

**AN IMPROVED NECK YOKE.**

The simple harness attachment shown in the illustration is mainly designed for securing the breast straps to the neck yoke, although capable of other uses. It has been patented by Mr. Lewis W. Rothrock, of Morrisdale Mines, Pa. As shown more in

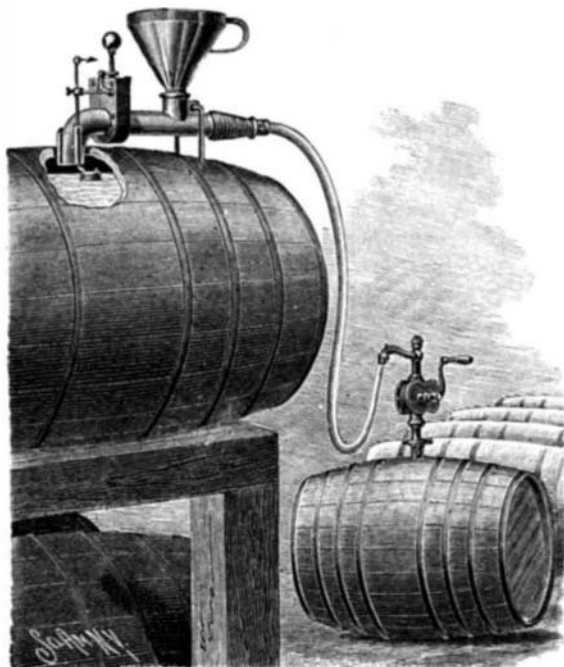


ROTHROCK'S NECK YOKE ATTACHMENT.

detail in the small view, the attachment consists of a ring having parallel arms, supporting a roller removably held in position by a bolt, there being on the bolt a loose sleeve slightly longer than the roller, preventing the binding of the arms against the roller. The device is light and strong and saves the breast straps from wear.

**AN IMPROVED LIQUID-MEASURING DEVICE.**

The measuring draw cock, with its connections, shown herewith, affords convenient means of filling vessels of different sizes and kinds, and automatically cutting off the delivery when the supply reaches any desired point in the receiving vessel. The improvement was patented August 30, 1892, by Mr. Jacob Roos. The draw cock body is preferably made in two parts to facilitate its manufacture, and at the junction of the two parts is a vertical slideway for the liquid-controlling gate, an upwardly extending rod from which terminates in a ball weight. The discharge nozzle has on its vertical portion three ribs, and a plate spring, serving to keep it erect when inserted in a bung hole. On the front side of the guide box in which slides the liquid-controlling gate is pivoted a bell crank lever, a laterally projecting toe from the upright member of which is adapted to enter a notch in the rod extending upward from the gate, to hold the latter in elevated or open position, and in a vertical perforation in one of the ribs on the spout slides a trigger rod, on the lower end of which is an inverted cup, forming a float. The upper portion of the trigger rod is adjustably connected with the horizontal member of the bell crank lever, the rod being vertically adjusted to set the float at the point to which it is desired the liquid should rise in the receiving vessel. When a cask or other vessel is to be filled, the float is set as desired, and the gate is raised, the rod extending upward from it being engaged by the lever; but, when the liquid rises sufficiently to raise the float, the lever is rocked by its engagement with the trigger rod, and the gate is dropped to cut off the flow of the liquid automatically. An inlet, threaded to receive a screw



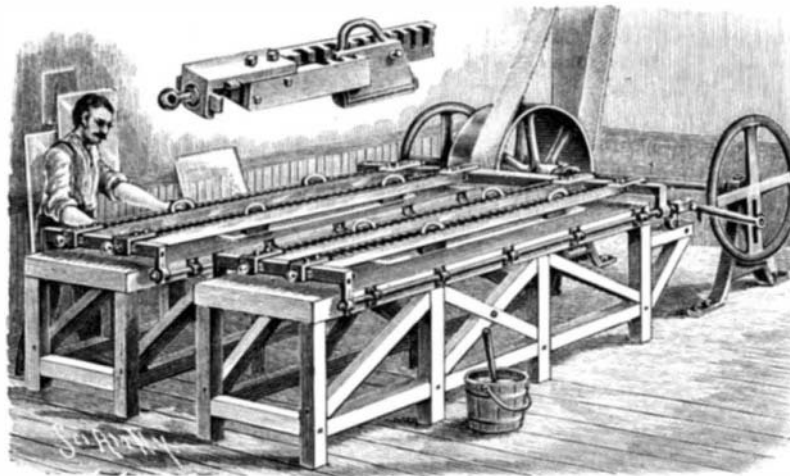
ROOS' FILLING APPARATUS.

