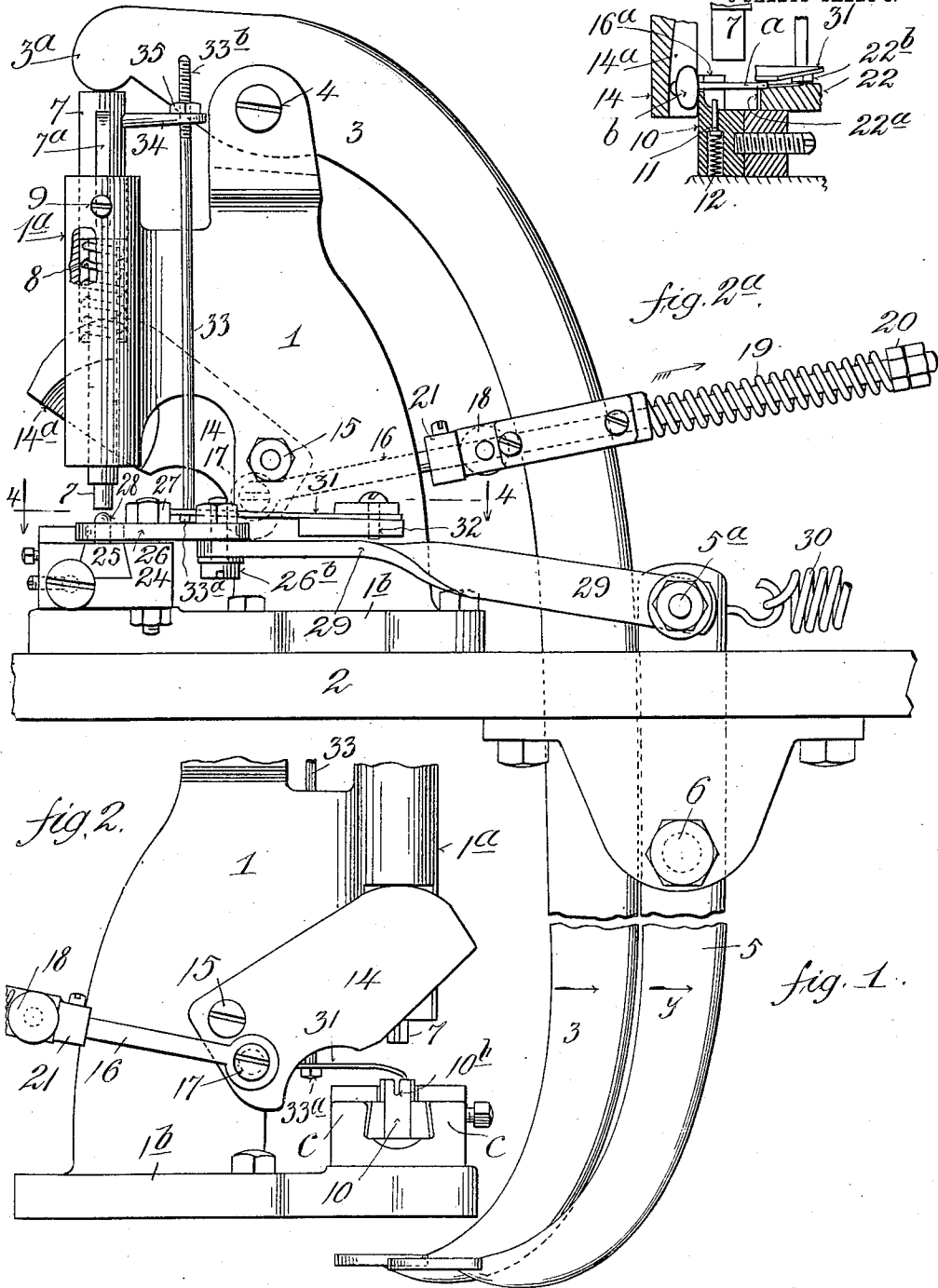


H. HALL.
MACHINE FOR SHANKING BUTTONS.
APPLICATION FILED JAN. 12, 1912.

1,046,462.

