

New Inventions.

Improvement in Planing and Tongueing and Grooving Machines.

Messrs. Rufus and C. S. Bixby, and John Garst, of Dayton, Ohio, have taken measures to secure a patent for improvements in planing, and stationary tongueing and grooving cutters. The planing knives are stationary; a set of section roughing planes, are set transversely to the motion of the boards, to cut off small portions of the rough surface at once, and then the whole face is finished by a single smoothing plane set behind those which operate upon the rough surface. Each plane, therefore, is made to perform but a small part of the operation, and thus far ease of working the planing action is spread over, it may be said, a wide surface. The tongueing and grooving is performed by stationary gouges set in the frame behind the planes, so as to take into the edges of the board and match them after the planing operation. The principal new feature in this does not relate to the cutters but to a fine revolving chain belt on each side under the gouges, which, by its continual revolving, keep the cutters clear of chips. This is a very important improvement.

Pendulum Ship Ventilators.

Mr. John Hirst, of Brushville, Long Island, has taken measures to secure a patent for a mode of ventilating vessels by a pendulum motion, derived from the motion of the vessel, to work a set of bellows, which takes in pure air by a tube from above and expel it by another pipe, leading from an under passage of the bellows below. To give the bellows a quick operating action, a pendulum rod with a heavy weight at its lower end, is secured to the movable cover of the bellows. This weighted rod, is kept by guides from flying too far out, and the weight, whenever it passes the vertical line of the centre of gravity has a quick motion to the side, thus opening the bellows to draw down good air from the top, by one roll of the vessel, and then swinging quickly to the other side, at the contrary roll of the vessel, to expel the air and send it fresh through the vessel. This same plan can act to expel foul air in the same way. The power derived is an inexpensive one, namely, the natural motion of the vessel. Valves are constructed in the bellows and pipes, to work upon the principle mentioned. The supply of air can be shut off by a valve, if there is too much forced through the vessel.

Improvement in Carriages.

Mr. James C. Spencer, of Geneva, N. Y., has invented an improvement in carriages, for which he has taken measures to secure a patent, that must ultimately come to be very generally adopted, as light carriages can be constructed by adopting his method, at much less expense than by any other plan with which we are acquainted. No reaches are used; the body of the carriage is jointed at the middle, and has an elliptical spring just above the joint. Strong curved springs, secured to the body of the carriage and supporting the same, are secured directly to the axles, in such a way that a turning axis bolt unites the front part of the carriage body, and a like one the back part to the axles, thereby allowing the front and back wheels to turn in a very small compass without any intervening reach under the seat of the carriage. The jointing of the carriage body and the elliptical spring under the same, gives the body of the carriage an easy accommodating motion when the wheels are passing over uneven roads. No bolsters, &c., are employed.

Improved Printing Press.

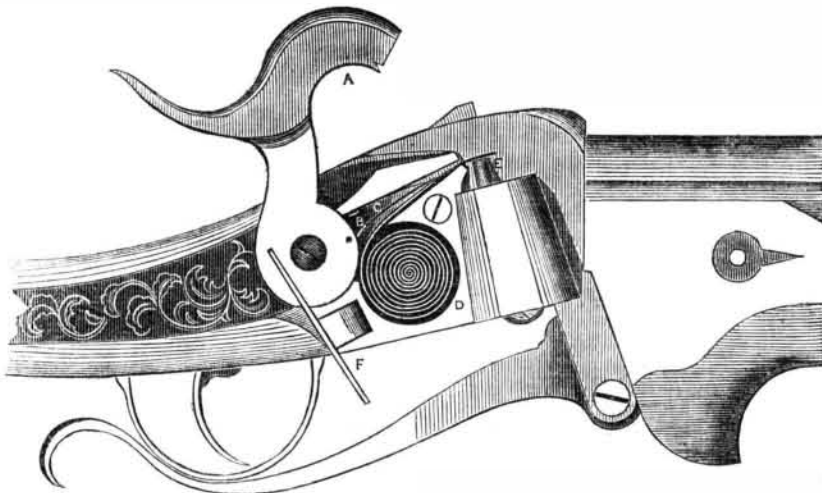
George Bruce, Esq., of this city, has offered a premium of \$1,000 to the first inventor who shall construct and submit for judgement a Press which will throw off 500 large Imperial sheets per hour and can be sold for \$500. A Committee of competent persons will in due season be chosen to examine competing Presses and make the award. The Patent-Right of the successful Press will be the sole property of the inventor, and ought to insure him a moderate fortune.

