

## New Inventions.

## Improved Stone Dressing.

Charles T. Porter, of this city, has applied for a patent for an improvement in machinery for dressing stone, whereby some advantages are promised to those engaged in this extensive and constantly increasing business. In a late invention the adjustment of the ways at the desired angles, and the maintenance of the proper relations between the rest, the hammer, and the toolstock, are provided for by the employment of a cylindrical rest, and further by giving a concavity to the toolstock whereby it is fitted to the cylinder and pivoting the ways to the rest. Mr. Porter professes to have rendered this cylindrical arrangement unnecessary, thereby simplifying the desired process and lessening the cost of machinery, and to have attained other desirable ends. Among these he specifies the accomplishment of a more rigid connection between the ways and the rest, whereby much racking and disarrangement is obviated. The rest and ways, which constitute a sort of frame, are furnished with journals fitting to suitable boxes in the main framing, and these journals serve as pivots upon which the rests and the ways swing together in such a manner as allows of their adjustment as the altered motion of the hammer requires, from time to time, in order to secure the desired angle of out or dressing. For his proposed improvement the more important features of which we have here described, Mr. Porter has secured a patent in Great Britain through the agency of the Scientific American establishment.

## Improved Windmill.

Daniel Halladay, of Ellington, Ct., claims an improvement in windmills. This consists of the attachment of wings or sails to rotary movable spindles furnished with levers. These levers are also attached to a head which rotates with the sails upon the same shaft. Another lever is attached to the head. This is connected to a governor which slides the head upon the shaft, so as to cause the levers to turn the wings or sails. The necessary resisting surface being thus presented to the wind, a uniformity of velocity is attained. The proper regulation of the obliquity of the sails, so as to adapt them to the varying motive force of the atmosphere, is represented by the inventor to be thus secured, without difficulty, to a degree which renders his mill more constantly available than those hitherto employed.

## New Centrifugal Pump.

In the centrifugal pumps, heretofore in use, there has been much friction and consequent loss of power, experienced from the change of the direction of the water at the customary angle. William D. Andrews, of this city, has applied for a patent for such an improvement as he thinks will obviate this difficulty. His plan is to tightly fit a hub in a case, and furnish it with spiral induction and eduction passages of gradually decreasing and increasing pitch, whereby the water's movements are duly regulated. In order to insure this result, the hub is made in the form of an inverted cone, deprived of its apex, to whose circumference are attached longitudinally radial arms, which decrease in width as they approach the base of the cone.

## Improvement in Steam Valves.

An improvement in steam valves has been suggested by Caspar Devillbis, of Cadiz, Ohio, the nature of which partakes of the slide valve principle, but is of circular form, and receives a reciprocating motion about its axis. To the valve, so constructed, there is to be attached a cylindrical head of about the same area as the valve. This head is concentric with the valve, and works in a stuffing box back of it. The inner end of the cylinder is exposed to the pressure of the steam, while the outer end is exposed to the pressure of the atmosphere, and thus the desired balance is secured without any precaution beyond the packing of the cylinder to prevent the escape of steam.

