A PIPE DIE STOCK FOR VARIOUS SIZES OF PIPE.

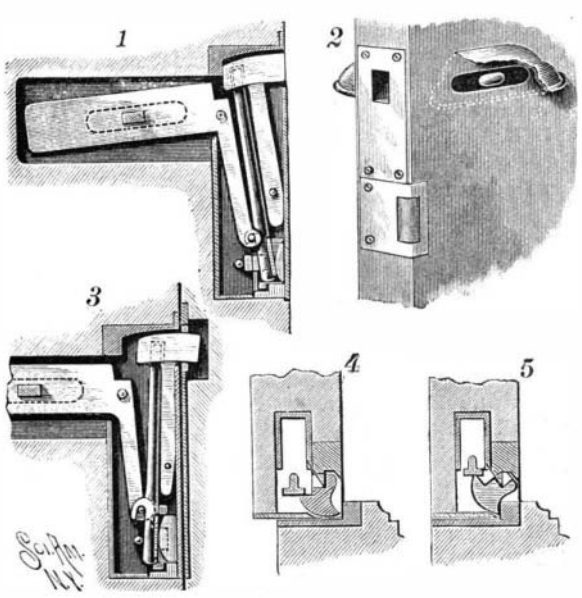
This new die stock has recently been placed on the market by the Wiley & Russell Manufacturing Co., of Greenfield, Mass. The stock which we illustrate holds five sizes of pipe, ¼, ⅜, ½, ¾ and 1 inch, and is always ready without any picking up and fitting. The five sizes of dies are so set in the circle that the hole

GALLOWAY'S "LIGHTNING" DIE STOCK FOR PIPE.

serving as a guide appears directly opposite each, giving a good, true bearing and insuring a perfect thread. The dies are made adjustable to allow for irregular fittings and for wear, and are in two parts, so that they may be taken apart to be ground when dull. The guide holes are bushed to next size larger for convenience in cutting nipples and to enable them to be kept in repair.

AN IMPROVED SPRINGLESS LOCK.

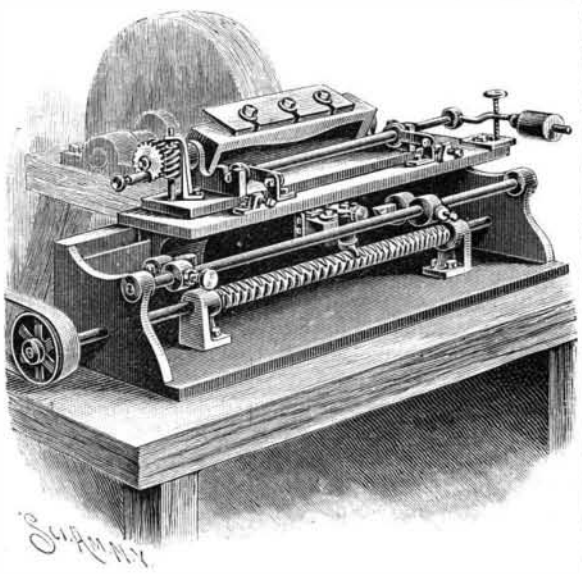
The illustration represents a lock having a gravity bolt, which, when the door is shut, will automatically move outward to lock the door, and when the bolt is drawn backward to open the door will remain in the lock casing until the door is again closed. This improvement has been patented by Mr. Thomas C. Mace, of Cameron, Mo. Fig. 1 is a central vertical section, the bolt being back in the casing, Fig. 3 showing the bolt thrown outward to the locked position. Fig. 2 shows the lock attached to a door, and Figs. 4 and 5 are transverse sections of the lower portion of the lock. The bolt of the lock is somewhat segmental in shape and has a shank pivoted low down in the casing, while in an opening in the back of the casing, to the rear of the bolt, is pivoted the inner end of a weight having a downwardly extending arm, and forming a weighted bell crank lever. The arm is bifurcated at its lower end, and through the bifurcation passes a hook extension of a shifting lever, the two being connected by a pin, and the shifting lever at its upper end entering a recess in the under face of the bolt. At the lower end of the casing is inserted an angle plate within which is pivoted a trip lever, as shown in Figs. 4 and 5, the lever consisting of a specially formed block having lugs which enter cavities in the angle plate, and a cylindrical surface closing a vertical opening in the corner of the angle plate. The lower end of the shifting lever has a T-shaped plate adapted to engage a shoulder on the trip lever, and on the striking plate fitted in the jamb of the door is a lug which, as the door is closed, engages the surface of the trip lever to force inward the lower end of the shifting lever, bringing the weight almost in a horizontal position, and throwing the bolt, as shown in Fig. 3. A projection on the weight extends through a mortise in the side of the door, under a suitable hood, as shown in Fig. 2, and by a slight pressure on this knob the weight is again moved to change the position of the shifting lever and withdraw the bolt. As will be seen, this lock is entirely without springs, and its parts are designed to move with a minimum of friction.