Patented Dec. 10, 1912.

3 SHEETS-SHEET 1.



Witnesses:

Wm. J. Fairright
Maria J. Fairright

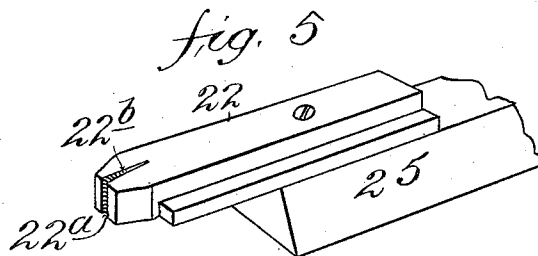
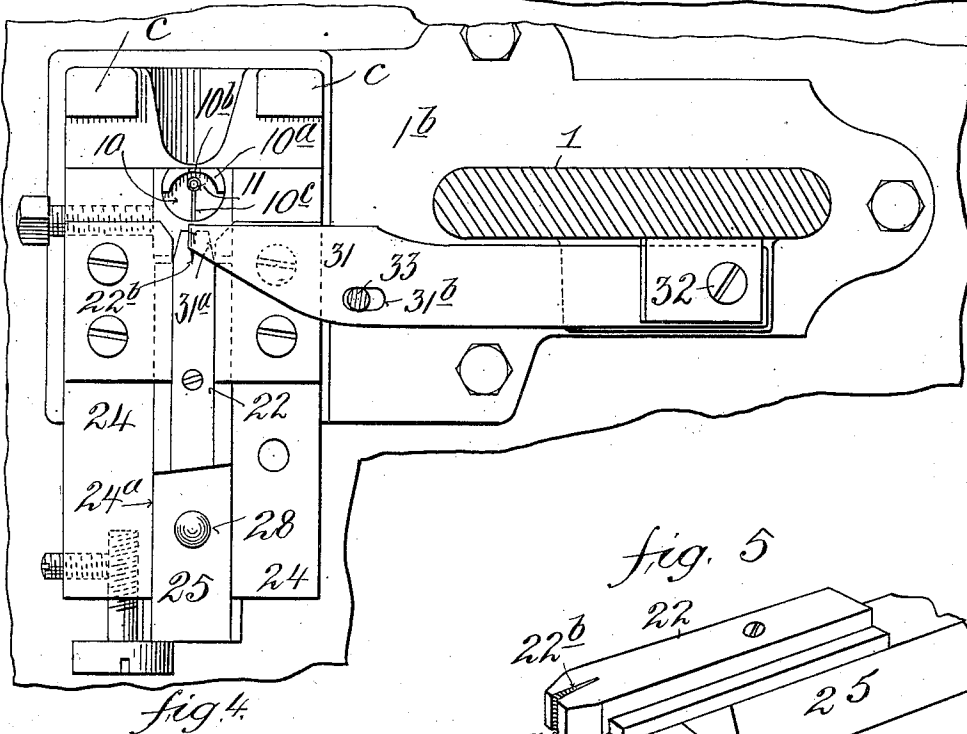
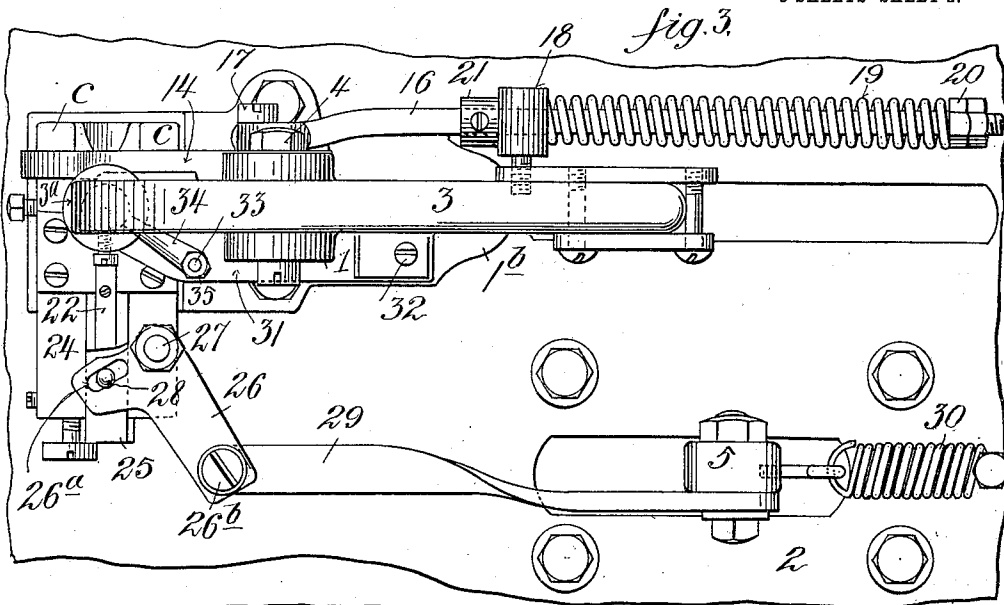
Inventor
Henry Hall.
By his Attorney
T. F. Bourn

