

Mr James W. Winn, of Haverhill, Mass., has invented an improved boot and shoe protector, which saves the sole of the shoe from wear, as it does not allow it to come in contact with the ground at all. It prevents mud, gravel, dirt, etc., from getting in the seam between the upper and sole, and thus protects the seam from the cutting and wearing action; and it protects the lower part of the upper and the toe from rubbing against the gravel, stones, etc.

Mr. James Robertson, of East Cambridge, Mass., has invented an improved hook for securing and controlling animals for slaughter and for other purposes. It is so constructed that the struggles of the animal to escape after being secured will only cause the device to hold with more certainty.

Mr Ephraim S. Morton, of Plymouth, Mass., has patented an improvement in bows, which consists in making the bow in two parts and connecting these parts by a hinge joint, so that when the bow is bent the hinge is opened, and held in that position by the string.

Messrs. Robert B. and Henry H. Russell, of Orange, Tex., have patented an improved method of packing shingles, consisting in arranging them in alternate longitudinal and transverse layers, so as to create air spaces throughout the pack. The pack is secured together with two crossbars, of wood, drawn tightly upon its center by tin or sheet iron bands.

Mr. Henry A. Robertson, of Haskins, Ohio, has devised an elastic prop or bearing for carriage tops for supporting them when turned back; and the object of the improvement is to preserve the framework of the top.

An improvement in gates has been patented by Mr. George W. Addis, of Clarkston, Mich. The improvements relate to the class of gates which are fitted to roll back part way and then swing at right angles. The gate is inexpensive and durable; there is but little liability of sagging or racking, and it is easily operated.

Mr. John P. Simons, of San Francisco, Cal., has invented an improved gun-wiper, which consists of a helical spring, the fixed end attached to a metal stock that screws into the end of the ramrod. To the spring is attached the cloth forming the swab, so that when entered into the barrel the spring refracts, but at the same time exerts a continued pressure, and thus causes the swab to take up and remove all accumulations. When used as a scraper the swab is removed, and the free knife edge of the spring acts on the surface of the barrel and takes off the lead.

A tablet designed for the use of penmen, engravers, and all persons who have lettering to do, is the invention of Mr. Herbert W. Kibbe, of Utica, N. Y. It is a self-instructor in lettering. Every letter in the alphabet can be formed complete with it, and with no more skill than is required in the use of a common ruler.

Mr. Amand Van De Wiele, of Brussels, Belgium, has invented an improved combined open grate and blower. The object of this invention is to modify or increase the draught in open fire grates by a movable blower that may be lowered upon the basket of the grate or elevated out of sight by simply turning a button attached to the front of the grate.

An improved camp chair, which is so constructed that it may be readily adjusted in an erect position, or at any desired inclination, which may be so compactly folded as to require no more space than the thickness of one of its frame timbers, is the invention of Messrs. William H. Gifford and William M. Bates, of Poughkeepsie, N. Y.

An improved device for attachment to windows to serve as a guard to the window when open to prevent children from falling out through it, has been patented by Mr. Solomon Weinhandler, of New York city. It is so constructed that it will rise out of the way when not required for use.

Mr. Charles A. J. Campbell, of Brooklyn, E. D., N. Y., has patented an improved detachable shoe for horses that may be attached as a temporary substitute in case a horse casts a shoe while on the road; they may be changed in width to suit any sized foot.

Mr. George W. Swain, of Brooklyn, N. Y., has patented an improved nursery chair, adapted to be used as a high or low chair, or as a carriage. It is readily changed from one form to the other, and is complete when used as a high or low chair.

Mr. James L. McKeever, of New York city, has patented an improved bed or cot, having parallel sides and rounded ends, and in a hinged cover of wire or other netting supported by a frame which is similar in form to the frame of the bed. The object of the invention is to construct a light strong bed having a protective covering of wire netting, to be used in hospitals and sick-rooms for the protection of patients against flies and other insects. It is also intended for use as an outdoor bed in warm countries.

Mr. Amandus Getzschmann, of Omaha, Neb., has patented an improved device for stopping runaway horses, which consists of a movable sleeve sliding on two guide rails that project from the sides of the carriage or wagon pole. The sleeve is held in position by a stout hook that is pivoted in a slot in the pole, which engages in the corresponding hole in the sleeve. This hook is also provided with an eye, to which a strap is attached. This strap is led to the seat of the driver, so that he can at any moment unhook the sleeve and allow it to slide freely on the pole. Should the horses attempt to run away, the driver will pull the line, the sleeve is unhitched and slides forward, and a strap is drawn in the opposite direction, causing the bit straps to operate on the bits and bring the horses to a standstill.