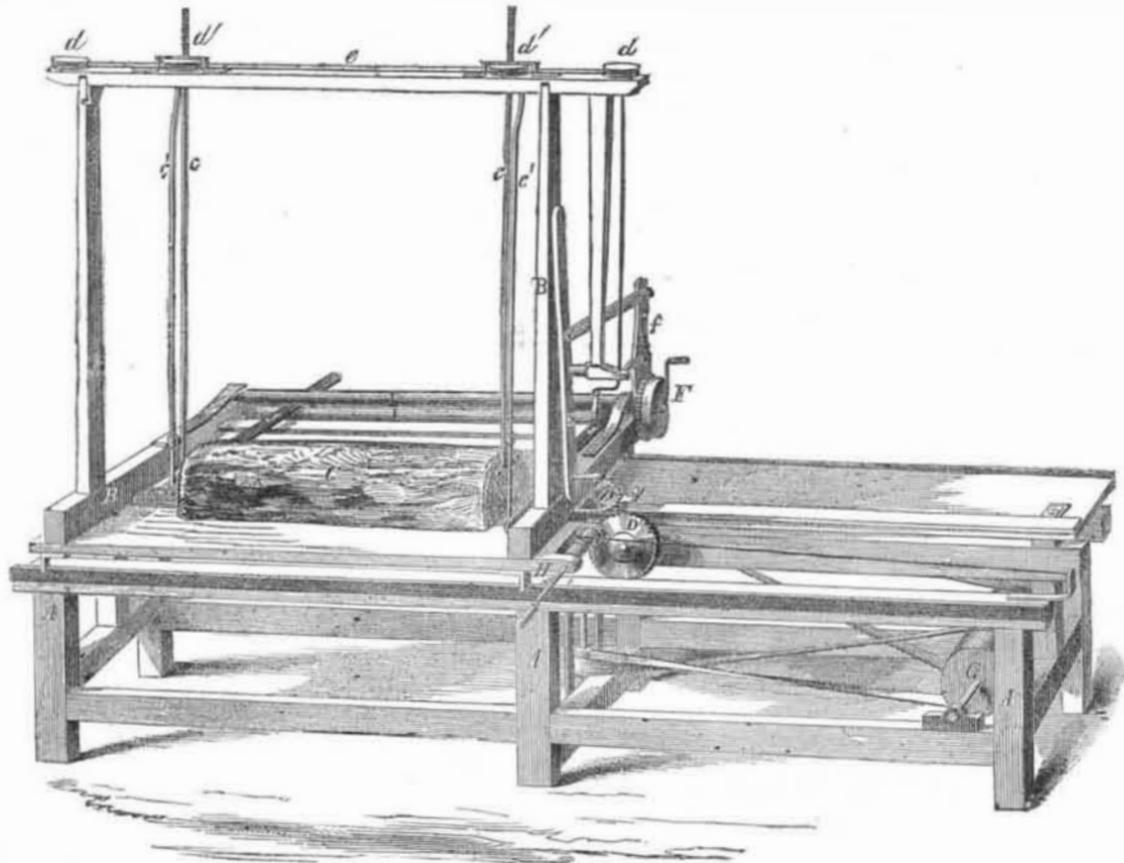
## IMPROVED SAWING MACHINE.

On page 228, vol. 8 Scientific American, we noticed the application for a patent on an improved sawing machine, by Thomas J. Alexander, of Westerville, Franklin Co., Ohio, and for which a patent was issued on the 20th of last September. The accompanying figure is a perspective view of the machine, the object of which is to saw sticks for fence-rounds, fork, hoe, and broom handles, paling, lath, &c., direct from the log, thereby saving the expense of having the tim-

ber first sawed into plank—as is usually done. A log is shown in the frame, and one horizontal and two vertical slitting rotary saws in the machine.

A A is a rectangular frame, and B B represents a peculiar carriage placed on ways on the upper part of A. This carriage has a forward and backward motion given to it for feeding the log to and back from the saws in any of the known ways for so doing. The top cross piece, e, of this carriage, swings in the uprights

by metal guides working in curved groove near the top; c c, are two rods with screws on their upper ends, these work through grooved pulleys, d d, which have threads cut in their eyes; therefore, by these pulleys being moved in one direction, the rods, c c, rise upwards, and elevate the log, C, or being turned in the contrary direction, the log is lowered. These same rods have spurs on their lower extremities which catch the log, and they have clasps which surround the rods, c' c', which thus act as