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3 SHEETS-SHEET 2.



Witnesses:
Wm. Benjamin
Marie A. Wright

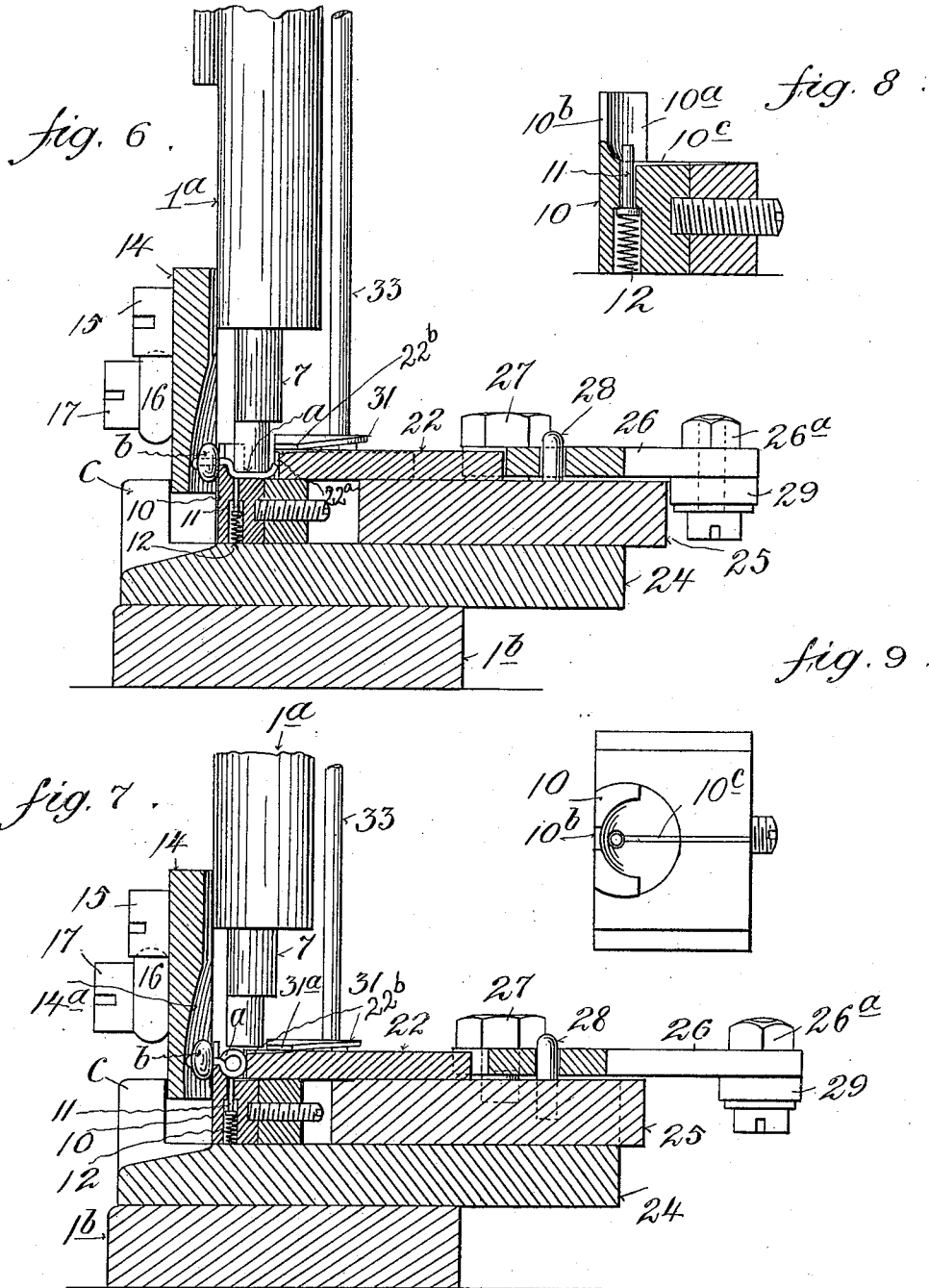
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3 SHEETS—SHEET 3.



