

## NEW INVENTIONS.

## Improvement in Lifting Pumps.

Zebulon Hunt, of Hudson, N. Y., has taken measures to secure a patent for an improvement in Lifting Pumps. The object of the improvement is to prevent the inconvenience of the pump losing its water when at rest, by the valve of the suction tube becoming leaky. The end of the suction pipe is simply carried some distance up through the bottom of and into the barrel, so as to leave an annular space in which a quantity of water is always left, from which it cannot escape. The bucket or piston is made of such a form that it will enter the said annular space and expel the water upwards through its valve to its upper side, and where it will have the effect of making it tight and enabling it to produce a vacuum in the suction pipe.

## Machine for Making Pills.

Erasmus A. Pond, of Rutland, Vt., has invented an improvement on pill machines, which consists in employing two cylinders, with a number of recesses in their peripheries, the said recesses in each cylinder being of the form of a half pill. The cylinders are placed parallel to one another, and with their peripheries nearly touching. They are geared to revolve in opposite directions. The mass to make the pills from, is fed in between the cylinders by feed rolls, and being pressed into the recesses, is formed into pills. A band of india rubber is made to act like a spring to discharge the pills from the cylinders after they are formed.

## Gold Seeker.

Abram Bronson, of North Fairfield, Huron Co., Ohio, has taken measures to apply for a patent for an improvement in machinery for digging or searching in the beds of streams for gold. The nature of this invention consists in displacing water within a tube or chamber by means of atmospheric air, forced and compressed within the tube by air pumps, by which arrangement, in connection with a draught tube, workmen may descend the tube to the bottom of a river and send up matter from below, to be examined for the golden treasure. The compressed air is not permitted to escape while the workmen are below.

## Improvement in Knobs.

W. G. Beach, of New Haven, Conn., has taken measures to secure a patent for improvements in knobs for doors and furniture of every description. The invention has been assigned to J. L. Allen, of the same place. The improvement consists in producing a knob with a bright face by closing a piece of thin polished metal plate over the face of a common cast-iron knob; the knob thus produced is very beautiful, and looks like a silver-plated one, while it can be manufactured at but a fraction of the price. These improvements which equalize the luxuries of life have a hopeful upward levelling tendency. Inventions in science and art have done much for the elevation of our race.

## Improved Tool for Boot and Shoemakers.

D. D. Allen, of Adams, Mass., has taken measures to secure a patent for a valuable improvement in what is denominated "a self-adjusting peg cutter." This peg cutter is capable of adjusting itself to any position desired so as to allow of its accommodating itself to the heel or toe of the boot, thereby effectually taking off the sharp ends of the pegs at the heel, toe, and every part of the inside of a boot, so as to leave no peg protruding, as is now done by all common peg rasps.

## Brake for Railroad Cars.

John S. Miller, of St. Johnsbury, Vt., has taken measures to secure a patent for applying a spring attached to the frame of the truck, for applying power by it to the brakes.

## Prescription Scales.

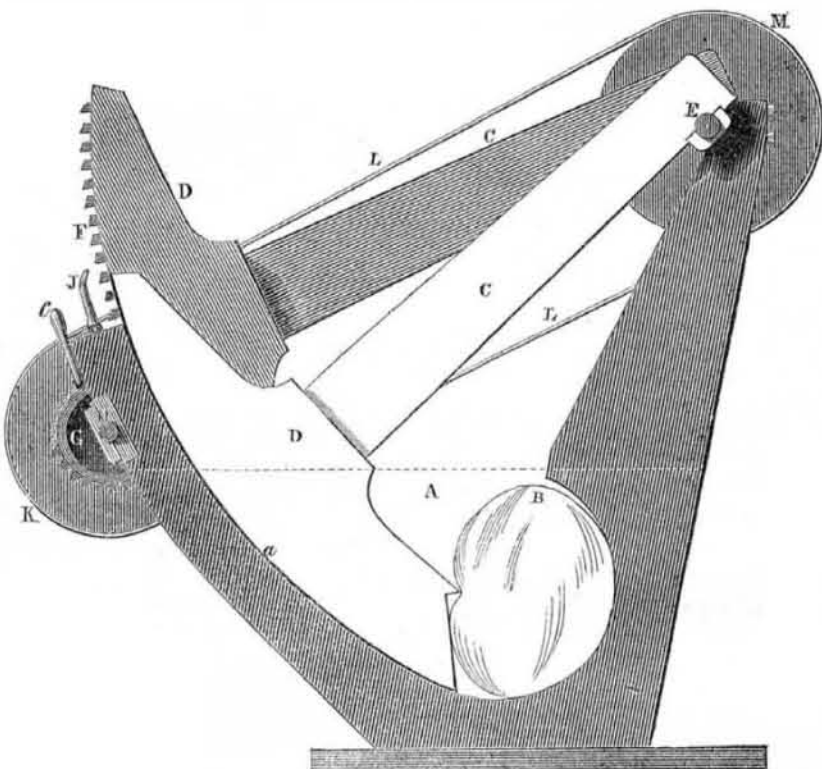
James P. Duffey, of Philadelphia, has made an improvement on "Prescription Scales." By the improvement, the scales can be kept in a box secluded from dirt. For chemists and druggists the improvement is a good one, as the weights and articles to be weighed are placed on the top of suspended arms and above the box.

