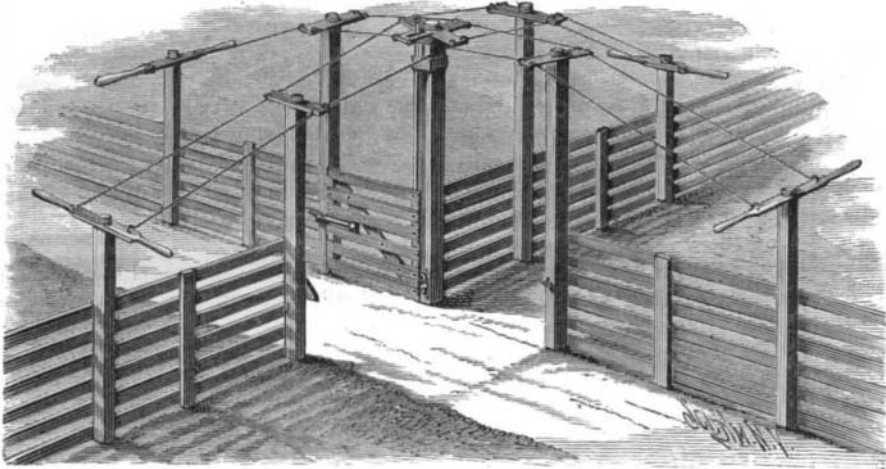


Ozokerite Railroad Ties.

A new and very important application of ozokerite has been recently discovered in Russia; it is now used for making ties in the Transcaspian railroad, which has already passed Oshabat and nearly reached Merv. The process of manufacture is very simple and inexpensive. Kyra, the local name for ozokerite, is found there in thin layers of 7 in. thickness. In its primitive state it contains a certain percentage of decayed matter. To remove this the ozokerite is melted in large caldrons,

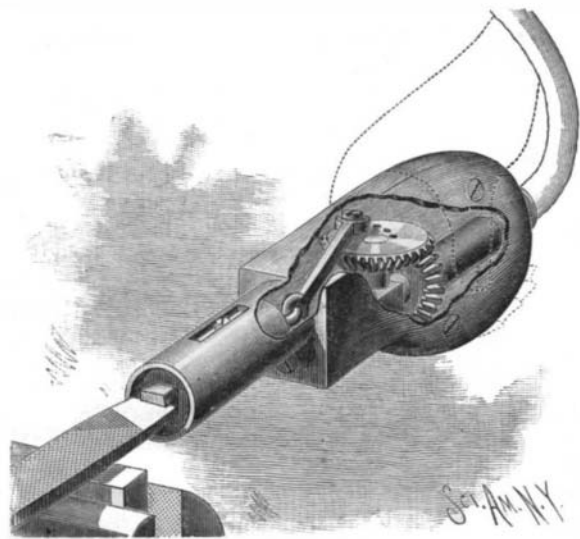


WILSON'S IMPROVED FARM GATE.

the refuse sinks to the bottom, and the pure ozokerite collects at the top. This purified ozokerite, melted and mixed with 75 per cent of limestone and 25 per cent of fine gravel, gives a very good asphalt, which is pressed in boxes shaped like railroad ties. Notwithstanding the high temperature, which reaches 48° R. (140° F.), the ties retain their shape and hardness. These asphalt ties are used all along the road, except at the ends and center of every rail, where as yet wooden ties are employed. In this way about \$800 per mile are economized.—From the Russian Monthly Journal of the Ministry of Roads.

AN IMPROVED RECIPROCATING HAND TOOL.

The file, saw, or other reciprocating tool held by this device is guided by the hand and over any part of the work, such as in file-finishing castings, in fret-sawing, or similar work. Held in the hollow stock by screws is a bearing, to which two beveled



KRAYER'S IMPROVED RECIPROCATING HAND TOOL.

gears are so journaled as to mesh into each other. To the horizontal gear is fixed a wrist pin, to which is connected one end of a pitman, the other end of which is connected to a plunger fitted into a tube screwed into the forward end of the stock. The plunger is prevented from turning by a pin projecting into a slot in the tube. One end of a shaft is screwed to a collar on the vertically placed gear, while the other end passes through the rear end of the handle, in which it has a bearing, and is connected with a flexible rotating shaft, which allows the stock to be held in any required position for guiding the operating tool, which can be held to the plunger in any approved way. It is evident that when the shaft is turned, the tool held in the plunger will be reciprocated. The wrist pin may be set in any one of a series of holes in the upper gear, so as to lengthen or shorten the stroke. The plunger can be easily removed, to allow the tools to be more conveniently fixed to it.

This invention has been patented by Mr. J. F. Krayer, of 1542 North 11th Street, Philadelphia, Pa.

Street Cleaning and Garbage Removal in Boston.

For the article under this heading which appeared in our paper of April 3, page 216, we were indebted to *Engineering News*, for which due credit should have been given, but inadvertently was omitted.

IMPROVED FARM GATE.

Test by actual use has shown that the gate herewith illustrated is not liable to get out of order from any cause, and can be easily operated from a point at any desired distance away. This latter feature makes it especially useful for a pasture gate in a stock raising country, as the herder can drive the cattle before him to the gate, and open it while herding them, without allowing the cattle to scatter off while going round them to open it; and as the gate latches open as well as closed, there is no danger of the stock being frightened, while passing through, by any movement of the gate caused by the wind. In locations where loaded wagons are to pass under the wires leading to the operating levers—by means of which the gate can be swung in either direction—the gate post is made high, as shown in the engraving. The distance of the operating levers from the post does not in any way affect the ease with which the gate can be operated. The lever of a gate now in use is about one hundred feet from the post, and yet the gate can be easily opened and closed by a child. The construction is so simple that it can be understood at a glance. The number of levers depends upon the situation of the gate.

