J. PICKLES.

FASTENER SETTING MACHINE.

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1,166,542.

Patented Jan. 4, 1916.

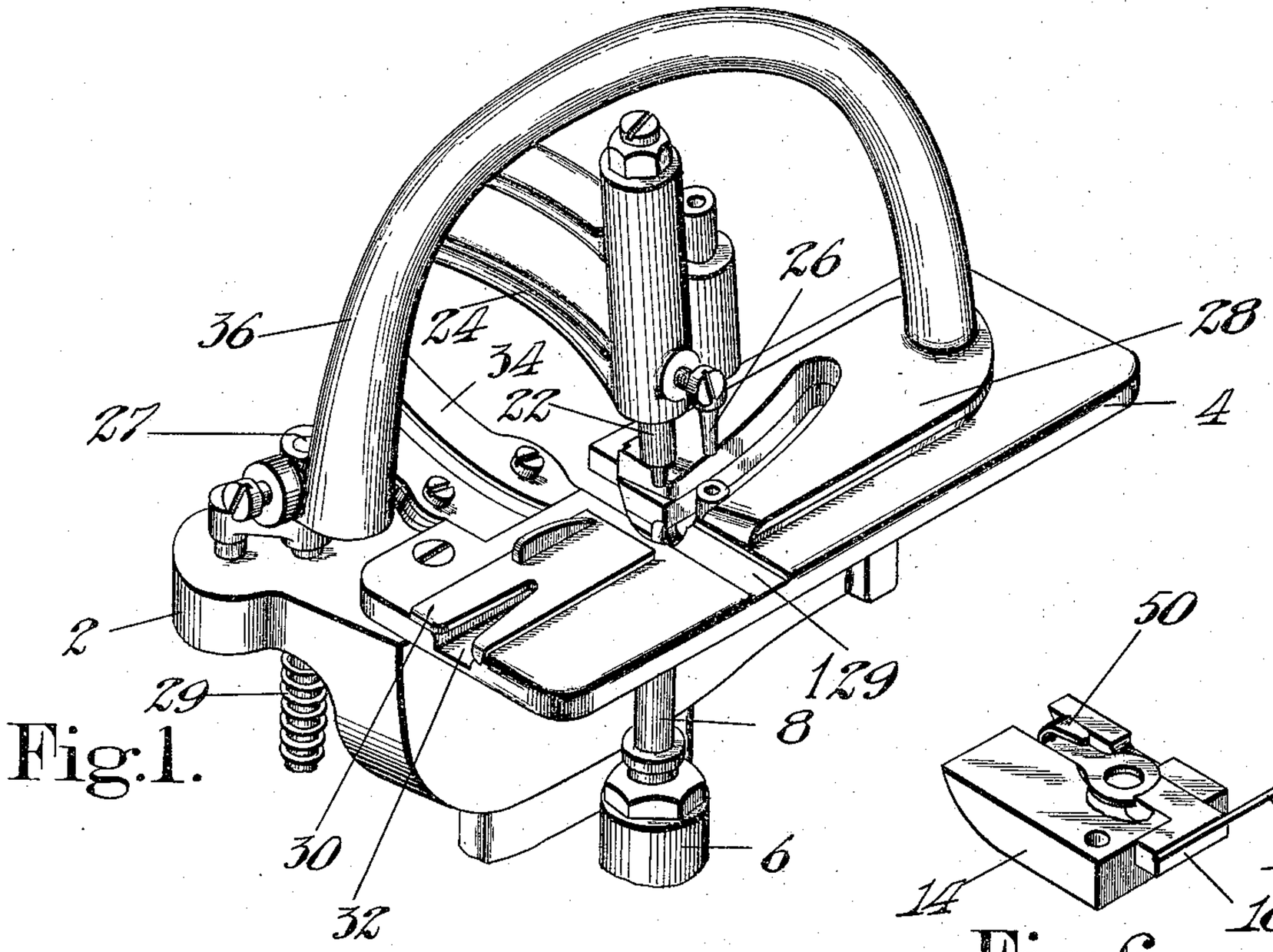

Fig.1.