Witnesses:
Wm Benjamin
Marie F. Fairright

Inventor
Henry Hall.
By his Attorney P. F. Bourne

UNITED STATES PATENT OFFICE.

HENRY HALL, OF ARLINGTON, NEW JERSEY, ASSIGNOR TO APPELBEE & NEUMAN, OF NEW YORK, N. Y., A COPARTNERSHIP.

MACHINE FOR SHANKING BUTTONS.

1,046,462.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed January 12, 1912. Serial No. 670,746.

To all whom it may concern:

Be it known that I, HENRY HALL, a citizen of the United States, and resident of Arlington, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Machines for Shanking Buttons, of which the following is a specification.

The object of my invention is to provide improved means for shanking buttons, and has particular reference to means for producing eyes or loops on shanks that are passed through holes in button heads and then coiled.

My invention comprises novel details of improvement and combinations of parts that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming part hereof, wherein,

Figure 1 is a side elevation of a machine embodying my improvements; Fig. 2 is a rear view of a portion of Fig. 1; Fig. 2^a is a detail section showing the button head and shank in position to be operated upon; Fig. 3 is a plan view of the machine; Fig. 4 is an enlarged plan view, partly in section on the line 4, 4, in Fig. 1; Fig. 5 is an enlarged detail view of the shank coiling presser or die; Fig. 5^a is a perspective detail of said presser or die; Fig. 6 is an enlarged sectional view illustrating the parts in position with a button shank partly coiled; Fig. 7 is a similar view showing the button shank coiled; Fig. 8 is an enlarged detail section of the anvil for the button shanks, and Fig. 9 is a plan view thereof.

Similar numerals of reference indicate corresponding parts in the several views.

The frame or head 1 may be mounted upon any suitable table or support 2, and is provided with a lever or treadle 3 shown pivoted to frame 1 at 4, and with a lever or treadle 5 pivotally supported at 6. Frame 1 has a suitable guideway 1^a for a plunger 7, the upper end of which plunger is adapted to be depressed by the short arm 3^a of lever or treadle 3. A spring 8 shown within guide 1^a normally tends to elevate plunger 7, the latter being shown guided by a screw 9 on guide 1^a entering a groove 7^a in plunger 7. Beneath plunger 7 is an anvil or die 10 suitably secured upon base 1^b. Anvil 10 is shown provided with an upturned portion 10^a having its inner face suitably curved and

provided with a slot 10^b, to receive the button shank *a*. The anvil 10 is also shown provided with a horizontal groove 10^c adapted to receive the button shank. When said shank is placed in position it will be beneath plunger 7. Anvil 10 is shown provided with a pin 11, pressed upwardly by a spring 12 tending to raise or eject the button shank from the anvil after the shank is coiled.