IMPROVEMENT IN RIFLES.

This is an improvement in Rifles, combining Sharp's Patent Loading Breech, and Dr. Maynard's Patent Self-Priming Rifles. In No. 25 of our last volume we published an illustrated description of Sharp's Rifle, and we would refer our readers to that for an explanation of the manner by which this rifle is loaded at the breech.

The accompanying engraving only illustrates the improved mode of priming, which is the invention of Dr. Maynard, of Washing-

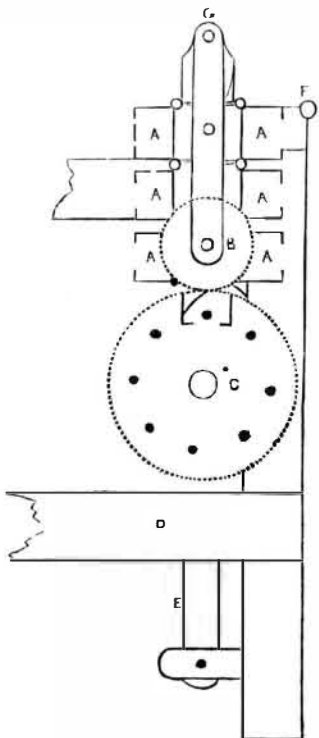
ton. The engraving is a side view, with the priming box open; no caps are used; the priming is a patent preparation of percussion paper made into a coiled ribbon, represented by D, and placed in the inside of a small box, which is now represented as being open. F shows the edge of the lid; A is the hammer; E is the nipple of the priming orifice. It will be observed that the strip of priming ribbon passes over the top of the nipple. It will also be noticed that there is a notch in the end of



the hammer, A; this cuts off the strip of ribbon as the hammer is coming down on the nipple, and when the hammer strikes the prepared paper, it being percussive, the powder is ignited, and the gun discharged. The question may now be asked, "how is the paper fed over the nipple for a new priming, after having been cut off by the hammer?" This is done by a small flat steel spring, B, secured on the periphery of the ring of the hammer joint. When the hammer is drawn back, it will be observed that the flat spring, B, is moved forward, pushing the priming strip over the orifice of the nipple for the next discharge. When the hammer, A, falls down on the nipple, it will be observed, the spring, B, is drawn back for a new feed of the paper. This would draw back some of the paper, were it not for another small stationary flat spring, C, which

holds the paper so as to allow it to be fed only up and along the metal incline to cover the nipple. This is the most ingenious, simple, and effective method of priming firearms ever discovered. Albert S. Nippes & Co. have the exclusive right to apply Dr. Maynard's Primer to Sharp's Rifle, with the exception of the U. S. Government privilege to the same. These rifles, thus improved, are manufactured and sold by Butterfield & Nippes, Kensington, Philadelphia. Capt. Tansil, of the U. S. Marine Corps, and a board of Ordnance officers, have reported in favor of the warlike instrument. A ball was fired by it along the surface of the Potomac, and it was loaded and fired again so quick that the two balls were seen skipping along the surface of the water at one time, a good evidence of the speed whereby it can be loaded.

For the Scientific American.
Improvement in Weaving Looms.



On February 4th, 1851, letters patent were granted to Enoch Burt, of Manchester, Conn., for improvement in fancy check power looms, of which the following is his claim:—

First, he claims the connecting a series of shuttle boxes, by joints, at their lower corners, or attaching them to a flat jointed chain and connecting their extremities so as to form an endless chain of boxes, and bringing them into a parallelogramic figure by means of two square heads of a size to fit the space between the joints of the boxes or the

chain, and hung on journals, one on the end of the race-beam, and the other on the sword of the lay, substantially as heretofore described.

Second, The combination of the irregular worm, the two sets of double rectangular levers, the connecting bars, and the vertical notched levers on which the bars operate, the pin-band and knees, and the wires connecting the knees and vertical notched levers, through which the notched are moved forward and backward, to embrace the bars, giving them and the heddles an upward and downward movement in any irregular manner desired, substantially as described in the specification, constituting a new and advantageous modus operandi of forming variegated sheds.

