

AN IMPROVED SCREW CUTTING LATHE.

The accompanying illustration shows a screw cutting foot lathe, manufactured by Sebastian, May & Co., of Cincinnati, O. It is specially designed to meet the wants of model makers, inventors, electricians, sewing machine agents, amateurs, and others having use for a small lathe to run by foot power.

With this lathe can be turned iron, steel, brass, wood, bone, or ivory; also screw cutting, polishing, drilling, milling, or any other kind of work that can be done on any large lathe proportionately.

It is strongly and durably built, and can be easily operated.

The bed of the lathe is 4½ inches wide and is 34 inches long, is thoroughly braced, has four Vs, will swing 8 inches over bed, and take 20 inches between centers.

The head spindle is made of 1¼ inch solid steel, and tail spindle is ¾ inch steel. The back gear is thrown in and out by a cam. The tail stock sets over for tapers, and is fastened down by a cam. The head is detachable, so as to admit readjustment if spindle becomes untrue.

The treadle is of wrought angle iron. The rod supporting the driving wheel runs on friction wheels. The tops of the pitmans are of gun metal, and the bottoms of the pitmans slip through holes in the foot bar, so as to adjust the length of the stroke.

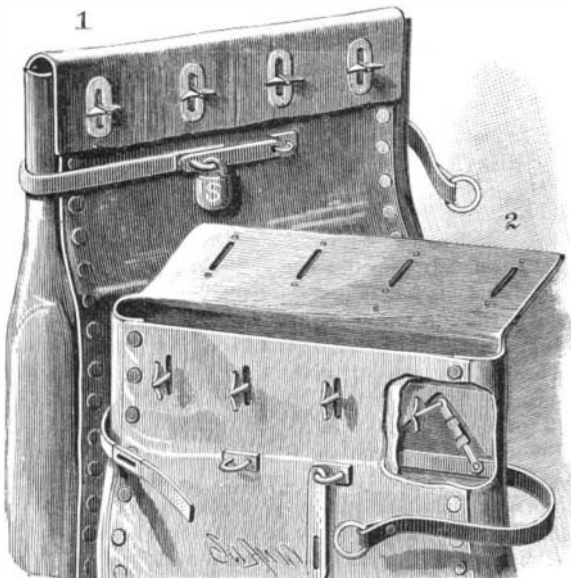
The carriage and rest are of the most approved and latest design. The carriage is detachable for hand work, and it can be thrown into feed instantly for turning or screw cutting. All threads for screws are hastard, that is, half square, half V.

With this lathe is furnished a face plate, two pointed centers, wrenches, and gears to cut from 3 to 40 threads.

Any further information may be obtained by addressing the manufacturers.

MAIL BAG.

Formed on the top edge of the back of the pouch is a flap which folds over on the front. Both the front and flap are provided with vertical slots which coincide with each other when the flap is folded. On the inner surface of the back of the pouch is riveted a leather strip, above which is



ARMSTRONG'S MAIL BAG.

secured to the outer surface a piece of leather having V-shaped recesses formed in its bottom edge. On these pieces is secured a piece of leather, between which and the back slides a strap. Pivots are held in the back of the pouch, and are so arranged as to pass through the slots, the outer ends being formed with a button. On the inner end of each pivot is an arm having a sliding section, the outer end of which is pivoted to the strap. At one end of the strap is a ring, and at the opposite end is a slot.

When the bag is filled the flap is swung down, so that the pivots pass through the slots when the strap is pulled; this swings the arms and turns the buttons in such a manner that they cross the slots. The slotted end of the strap is then swung over the front of the pouch, and the padlock applied as shown in Fig. 1. By disengaging the strap and pulling it in the opposite direction, the pouch may be opened. Fig. 2 shows the pouch opened, parts being broken away to show the arrangement of the pivots and arms.

