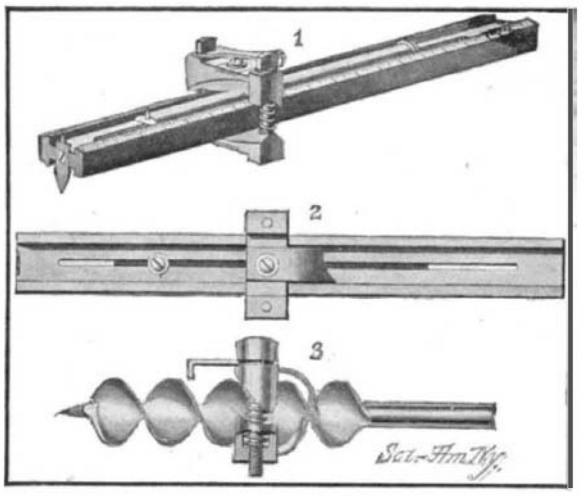
windwheels and the direction of the wind. Mr. Alfred Fornander, 32 West 66th Street, New York city, is the patentee of this novel windmill. He is an inventor of some note, having devised a number of machines and articles, among them tapestry-yarn printing machinery and the "perpetual" pencil. His present invention certainly seems a marked advance on the windmill with which most of us are familiar.

IMPROVED GAGE.

The gage which is illustrated in the accompanying engraving is capable of quite a variety of uses. It

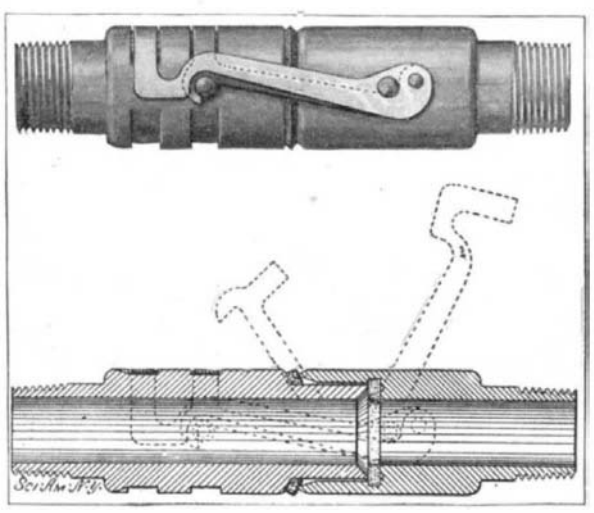


IMPROVED GAGE.

may be used either as a single-tooth gage for marking, or as a double-tooth gage for mortising work, as a cutter for forming dovetails and deep cuts, or as a stop on auger bits to limit the depth of holes. As indicated in Fig. 1, the device comprises a bar which is I-shaped in cross section, and is graduated along the edge. Resting on the web of the bar is a slide, which is loosely held in place by a screw threaded therein, and passing through a central slot formed in the web. This is illustrated in Fig. 2, which shows the underside of the device. A cutter is fastened to one end of the gage bar. This cutter is provided at its opposite end with a scratch pin. A scratch pin is also secured to the adjacent end of the slide, for making parallel scratch lines for mortising work. The space between the scratch pins can be regulated by moving the slide to any desired position. The slide when thus adjusted is held by a clamping head adapted to abut against the side of the work when using the tool as a marking gage. The clamping head consists of two transversely-extending jaws, held together at their outer ends, against the tension of two coil springs, by means of thumb screws. When the clamp is to be used on an auger bit, the gage bar is dispensed with, and merely the clamping head is used. The latter is secured to the bit by means of two braces, one on each jaw, which engage opposite sides of the auger at its middle portion. A stop piece secured to one of the jaws serves to limit the inward movement of the auger after the hole has been drilled to a predetermined depth. Mr. George Arnold, of 7002 St. Lawrence Avenue, Chicago, Ill., is the inventor of this improved gage.

HOSE OR PIPE COUPLING.

