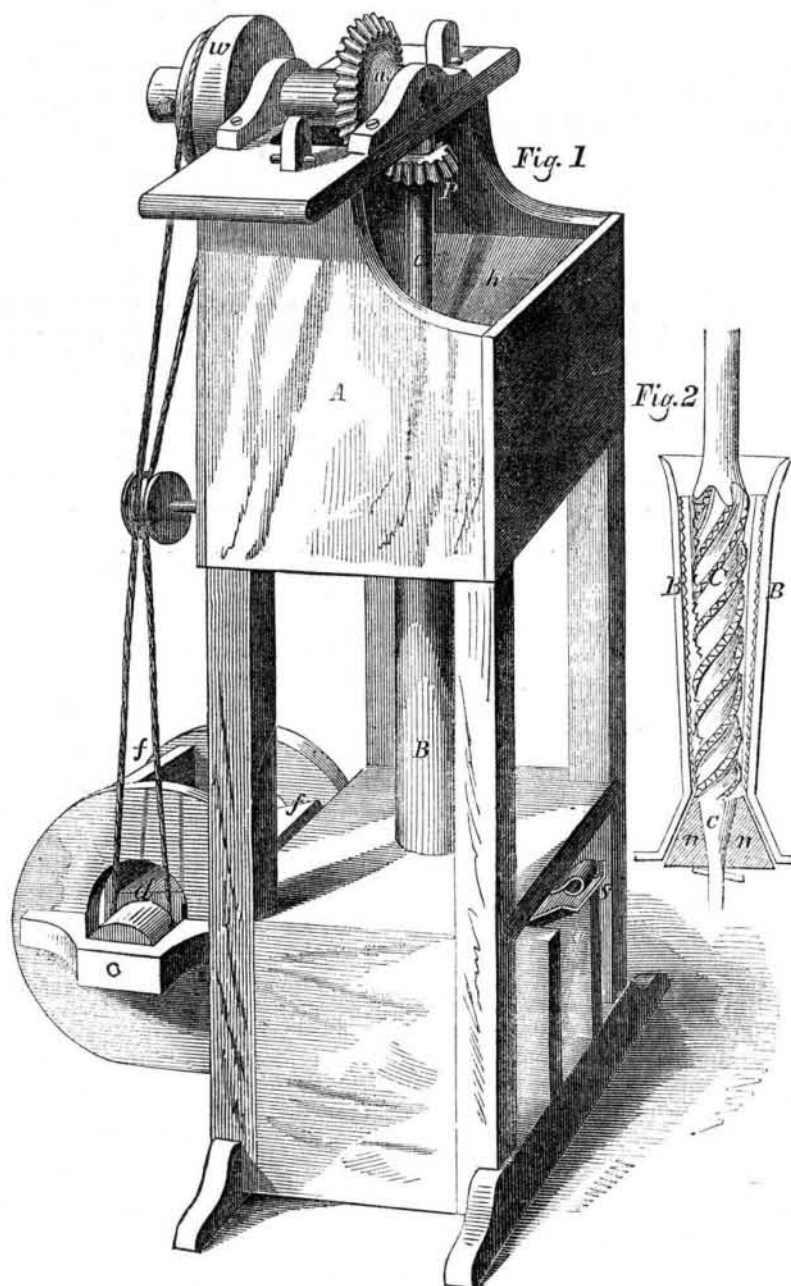
CLARKE'S CHIMNEY SAFE.



arrangement a smaller sized chimney than in ordinary cases can be used, the device being designed for frame rather than brick buildings, where the masonry has the joists instead of the substantial wall of the building for its support.

More information may be obtained respecting this improvement, for which, we believe, there is no similar patent, on applying by letter to the patentee, whose name and residence are given at the commencement of this article.

HOMINY MILL.



The annexed figures represent a hominy mill, for which a patent was granted to B. Bridendolph, of Clearspring, Md., on the 22nd of last August. Fig. 1 is a perspective view of the mill.