## IMPROVEMENT IN FULLING MILLS.

The accompanying engraving is a side elevation, with part of the frame removed, of an improvement made in Fulling Mills, by Volney E. Rusco, of Chicago, Ill., who has taken measures to secure a patent for the same.

A is a fulling box or trough; B is a web of cloth or other material to be tulle; C C are the arms of the two stocks or beaters, D D. E is the shaft on which the stocks are hung; M is a pulley, which, by a belt, L, passing

over another pulley, K, drives two half-cogged pinions, G (one shown). H is the shaft on which these cog wheels are hung. Each stock has a number of cogs, F, on its face. The cogged pinions mesh into the cogs, P, of the stocks, and lift them as the shaft, H, is revolved. There is a pawl, J, on the frames for each cogged face of the stocks to hold up each stock when required, for putting in or taking cloth out of the mill; c is a handle for work-

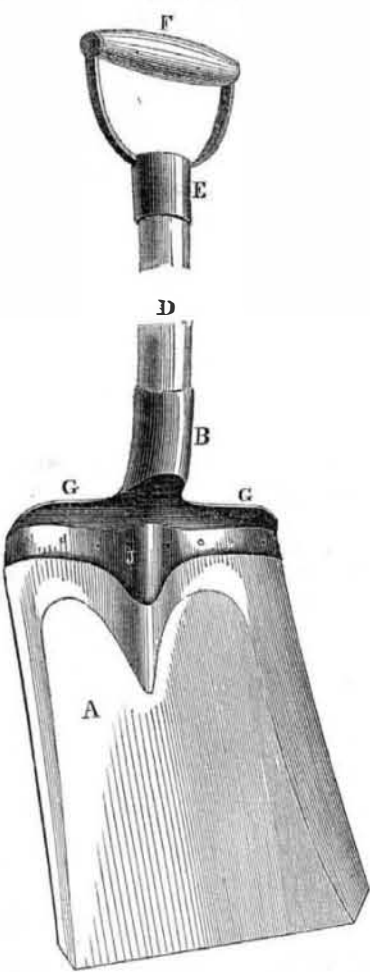


ing a clutch, which gears the cog pinions, G, with the stocks; these pinions are hung loose on shaft, H. Each cog pinion has only one half of its periphery cogged; therefore, when one lifts the stock up to its proper height, it (the stock) falls down on the cloth with its full weight while the pinion is still revolving. The pinions are set to lift and let fall one stock after another. Any number of stocks may be employed and thus operated. It makes a splendid washing machine where there is power to drive it. Many farmers, with small

streams of water on their property, could erect re-action water wheels for performing many operations, one of which should be to wash clothes with such a mill as this. a is a recess in the front part of the frame, in which the cogs of the high stock move. The engraving represents the parts so distinctly, and they are so simple, that all will understand its operation by the description we have given.

More information may be obtained by letter addressed to Mr. Rusco, who requests the attention of cloth manufacturers to his improvement.

## Patent Shovel.



The accompanying engraving is a perspective view of the improved Shovel, for which a patent was granted on the 6th of last January to the inventor, Hiram Kimball, of Worcester, Mass.