guides. By raising and lowering the log, it is brought down to be acted upon by the horizontal saw, D, which is secured on a vertical shaft. To the lower ends of the rods, c' c', are secured ways, J J, which have a half twist and pass between two rollers, I I, on the back part of the carriage, the upper one is pressed down by springs, and on its end is a ratchet wheel, F, which is operated by a lever handle. It has a ratchet which takes into its teeth. By turning this lever in one direction, the rollers, I I, feed the thin ways, J J, between them, and draw them out, thus making the frame, e, with the log swing to the one side, and by turning the said lever in the contrary direction, the ways are drawn inwards and the frame and log swung in the contrary direction. D' are two vertical saws, secured on a horizontal spindle; four or more are used when sawing lath. It will be observed, that the saw, D, cuts a horizontal deal, while the saws D', cross-cut the same. A cord passes around the pulleys, d d, at the ends of the swing frame, e, and around the nut pulleys, d' d', for raising the log rods, c c. The motion of these pulleys is directed by a vertical rod, with a crank lever at its lower end, near E, which is a small lever for working the ratchet, f, which is secured on a rocker arm. This ratchet, by pushing the lever, E, backwards and forwards across the frame, is made to take into and pass over any number of teeth on the ratchet wheel, F, so as to work the top roller, I, to feed the ways, J J, to the proper position, and thus set the log as may be desired, for proper sawing. The log, C, being secured between the screw rods, c c, the rod of pulley, d, is turned and the log raised from the table; it is moved laterally by the gauge lever, E, operating the ways, and then run through, and a stick cut from the log, which drops into the box below through the open space, running on a line with the saws, D'. When the carriage is run through in one direction, the log is again brought to the proper gauge by the lever, E, operating the feeding roller, I, and the carriage is run back and a stick cut out like the first, and thus the saws cut both ways, until the whole width of the log is cut out in strips,

when the log is lowered for another series of cuts, and thus cutting cross ways, and vertically, backwards and forwards; the operations are continued as described, until the log is all cut into the proper stuff desired. The size of the stick to be cut, and the number of lath, is determined laterally by the gauge lever, E, and vertically by the height of the log in the frame, which is regulated by turning the crank handle of pulley d, at J.

The duty of the machine represented is to saw for two gauge laths. Four saws like D', will cut out 20 lath per minute—and ten thousand can be cut out in a day.

More information may be obtained by letter addressed to the patentee at Westerville, Ohio.

## Improved Hay Knife.



This is a perspective view of a new Hay Knife, for which a patent was obtained on the 2nd of May last, by Seth Whalen, of West Milton, Saratoga Co., N. Y.

A is the knife, with a cross-head handle, B B. The blade is formed with a bend near the handle, so that it stands out from it at a suitable distance without a shank, the blade being simply screwed to the center of the handle. This method of constructing hay knives, so as to divide the applied power between the two handles, B B, with the knife in the center, economises labor, and enables the operator to cut with greater ease and more facility than with the old-fashioned hay knife, which has not a cross-head handle. Thus by power being exerted upon the knife, as represented, it will cut vertically and horizontally, as indicated by the lines, a b, and it will have a pressure always in that direction, owing to the position of the operator and the action of his arms, and thus the cutting power will be more equally distributed between the lines, a b, as shown by the arrow, c.

The claim of this patent sets forth the nature of the invention clearly; it is as follows: "I claim attaching a blade made of sheet steel and bent at its upper extremity so as to stand out from the handle, and between the arms, whereby a great saving in time, labor, and expense in making hay knives can be effected, and an equal distribution of the power of the operator exerted in a perfect manner upon the edge of the knife, causing it to act more effectually upon the hay than the ordinary knife."

More information respecting rights, &c., may be obtained by letter addressed to J. Livesey, Saratoga, N. Y.

## The National Armories.

The superintendence of the National Armories for the manufacture of fire arms, which have hitherto been under military officers, are to be placed under civilians—according to an amended bill which has just passed the House of Representatives. This is just bringing back measures to their former position.—Great complaints against the tyranny of military officers, have been made by the mechanics since the former became their superintendents.