

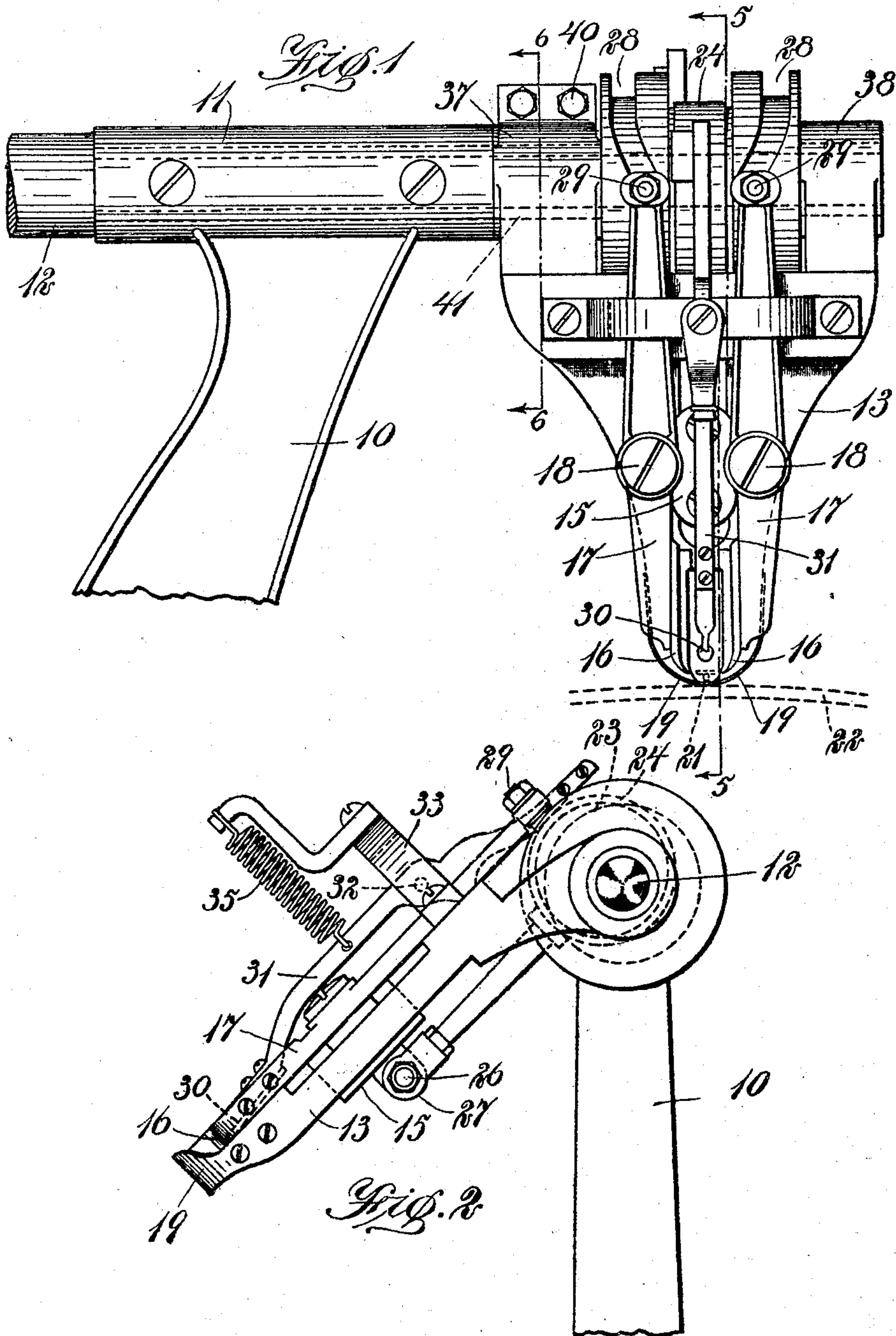
No. 795,631.

PATENTED JULY 25, 1905.

