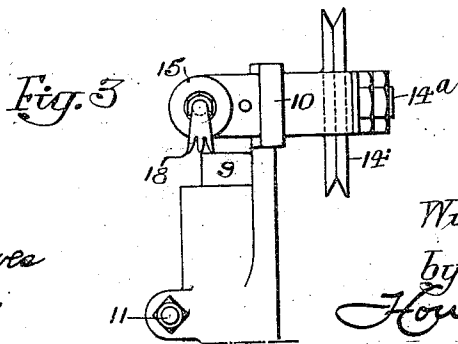
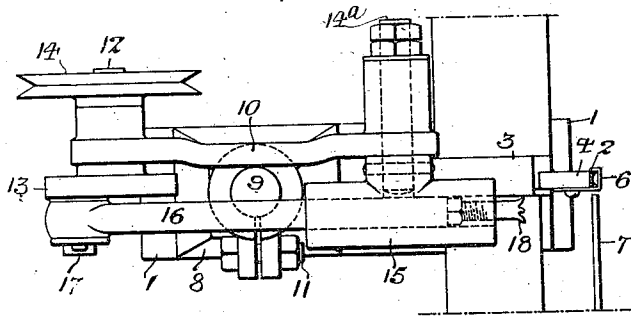
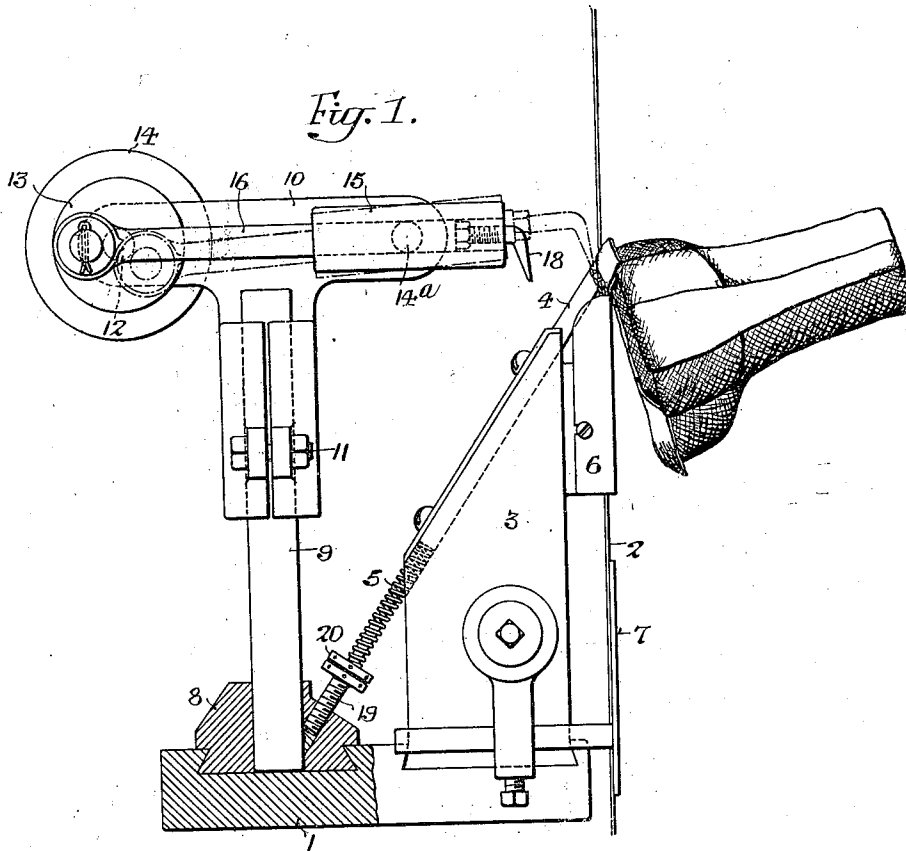


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1,036,269.



Witnesses.—
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12
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UNITED STATES PATENT OFFICE.

WILLIAM B. KEIGHLEY, OF VINELAND, NEW JERSEY.

TACK-PULLING MACHINE.

1,036,269.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed September 10, 1909. Serial No. 517,057.

To all whom it may concern:

Be it known that I, WILLIAM B. KEIGHLEY, a citizen of the United States, residing in Vineland, New Jersey, have invented certain Improvements in Tack-Pulling Machines, of which the following is a specification.

My invention relates to machinery employed in connection with the manufacture of shoes and more particularly has to do with machines designed to remove the tacks used to hold the upper, etc., to the last and insole after such parts have been lasted together so as to no longer require the support of said tacks.

One object of my invention is to provide a machine of the above noted character which shall be capable of automatically acting to withdraw the tacks from a shoe in process of manufacture, and which shall be of such construction as to perform this function with certainty and at a relatively high speed.

I further desire to provide a tack pulling machine of such construction that it shall be capable of certainly clearing itself of the tacks after their removal from the shoe operated on, and which shall be of a relatively simple compact and inexpensive construction.

Another object of my invention is to provide a tack pulling machine particularly designed to operate in connection with the shoe trimming machine described and claimed in Patent #928,133, dated July 10, 1909.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which:—

Figure 1, is a side elevation, partly in section, showing my invention as employed in connection with a shoe trimming machine; Fig. 2, is a plan of the machine shown in Fig. 1, and, Fig. 3, is a front elevation of a part of the machine.