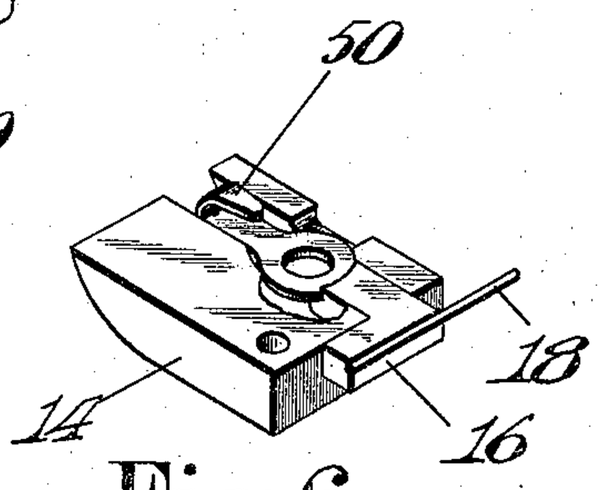

Fig.6.

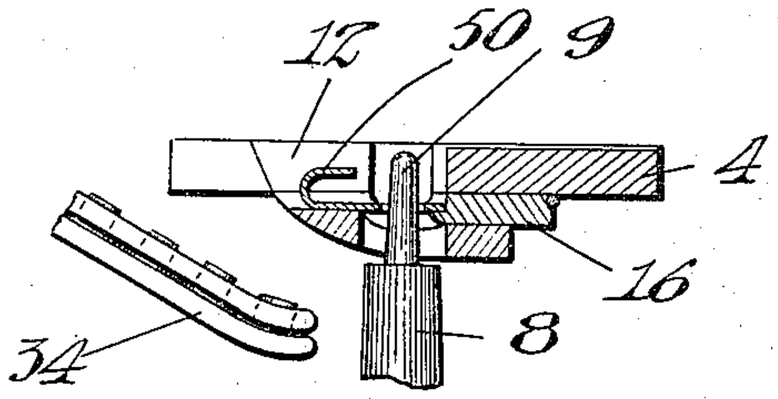

Fig.2.

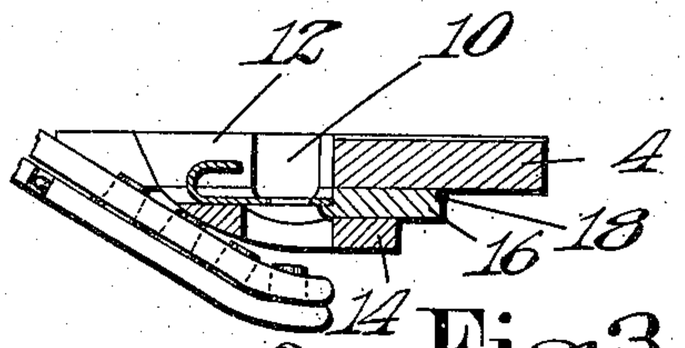

Fig.3.

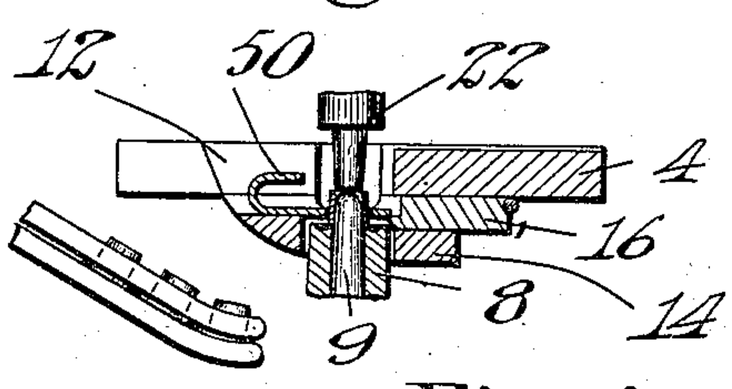

Fig.4.