H. LYON.
MACHINE FOR PULLING LASTING TACKS.

APPLICATION FILED NOV. 16, 1904.

2 SHEETS—SHEET 1.



Witnesses:
Lawrence E. Kennedy.
E. Batchelder

Inventor:
Harry Lyon
By Wright Brown Quincy
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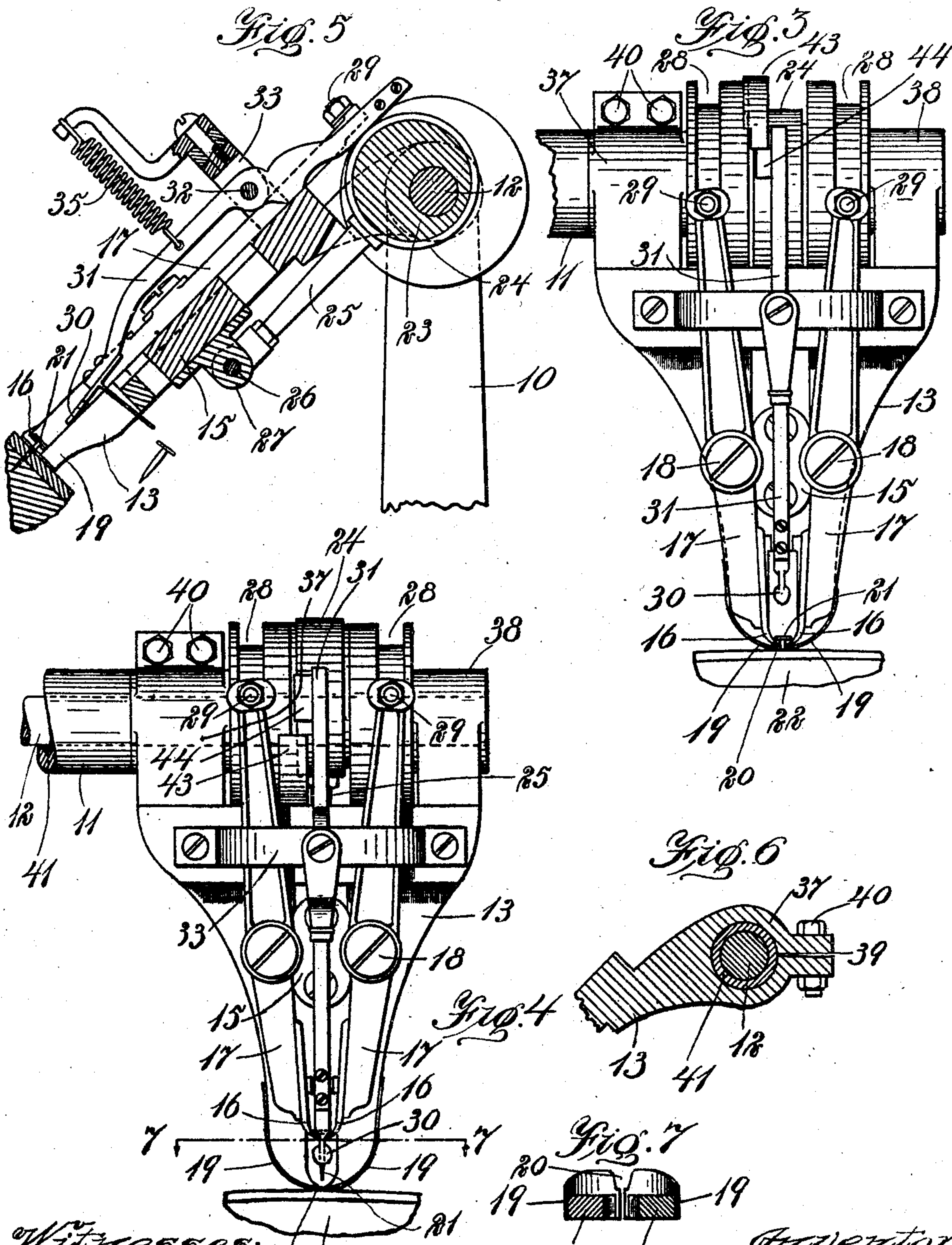
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UNITED STATES PATENT OFFICE.