At 14 is an arm or abutment shown pivoted upon frame 1 at 15, and normally held raised at one side of anvil 10 (Fig. 2) and adapted to be lowered in line with said anvil and with the button shank placed therein, while the latter is being operated upon. The arm 14 is shown provided with an inner inclined recess 14^a adapted to line with the button shank *a* and the button head *b* on the outer side of anvil 10, whereby varying sized button heads may be received between the arm 14 and anvil 10. Arm 14 is operatively connected with lever or treadle 3 as follows: A rod 16 is pivotally connected with arm 14 below pivot 15, as at 17, and passes through a guide 18 on lever or treadle 3. A spring 19 shown coiled around rod 16 bears at one end against guide 18 and at the other end against stop 20 on rod 16, said spring serving to push rod 16 outwardly when lever 3 is pushed. A stop 21 on rod 16, on the side of guide 18 opposite spring 19, is normally held by the action of said spring against guide 18. The action of the parts is such that when treadle 3 is pushed in the direction of the arrow *x* (Fig. 1) rod 16 will be pushed by spring 19, and arm 14 will be quickly depressed, to the positions shown in Figs. 6 and 7, pushing the button head against the anvil, before plunger 7 engages the button shank, (by reason of the action of spring 19 against stop 20) and then a further movement of lever or treadle 3 will cause complete depression of plunger 7 to give initial bending of the button shank as in Fig. 6. Opposed to the raised portion 10^a of anvil 10 is a presser or die 22, shown upon a block 25 mounted to slide in a guide 24^a in block 24 secured on base 1^b. A lever 26, shown pivoted at 27 on block 24, is shown provided with a slot 26^a engaging a pin 28, extending from block 25, and pivotally connected, as at 26^b, by a link 29 with lever or treadle 5, as at 5^a. A spring 30, shown connected at one end with lever or treadle 5 and at the

other end with support 2, tends normally to hold lever 5 in normal position, and thus hold the presser or die 22 retracted from the anvil. When lever or treadle 5 is moved in the direction of the arrow *y*, in Fig. 1, presser or die 22 will be pushed toward the anvil to finally coil the button shank (see Figs. 6 and 7). Presser or die 22 is shown provided with a notch or groove 22^a at its operative end, to engage the button shank, and with a recess 22^b in its top leading to notch 22^a to receive the end of the button shank when the same is first placed in position for operation therein (see Fig. 2^a).

In order to hold the extreme end or tip of the button shank *a* upon presser or die 22, when the shank is first inserted in position, as in Fig. 2^a, a finger 31 is attached at one end to frame 1, as at 32, with the free end 31^a of said finger projecting over the shank-pressing end of presser or die 22, and normally raised therefrom to permit the passage between said finger and presser of the tip end of the button shank (see Fig. 2^a). Finger 31 may be made spring acting to normally tend to bear upon presser 22 or the interposed button shank, and is shown normally held raised from the presser or die 22 by plunger 7. To this end a rod or bolt 33 is shown passing through a slot 31^b in finger 31 (Fig. 4) and having its head 33^a below said finger, the upper end of said rod 33 being connected with plunger 7 as by the projection 34 from said plunger. The upper end of rod 33 is shown screw threaded at 33^b to pass through an opening in projection 34, a nut 35 on said rod serving to provide for adjustment. The arrangement shown is such that when plunger 7 starts to descend finger 31 will quickly engage the end of the button shank upon presser or die 22 and hold the shank in position, and when the plunger rises finger 33 will be raised from the presser.