MACE'S LATCH, OR SPRINGLESS LOCK.

AN EFFICIENT KNIFE-GRINDING MACHINE.

The machine shown is especially designed for grinding knives for cutters of various descriptions, and permits of readily examining the work as it progresses without disturbing the adjustment. It has been patented by Mr. Eugene J. Wheeler, of Millington, Tenn. On the main driving shaft is a right and left hand screw thread engaged by a shoe on the lower end of a shaft turning in a bracket secured to a longitudinally sliding table, the carriage with the cutter-head carrying the knife to be ground sliding in guideways on the table. When the shoe stands in one direction it engages one of the screw-threads to move the table toward one end of the frame, and when the shoe is turned to point oppositely it engages the other thread to carry the table toward the other end of the frame, whereby the knife will be carried forward and backward over the grinding wheel. The shaft turning the direction of the shoe may be shifted by hand by means of a handle, not shown, but this is effected automatically by an arm on the shaft engaging spring-pressed blocks held in collars on a longitudinal rod, the collars being placed where desired on the rod, and the blocks being held yieldingly in the collars, so that the shoe will readily change its position at the crossing of the threads. To move the carriage and knife toward or from the grinding wheel, a shaft is held in links pivoted to the front part of the table, the shaft having at its outer ends eccentrics engaging vertical slots in offsets on top of the carriage, while from one of the eccentrics extends outward a reduced part of the shaft on which is secured an arm carrying a weight. By swinging the arm upward the knife is drawn from the wheel, and when the arm is swung down to a normal position, regulated by a screw, the carriage slides to

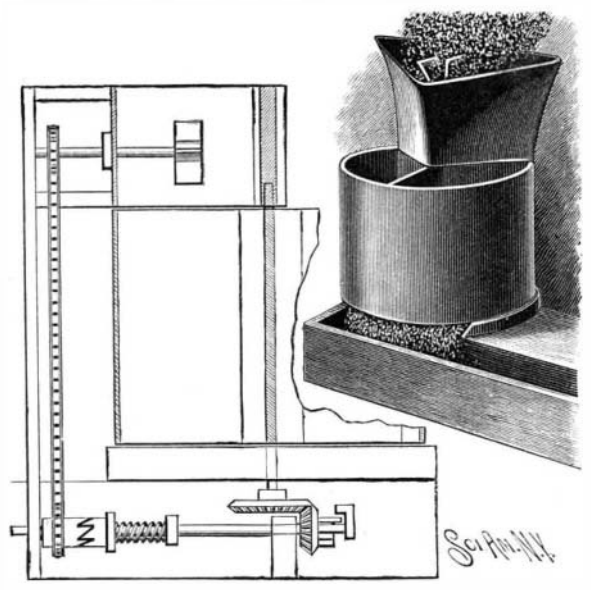


WHEELER'S KNIFE-GRINDING MACHINE.

bring the knife in contact with the wheel. On one of the trunnions of the knife head is a loosely rotating worm-wheel on which is a spring-pressed pin adapted to engage one of a series of apertures in a plate on the trunnion, the worm-wheel being in mesh with a vertical worm, and the outer end of the pin having a suitable knob by means of which it may be manipulated. When the pin is in engagement with the plate and the operator turns the worm, the knife is swung toward or from the grinding wheel to enable the operator to adjust it according to the bevel desired.

AN AUTOMATIC GRAIN MEASURING MACHINE.