A novel hose or pipe coupling, which has been invented by Mr. S. N. Vernon, of Sonora, Ohio, is illus-

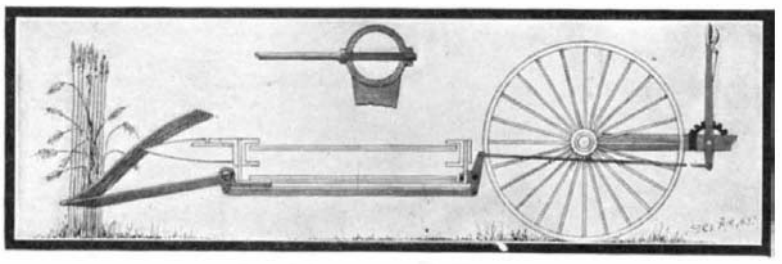


HOSE OR PIPE COUPLING.

trated herewith. The improved construction provides a very simple and convenient locking device, which will securely clamp the coupling sections together in a water-tight manner. The two coupling sections are made of metal, and are threaded at their outer ends to receive the hose or pipe. One of the sections, that shown at the right in the engraving, is cup-shaped at the inner end, to receive the neck formed on the inner end of the other section. A packing ring is placed at the bottom of the cup, against which the sharpened edge of the neck section bears, and, similarly, a packing ring is placed at the base of the neck, to receive the sharpened edge of the cup section. Fulcrumed to the right-hand member is a locking link of general U-shaped formation, that is, it comprises two levers connected at their outer ends by a yoke band. A second, shorter member of similar form has its two arms pivoted to the two arms of the locking link just back of the main fulcrum. The shorter member is formed with hooks on each arm adjacent to the yoke band, which are adapted to hook over two pins formed on the left-hand coupling section. To couple the two sections together, it is merely necessary to slip the neck of one into the cup of the other, bring the hook member into engagement with the pins, and then press down the locking link which, owing to the eccentric pivotal connection of the hook member with the locking link, will result in drawing the coupling sections tightly together and pressing their sharpened edges into the flexible packing rings, thus effecting a water-tight joint. In this position the coupling sections will be locked until the locking link is lifted again. Recesses are formed in the left-hand coupling section to receive the yokes of the two U-shaped levers.

GRAIN LIFTER FOR HEADERS.

The improved grain lifter, illustrated herewith, is adapted for removable attachment to any header or like machine, and is especially designed for straightening individual stalks of the grain, so that the heads need not be lost in the cutting. The device is not intended for use upon grain lying flat upon the ground, but particularly for use in connection with grain upon which the header can be readily worked, or grain in which the heads have sagged down for any cause, so as to be below the level of the platform of the machine when the platform is at its lowest point. The body of the device consists of a bar, preferably tubular, and a series of lifting arms or fingers carried thereon, and located at desired intervals apart along the length of



GRAIN LIFTER FOR HEADERS.

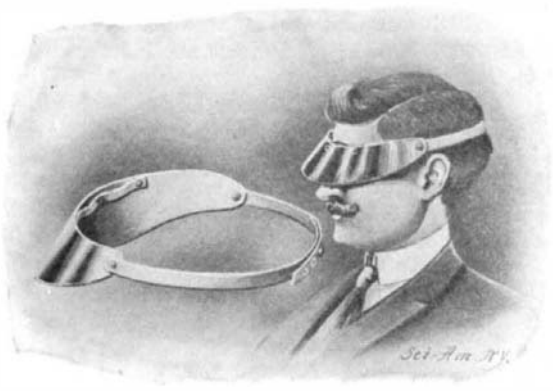
the bar. The lifting fingers are formed of spring steel rods, which project horizontally forward from the body bar, and are bent upward and backward at their outer ends, as shown. To prevent the fingers from turning in the body bar, they are made with rectangular shanks, which fit into rectangular openings in the bar. The grain lifter is mounted in hangers secured to the header. A pair of crank arms are secured to the body bar, from which suitable connections extend to an adjusting lever. The latter may be operated to raise or lower the lifting fingers, according to the condition of the grain to be operated upon. It is evident that the device will very effectually raise the majority of the heads of grain which may have dropped from any cause, and carry these heads upward, so that the grain can be acted upon at a suitable point below the heads, and be cut by the sickle blades of the machine. It will be noted that all the operating parts of the device are carried rearward beneath the platform of the header, so that it can readily be attached thereto, and will in no manner interfere with the proper operation of the machine. The inventor of this improved grain lifter is Mr. Jacob Mees, of Lane, So. Dak.

Blanks for Pearl Buttons.