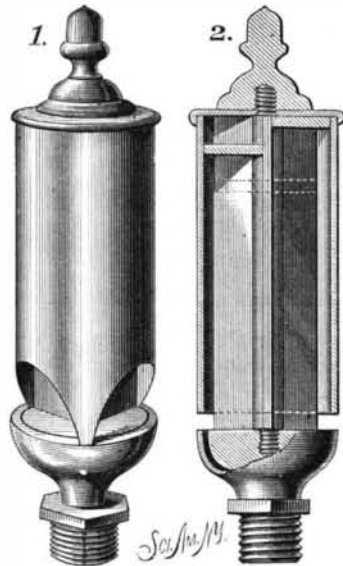
Mr. Frank Imhof, of New York city, has patented a paper box for banjos, violins, guitars, and other similar instru-

ments. The improvement consists in making the bottom and top and also the sides in separate parts, so as to avoid the trouble and difficulty of bending the sides around the edges for the whole length of the box.

Mr Augustus B. Wood, of Fountain Hill, Ark., has patented an improved matchbox or case for carrying matches in the pocket, which is so constructed that the matches may be forced out one at a time, as required, and at the same time ignited.

IMPROVED STEAM WHISTLE.

The whistle shown in the accompanying engraving is divided longitudinally into three or more compartments of different lengths, each compartment being provided with an aperture for receiving steam and with the usual mouth. The object is to produce three or more sounds simultaneously. The usual way of doing this is to attach three or

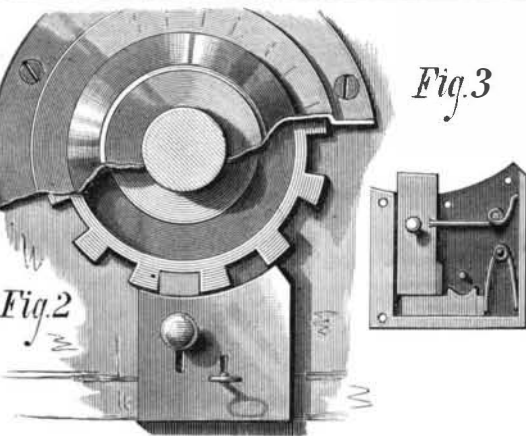
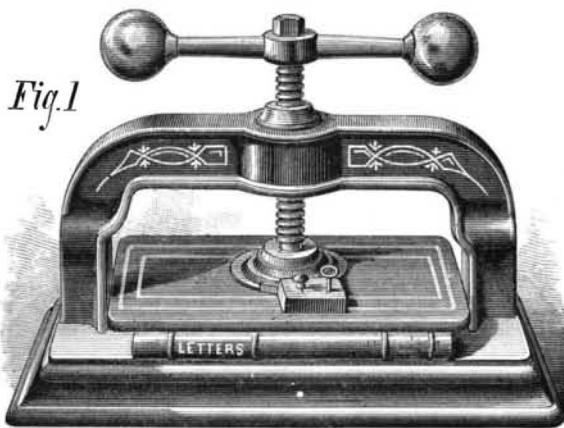


EINIG'S STEAM WHISTLE.

more steam whistles to a single pipe and admit steam to them all through a single valve, but this incurs the expense of three whistles and wastes an appreciable quantity of steam. The whistle shown in the accompanying engraving costs but little if any more than one of ordinary construction. More or less than three compartments may be formed in the same shell or tube, and the whistle may be made in either of the forms shown in the engraving. This whistle was recently patented by Mr. John Einig, of Jacksonville, Fla.

LOCK LETTER PRESS.

The letter press represented in the engraving secures letter copy books against abstraction and the curiosity of meddlers employed in or frequenting business offices. A toothed



HILL'S PATENT LOCK LETTER PRESS.

wheel is attached to the lower end of the screw, and to the platen is secured a lock the bolt of which enters between the teeth of the wheel on the screw.

When the platen is screwed down upon the letter book and the bolt of the lock is projected into the wheel on the screw as before indicated it will be impossible to turn the screw so as to release the book. The lock is so constructed that by pressing against a knob the press will be locked without the use of a key; but to unlock it a key is required.

The details of the lock are shown in Figs. 2 and 3. The operation of the lock is as follows: The inner spring presses

the main bolt away from the gear, while the outer spring presses the supplemental bolt against the side of main bolt. When the main bolt is pressed into a recess in the toothed wheel the supplementary bolt at once springs past the end of the main bolt, and the press is locked. To unlock it, the key is inserted and the supplemental bolt is pressed away from the outer end of the main bolt, when that bolt instantly disengages itself by the action of the inner spring, and so remains unlocked until pressure is again applied to the key when it is desired to lock it.

