

AN IMPROVED DENTAL PLUGGER.

This is a dental instrument capable of use as a hand and mallet plugging implement, the device being also adapted for use as a handle for various instruments. It has been patented by Mr. George W. Geitz, of No. 127 Water Street (room 14), New York City. The tubular casing of the instrument is preferably made in one piece, its upper and lower portions of two diameters, and the bore also has two diameters, forming thereby a shoulder at the bottom of the upper section, as shown in Fig. 1. A plunger rod held to slide in the casing has at its lower end a threaded or other suitable



GEITZ'S DENTAL PLUGGER.

socket to receive the shank of a tool, and the upper portion of the rod, in the upper section of the casing, has a collar normally resting on the shoulder, while one side of the rod, below the collar, has a longitudinal slot into which a screw is passed through the casing to prevent the turning of the rod. A cap having a threaded bore screws into the upper end of the casing, and a spiral or coil spring resting at one end on the collar of the plunger rod bears at its other end against the bottom surface of the cap. An adjusting screw, passing through the threaded bore of the cap, is adapted at times for engagement with the upper end of the plunger rod. When the instrument is to be used for hand plugging, the adjusting screw is carried out, as shown in Fig. 2, and then, as the instrument is reciprocated, the upper end of the plunger rod is carried up, against the tension of the spring, into violent engagement with the lower end of the screw, at every downward or inward stroke of the casing, when the screw acts as a hammer, the spring also re-enforcing such action and returning the plunger rod to its normal position, with its collar in engagement with the internal shoulder of the casing. When the device is to be employed as a tool handle, or as a mallet-plugging implement, the screw is carried down into positive engagement with the plunger rod, as shown in Fig. 1, whereby all the parts are held in fixed position.

A New Blowpipe.

At a recent meeting of the *Académie des Sciences*, M. Paquelin exhibited a new blowpipe of a single tube, connected by an India rubber tube with a carburetor. A cylinder of wire gauze prevented the flame from reaching the carburetor. The air

of a bellows regulated by stop cocks fed the flame, part of it going through the carburetor, which contained a mineral essence. The maximum heat of the flame was obtained when it was of an indigo-blue color, showing a complete combustion of the carbon, and its temperature was then sufficient to fuse platinum, that is to say 1,800° C.

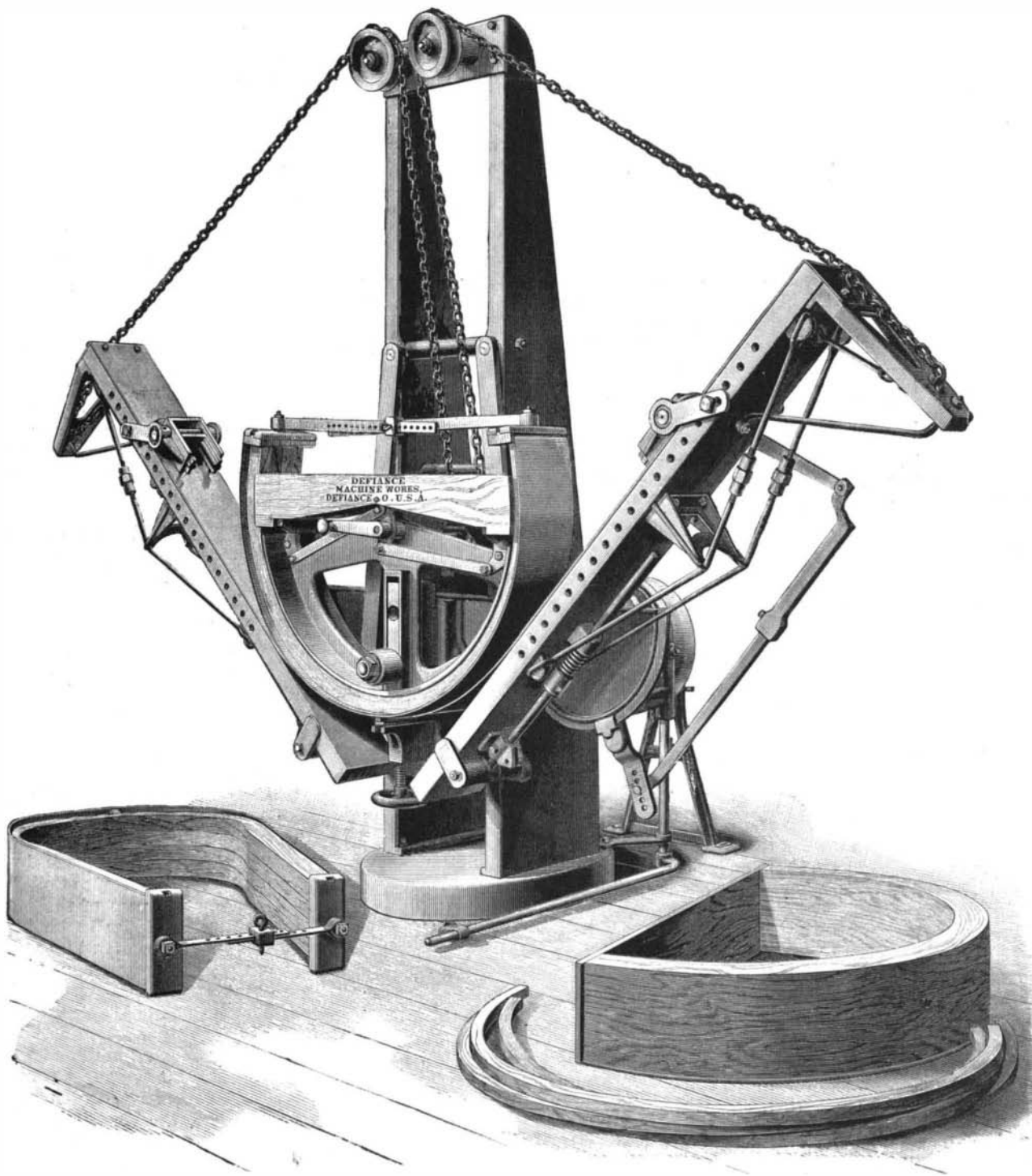
AN IMPROVED WOOD BENDING MACHINE.