The improved grain measurer shown in the illustration is more especially designed for use in connection with thrashing machines, to measure the grain as it leaves the machine. It has been patented by Mr. John W. Kershaw, Jr., of Burnside, Iowa. The cylindrical grain receptacle, open at the top and bottom, is preferably divided into three compartments, and is adapted to be revolved upon a fixed bottom, part of which is cut out to discharge the grain from one compartment at a time. The receptacle is intermittently revolved by a vertical shaft whose upper end has a bearing in the hopper above. The hopper has a cross section corresponding to that of one of the compartments of the measuring receptacle, and within the hopper a rimless wheel is revolved by means of a sprocket chain passing over a sprocket wheel turning loosely on a drive shaft, as shown in the sectional view, the drive shaft being held to rotate continuously in bearings at one side of the receiving trough. One face of the sprocket wheel has clutch teeth adapted to be engaged by clutch teeth on a spring-pressed wheel mounted to turn with and slide on the drive shaft, but the tension of the spring is such that, on the accumulation of grain in the hopper, to impede the rotation of the rimless wheel therein, the clutch teeth will slide by each other, and the motion of the sprocket chain will be stopped. At the same time the sliding movement of the spring-pressed wheel on the drive shaft operates a longitudinally sliding rod engaging a spring-pressed trigger on a gear wheel meshing into a bevel gear wheel on the lower end of the shaft of the grain receptacle, whereby the latter is turned so that its

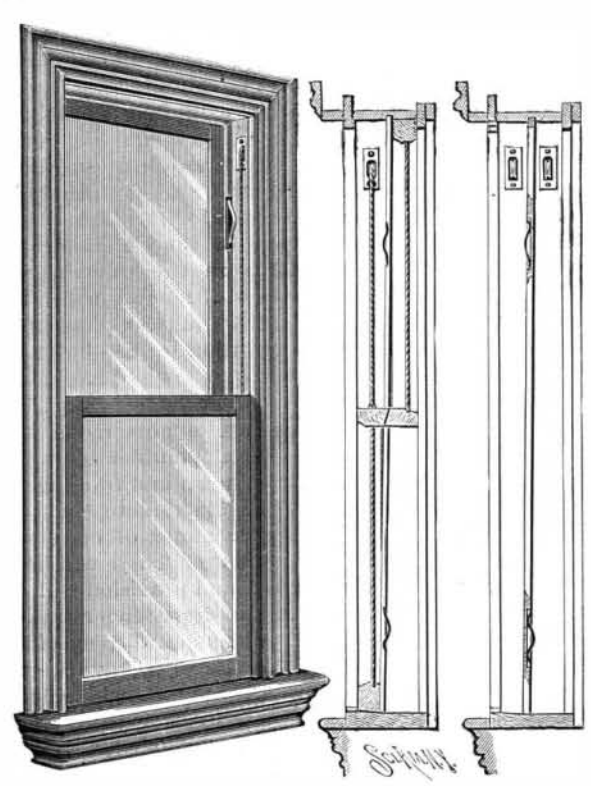


KERSHAW'S ROTATING GRAIN MEASURER.

filled compartment is brought over the cut-out portion of the fixed bottom, the grain flowing through into the receiving trough, while an empty compartment at the same time comes under the hopper. The inflowing grain not only fills each measuring compartment completely, but also occupies some of the space of the hopper, before the movement takes place by which the measured grain is discharged into the receiving trough.

AN IMPROVED WINDOW FRAME.

The accompanying illustration represents, in front elevation and vertical sections, an improved construction of the sash slideways of window frames designed to effectually prevent draughts and the rattling of the sashes, which, when closed, will be firmly wedged in place. It has been patented by Mr. August Schmidt, of No. 1768 Amsterdam Avenue, New York City. The frame is of the ordinary pattern except in the slideways of the upper and the lower sash, of which the parting rail, instead of extending vertically from top to bottom of the frame, is placed diagonally, so that the upper portion of the slideway for the upper sash is narrower than the top portion of the slideway of the lower sash, while at the bottom the slideway of the lower sash is narrower, and that of the upper sash wider. The width of the slideway of each sash at the top and bottom approaches as nearly as possible that of the thickness of the top and bottom rails of the respective sashes. In the wide portion of each slideway a spring is placed in a recess in the parting rail, in such position that when the sashes are closed they will be firmly held to prevent rattling and the wind from entering the room. As the taper of the sash slideways is very gradual, the sashes are designed to be freely moved without binding, so that they can be easily raised and lowered, while the springs enable the sashes to be held in any desired position in the wider portions of the slideways without exerting tension at all times on the sash cords.



SCHMIDT'S WINDOW FRAME.