

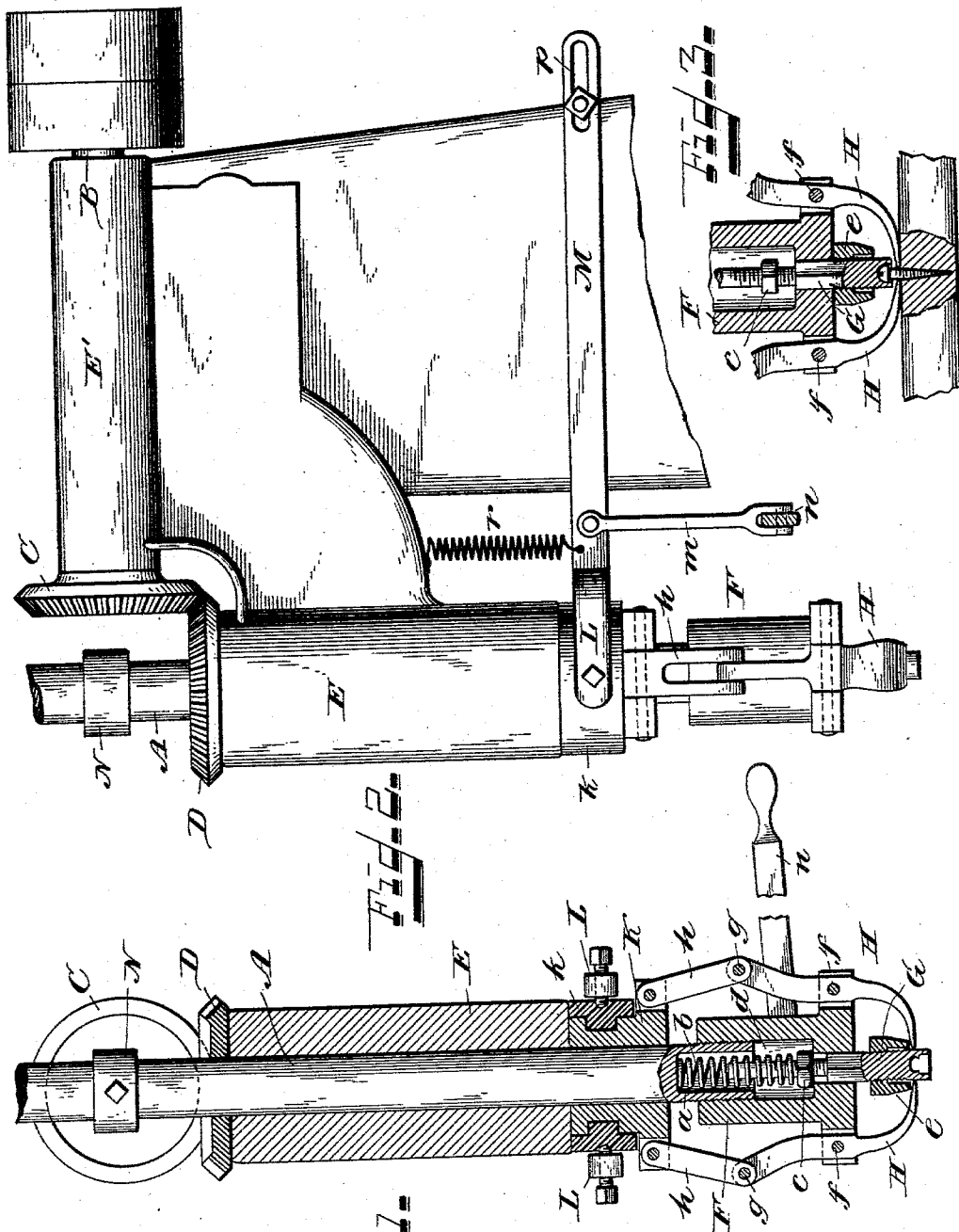
(No Model.)

T. BURCHILL.

SCREW SEVERING ATTACHMENT FOR SCREW DRIVING MACHINES.

No. 569,744.

Patented Oct. 20, 1896.



Witnesses.
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UNITED STATES PATENT OFFICE.

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SCREW-SEVERING ATTACHMENT FOR SCREW-DRIVING MACHINES.

SPECIFICATION forming part of Letters Patent No. 569,744, dated October 20, 1896.

Application filed April 6, 1896. Serial No. 586,295. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BURCHILL, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Screw-Severing Attachments for Screw-Driving Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My improvements relate to devices for severing the heads of screws, after they have been driven to place in woodwork and the like, where for any purpose the removal of the heads of the screws is desired, and my invention has particular relation to such attachments when used in connection with screw-driving machines as employed by vehicle-wheel manufacturers.

In the manufacture of vehicle-wheels it is customary to drive screws into the felly on each side of the spokes to hold the spoke and prevent the felly from splitting. These screws have often been driven by machines provided with a vertically-movable and rapidly-revolving mandrel arranged to hold the screw by its head and drive it into the wood. Heretofore after the screws have been thus driven it has been customary then to remove the screw-heads one at a time with a pair of hand-pincers. This is necessarily quite a tedious undertaking, involving considerable time and labor, which it is the purpose of my invention to dispense with; and the invention consists of certain devices, to be hereinafter particularly pointed out and claimed, arranged to be attached to the screw-driving mechanism, whereby the moment the screw is driven to place the screw-heads will be automatically severed from their stems.

In the drawings, Figure 1 is a central vertical section of my attachment, showing the toggle-nippers in front elevation. Fig. 2 is a side elevation of the same. Fig. 3 is a detail view, in central vertical section, with the nippers in position to sever the screw-head.

