

March 16, 1937.

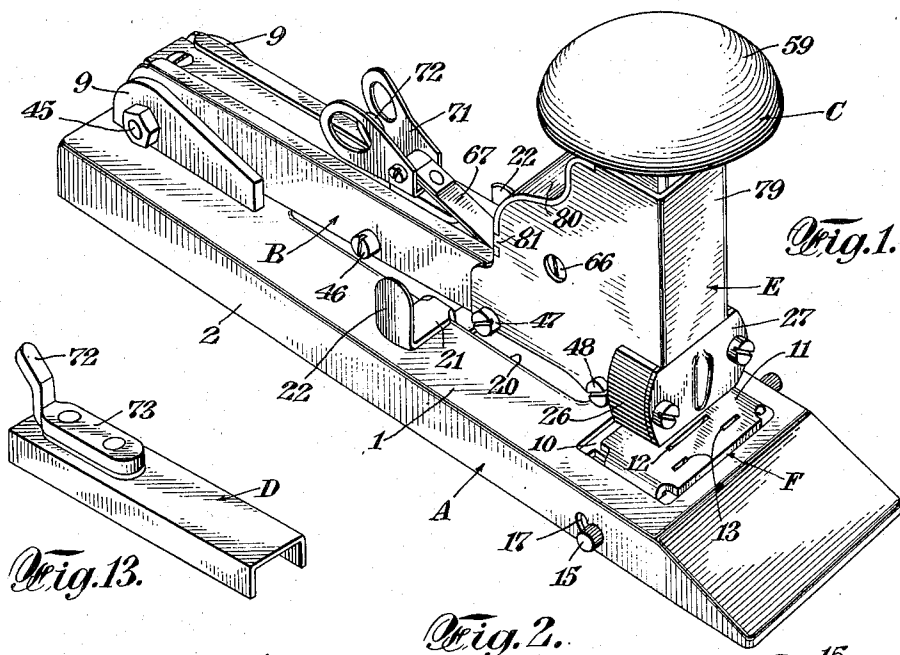
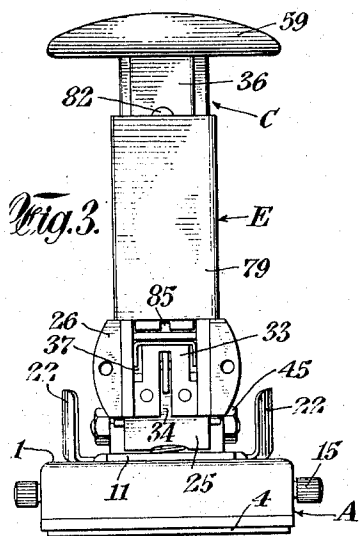
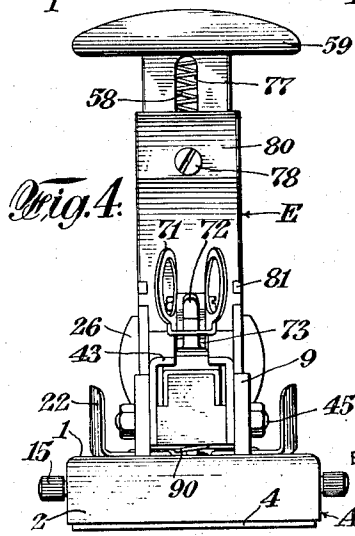
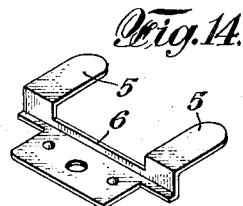
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2,073,958