The demand for wood bent into shapes to suit structural requirements has steadily increased of late years, and ingenuity has been taxed to fill it. Pieces for ornamental furniture, in infinite variety of form, carriage seats and carriage bodies, car finishings, ship building, wagon making, and innumerable other departments make demands on the art of bending woods for effects of utility and beauty which seem to have no end.

The accompanying engraving represents a machine capable of bending wood of every description, from the size of the most delicate stick to that of the heavier piece of oak, 4 by 9 inches, shown in the illustration. Of course it must be understood that the timber, of whatever size, is required to be steamed to perfect saturation before the operation of bending; but a person unacquainted with the bending of woods can have very little idea of the enormous energy required to bend such a stick as the larger one represented in the engraving. Some of the most refractory woods, such as Australian iron bark and Tasmanian black wood, have been successfully bent in this machine, and while woods of a more cellular character are better for the purposes of bending, it is believed that wood of nearly every variety can be satisfactorily bent.

The outside arc of the larger piece of bent timber shown in the engraving is forty inches in diameter. The lighter pieces and those shown in the form on the machine are forty-eight inches in diameter, and are such as are used for carriage felloes. The bundle lying down and shackled in the inclosing steel strap contains wagon hounds.

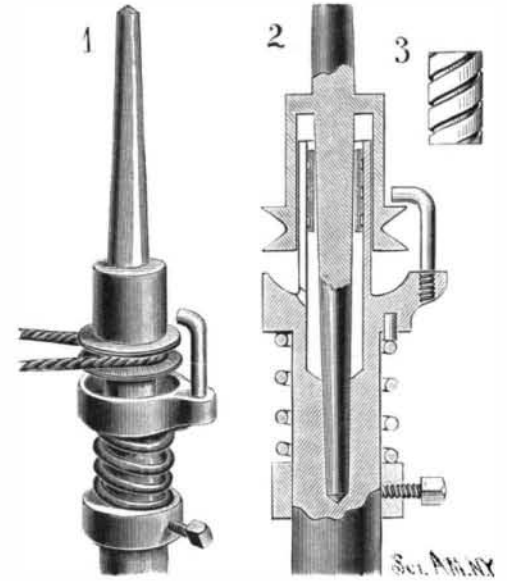
The machine is composed entirely of iron and steel, is automatic in its movements, weighs about four thousand pounds, and has several valuable features recently patented by the Defiance Machine Works, the manufacturers, Defiance, Ohio.



AN IMPROVED WOOD BENDING MACHINE.

A SILK SPINNING SPINDLE SUPPORT.

The device shown in the illustration provides for the perfect lubrication of the spindle in its supporting box, while thoroughly preventing the escape of any oil to the possible injury of the delicate material operated upon. It has been patented by Mr. Robert Atherton, of the Franklin Mill, Mill Street, Paterson, N. J. The spindle box is of the usual form, and is adjusted in place upon the spinning frame in the ordinary way,



ATHERTON'S SPINDLE SUPPORT.

and formed upon the box near its lower end is an oil cup having an annular recess in its upper surface, around a vertical extension, as shown in Fig. 2. This vertical extension is cylindrical, and has an oil chamber above an axially formed step socket, in which the spindle is supported, a small perforation or oil passage for the introduction of the lubricator extending from the bottom of an annular recess into the oil chamber. The spindle has an enlarged portion to form a seat for spun yarn, and near its lower end is a grooved whirl

for the band, by which the spindle is rotated. The enlarged portion of the spindle is hollow, and has a central leg, whose lower end is formed as a conical step, seated in the step socket near the bottom of the box. Around this central leg is an annular channel, against the outer walls of which loosely fits the vertical extension, while within the extension, just below its upper edge, and around the central leg, closely fits a bushing sleeve, shown in Fig. 3. On the exterior of the sleeve are spiral grooves forming channels for the lubricating material, which, as the spindle revolves, works upwardly around the spindle leg and lubricates the portion of the latter which has contact with the bore of the bushing sleeve. As the upper end of the sleeve is below the edge of the vertical extension of the box, no oil can work over the latter, but the oil is conducted downwardly into the oil chamber below the sleeve.

To remove a wart, cover the skin around the wart with lard, apply over the surface of the growth one or two drops of strong hydrochloric or nitric acid; then keep the part covered up until the scab separates.