This improvement is simple and inexpensive, and commends itself to any one having use for such an article. The patent was obtained July 9, 1878. For further information address the inventor, Mr. John Hill, of Columbus, Georgia.

Petroleum.

When we are told that at the present time over 1,800,000 gallons of petroleum or earth oil are brought to the surface every day in the oil regions of Pennsylvania alone, the mind is staggered by the contemplation of the magnitude of this comparatively new industry. So lavish is Mother Earth of her hidden stores of oil that it is sent to the surface much faster than it can be taken care of, or stored, and at the present time 300,000 gallons, at the lowest estimate, run to waste every day. The great United Pipe Line, and other methods of conveyance, utterly fail to convey the oil to markets, and the enormous tanks for storage are full to overflowing. There are tanks owned by companies which hold 5,000,000 barrels of oil, and all of them are full. The wooden tanks owned by individuals and private concerns amount in their aggregate capacity to as large a number of barrels, and these also are full.

Thus it will be understood that there are great lakes of oil above ground, as well as below; but there is good reason to believe that the subterranean deposits may with greater propriety be called oceans rather than lakes. The oil workers are evidently pumping from inexhaustible supplies in the rock chambers below, and what are called the "spouting wells" deliver their vast currents with the same impetuosity as when the drills first tapped the pent-up stores. An interesting inquiry arises as regards what becomes of the oil that cannot be secured; into what does it flow, and where is its final resting place? Any one who has visited the oil regions will know of the nature of the country, and readily understand that much of the oil flows into brooks or small rivers, and in time finds its way into the large rivers, and is lost ultimately in the Gulf of Mexico or the Atlantic Ocean. Still larger quantities are absorbed by the earth in ravines and marshy places, and thus it is lost to view. In the famous district one is led to exclaim, "Oil, oil everywhere, and no undistinct water to drink." There is oil in the soil; oil in the springs; oil on the bushes and trees; oil in the atmosphere, apparently; oil on the clothing, and in the mouth, eyes, and hair of the workmen; the bread and coffee of the region have the odor of oil, and the beds are saturated with it.

How wonderful is all this! Well do we remember when the first vial of "rock oil" fell into our hands. It was called "Seneca oil," and it was claimed to be a most efficacious remedy for a variety of ills to which the human body is subject. The statement that it flowed spontaneously from a spring in Pennsylvania was received at first with much incredulity, as that was regarded as impossible; but in a short space of time the truth was known, and the oil was no longer regarded as a mixture devised by human hands.

American petroleum oil is now used as a source of artificial illumination in nearly all parts of the world. It goes along with rum, powder, and muskets to the savage tribes of Africa, and the mud houses on the banks of the rivers of the interior are illuminated by its combustion; it is found in the interior of the Turkish Empire, in Persia, in Egypt, in Palestine, in China, in Japan, and in the remote islands of the sea. For the paltry sum of fifteen cents we can purchase a gallon of the clear refined oil, and the cost of the light afforded, in comparison with gas as furnished at the lowest cost in cities, is as one to twenty in its favor. It is just now the most formidable antagonist of gas, and we can scarcely hope in the utilization of electrical force in the future, to secure light at a lower expense.—*Boston Journal of Chemistry.*

A 1,500 Horse Power Hoister.

The new hoisting machinery for the Yellow Jacket shaft, now being constructed in San Francisco, will be surpassed by nothing of the kind on the Comstock. It will be a double cylinder, directacting hoist. Each engine will have a stroke of eight feet, cylinders 28 inches in diameter, and will be of a non-condensing character. They are to work at a steam pressure of 120 lb. to the square inch, and at 50 revolutions per minute will have a piston speed of 800 feet. While hoisting from a depth of 4,000 feet each will exert 1,500 horse power. A flat steel rope, 7 inches wide, 1/2 inch thick, and 4,000 feet long, will be used in hoisting. The Union shaft is now supplied with hoisting works, and will soon be furnished with pumping machinery superior to any now in use on the Comstock. The new pumping engine will be of the compound condensing style, the initial cylinder being 64 inches in diameter, with a stroke of 7 feet. The expansion cylinder is 100 inches in diameter and 8 feet stroke. It will have 8 strokes a minute and 136 feet of piston speed in the same time, and will exert about 1,500 horse power. It will operate a double line of 14 inch pumps, having a stroke of 10 feet.—*Virginia Enterprise.*