STAPLING MACHINE

Filed Dec. 10, 1932

3 Sheets-Sheet 1



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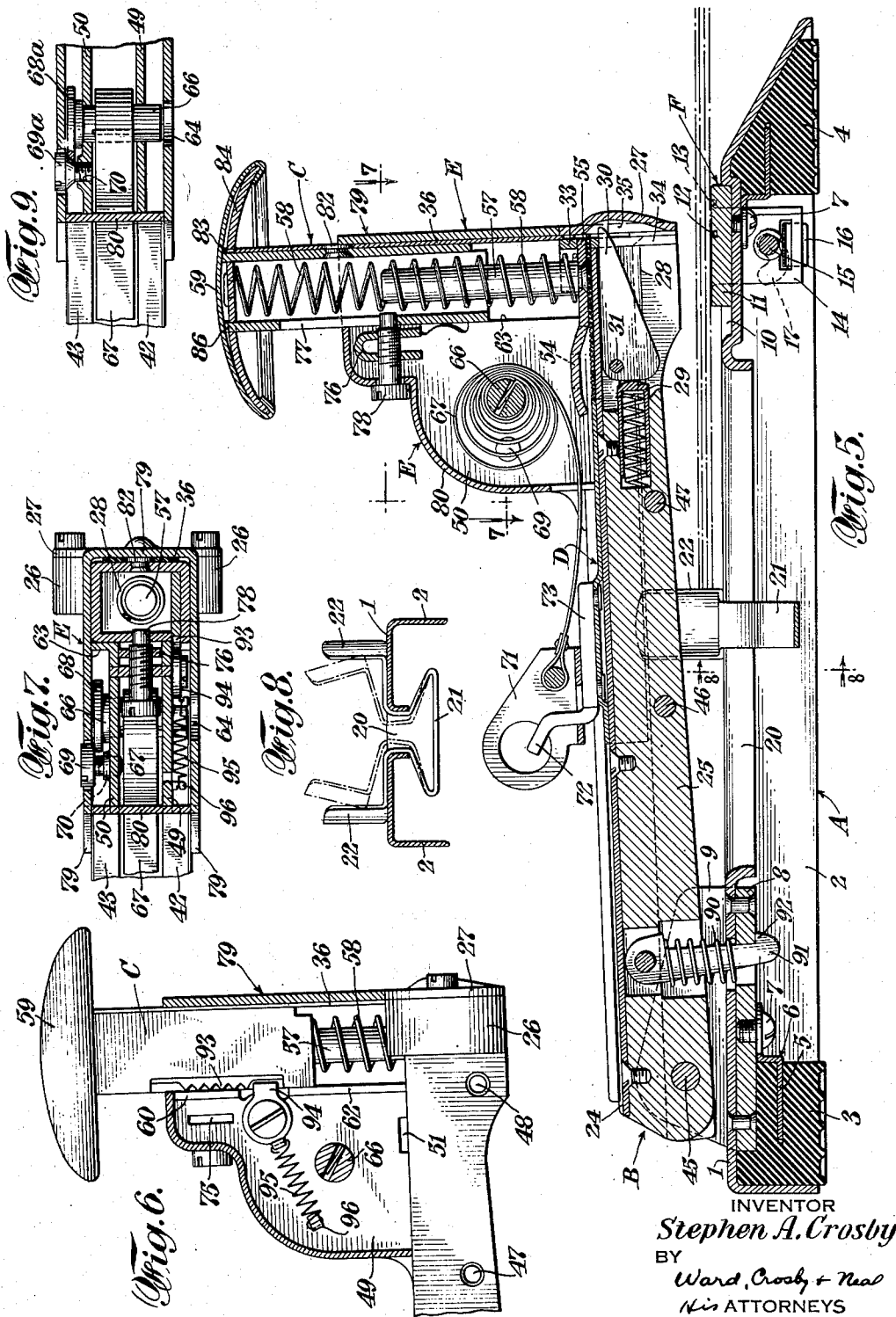
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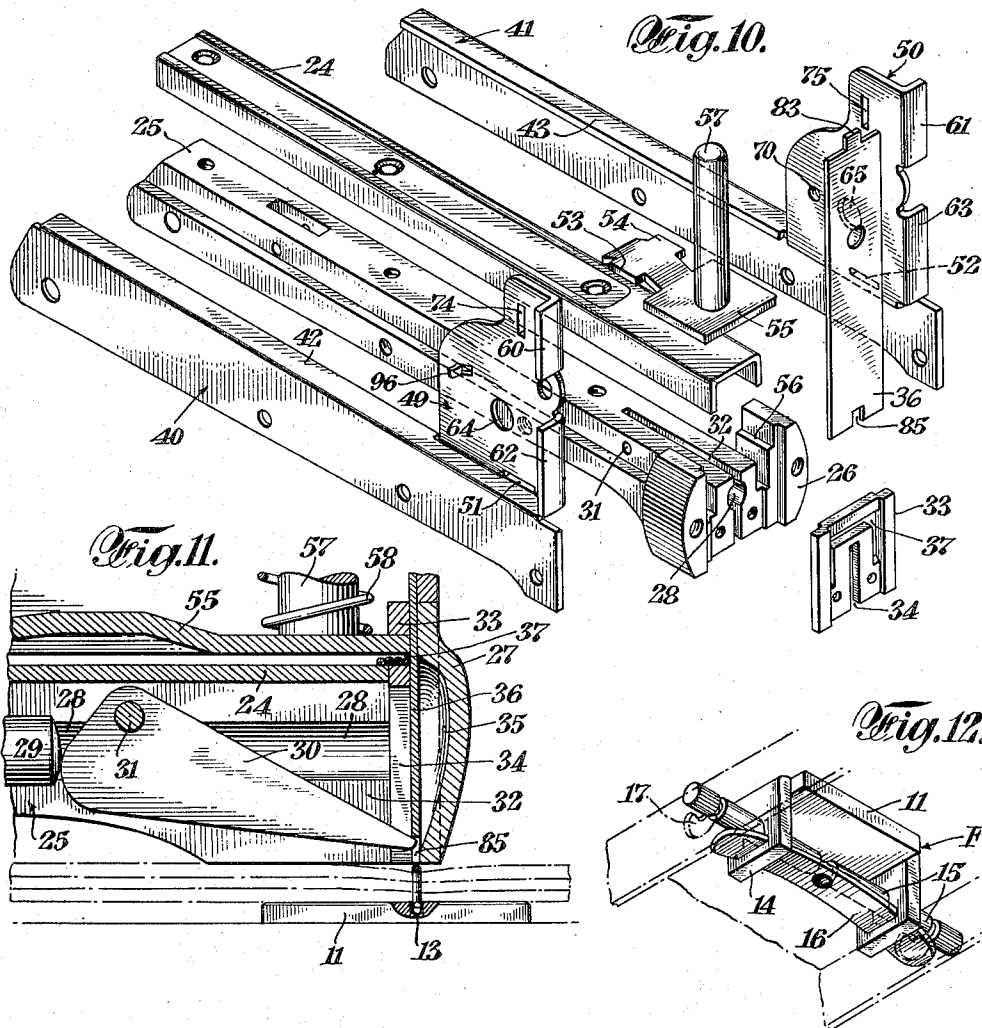