In the cutting of blanks for pearl buttons, much of the operator's time is consumed in the sharpening of the saw, which must be done at very frequent intervals. This must be done three or four times an hour, and each time about three minutes is consumed in putting a new edge on the saw teeth. A new invention by which this can be done in about ten seconds has recently been patented by J. W. Miller, of Muscatine, Iowa, and the inventor claims that not only is this time saved but better work is done. The time saved alone represents an additional product of between fifteen and twenty gross of blanks in the course of a week. The device is merely an attachment made to the regular blank cutting machine, being fastened adjacent to the maple plug. When an operator wishes to set his saw, he adjusts the machine and without stopping the cutter, sets the saw. He then stops the machine and adjusts the filing machine, which consists of a number of small steel files working rapidly back and forth on the teeth of the saw. In ten seconds the saw is filed and set and the cutter has nearly a half a gross of buttons cut before his neighbor who is using the old method has finished filing his saw.

VENTILATED EYE-SHADE.

The ordinary type of eye-shade possesses the serious defect of improper ventilation. It is arranged to fit closely to the eye, and its shape is such as to catch and hold the heated air which drifts therein. This pocket of hot air is very annoying to the eyes, and causes them to burn and smart. The heat also affects the head, producing a dull, stupefying headache. These ill effects are avoided in the eye-shade here illustrated, since ample provision is made to permit the

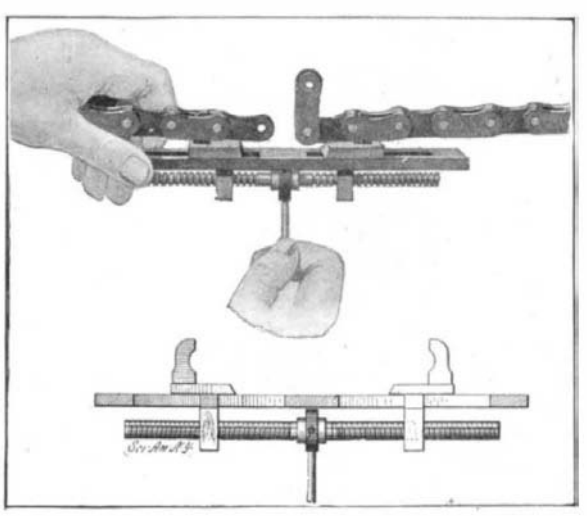


VENTILATED EYE-SHADE.

heated air to escape. The eye-shade is spaced from the forehead by means of a flexible ribbon, secured along its upper, inner edge. This ribbon is sinuously disposed on the eye-shade, that is, it is looped, instead of lying flat thereon, and these loops bear against the forehead, causing the eye-shade to stand out a distance of about a quarter of an inch, thus forming a large ventilation passage for the heated air. A patent on this eye-shade has recently been granted to Mr. William S. Bevan, of 829 Gates Ave., Brooklyn, N. Y.

CHAIN CLAMP.

In the accompanying illustration we show a simple clamp, which can be attached to any chain in such manner as to relieve the tension on any part, to permit removal or separation of that part from the rest of the chain. The device will be found very useful in repairing automobile chains while on the road. The main advantage of the invention is that one or more links may be removed from the chain without taking the chain off the sprockets or letting it drop to the ground, thus obviating the possibility of dirt or sand clogging or injuring the chain or sprockets. By use of this chain clamp, injured links may be removed from the chain without disturbing its adjustment. The clamp is a very compact little device, as shown. It comprises a metal bar formed with two slots, to receive the depending arms of two blocks. These arms, at their lower ends, are threaded to receive a screw rod. One-half of the screw rod is cut with a right-hand thread, and the other half is cut with a left-hand thread, so that when the rod is turned in one direction the blocks will be drawn together, and when turned in the opposite direction the blocks will move apart. The blocks are formed at their upper ends with curved lugs adapted to fit against the pivot pins or bolts of



CHAIN CLAMP.

the sprocket chain. When the lugs are thus applied back of the chain pins on opposite side of the injured section, the screw rod is turned to draw the links together. This relieves the tension from the injured section, and permits removal of the broken or weakened link without otherwise disturbing the rest of the chain. Mr. Hermann Hubn, of Macon, Ga., is the inventor of this improved clamp.