A is the vertically-movable mandrel of the screw-driving machine and rotated at any desired speed by the power-driven shaft B and beveled gear C, which meshes with the be-

veled gear D, mounted on and keyed to the mandrel, the shaft B and mandrel A being supported in the sleeves E E', secured to the frame of the machine.

Upon the lower end of the mandrel is tightly coupled or otherwise secured the sleeve F. This sleeve carries in a central recess therein the screw-holder G, which holder is recessed and grooved at its lower end to conform to and hold the head of the screw. The screw-holder G passes loosely through the sleeve F and up into a recess *a* in the mandrel, while a coiled spring *b* bears between the mandrel and an adjustable nut *c* on the screw-holder, thus normally keeping the holder extended, but allowing it to be pressed back against the spring-pressure, the recess *d* in the sleeve being enlarged to allow play for the nut and to furnish an abutment for the nut to prevent the holder from dropping from the attachment.

e is a collar or nut mounted on and adjustable on the outer end of the screw-holder, by the adjustment of which the distance the screw-holder can be pressed upward is regulated.

H H are a pair of nipping or cutting jaws pivoted at *ff* to the sleeve F and at *gg* to the toggle-bars *h h*. The toggles *h h* are pivoted to the collar K, which is mounted loosely on the mandrel, the upper portion of the collar being formed with a groove to receive the split ring *k*, to which are secured the outer ends of the bifurcated yoke L, the lever-arm M of which is coupled by connecting-rod *m* with hand-lever *n* and with a foot-treadle, (not shown,) so that the lever M can be shifted either by hand or foot, as may be most convenient.

The lever M is pivoted in the slot *p* to the frame of the machine, so that the mandrel can be moved vertically thereby. On the upper portion of the mandrel is adjustably secured by set-screws or otherwise the collar N, which limits the downward play of the mandrel and screw-driver, while a spring *r*, attached to lever M and the frame, holds up the operating parts, until brought into action, with the collar K against the sleeve E.

Before the screw is inserted in the holder the cutting-jaws H H are held apart by com-

ing in contact with the end of the screw-holder, as shown in Fig. 1, and in this way the jaws are out of the way, allowing the operator to easily insert the screw in the holder, which is then pressed upward, allowing the jaws to come in contact with the screw immediately under the head or at such a point on the stem of the screw as it may be desired to cut off same, the portion of the screw to be cut off being regulated by the distance the nut *e* is adjusted from the base of the sleeve *F*, inasmuch as the position of the cutting-jaws is fixed with relation to the sleeve, as they are pivoted thereto.

15 In screw-driving machines it is usual to have a table upon which the work is placed, and as the table is in a fixed position it is also necessary to adjust the distance from the end of the screw-holder to the wood for the varying thickness of wheel-fellies, so that the operator shall always have room between the wood and driver to insert the screw in the holder. This adjustment is obtained by the adjusting of the nut *c* so that the spring *b* may advance the screw-holder a greater or less extent, as required. Then the distance the screw is to be driven into the wood (usually about the length of the screw) is determined by the adjustment of the collar *N* from the gear-wheel *D*.

In order that the cutting edges of the jaws *H H* may be kept sharp, I prefer to insert a hardened-steel cutting-blade in the end of the jaws, which can be removed for sharpening.

35 The operation of the device will be evident from the description already given.

Having made the necessary adjustments for the work required, the mandrel and attachment are set in rapid rotation and the operator 40 inserts the screw in the holder, pressing back the same and allowing the cutting-jaws to come together around the screw. The lever *M* is then depressed, bringing down the mandrel and driving the screw, the resistance of the screw against the cutting-jaws allowing 45 the mandrel to descend rather than the jaws to cut. As soon as the screw is driven in and the collar *N* comes in contact with the gear *D* the mandrel necessarily stops in its descent, and the downpressure on the lever *M* now is at once transferred to the toggles, driving the cutting-jaws through the screw and at once severing the head. In this way all of

the time and labor heretofore spent in cutting off the heads of the screws by hand are 55 entirely saved, as the moment the screw is driven to place the head is removed by the cutting-jaws.

Having thus described my invention, what I claim, and desire to secure by Letters Patent 60 of the United States, is—

1. In a screw-severing attachment, the combination, with a screw-driving mandrel, of cutting-jaws pivoted thereto, toggle-bars pivoted to said jaws, and means for operating 65 same, whereby the screw may be severed at the completion of the mandrel stroke, substantially as shown and described.

2. In a screw-severing attachment, the combination, with a screw-driving mandrel, of 70 cutting-jaws pivoted thereto, collar mounted and sliding on said mandrel with toggles connecting said collar and cutting-jaws, and lever for operating said mandrel coupled to said collar, whereby the screw may be severed at 75 the completion of the mandrel stroke, substantially as shown and described.

3. In a screw-severing attachment, the combination, with a screw-driving mandrel, of 80 cutting-jaws pivoted thereto, collar mounted and sliding on said mandrel with toggles connecting said collar and cutting-jaws, lever for operating said mandrel coupled to said collar, movable screw-holder adjustably secured to said mandrel, with spring to normally hold 85 said screw-holder extended, to separate the cutting-jaws and allow for the insertion of the screw, substantially as shown and described.

4. In a screw-severing attachment, the combination, with a screw-driving mandrel carrying a fixed sleeve at its outer end, with recesses formed therein, and screw-holder movably mounted in said recess, spring and stop-nut within said recess, to keep said holder 95 extended, cutting-jaws pivoted to said sleeve, with means for operating same, and an adjustable nut on the outer end of said screw-holder, whereby the amount of cut of the cutting-jaws may be regulated, substantially as 100 shown and described.

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Witnesses:

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