The operation may be described as follows: With the parts in the normal positions shown in Fig. 1, the button shank *a*, passing through the button head *b*, is inserted in slot 10^b, the tip end of the shank resting in the recess 22^b of presser 22 and beneath finger 31 (see Fig. 2^a). Lever or treadle 3 is then pressed in the direction of the arrow *x* (Fig. 1) and finger 31 immediately bears upon and holds the tip end of the button shank, and arm 14 immediately descends into alignment with the button shank, forcing it against the anvil, before plunger 7 engages the shank (see Fig. 2^a), arm 14 remaining in such position during further forward movements of said lever or treadle. Upon arm 14 aligning with the button shank, plunger 7 engages the button shank and presses or bends it downwardly into a partial eye or loop as in Fig. 6, withdrawing the tip end of the shank from beneath finger 31. Lever

or treadle 3 is then restored to a position substantially midway between the extremes of its movement, thereby permitting plunger 7 to rise above presser 22 but retaining arm 14 depressed by reason of the continued action of spring 19 now partly under compression, and then treadle 5 is moved in the direction of the arrow *y*, Fig. 1, to cause presser or die 22 to engage the partly upturned end of shank *a* (the latter entering notch 22^a, Fig. 6), and coil the same into an eye or loop (Fig. 7), the arm 14 resisting the pressure upon the button shank of the presser or die 22, by bearing against stops *c*. Both treadles are then restored to their normal positions, and thereupon presser 22 is withdrawn from beneath the plunger (Fig. 6) and rod 16 is pushed so as to raise frame 14 to its normal position (Figs. 1 and 2).

Advantages of my improvements are that the finger 31 holds the tip end of the button shank, thereby retaining the button head snugly in position against the anvil, and the button shank in proper position for the descent of arm 14, thereby enabling the operator to remove her fingers from dangerous proximity to the moving parts, and permitting her to operate the machine with freedom and safety.

The arrangement shown is such that the parts, such as the anvil and presser, may be readily removed and replaced on account of wear; the machine is simple in construction, and efficient in use.

Having now described my invention what I claim is:—

1. A button shanking machine comprising an anvil for a button shank, a presser opposed thereto and spaced therefrom, a plunger operative between the anvil and the presser, a finger adjacent the presser to engage a button shank, and an arm at the outer side of the anvil to oppose the button shank.

2. A button shanking machine comprising an anvil provided with a slot to receive a button shank, a presser opposed to and spaced from the anvil, a plunger operative between the anvil and the presser, a finger adjacent the presser to engage a button shank at its end opposite its head, and means to operate the finger to engage and hold the button shank.

3. A button shanking machine comprising an anvil provided with a slot to receive a button shank, a presser opposed to and spaced from the anvil, a plunger operative between the anvil and the presser, a finger adjacent the presser to engage a button shank at its end opposite its head, and means to operate the finger to engage and hold the button shank, and an arm outside of the anvil adapted to coact with the button shank.

4. A button shanking machine comprising an anvil provided with a slot to receive a button shank, a presser opposed to and

spaced from the anvil, said presser having a recess to coact with the button shank, a plunger operative between the anvil and the presser, a finger adjacent the presser to engage a button shank at its end opposite its head, means operated with the plunger to actuate the finger to engage a button shank, and an arm outside of the anvil to coact with the button shank.

5. A button shanking machine comprising an anvil provided with an upturned portion having a slot to receive a button shank, a presser opposed to and spaced from the anvil, a plunger operative between the anvil and the presser, a finger above the presser to engage a button shank thereon, a rod extending from the finger, and means connecting the rod with the plunger for operating the finger by and with the plunger.

6. A button shanking machine comprising an anvil provided with an upturned portion having a slot to receive a button shank, a presser opposed to and spaced from the anvil, a plunger operative between the anvil and the presser, a finger above the presser to engage a button shank thereon, said finger being normally pressed toward the presser, and a rod extending from the finger and connected with the plunger to cause the finger to descend upon descent of the plunger.