Fig. 15.

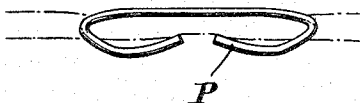
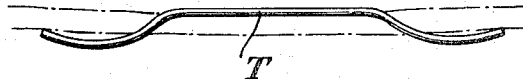


Fig. 16.



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UNITED STATES PATENT OFFICE

2,073,958

STAPLING MACHINE

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Application December 10, 1932, Serial No. 646,570

33 Claims. (Cl. 1—3)

This invention relates to improvements in stapling machines for fastening together sheets of paper, or the like.

Among the objects of this invention are the provision of improved mechanism in a stapling machine, including a stapling arm constructed of parts which are readily assembled and disassembled, which may be cheaply manufactured and which provide for a rigid construction.

Other objects consist in the provision of a stapling arm including a detachable housing for the follower spring, and provision for preventing the spring from interfering with the feeding movement of the staples, and improved staple supporting means for supporting and holding the staple against the staple driving and setting plate, and improved means for stopping and aligning sheets of paper.

The invention also includes an improved base construction together with improved devices for holding resilient feet connected to said base.

The invention also includes an improved anvil construction provided with clenching depressions or recesses for clenching the staple for either permanently or temporarily securing the sheets together, and means for shifting the anvil for this purpose.

Other objects will appear from the following description taken in connection with the drawings, in which

Fig. 1 is a perspective view of an improved stapling machine;

Fig. 2 is a bottom plan view of the base of the machine;

Fig. 3 is a front elevation of the machine;

Fig. 4 is a rear elevation of the machine;

Fig. 5 is a longitudinal vertical central section of the machine;

Fig. 6 is a side view of the head of the stapling arm with the casing shown in longitudinal vertical section;

Fig. 7 is a section on the line 7—7 of Fig. 5;

Fig. 8 is a section on the line 8—8 of Fig. 5;

Fig. 9 is a view similar to parts of Fig. 7 showing a modified construction;

Fig. 10 is a view showing the main elements of the stapling arm disassembled;

Fig. 11 is a vertical section on an enlarged scale corresponding to the portion of Fig. 5 showing the staple supporting arm;

Fig. 12 is a bottom perspective showing the means for shifting the anvil;

Fig. 13 is a perspective view of the staple follower;

Fig. 14 is a perspective view of the means for

securing the resilient feet or blocks to the base;

Fig. 15 shows the form of a staple when clenching to permanently secure sheets of paper together; and

Fig. 16 shows the form the staple assumes when it is bent to hold the sheets of paper together temporarily.

In the drawings I have illustrated a preferred embodiment of the invention which will be described in detail, but it is to be distinctly understood that various changes may be made without departing from the spirit of the invention and that the embodiment selected for illustration has merely been chosen for the purpose of describing the principles of the invention.

The stapling machine includes a base A, a pivoted stapling arm B, a vertically movable plunger or staple driving and setting means C, a staple follower D, a housing E for the follower spring etc., and an anvil F.

The base A, shown in Figs. 1, 2, 3, 4, and 5, may be cast or formed in the shape shown in these figures in which it includes a top plate 1, a flange 2 depending from said top plate and which may be shaped as shown in these figures providing a recess in the bottom of the base in which may be located the rubber feet 3 and 4 conforming to the shape of the flange and the top plate and projecting slightly below the flange. The lower surfaces of the rubber feet may be provided with crossed ribs and grooves, as shown in Figs. 2 and 5, for the purpose of preventing the stapling machine from sliding on a table on which it may be supported. These feet are preferably recessed to receive projections 5 on anchoring plates 6, Figs. 2, 5, and 14, which plates are provided with apertures to receive screw bolts such as 7 by means of which the plates are secured in position.

The anchoring plate 6 for the foot 3 is secured to a U-shaped pivot bearing plate 8 which may be riveted against the lower face of the top plate 1 of the base. The legs 9 of the plate 8 project through slots in the top plate 1 of the base and are provided with aligned pivot perforations described later. The anchoring plate 5 for securing the foot 4 in position is secured to the bottom face of an anvil seat 10 which, as indicated in Fig. 5, is formed by depressing a portion of the top plate 1 to form a seat for the shiftable anvil F.

The anvil F comprises an upper member or anvil proper 11, Figs. 1, 3, 5, and 12, which is provided with a single recess 12 for clenching the staples into the permanent form P shown in Fig.

15, and with a pair of spaced recesses 13 for clenching the staple into the temporary form T shown in Fig. 16. The anvil F also includes downward extending lugs or ears 14, Figs. 2, 5, and 12, which extend through elongated slots in the depressed anvil seat 10, the slots being of greater length than the width of the ears, as indicated in Fig. 2, the ends of the slot forming limiting stops for the anvil in either of the two positions which it may assume. The ears 14 are provided with inverted T-shaped apertures for receiving a manipulative rod 15 and a plate spring 16 normally tending to hold the rod in its uppermost position. The rod may be provided with grooves 15 cooperating with arcuate slots 17 in the side flanges of the base which hold the rod in position and permit adjustment of the rod from one end of the slots to the other for moving the anvil from one of its positions of adjustment to the other. The rod is also preferably provided with a groove at its center cooperating with a raised portion on the spring 16 for holding the spring in position in the anvil. The ends of the rod constitute manipulative means, as shown.