HARRY LYON, OF BROCKTON, MASSACHUSETTS, ASSIGNOR TO OSCAR A. CAMPBELL AND SAMUEL H. NICHOLS, OF BROCKTON, MASSACHUSETTS, COPARTNERS AS BROCKTON SUPPLY COMPANY.

MACHINE FOR PULLING LASTING-TACKS.

No. 795,631.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed November 16, 1904. Serial No. 232,982.

To all whom it may concern:

Be it known that I, HARRY LYON, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Machines for Pulling Lasting-Tacks, of which the following is a specification.

This invention has for its object to provide an improved machine for pulling lasting-tacks from the lasted uppers of welted and turned shoes, the said lasting-tacks being driven temporarily and requiring removal before the completion of the shoe.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a front elevation of a tack-pulling machine embodying my invention. Fig. 2 represents an end elevation of the same. Fig. 3 represents a front elevation showing the jaws projected and closed. Fig. 4 represents a front elevation showing the jaws retracted. Fig. 5 represents a section on line 5 5 of Fig. 1. Fig. 6 represents a section on line 6 6 of Fig. 1. Fig. 7 represents a section on line 7 7 of Fig. 4.

The same reference characters indicate the same parts in all the figures.

In the drawings, 10 represents a supporting frame or standard, which may be of any suitable form and is provided with a bearing 11 for a driving-shaft 12.

13 represents an arm affixed to the frame 10, said arm having a guide for a movable slide 15. The guide is preferably a slot formed in the arm 13, the slide 15 being movable in said slot and guided by the longitudinal sides thereof.

16 16 represent a pair of opposed tack-grasping jaws, which are preferably formed like ordinary nipper-jaws, said jaws being affixed to levers 17 17, which are pivoted at 18 to the slide 15.

19 19 represent the two parts or sections of a work-supporting foot affixed to the lower end of the arm 13 and projecting from one side thereof, the projecting portion of the foot having a slot or throat 20, adapted to receive the portion of a lasting-tack 21 which projects from a lasted shoe-upper 22. The edges of the throat guide the tack to the inner end of the throat, which arrests the tack. The

lasted upper is held and manipulated by the hands of the operator, who forces each tack into the throat 20 and holds the tack when it comes to a bearing on the inner end of the throat, the tack being thus accurately located in position to be engaged by the jaws 16, as hereinafter described.

The slide 15 constitutes a carrier which is adapted to reciprocate on the arm 13 toward and from the foot 19, means being provided, as hereinafter described, for reciprocating said carrier, and thus giving the jaws a longitudinal reciprocating movement toward and from the said foot. Mechanism is also provided for moving the jaws toward and from each other to cause them to alternately grasp and release a tack located by the throat 20.

The preferred means for giving the jaws the above-described movements are as follows: 23 represents an eccentric affixed to the shaft 12, said eccentric being surrounded by a strap 24, to which is affixed a rod 25. Said rod is jointed at 26 to an ear 27 on the slide 15. The rod 25 and link 26 impart a reciprocating movement from the eccentric 23 to the above-mentioned carrier and the jaws 16, the jaws being thus moved longitudinally toward and from the foot 19. 28 28 represent groove-cams affixed to the shaft 12. The levers 17 17 are provided with slides 29 29, bearing trundle-rolls engaged with the cams 28. The rotation of the shaft 12 causes the cams 28 to oscillate the levers 17, which are thus caused to move the jaws 16 toward and from each other.

The above-described mechanism is timed to operate as follows: When the jaws are raised above the foot 19, they are separated from each other, so that a tack previously held between them is released. The jaws while separated move toward the throat until their grasping edges are below the head of the tack 21, located by said throat. The jaws then move inwardly and engage the shank of the tack under the head. The jaws while thus closed are next moved outwardly or away from the throat, and are thus caused to pull the tack. As the jaws approach the upward extreme of their movement they separate and release the tack.

