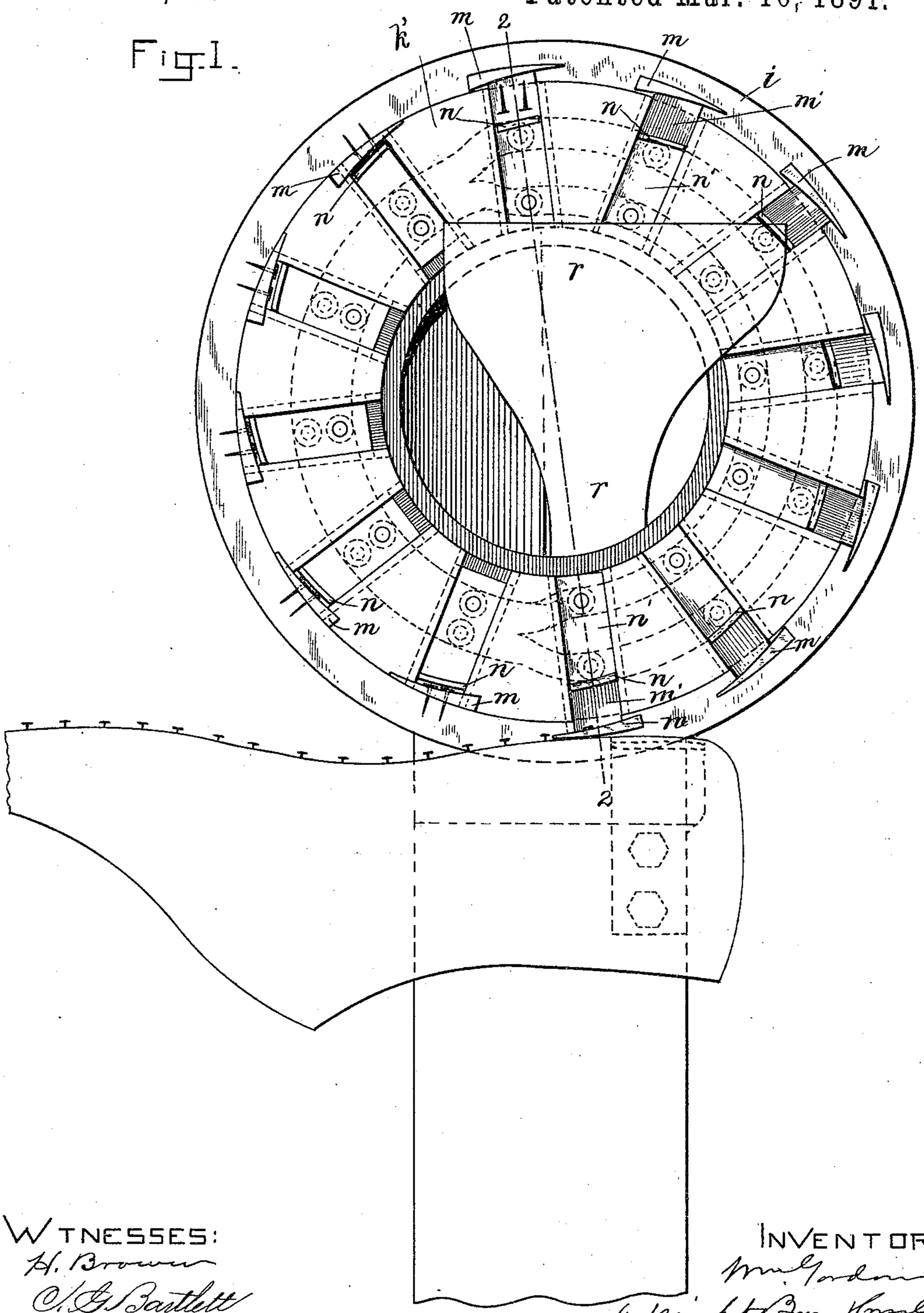
(No Model.) 3 Sheets—Sheet 1.