plug, in the longitudinal passage of the body, provides for the introduction of liquid to the cask through a funnel when so desired. A pair of prop legs, at the rear of the inlet, may be inserted slightly in the cask when necessary to afford support to the draw cock body near the funnel. The device may thus be used to safely fill any vessel, or partly fill it, cutting off the flow according to its adjustment, and thereby serving as a measure of quantity or as a safety tapping faucet.

Further information relative to this improvement may be obtained of Messrs. D. Rich & Co., who are agents therefor, at No. 22 Park Place, New York City, where also the apparatus may be seen in operation.

**AN EFFICIENT GLASS-POLISHING MACHINE.**

A machine for polishing the beveled edges of plate glass is shown in the accompanying illustration, its construction being designed to increase the capacity of such machines and reduce the cost of labor. The connecting rods from the crank wheels of the drive shaft are connected with a transverse rod, and with the latter are connected longitudinally ranging guide rods having bearings in brackets at the sides of two beds on which the glass to be polished is laid. At each end of these guide rods are secured vertical brackets or standards supporting cross bars on which are held laterally adjustable longitudinal rubber-carrying bars. An end view of one of the rubber-carrying bars, with a rubber in position, is shown in the small view, the bar having at each end an overhanging angle iron with a set screw for clamping it in position, and the bars being longitudinally slotted and having vertical recesses to receive the studs of the rubbers. The beds are far enough apart to afford a passageway between them, so that one attendant can conveniently examine and attend to the inner rubbers of each bed in addition to having the usual access to the outer rubbers. In large work the plates may be placed on both tables, bridging the passage, the rubbers being then removed from the central bars, or the bars being bodily removed. The frame carrying the rubbers is reciprocating



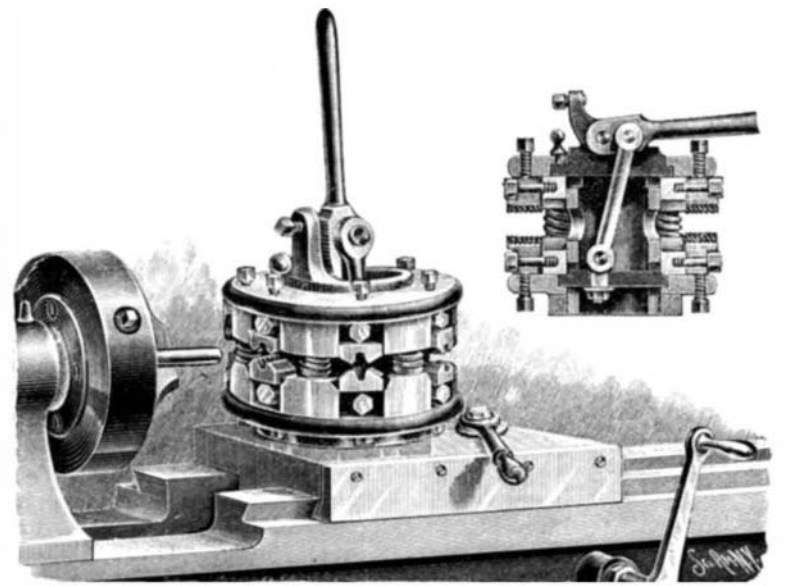
MAXIMILIAN'S GLASS-POLISHING MACHINE.

ated from the drive shaft through the connecting rods, and the single machine with one attendant is designed to perform the work of two machines and two attendants.

Further information relative to this improvement may be had of the patentee, Mr. Ferdinand K. Maximilian, at Jacques Kahn's, Nos. 27 to 31 Bleecker Street, New York City, where the machine may be seen in operation.