It will be seen from the foregoing that provision is made for quickly and effectively removing lasting-tacks from a shoe-upper.

To prevent loose tacks from being caught

between the jaws 16 after they have been pulled, I provide a tack-ejector 30, which is movable across the jaws. Said ejector is a finger affixed to one end of a lever 31, which is pivoted at 32 to a bracket 33, affixed to the arm 13. The lever 31 is oscillated in such manner as to cause the ejector to pass between the jaws when the latter are opened or separated, the timing being preferably such that the ejector moves inwardly between the jaws from their outer edges when the jaws are first separated after being raised or retracted, the ejector returning to position in front of the jaws while the latter are descending and preparing to engage another tack. The inward movement of the ejector across or between the jaws insures the dislodgement from the jaws of a tack that might possibly remain in contact therewith. The ejector also prevents the possibility of tacks being piled loosely upon the work-supporting foot. The preferred means for operating the ejector comprise an eccentric on the shaft 12, said eccentric being in this case the slide-operating eccentric 23 and its strap 24, and a spring 35, which acts to press the upper end of the lever inwardly toward the said eccentric. The lever 31 is therefore oscillated by the conjoint action of the eccentric and the spring.

To prevent the possibility of such accidental movement of the lever 31 as will cause a collision between the ejector and the jaws, I provide one of the cams 28 with a segmental guard-flange 43, which overhangs an ear 44, affixed to the lever 31, said guard-flange preventing the upper end of the lever from moving outwardly, and thus moving the ejector inwardly while the jaws are rising and before they have separated.

As above stated, the work-supporting foot is preferably made in two parts or sections 19. Each of these parts is composed of resilient material, such as steel, and is preferably made of such thickness that it is adapted to spring or yield, so that in case a tack becomes wedged in the throat between the two sections one or both of the sections will yield to downward pressure, tending to force the tack against the sections, the tack being thus permitted to be forced outwardly between the sections without breakage of any of the parts. The thing to be avoided is breakage of the work-supporting foot or of the jaws by pressure exerted by the jaws when they are moving downwardly on a lasting-tack that may

be interposed between the jaws and the foot. This object is attained by making the foot in two sections, each adapted to yield independently.

The arm 13, which supports the jaws, is adapted to be adjusted so that it will project at any desired angle from the shaft 12—that is to say, the arm may stand in a vertical position or in a horizontal position or at any intermediate angle. To this end the arm is provided with sleeves 37 38, which are adapted to turn on the shaft 12 to give the arm any desired adjustment. The sleeve 37 is split, as shown at 39, Fig. 6, and is provided with bolts 40, whereby it may be compressed and clamped firmly upon a tubular sleeve 41, affixed to the bearing 11 and surrounding a portion of the shaft 12. When the bolts 40 are loosened, the arm 13 can be swung freely on the shaft 12, and when the bolts are tightened the sleeve 37 is compressed upon the sleeve 41 with sufficient force to hold the arm rigidly in any position to which it may have been moved.

I claim—

1. A tack-pulling machine comprising tack-engaging jaws, means for imparting a reciprocating movement to the jaws, means for imparting tack engaging and releasing movements to the jaws, a tack-ejector movable across the jaws, and means for operating said ejector.

2. A tack-pulling machine comprising tack-engaging jaws, means for imparting to said jaws a reciprocating movement, means for imparting tack engaging and releasing movements to the jaws, and a fixed work-supporting foot having a tack-locating throat, said foot being composed of two independent resilient sections.

3. A tack-pulling machine comprising a supporting-frame, a shaft journaled therein, an arm mounted to swing relatively to the shaft, means for securing the arm in different positions, tack-engaging jaws supported by the arm, means for reciprocating the jaws endwise, and means for imparting to the jaws tack engaging and releasing movements.

In testimony whereof I have affixed my signature in presence of two witnesses.

HARRY LYON.

Witnesses:

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E. BATCHELDER.