# W. GORDON.

## MACHINE FOR EXTRACTING LASTING TACKS.

No. 448,023. Patented Mar. 10, 1891.

Fig. 1.

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(No Model.) 3 Sheets—Sheet 2.

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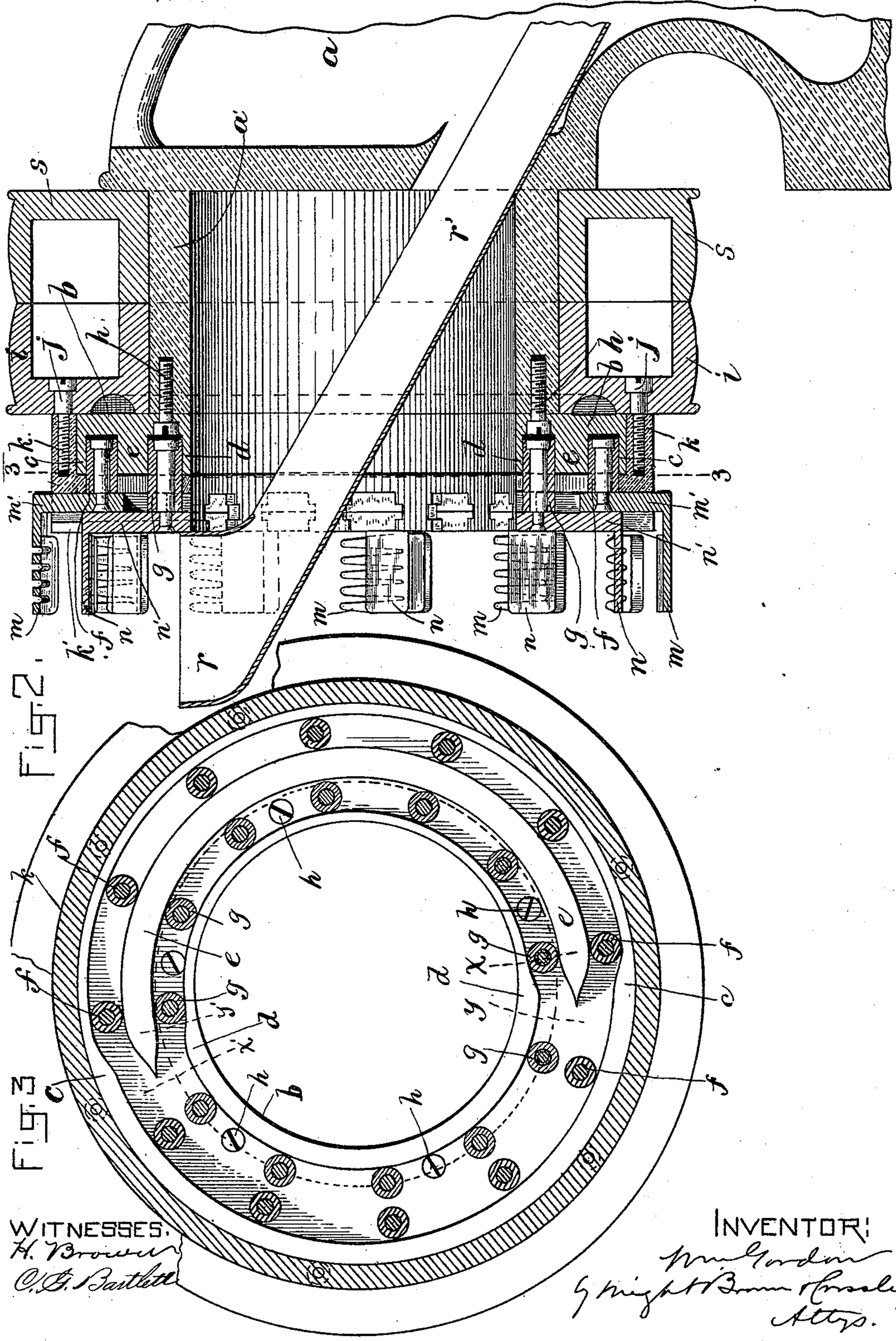


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(No Model.) 3 Sheets—Sheet 3.