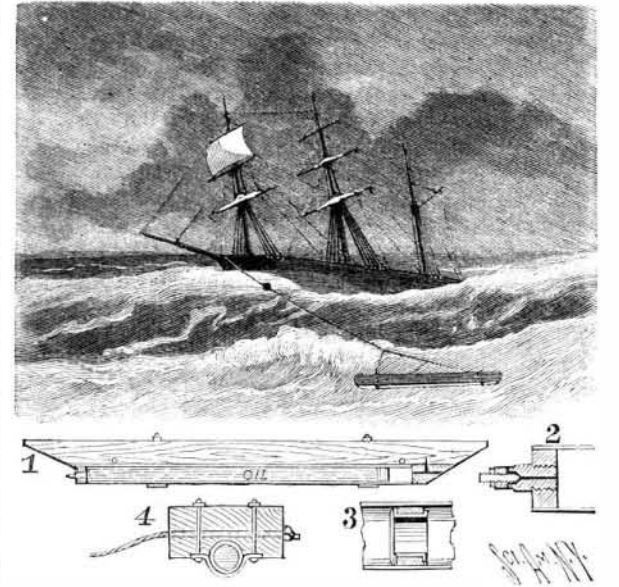
**AN IMPROVED BOLT-THREADING MACHINE.**

The screw-cutting die head, or bolt-threading machine, shown in the illustration in perspective and in section, is the invention of Mr. James A. Becher, of Mishawaka, Ind., and has been patented in the United States, Canada, and Great Britain. The head, shown closed in the perspective view, is used for heavy as well as for light work, and can be made to carry a dozen sets of dies or more, as desired. The turret die carrier, having opening and closing jaws, is mounted on suitable standards secured to a lathe or screw-cutting machine spindle in such a manner that the axis of the turret is transverse with its axis of rotation. The turret jaws may be opened and closed at any stage in the work without stopping the machine, and the jaws may be rotated to bring any pair of the series of the cutting dies into operation, and concentric with the axis of rotation of the lathe or screw-cutting spindle. The same device may be used as a revolving head by dispensing with the lever and adding some extra mechanism to open and close the head while in revolution, making a reliable and labor-saving



BECHER'S REVOLVING-TURRET BOLT-THREADING MACHINE.

machine for light work from one inch down. With this turret no time is lost by backing out of dies after thread is cut, and the machine requires one less pulley on line shaft, and one less belt between line shaft and counter, than usual, dispensing also with friction



PRESCOTT'S APPARATUS FOR DISTRIBUTING OIL UPON WATER.

clutch. Further particulars in regard to this improvement may be obtained of the patentee.

**A DEVICE TO DISTRIBUTE OIL ON WATER.**

A device whereby oil may be distributed upon the water around a vessel, to modify the force of the waves, is shown in the illustration, and has been patented by Mr. Sidney I. Prescott, of No. 154 Tompkins Avenue, Brooklyn, N. Y. The device is shown in section in Fig. 1, and consists of a float made of wood, or wood and cork, to the underside of which is secured an oil tube having at one end a valve, shown in Fig. 2, which may be adjusted to feed the oil more or less rapidly. Near the other end of the tube is a piston, shown in Fig. 3, capable of sliding the length of the tube, the end of the tube outside of the piston being wholly open to or having a channel communicating with the sea water, which acts upon the piston to force the oil through the valve at the other end of the tube. The distributor is towed by the vessel to distribute the oil as desired, the attachment of one of the lines to the float being shown in the sectional view, Fig. 4. A weight is designed to be bent into a bight of the tow line a short distance from the ship, to serve when desired as a governor in cross seas.

**Improvement of Aluminum.**

An account of a process invented by Reinhardt Mannesmann for increasing the resistance of aluminum to atmospheric, chemical, or mechanical influences is given in the *Moniteur Scientifique*. The inventor says that the addition of a little tungsten to pure aluminum or its alloys communicates a remarkable resistance to the action of cold or hot water, salt water, and other reagents. When the proportion of tungsten is sufficient, the alloys formed offer among other physical properties great resistance to traction and tension. The proportion of tungsten can be varied within extremely wide limits, according to the composition and nature of the alloy, and according to the usage for which it is destined. The tungsten can be added, alloyed with other metals; still the most advantageous way consists in adding the tungsten before the aluminum is melted.