The improvement in shuttle boxes, here claimed, is illustrated by the following, which is an end view of the boxes and a part of the loom; D is a section of the loom frame, E is the sword of the lay; F is the top of the breast-beam; A A is the chain of the shuttle boxes; O O are the journals of the two square heads, over which the chain of boxes is stretched in an oblong or parallelogramic shape; B is a wheel on the end of the lower square; C is a wheel double the size of the preceding and taking into it, having on its face eight pins—the moving of this wheel the distance of one pin carries the wheel, B, and the square head to which it is attached, one quarter around, and consequently shifts a shuttle. The running shuttle is on the top, level with the top of the race-beam. The pins in the wheel are acted upon by two levers, which are brought into contact with the pins, on one side or the other, as the figure wheel directs, thus shifting the chain forward or backward one shuttle. G is the end of the picker rod, in the hanger, which supports the outer end of the squares on which the chain boxes are hung. This improved form of boxes, has manifest advan-

tages over every other that has been used.

It is apparent, upon inspection, that any number of shuttle boxes may be added, by simply moving down upon the sword the lower square, and that without impeding the speed of the lay, as the increase of gravity by increasing the number of shuttle boxes, extends downward towards the centre of motion of the lay. The shuttles also, on this plan, will shift with the utmost ease, whatever the number may be, as those on one side of the square head exactly balance those on the other, one side descending whilst the other side rises, thus producing an equipoise, without the help of extraneous weight or springs.

The harness motion comprising the second claim, is also very simple and easy, and can readily be adjusted to any variety of modes of springing the heddles to form the shed, however irregular, but the several parts to effect this, are so placed in the loom as to make it difficult to display them distinctly by a plate, which is in this part omitted. This improvement, in fancy shift box looms, is evidently not only the most recent, but also by far the most important that has hitherto been made.

The enterprising or the large manufacturer might find it advantageous to become acquainted with this improvement, as the inventor being considerably advanced in years, might doubtless be disposed to part with it in toto, on reasonable terms. * *

[The inventor, Mr. Burt, is the oldest and youngest inventor and improver of check power looms in America. Like Dr. Cartwright, he is a clergyman, with a fine mechanical taste and great inventive faculties. The first check loom that was set in operation in this State, was in 1839 by a Mr. J. Allen, from Scotland. He could not get his loom to operate successfully until he consulted Mr. Burt, and employed an element of machinery patented by the Reverend inventor. The claim referred to as published by us in our list, was an exact copy taken from the Patent Office List which we receive officially every week. It struck us at the time as something curious, but Mr. Burt will remember his communicating with us in 1848 about a rotary engine, and we thought he had secured a patent for some improvements on the same. We now see that we were not clear sighted enough to point out the error at the time.

We would call the attention of our manufacturers to the improvements of Mr. Burt, they are valuable and of the utmost consequence. The only great and permanent relief that we hope for our northern manufacturers, is from improvements in machinery.

New Printing Press.

The Auburn Advocate says, "Mr. I. L. Burdick, of Utica, has succeeded in inventing a new cylinder printing press, which is certainly far ahead of anything now in use. This press prints both sides of the paper by one revolution; will print twice as fast as the Hoe's press, and do its work as well or better than the Adams press, and it requires but half the labor in feeding it, while the cost of the machine, it is believed, will be less than that of any power press. There is one of these presses now at work in Utica."

[This is a pretty strong paragraph. We cannot trust to its general correctness, and would like to hear some other testimony on the subject.

Respirator Cravat.

A new cravat has just been brought out in Manchester, England, for the benefit of those who have weak lungs in that foggy country. It consists of a cloth which allows the wearer to breathe freely through it without imbibing moisture. The air inhaled is rarified by passing through it, so that it is warmer for the lungs. The moisture of the atmosphere is also, as it were, screened, and the lungs thereby relieved from burdensome pressure.

A Nineveh Fund.

A subscription has been set on foot, in England to raise a "Nineveh Fund" to enable Mr. Layard to prosecute his researches—the funds provided by the British Government being exhausted.