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## MACHINE FOR EXTRACTING LASTING TACKS.

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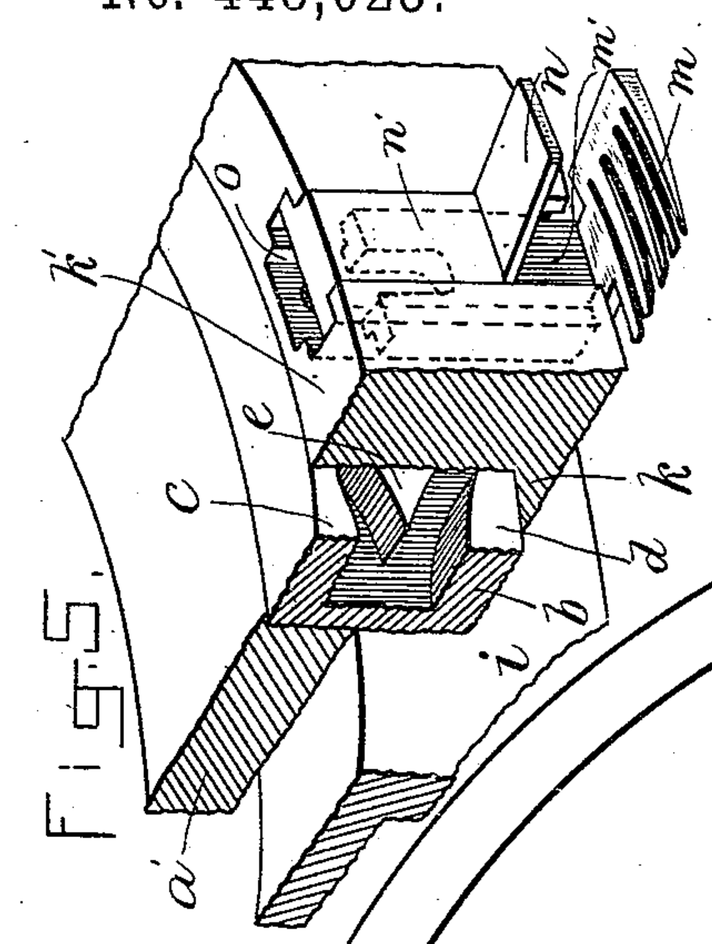


FIG. 5.




FIG. 4.

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# UNITED STATES PATENT OFFICE.

WILLIAM GORDON, OF BOSTON, MASSACHUSETTS.

## MACHINE FOR EXTRACTING LASTING-TACKS.

SPECIFICATION forming part of Letters Patent No. 448,023, dated March 10, 1891.

Application filed July 5, 1890. Serial No. 357,792. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GORDON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Extracting Lasting-Tacks from Boots or Shoes, of which the following is a specification.

This invention has for its object to provide means for extracting lasting-tacks from the inwardly-turned edges of boot or shoe uppers after such uppers have been secured to the last by means independent of the lasting-tacks, so that the latter are no longer required.

The invention consists in the improved tack-pulling appliances hereinafter described and claimed, the same comprising a rotary wheel having a series of tack-pulling claws which are arranged to grasp the heads of lasting-tacks and pull the same from the edges of the upper. The said claws may be rigidly affixed to the rotary wheel or may be movable thereon and arranged to serve as a series of jaws or jaw members co-operating with another series of jaw members, the whole constituting a series of pairs of jaws, one jaw of each pair being provided with tack-pulling claws. In connection with said jaws I employ means for closing the same at a given point in their revolving movement, and thereby causing them to grasp the heads of tacks engaged by said claws, and means for opening said jaws at another point, and thereby causing them to release the tacks. A chute may be arranged to receive the tacks that are released from the jaws and conduct the same away from the machine.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of my improved machine. Fig. 2 represents a section on line 2 2, Fig. 1. Fig. 3 represents a section on line 3 3, Fig. 2. Fig. 4 represents an end view of the machine, and Fig. 5 a perspective view of a portion thereof.