A represents the front side of the blade of the shovel, to be made of sheet-iron or other material. B G G J represent the front side of the attachment for connecting the handle with the blade, consisting of the lip, J, the flange, G G, and the socket, B. The attachment is a casting made of strong malleable iron or other metal, and is fastened to the blade by eight or more screws or rivets, passing through both the lip and the upper end of the blade. The heads of the rivets or screws are more prominent upon the back side of the blade, and their position is indicated by the corresponding dots on the front side of the lip, J. The heads of the rivets or screws so formed upon the back of the blade, are at points where the same is depressed, and particularly in the middle thereof, so that those heads are not liable to be worn off, or if they be, the rivets or screws may be easily removed, and the shovel thus restored to its original strength; and when the blade of the shovel is worn out, it may readily be detached from the handle by knocking out the old rivets or screws, and a new blade may then be put on as before described; thus at small expense the shovel may be restored to be as good as when new. G G represents the flange of the attachment at the bottom of the socket, B, and projecting along the top of the blade from one side to the other. This flange answers a three-fold purpose, forming the upper part of the tray or scoop of the shovel; a convenient stirrup for the foot of the operative when he desires to press down the shovel, and two lateral braces, extending from the centre of the top of the blade to the point where the failure of the old kind of shovel has demonstrated that such strength is most needed. B represents the socket that receives the lower end of the stock of the handle, and this, together with the lip and the flange, constitute what is called the attachment. G represents an iron strap passing under the lower end of the stock of the handle,

with the ends brought up on the front and back sides of it. After this strap is so applied to the lower end of the stock, the stock is driven through an iron tunnel, the lower orifice of which is just the size of the stock, so that by this process the iron strap bedded in it is then driven into the socket, which is nicely fitted to receive it, and by means of three or more rivets or screws passing quite through the stock, and embracing both ends of the strap and the socket, the attachment of the handle to the blade is made perfect. D represents the stock of the handle, and may be made of any good suitable wood. The stock is a cylindrical piece of wood, slightly tapering upwards, without any enlargement at the top, for the hand, as in the old kind of shovels—and thus at least four hundred per cent. of timber is saved in making this part of the shovel. E represents the socket that receives the upper end of the stock, and this socket, together with the ribs extending upwards from each side of it, is a casting made of malleable iron or other metal; the upper end of the stock is firmly fitted to this socket, and is further secured by a rivet or screw passing through them both. The ribs extending upwards from this socket form a curve suitable to receive the hand of the operative. F represents a small cylinder made of iron, wood, or other hard material. This cylinder being perforated longitudinally through its centre, receives a strong metallic rivet, which also passes through the perforated swell of the ribs, and thus forms a strong and perfect handle, without liability to split and break.

The improvements made on this shovel does for the operator what the improved snaths for scythes have done for our farmers. A man will do more work with one of them than with any of the old shovels now used. It also has advantages of durability and ease of renovation—something not possessed by any other shovel.

More information may be obtained by letter addressed to Daniel Wyman, President of the Massachusetts Shovel Co., Worcester, Mass.

## Sharp's Rifle.

The Hartford (Conn.) Excelsior of May 1st has an article on Sharp's Rifle, in answer to some of our remarks on the subject. It thinks we gave the cold shoulder to its veracity, because we doubted the statement made about the rifle of Mr. Sharp, viz., that with 55 grains of powder, it had sent a ball of one ounce weight, the distance of one mile and a quarter. The "Excelsior" should not speak in this way, for we believe the rifle is an excellent one, as a simple breech-loading fire-arm. We own one ourselves, and we would be very much obliged to Mr. Sharp to send us his directions for its use, when he has got through with the experiments to which our cotemporary refers. We still have to plead ignorance in respect to the carrying power of this rifle; we do not see how it can be superior to others. There may be a reason, however, unknown to us.

We see it stated, in some foreign papers that the Minie rifle, which is being introduced into the British army, is deadly at 1000 and 1400 yards distance. Its powers are surely exaggerated.

## Improved Locomotives.

Two large and powerful locomotives, with seven feet driving-wheels, says the "Reading Gazette and Democrat," are now being constructed at the machine shops of the Reading Railroad Company, after plans by Mr. Millholland, and under his immediate superintendence. They will embrace his new and important improvement for burning anthracite coal, which we believe has been tested so as to render its practicability beyond doubt. The locomotives are designed for drawing the passenger trains, and it is intended as soon as they are placed upon the road, which will be in two or three weeks, to run the train through from Pottsville to Philadelphia in 3½ to 3¾ hours, including stoppages, which will be an average speed of nearly 36 miles an hour.

## Great Fire Engine Performance.

On the 6th inst., in Philadelphia, the independent Fire Engine Co., of Baltimore, tried the power of their engine in front of Jayne's building, and threw the water 45 feet above the cupola, being a total height of 184 feet, and beating any engine ever tested here.