7. A button shanking machine comprising an anvil provided with an upturned portion having a slot to receive a button shank, a presser opposed to and spaced from the anvil, a plunger operative between the anvil and the presser, a finger above the presser to engage a button shank thereon, said finger being normally pressed toward the presser, a rod extending from the finger, a projection from the plunger having an eye receiving said rod to permit the finger to move toward the presser upon descent of the plunger.

8. A button shanking machine comprising an anvil, a presser opposed to and spaced from the anvil, a plunger operative between the anvil and the presser, an arm movably supported at one side of the anvil, a lever operatively connected with the plunger and operatively connected with said arm, a finger to engage a button shank upon the presser, and means to operate the presser.

9. A button shanking machine comprising an anvil, a presser opposed to and spaced from the anvil, a plunger operative between the anvil and the presser, an arm movably supported at one side of the anvil, a lever operatively connected with the plunger, a rod connected with the arm, a guide for the rod connected with the lever, a spring coacting with the rod and lever, a stop on the rod to coact with the lever, a finger to engage a button shank on the presser, and means to operate the presser.

10. A button shanking machine comprising an anvil, a presser opposed to and spaced from the anvil, a plunger operative between the anvil and the presser, an arm movably supported at one side of the anvil, a lever operatively connected with the plunger, a rod connected with the arm, a guide for the rod connected with the lever, a spring coacting with the rod and lever, a stop on the rod to coact with the lever, a finger to engage a button shank on the presser, a slide carrying the presser, a lever, and means operatively connecting the lever with the presser for operating the latter by the former.

11. A button shanking machine comprising an anvil, a presser opposed to and spaced from the anvil, a plunger to operate between the anvil and the presser, an arm movably supported at one side of the anvil, a lever operatively connected with the plunger, a rod connected with the arm, a guide for the rod connected with the lever, a spring coacting with the rod and lever, a stop on the rod to coact with the lever, a finger to engage a button shank on the presser, a slide carrying the presser, a lever, a link connected with the lever, and a lever connected with the link for operating the slide.

12. A button shanking machine comprising an anvil, a presser opposed to and spaced from the anvil, a plunger to operate upon a shank between the anvil and the presser, an arm movably carried at one side of the anvil, a lever to operate the plunger, said lever carrying a guide, a rod connected with the arm and passing through the guide, a stop on the rod to coact with the guide, a spring on the rod to coact with the guide, a finger above the presser to engage a button shank thereon, means for operating the finger with the plunger, and means for operating the presser.

13. A button shanking machine comprising an anvil, a presser opposed to and spaced from the anvil, a plunger to operate upon a shank between the anvil and the presser, an arm movably carried at one side of the anvil, a lever to operate the plunger, said lever carrying a guide, a rod connected with the arm and passing through the guide, a stop on the rod to coact with the guide, a spring on the rod to coact with the guide, a finger above the presser to engage a button shank thereon, means for operating the finger with the plunger, a lever, and means connecting the lever with the presser for operating the latter.

14. A button shanking machine comprising an anvil, a presser opposed to and spaced from the anvil, a plunger to operate upon a shank between the anvil and the presser, an arm movably carried at one side of the anvil, a lever to operate the plunger,

said lever carrying a guide, a rod connected with the arm, and passing through the guide, a stop on the rod to coact with the guide, a spring on the rod to coact with the guide, a finger above the presser to engage a button shank thereon, means for operating the finger with the plunger, a slide carrying the presser, a lever operatively connected with the slide, a link connected with said lever, and a lever connected with the link for operating the slide.

15. A button shanking machine comprising an anvil for a button shank, a presser

opposed thereto and spaced therefrom, a plunger operative between the anvil and the presser, and a finger adjacent the presser to engage a button shank, a pin slidable in the anvil, and a spring normally pressing the pin toward the button shank.

Signed at New York, in the county of New York and State of New York this 9th day of January, A. D. 1912.

HENRY HALL.

Witnesses:

T. F. BOURNE,

MARIE F. WAINRIGHT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."