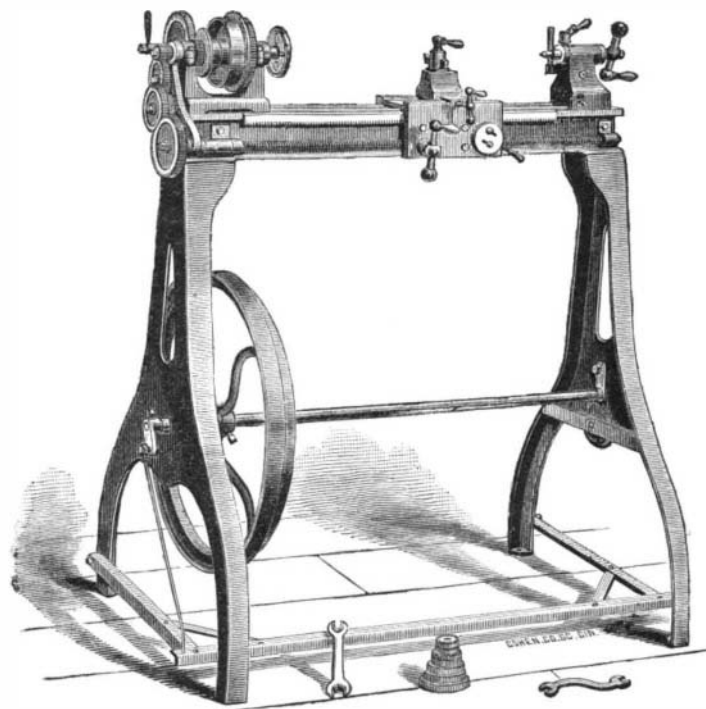
This invention has been patented by Mr. B. F. Armstrong, of Engle, New Mexico.

A Machine for Producing Rain.

Among the last inventions reported from Australia is a machine for producing rain storms. It is intended to force a rain supply from the clouds during a period of drought. The apparatus is in the form of a balloon with a charge of dynamite attached underneath it. The balloon is to be sent into the clouds, and when there the dynamite is to be fired by a wire connecting it with the earth. A trial of this novel contrivance is to be given upon the dry districts of New South Wales, and the result is looked forward to with interest by some of the residents of that colony.

A Specific for Hiccough.

Dr. Henry Tucker recommends, in the *Southern Medical Record*, the use of the following very simple remedy in the treatment of hiccough, namely: Moisten granulated sugar



SEBASTIAN, MAY & CO'S IMPROVED SCREW CUTTING LATHE.

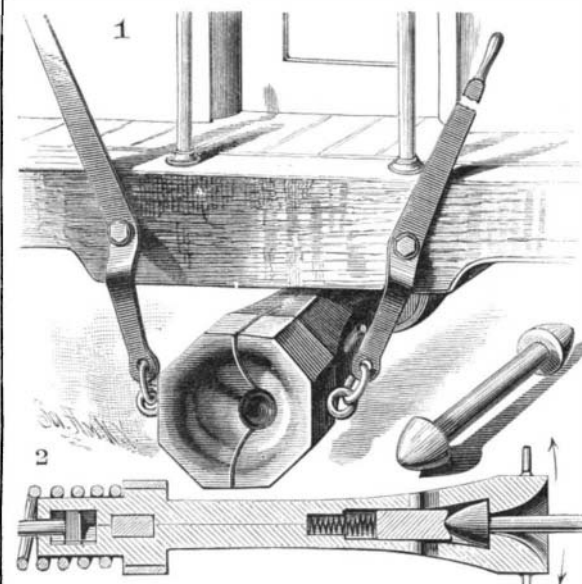
with good vinegar. Of this give to an infant from a few grains to a teaspoonful. The effect, he says, is almost instantaneous, and the dose seldom needs to be repeated. He has used it for all ages—from infants of a few months old to those on the down-hill side of life, and has never known it to fail. The remedy is certainly a very simple one, and although no theory is advanced to account for its wonderful action, it merits trial.—*Therapeutic Gazette.*

CAR COUPLING.

The drawhead is formed of two like sections, in the outer end of each of which is a half funnel-shaped recess, behind which is a triangular recess forming, when the sections are united, a chamber in which slides a buffer block that is pressed outward by a spiral spring. Near the rear end of the drawhead is formed a fixed collar that is surrounded by a stirrup suspended from the bottom of the tie bar, and that serves to hold the two sections together at that point. The extremity of the drawhead is surrounded by a powerful buffer spring. The sections are prevented from moving longitudinally on each other by a key. Near the rear of the drawhead is formed a recess to receive the head of a rod attached to the bottom of the car for limiting the longitudinal movement of the drawhead.

A pin entering a slot in each section retains the buffer block in place when the sections are spread. The sections of the drawhead are operated by means of two levers arranged as shown in the perspective view.

When one of the rounded heads of the link bar enters the funnel-shaped mouth of the drawhead, it forces the sections apart and passes into the front part of the inner chamber. The end of the head strikes the block, and the spring breaks the shock. When the head has passed the offsets, the sections spring together and hold the link rod in place. The link rod is released by moving the sections by means of levers. The inward convex curve of the recesses forming the link opening is such that a ridge is virtually formed in



McPHEETERS' CAR COUPLING.

the opening, against which the link will strike in case a car is derailed, thereby spreading the sections and allowing the head of the link to come out of the drawhead.