A is the hopper box, B is a metal cylinder with projections on its inner surface, C is the hulling shaft, working in cylinder B. It is of

a compound spiral shape; it has a spiral face and spiral edges on its threads. This shaft revolves in the cylinder, B, by the bevel gearing, *u P*. The shaft of the bevel wheel, *u*, is rotated by hand by a crank lever, or it may be driven by any other power. *f* is a fan which is rotated by a band from pulley, *w*, passing around pulley, *d*, on the shaft of the

fan. The corn is put into the inside *h*, of the hopper box, and the shaft, C, being rotated the corn passes gradually from the hopper down through the cylinder, B. The spiral threads of the shaft, C, beats the corn against the rough interior surface of the cylinder, carries it down, and at the same time packs it in a mass at the bottom, while the spiral edges (which run reverse to the spiral of the threads) act so as to strip the hulls from the grain, and break and take the eyes out of it.

The outlet of the hollow grinding cylinder is regulated by a small vent gate at the one side at the bottom, which allows it to escape just as fast as the mill hulls it. It then falls upon a sieve, *s*, fig. 1, and the hulls, eyes, and other impurities, are there separated from it by the blast from the fan, *f*, when it passes down and out in a clear state from a chute under the fan.

This mill can be made of any size, from a hand up to a horse power. A hand power mill, the patentee informs us, hulls one bushel per hour; a horse power from 50 to 80 bushels per day. Several thousands of them have already come into use.

It can be made on a large scale, so as to convert it into a corn and cob mill. Fig. 2 represents a vertical section of a cylinder and shaft, when used as such a mill. It is made like fig. 1 in every respect excepting the addition of a conical nut, *n*, and corresponding seat at the lower end of the shaft. This nut is secured to the shaft, C, and a key passes through the shaft under it. The shell or concavity in which this nut works, is separate from that of B, the cylinder, and it can be taken off and attached to the framing, so as to renew these parts when they get dull, which can be done at a very small cost.—The nut, *n*, grinds the hominy into meal: it can be enlarged as a corn and cob mill to grind fifteen bushels per hour.

It will be observed that this hominy mill is exceedingly simple. Its action will be understood from the figure, without a single other word being added to explain it. The cost of a hominy mill, fig. 1, is \$7.

More information may be obtained by letter addressed to the patentee, at Clearspring, Washington Co., Md.

Paper Ruling Machine.

The improved paper ruling machine of T. J. Baldwin, of Bridgeport, Conn., for which a patent was obtained, and the claims published in our last week's list, embraces a striking peculiarity. The improvement relates to the peculiar means employed for lifting the pens from the sheets of paper at proper intervals to make the required blanks or spaces on the sheets. This can be done to make spaces of different sizes, with great rapidity; also for making different spaces on the same sheets at any time, for fancy ruling for different purposes, so that it is flexible in its character, and differs from common machines in this respect.

Noyes' Slide Rest.

The patent granted last week to C. A. Noyes, of Pittsfield, Mass., for an improvement in slide rests, relates to the adjusting and guiding of the cutting tool. The edge of the cutter can be elevated and depressed with great facility, so as to bring it in a proper relative position or angle with the article to be turned, by simply turning a hand wheel, which elevates or depresses the edge of the tool, as may be desired.

Schenck's Slide Valve Gear.

The patent granted last week to John B. Schenck, of Ansonia, Conn., for improvements in operating slide valves, embraces very excellent features. The principal object of the invention is to effect the cutting off of the steam at any point in the stroke of the piston by means of a single slide valve, by such a movement as will leave a free exhaust till the end, or very near the end of the stroke, and connect the valve with a governor, so that it shall be variable in the most perfect degree under the control thereof, either to allow the full head of steam to act nearly during the whole of the stroke of the piston, or to cut off at the very earliest desirable point.