The same letters of reference indicate the same parts in all of the figures.

In the drawings, *a* represents a fixed supporting-standard on which is formed a tubular bearing or support *a'*. To the outer end of the tubular bearing *a'* is rigidly attached by screws *h* a ring *b*, the outer side of which is grooved to form the outer and inner cams *c d* and the intermediate cam *e*, (shown in Fig. 3,) said cams being formed to guide the trundle-rolls *f g*, which are secured to the tack pulling and grasping jaws hereinafter described.

*i* represents a pulley mounted to rotate on the bearing *a'*. To said pulley is attached by screws *j* an annular holder *k*, which has a flange *k'*, Fig. 5, projecting inwardly over the grooved face of the fixed ring *b*, said annular holder rotating with the pulley, while the ring *c* with its cams remains stationary.

*m n* represent jaws which are arranged in pairs and are attached to slides *m' n'*, which are movable in radial grooves *o*, Fig. 5, in the flange *k'*. The jaws *m* are provided with claws, as shown in Fig. 4, which are formed to engage the heads of lasting-tacks and extract the same when the lasted upper is held bottom upward against a rest or finger *p*, as shown in Fig. 4, in such position that the revolving claws will sweep along over the bottom surface of the inwardly-turned edge of the upper. The rest or finger *p* is arranged to bear on the inwardly-turned portion of the upper close to the point from which the tacks are pulled, so that said finger prevents the edge of the upper from being pulled away from the last by the pulling of the tacks.

Each jaw *n* is plain, or, in other words, has no claws, and is formed to co-operate with the jaw *m* in holding the heads of the tacks extracted by the claws of the jaw *m*, as shown at the left-hand portion of Fig. 1.

The slides *m' n'*, which respectively carry the jaws *m n*, are provided, respectively, with trundle-rolls *f g*, arranged to run in the grooves between the cams on the fixed ring *b*. The cams *c d* are formed so that their inner sides force the trundle-rolls toward each other, and thus bring the jaws *m n* together when the rolls are passing from *x* to *y*, Fig. 3, thus causing the jaw *n* to bear upon the head of a tack immediately after such head has been engaged by the claws of the jaw *m*. The cam *e* is formed to separate the trundle-rolls when the latter are passing from *x'* to *y'*, Fig. 3, and thus separate the jaws when the same are at about the highest point in their revolution, the tacks being thus released.

*r* represents a receptacle arranged to receive the tacks that are released by the jaws.

The tacks pass from said receptacle away from the machine through a chute or spout $r'$, which passes through the cylindrical bearing $a'$.

It will be seen that the operator holds the lasted upper and presents it to the machine, moving it about until the tacks are extracted in the manner above described. The claws of the jaws $m$ catch the heads of the tacks and pull them out, while the jaws $n$ hold the tacks against the jaws $m$ until they reach the point where they are discharged into the receptacle $r$.

I do not confine myself to the details of mechanism here shown and may vary the same without departing from the spirit of my invention. For example, instead of making the jaws $m$ movable toward and from the jaws $n$ they may be rigidly affixed to the rotary carrier, only the jaws $n$ being movable radially.

It is obvious that the jaws $m$ may be used alone for extracting purposes, the jaws $n$ being useful mainly in saving the tacks and preventing the scattering of the same.

$s$ represents a loose pulley mounted on the bearing $a'$ beside the driving-pulley $i$.

I claim—

1. A rotary wheel or carrier having a series of tack-extracting jaws arranged on and projecting from the periphery of the wheel, as set forth.

2. The combination, with the rotary wheel or carrier having tack-pulling jaws arranged on and projecting from its periphery, of the fixed rest or finger arranged to support the upper near the point from which the tacks are extracted, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 7th day of June, A. D. 1890.

WILLIAM GORDON.

Witnesses:
C. F. BROWN,
A. D. HARRISON.