This invention has been patented by Dr. S. B. McPheeters, of Medoc, Mo.

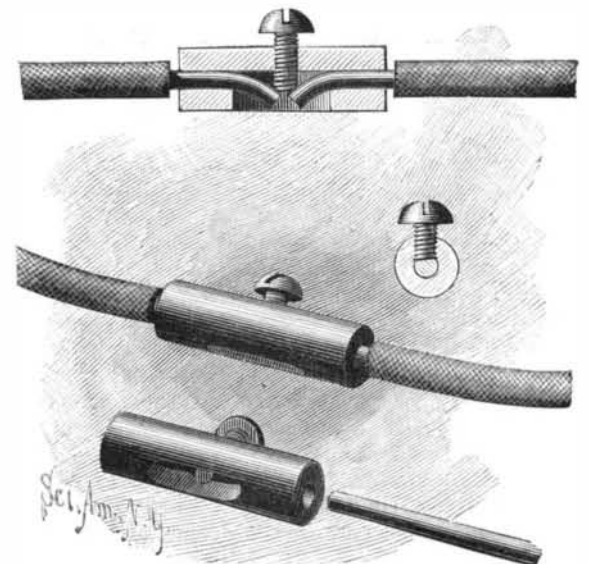
Machine Borers.

An interesting lecture was recently delivered at the Edinburgh Forestry Exhibition by Professor McIntosh, in which he called attention to the serious damage inflicted upon submarine woodwork by marine borers. Among the most destructive of this class are the crabs known as the *Cheluria terebrans* and the *Lamnorina lignorum*, or Scotch gribble, of which the former is the most mischievous, as being able to make larger and more oblique excavations. The ravages made by the gribble in the fir beams that supported the beacon on the Bell Rock were described by Mr. Robert Stevenson a long time ago, the rate of destruction being an inch a year. It was thought that the gribble paid attention only to timber, but it is now known that it is equally unremitting in its attentions to the sheaths of gutta percha and other materials which protect submarine cables. The ravages of the gribble, great as they are, are surpassed by those of the *Xylophaga*, a very small bivalve occupying a position between the stone and rock boring *pholas* and the wood boring teredo. The tunnels which the latter made into timber were of astonishing length, varying from one to two feet in the common teredo to three feet in the case of the great teredo.

Up to the present time no wood has been found capable of resisting the attacks of these little creatures; and although various remedies have been tried in the shape of immersion of the wood in silicated lime, bitumen, and creosote, by forcing them under great pressure into the tissue, the latter material was the only one which had been found to be efficacious, while mechanically nothing short of metallic sheathing protects the timber. On the other hand, the Professor pointed out that the borers were frequently useful in their proper place, and particularly in the case of drifted timber and old wrecks, which would be very dangerous to navigation were they not rapidly disintegrated by the action of the teredo. The subject is one that is worthy of very close attention at the hands of those scientific men who would be connected with the marine laboratories now being established.

JOINT FOR ELECTRIC CONDUCTORS.

The annexed engraving shows a joint for electric wires recently patented by Mr. Richard W. Kear, of 206 South



KEAR'S JOINT FOR ELECTRIC CONDUCTORS.

Center Street, Pottsville, Pa. A short tubular socket is provided with a longitudinal slot, diametrically opposite which is a screw threaded aperture containing the binding screw. The ends of the wires are passed into opposite ends of the socket until they meet below the aperture, when the screw, being turned down, presses and bends the ends of the wires down into the slot, as shown in the upper view, thus holding the ends of the wire in such a way that they cannot be withdrawn. The screw and the tubular socket form a good electrical connection between the wires. The manner of using the socket with coated wires will be readily understood from the engraving.

The World's Telegraphs.

The telegraph appears to have made more progress in the United States than in any other country. The number of American telegraph offices in 1882 was 12,917, and the number of telegrams forwarded during the year was 40,581,177. The number of telegraph offices in Great Britain and Ireland in 1882 was 5,747, the number of telegrams forwarded being 32,965,029. Germany had 10,803 offices, the number of telegrams forwarded being 18,362,173. France had 6,319 offices, the number of telegrams forwarded being 26,260,124. Russia had 2,819 offices, the number of telegrams forwarded being 9,800,201. Belgium had 835 offices, the number of telegrams forwarded being 4,066,843. Spain had 647 offices, the number of telegrams forwarded being 2,830,186. British India had 1,025 offices, the number of telegrams forwarded being 2,032,603. Switzerland had 1,160 offices, Italy 2,590, and Austria 2,696. The number of telegrams forwarded in these three last mentioned countries was 3,046,182, 7,026,287, and 6,626,203 respectively.