This invention, which has been patented by Mr. John G. Wilson, of Cameron, Texas, can be applied to a swinging gate already in use.

For Locomotive Engineers.

How to run a headlight casing without glass. A. If the glass is half broken or there is a hole in it, knock the glass entirely out, turn burner one-third higher, and rain, wind, or snow will not put it out.

When side-tracked, turn down the light, or it will smoke.

How to block a driving or engine truck box when spring is broken. A. Run forward or back wheel on a wedge, block box, and go.

Quickest way to set an eccentric. A. Let fireman catch hold of lugs on eccentric and knock key out of front end of eccentric rod where it connects to link, drop rod, turn eccentric, hold eccentric rod, and let it follow eccentric until rod will go in eye neat, put key in, tighten eccentric, and go, and it will be as true as any machinist can set it.

To explain why pipe from steam gauge to boiler is bent. A. Steam condenses in the bent part and presses against the springs in gauge and keeps steam from cutting springs; the gauge being air or steam tight will not rust. Only, backing up or standing, the gauge pipe will freeze.

Why is it that water in a boiler running for 20 years don't rust boiler or flues? If you put boiler in water, it will rust boiler out in one year. A. Boiler being air tight, it won't rust on the inside.

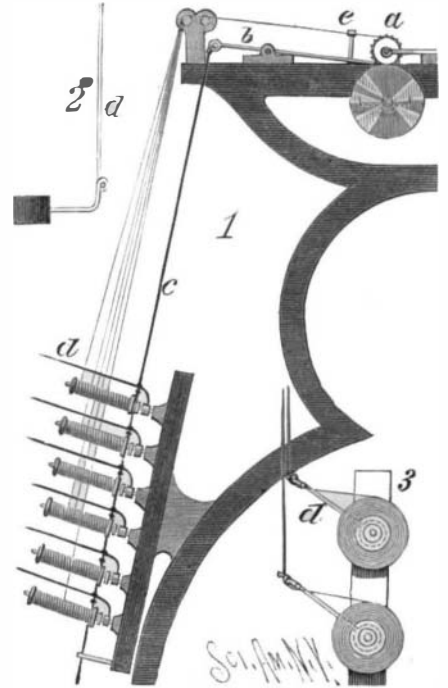
Removal of Warts.

A correspondent of the *Therapeutic Gazette* announces through its columns the virtues of castor oil in the removal of warts. Constantly applied for from two to four or six weeks each day—that is, once a day—it has not failed in my hands, says the writer, in any case of any size or long standing. The time it takes may try the patience of the user, but if faithfully used they will get their reward in the removal of the wart without leaving any scar. I have used it with some success in other growths, and had benefit enough to merit further trial. It might, he adds, be a success in the removal of certain kinds of cancer, especially scirrhous forms.

STOP MOTION FOR DOUBLING MACHINES.

The gravity take-up, shown detached in Fig. 2 and in place in Fig. 1, which represents part of a silk doubling machine, is composed of a collar to which is secured a bent wire or rod. The collar fits loosely upon the creel spindles below the spool, and the wire is bent at right angles, so that its long arm stands parallel with and a little distance from the spool. The wire is formed with an eye to receive a cord, *c*, attached to the stop lever or pawl, *b*, for stopping the revolution of the bobbin, *a*, and spindle on which it is placed in case a thread should break. The eyes in the wires prevent the cords from sliding on the take-up arms, thus rendering tangling impossible. The spindles, of any desired number, are held at an angle upon an inclined plate attached to the main frame of the machine. The spools are placed upon the creel spindles so that the threads unwind from the top, and the thread is passed

first under the wires, *d*, thence over bars and through the traversing eye, *e*, to the bobbin. In unwinding the thread from the spools, the friction of the spools upon the spindles will cause each thread to lift its take-up about to a level with the thread on the spool, as shown in Fig. 3, so that the whole weight of the take-up comes upon the thread and always holds it taut. In this way a regular tension is kept upon the threads, causing them to be wound with uniform tightness upon the bobbin. Each take-up is connected to the end of the pawl by a cord. When the weight of the take-up is upon the thread, this cord is slack; but in case a thread breaks, the weight of the take-up will come upon the cord, when the pawl will be made to engage with the ratchet wheel and instantly stop the spindle. A single cord may be passed through and knotted below each eye; or in place of a cord, a slight rod may be used.



NIGHTINGALE'S STOP MOTION FOR DOUBLING MACHINES.

This invention has been patented by Messrs. Nightingale Brothers, of Paterson, N. J.

COMBINED NEWSPAPER STAND AND FILE.

Within the tubular post of the pedestal slides a rod which can be held at any desired height by a set screw. The upper end of the rod is slotted to receive a lug formed upon a plate secured to the center bar of the frame. This lug is formed with a projection which permits the frame holding the papers only to come to a level. Passing through the slotted end of the rod and the lug is a clamping screw, by which the frame can be held at any required inclination. The main frame, at each side, is provided with a sliding extension frame, by means of which the file can be adjusted to the size of the newspaper to be filed. The cranks of crank screws, held in the upper and lower parts of the central longitudinal bar of the frame, are made with sharp ends to penetrate the papers easily, and with rounded angles, so that the papers can be readily slipped off and on. The papers are held in place by a bar having grooves formed in it to receive the cranks,



BAILEY'S COMBINED NEWSPAPER STAND AND FILE.

as shown in the sectional view, Fig. 2. These grooves are covered with metal plates having short slots formed through their lower parts for the passage of the cranks. The frame and its attached paper can be raised or lowered, and adjusted at any desired inclination to suit the convenience of the reader.

This invention has been patented by Mr. William E. Bailey, of Manchester, Md.