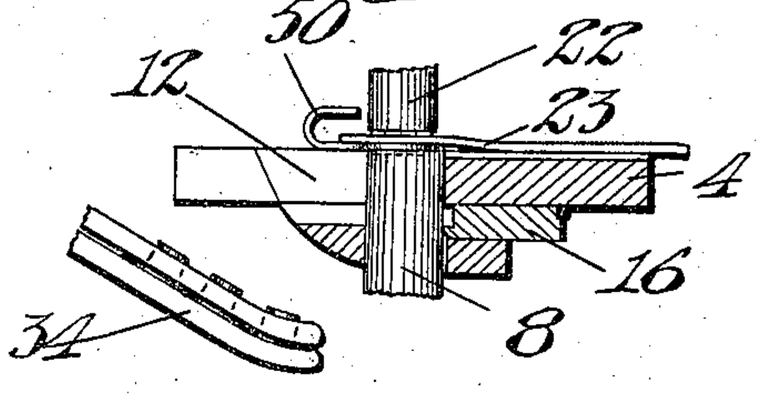

Fig.5.

WITNESSES.

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FASTENER-SETTING MACHINE.

1,166,542. Specification of Letters Patent. Patented Jan. 4, 1916.

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To all whom it may concern:

Be it known that I, JAMES PICKLES, a citizen of the United States, residing at Ansonia, in the county of New Haven and State of Connecticut, have invented certain Improvements in Fastener-Setting Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to fastener setting machines and one of its objects is to provide an attachment which may be used with any fastener setting machine of usual type for the purpose of adapting the machine for securing to sheet material, by means of a clenched eyelet, clasps or fastener parts, such for example as a skirt hook.

An important feature of the invention consists in the provision of a work plate recessed to receive the fastener part or hook below its surface. Advantages of such construction are that the work may be accurately located upon the plate without being interfered with or displacing the hook and may be also fed across the plate without obstruction.

It is important to support the fastener part or hook and maintain it accurately in position preliminarily to the setting operation and to this end another feature of the invention consists in the provision of movable supporting means arranged to engage the fastener part or hook at points in line with the path of the setting devices and consequently close up to the part of the hook to be acted upon. As herein shown, the supporting device is movable from operative to inoperative position responsive to the movement of one of the setting dies.

Another feature of the invention consists in the provision of a guideway in the work plate leading to the recess for the hook, the purpose of which is to facilitate the introduction of a hook into this recess. As herein shown, a spindle is arranged to project into the hook recess and this further facilitates the proper positioning of the hook when delivered thereto.

The invention further contemplates the provision of a presser foot of novel form and particularly adapted, by reason of its shape, to the class of work under discussion. As herein shown, this presser foot is disposed entirely at one side of the setting position and is connected with the usual presser bar located upon the other side of the setting position by means of an arched connecting member.

These and other features of the invention will be best understood and appreciated from the following description of a preferred embodiment thereof selected for purposes of illustration and shown in the accompanying drawings, in which,—

Figure 1 is a view in perspective of so much of the fastener setting machine as is necessary to understand the present invention; Figs. 2 to 5 are fragmentary sectional views representing different steps in the cycle of the machine, and Fig. 6 is a view in perspective of the hook supporting members.

In the accompanying drawings the invention is shown as embodied in an eyeleting machine substantially similar to that disclosed in United States Letters Patent No. 603,023, Field, granted April 26, 1908, but as already intimated, the invention is in no sense restricted to this or any other particular type of eyeleting machine.

To the front part of the machine frame 2 is secured the work plate 4 which is provided with a circular perforation 10 for the passage of the lower reciprocatory setting die 8 and with a recess 12 for the reception of part of the hook 50. The recess 12 may be of suitable shape to contain the particular hook it is desired to set and to guide it without angular displacement into position on the work. That shown in the accompanying drawings comprises a circular perforated eye having a straight shank in the same plane as the eye and a hooked portion bent vertically above the shank. The setting die 8 is mounted in a reciprocatory plunger 6 as in the machine of said patent and coöperates with an upsetting die 22 mounted in the lever 24. A punch 26 and coöperating punching die are arranged at one side of the setting dies and operate preliminarily to the setting operation to punch the work and feed it into alinement with the setting devices.