In the above drawings, 1 is a portion of the work table of a band knife machine for trimming shoes, such as that shown in the patent above noted, although if desired it may consist of a separate bracket or base for attachment to such a table. The band knife is indicated at 2 and operates in connection with a work supporting post 3, adjustably mounted on said base, so as to be horizontally movable in a line at right angles to

said knife. An inclined bar 4 is carried by this post so that it extends into engagement with one side of the band knife 2; its end being beveled so that it is substantially parallel with said side, and a spring 5 is placed to act against this bar so as to continually force it toward the knife. The post 3 also carries guards 6 and 7, extending around said knife for the protection of operators, and said guards may be so mounted as to be adjustable in any desired manner.

The base 1 is provided with an undercut slot also extending at right angles to the operating run of the knife and designed for the reception of a block 8 on which is mounted a vertically extending bar 9. This latter carries a vertically adjustable head 10 having a suitable bearing for the reception of said bar to which it is clamped by means of a bolt 11.

The head is substantially T-form and at one end of its top member is provided with a bearing for a spindle 12, on which are fixed a crank 13 and a driving pulley 14; the latter being connected to a source of power suitable for turning the spindle at the desired speed. At the other end of the top member of the head 10 is mounted a horizontal pivot spindle 14^a, to one end of which is fixed a guide 15.

A rod 16 has one end constructed for the reception of the pin 17 of the crank 13 and its other end fits into the guide 15; being formed for the reception of a tack pulling claw 18;—the positions and dimensions of the various parts being such that the throw of the crank is sufficient to project the operating end of the claw 18 into the plane of the band knife 2.

Under working conditions, the block 8 is so adjusted that when the pulley 14 is turned at a suitable speed, said claw 18 will be caused to operate immediately in advance of the band knife;—that is to say, it will remove tacks from any given part of the shoe just before this particular part is operated on by said knife. Moreover, owing to the method of supporting and actuating the rod 16 and its attaching claw, the latter, which is substantially L-shaped with its teeth pointed downward, is first advanced and then lowered in the act of engaging a tack or tacks, as shown in dotted lines in Fig. 1. Immediately thereafter it is drawn away from the shoe and as the crank continues its movement, said claw is projected toward

said shoe with a rapid upward movement which serves to very effectually discharge the tack from its teeth, so that these latter are not liable to become clogged, but are at all times in condition for rapid work on a shoe.

The downward and rearward movement of the claw at the time of its engagement with the tacks has been found to be best adapted for their removal from a shoe and particularly when the device is used at the same time that surplus material is being trimmed from such shoe by means of the band knife. The speed of operation or number of strokes of the claw is so regulated that it is a practical impossibility for it to miss any of the tacks and there is consequently no danger of any of these being left in position to cause possible injury to the band knife.

While both the work supporting post 3 and the tack post 9 are so mounted on the base 1 as to be independently adjustable, I preferably support the end of the spring 5 which acts upon the bar 4, by means of an adjustable screw 19 mounted in the block 8 and maintained in any desired position by means of jam nuts 20. By suitably adjusting said screw, the pressure with which the bar 4 bears against the knife 2 may be regulated.

While as noted, I preferably employ my improved tack pulling machine in connection with a band knife machine for trimming the surplus material from shoes, it is to be understood that said machine is by no means limited to use in such a combination, as it is obvious that in many cases it may, with equal advantage, be employed to remove tacks independently of any other device or operation. I have found, however, that it is peculiarly adapted to be used simultaneously with a band knife machine.

It will be noted that by the particular construction and arrangement of parts above described, the tack pulling claw acts upon each tack so as to withdraw it in a line substantially the same as that in which it was originally driven by the laster. Owing to the fact that the tack pulling machine and band knife act simultaneously upon a shoe, the former aids in holding said shoe in the proper position upon the work supporting post, since this pulling action upon the

tacks actually draws the shoe toward the band knife. It is of course obvious that by adjusting the claw in or out upon its supporting rod and by adjusting the various supporting structures, the device may be quickly adapted to operate upon work in which the tacks are set in any of a number of different positions.

I claim:—

1. A tack pulling device consisting of a supporting structure; a guide pivoted thereto; a rod slidable in the guide; a claw on said rod; and a crank on which said rod is pivotally mounted, for moving said claw successively forward, down, and to the rear.

2. A tack pulling machine consisting of a supporting structure; a tubular oscillatory guide mounted on said structure; a rod slidable in said guide; an L-shaped claw attached to the rod; and a crank on which said rod is pivotally mounted for actuating the same to cause the claw to move successively forward, down and to the rear.

3. The combination of a supporting structure; a guide mounted thereon so as to be free to oscillate; a rod having one end slidable on the guide; a claw carried by the rod; a crank having the rod pivotally mounted on its pin for oscillating said rod and simultaneously giving it a longitudinal movement; and a work supporting post mounted adjacent the path of movement of the claw; said driving means including a device for moving the claw successively toward the post, down, and then to the rear to said post.

4. The combination of a supporting structure having a T-shaped head, a supporting spindle to which one branch of said head is connected, two spindles mounted in bearings in said head, one of said spindles having a driving pulley and a crank the other spindle having a guide fixed to it, a rod having one end connected to the pin of the crank, and its second end slidably mounted in the guide, with a tack extracting claw attached to said second end.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLIAM B. KEIGHLEY.

Witnesses:

WILLIAM E. BRADLEY
WM. A. BARR.