The hook 50 is supported by a movable

supporting member 16 carried by a block 14, as shown in Fig. 6. The block 14 is secured to the lower side of the work plate 4 and is perforated for the passage of the setting die 8 and provided with a shallow recess for the shank portion of the hook. The member 16 comprises a slide plate or block curved at its inner end to fit the eye of the hook and having a ledge or shoulder arranged to underlie and support the same. The plate 16 is slidable in ways formed in the block 14 and is normally maintained in its inner or operative position by a spring 18. A projecting portion on the outer end of the plate 16 limits its inner position. On its lower inner edge the plate 16 is beveled so that when the setting die 8 is raised, the plate 16 will be forced outwardly out of the path of the die, the hook at the same time being carried upwardly by the setting die.

The machine is provided with the usual raceway 34 by means of which eyelets are delivered to the setting die 8, the raceway being moved from inoperative position as shown in Fig. 2 to delivering position as shown in Fig. 3 and then back again as is usual in machines of this character.

Above the work plate 4 is provided a presser foot 28 which serves to hold the work in place preliminarily to and during the setting operation. This presser foot is slotted to permit the passage of the punch 26 which operates at one side of the setting position. It is located entirely upon the right hand side of the setting position so as to enable the operator to have an unobstructed view of the work at the point where the hooks are set and is of sufficient width to hold the work firmly in place upon the work plate 4. Upon the other side of setting position and at the rear of the work plate 4 is located the usual presser bar 27 normally held downwardly to bring the presser foot into clamping engagement with the plate 4 by a spring 29. The presser bar 27 is connected with the presser foot 28 by an arched member 36 which extends above the punch 26 and upsetting die 22 and joins the presser foot at its extreme outer end.

In the upper surface of the work plate 4 is provided a transverse guideway 129 leading to the hook holding recess and by means of which the introduction of hooks to the recess is facilitated. At its left side the work plate 4 is provided with an adjustable gage plate 30 having a projecting edge gage member thereon and a U-shaped slot in its outer end. This slot is located above a recess or channel 32 cut in the guide plate 4. One purpose of this arrangement is that the lowermost stud on one side of a corset may be slipped into the slot and by being drawn against the end of the slot positively determine the initial position of the work in the machine. When it is desired to operate upon the other side of the corset the work is located by the engagement of the loop or eye member on the corset with the projecting edge gage member.

The operation of the machine hereinabove described is as follows: In its initial position the lower setting die 8 is sufficiently elevated to cause the spindle 9 to project into the hook receiving recess so that a hook presented thereto will be located as shown in Fig. 2, that is, in horizontal position with the spindle 9 extending through the eye of the hook and the outer portion of the eye resting upon the shoulder of the plate 16. The work having been presented with the part to which the hook is to be attached in alinement with the punch 26 and its edge against the gage, the machine is set in operation. The punch acts to perforate the work and then by moving laterally, feeds the work to bring the punched hole in alinement with the setting devices. Meanwhile the lower setting die 8 is depressed and the raceway 34 advanced to its delivering position as shown in Fig. 3. The die 8 is then moved upwardly until the spindle 9 engages the lowermost eyelet in the raceway whereupon the raceway is withdrawn leaving the setting die 8 free to continue its upward movement with the eyelet. As this continues, the upper edge of the set engages the beveled edge of the plate 16 and displaces it rearwardly as shown in Fig. 4. The set then picks up the hook 50 and carries it up into engagement with the under side of the work. The eyelet meanwhile has been inserted through the eye of the hook and when the upsetting die 22 is encountered the eyelet barrel is rolled over and clenched, as shown in Fig. 5. A portion of the work 23 is shown in this figure and it will be seen that the hook 50 is secured thereto with its eye beneath the work and with its hook shaped portion extending above it.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A fastener setting machine having, in combination, a movable setting die, a work plate apertured for the passage of the setting die and recessed to receive a hook having a laterally extending perforated shank with its perforation in the path of the die, the recess in said plate being so shaped as to prevent angular displacement of the hook, and an upsetting die arranged to coöperate with said setting die.

2. A fastener setting machine having, in combination, a movable setting die having a center spindle, a work plate apertured for the passage of the setting die and recessed to receive a hook with the eye of the hook surrounding the spindle, means for supporting

the hook within the recess and below the surface of the plate, and a coöperating upsetting die.

3. A fastener setting machine having, in combination, a setting die, a stationary work plate having a smooth face over which the work may be moved, a recess for receiving a hook entirely below said surface, means for raising a hook into engagement with the lower side of the work supported on the plate and for clenching an eyelet through the hook and work, and automatic work feeding means.

4. A fastener setting machine having, in combination, a movable setting die having a center spindle, a work plate surrounding the die and having a recess for a hook, means for supporting the hook at points on opposite sides of the die with the eye of the hook surrounding the spindle, and a coöperating upsetting die.

5. A fastener setting machine having, in combination, a reciprocatory setting die, a work plate independent of said die apertured for the passage of the die and having a recess for a hook, and a support for the hook located beneath the surface of the work plate and laterally movable from operative to inoperative position, responsive to the movement of the reciprocatory die.

6. A fastener setting machine having, in combination, a reciprocatory die, a work plate apertured for the passage of the die and having a recess to contain a hook, and means normally extending into the path of and arranged to be engaged by the die for supporting part of a hook beneath the surface of the work plate and movable out of the path of the die during its reciprocation.

7. A fastener setting machine having, in combination, coöperating setting devices, a work plate having a recess disposed between said devices and shaped to contain a hook below the surface of the plate and a guideway in the surface of said plate extending to said recess to facilitate the introduction of hooks to the recess.

8. A fastener setting machine having, in combination, a work plate, a punch and setting die arranged to operate successively upon work on the plate, the work being fed from one to the other, said plate being recessed below its surface to receive a hook having a shank, and means including said die for clenching an eyelet on the shank of the hook.

9. A fastener setting machine having, in combination, a work plate recessed to receive a hook, means for inserting an eyelet through the shank of the hook and clenching the eyelet, and a presser foot located entirely on one side of setting position to afford the operator an unobstructed view of the work at the setting point.

10. A fastener setting machine, having, in combination, coöperating setting devices, a work plate, a slotted presser foot coöperating with the work plate located adjacent to the setting devices and at one side thereof, a presser bar disposed on the opposite side of the setting devices, and an arched member connecting the presser foot and presser bar, and a punch arranged for movement in the slot of the presser foot to feed the work.

11. A fastener setting machine for operating upon articles with projecting studs, having in combination, eyelet setting devices, means for holding a hook in position to be secured to an article by an eyelet, and an adjustable gage plate having a slot to receive a stud whereby the work may be located in the machine.

12. A fastener setting machine for operating upon articles with projecting studs, having in combination, eyelet setting devices, means for holding a hook in position to be secured to an article by an eyelet, and a gage plate having an opening to receive a stud, said opening terminating at a predetermined distance from setting position.

13. A machine for securing hooks to corsets having, in combination, eyelet setting devices, means for holding a hook, and a gage plate having a projection arranged to be engaged by a loop member on one side of a corset and a slot for receiving a stud on the other side of the corset.

14. A fastener setting machine having, in combination, a work plate having a recess to receive a hook with a laterally extending shank, a gage for locating the edge of work supported upon the table at one side of the throat of the hook, an eyelet carrying die movable to insert an eyelet through the eye of the hook and the work, and a coöperating upsetting die.

15. A fastener setting machine having, in combination, a work plate having a recess for containing an elongated fastener part below the surface of the plate and shaped to guide the fastener part and at the same time hold it against angular displacement, and means for lifting said fastener part while so guided into engagement with work supported by the plate and for inserting an eyelet through the work and the fastener part.

16. A fastener setting machine having, in combination, a stationary work plate having a recess with walls shaped to guide an elongated fastener part and prevent angular displacement thereof, supporting means for the fastener part disposed below the plate, an eyelet carrying set movable through the recess and a coöperating upsetting die.

17. A fastener setting machine having, in combination, a reciprocatory die, a work plate apertured for the passage of the die

and having a recess to contain a fastener part, and a spring pressed plate normally extending into the recess to support the fastener part and being movable out of the path of the die during the reciprocation of the die.

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

JAMES PICKLES.

Witnesses:
HERBERT W. KENWAY,
ARTHUR L. RUSSELL.