The top plate 1 of the base A is also preferably provided with a slot 20, Figs. 1, 2, 5, and 8, for receiving a stop and aligning means 21 for stopping and aligning the sheets to be stapled. This aligning means is adjustable within the slot 20 and is held in its adjusted position by its spring tension. The stop is provided with upwardly extending finger pieces 22 by means of which the stop may be compressed, as shown in Fig. 8, prior to adjustment from one position 35 to another.

The stapling arm B, as shown in Fig. 10, comprises a central main body member 25 which is provided with a narrow raised portion on which is secured a channel member or rail 24 of a width equal to the channel in the staples, and which is received by the staples as the staples are inserted in the arm. The forward end of the member 25 is provided with cheek plates 26 to which the front staple guide plate 27 may be secured by screws, as shown in Fig. 7.

The forward end of the member 25 is also provided with a cylindrical cavity 28 to receive a spring-pressed plunger 29 which operates a staple supporting arm 30 pivoted at the point 31 to the walls of a slot 32 intersecting said cylindrical cavity and in which the arm 30 operates.

The rear guide plate 33, Fig. 10, is provided with a slot 34 coinciding with the slot 32, the upper end of which constitutes means for limiting the upper movement of the arm 30. The rear guide plate 33 is also provided with a U-shaped slot 37, Figs. 10 and 11, through which the staples are fed from the channel member or rail 24. The plate 33 is secured to the forward end of the arm 25, preferably by screws, so that it may be readily assembled and disassembled. The front plate 27 is preferably shaped as shown in Figs. 5 and 11 providing a slot 35 in which the extreme free end of the arm 30 operates.

The construction of the forward end of the spring-pressed plunger 29 and the cooperating portion of the arm 30 is such that the spring pressure on the arm is substantially constant throughout its travel, so that the staple will be held with substantially constant pressure against the driving or setting plate 36 carried by the plunger C.

The staple arm B also includes side plates 40 and 41, Fig. 10, which are provided with over-

hanging flanges 42 and 43 to retain the staples in position on the member 24. These side members are secured to the member 25 by the pivot bolt 45, Figs. 1 and 5, and by screw bolts 46, 47 and 48.

The flanges 42 and 43 of the members 40 and 41 at their forward ends are provided with vertically extending frame plates or wings 49 and 50 which are provided with slots 51 and 52 for receiving ears 53 and 54 on a plate 55 which in the assembled position rests on shoulders 56 on the cheeks 26 in spaced relation to the upper face of the rail 24, as indicated more clearly in Fig. 11, providing a passageway for the staples between the plate 55 and the rail 24. The forward end of the plate 55 extends into the horizontal portion of the U-shaped slot 37 in the rear guide plate 33. The plate 55 carries the spring supporting stud 57 which positions the plunger operating spring 58 which bears against the inner face of the head 59 of the plunger.

The side members 49 and 50 are provided with outwardly or laterally extending flanges 60 and 61, and 62 and 63, as shown in Fig. 10. These flanges, as shown in Figs. 5, 6, and 7, constitute guiding means for the rectangular plunger C. The side members 49 and 50 are provided with aligned holes 64 and 65 in which is supported the bolt or arbor 66 which supports the follower spring 67. The spring may be tensioned by rotating the bolt and for the purpose of locking the bolt in position the bolt may be provided with a head 68, as shown in Fig. 7, which may be locked in position by means of a screw bolt 69 which is threaded into the member 50, as shown at 70, and which is accessible through an opening in the housing E. If desired, the head of the adjusting bolt 66 may be tapered, as shown in Fig. 9, and the locking screw 69a may be provided with a tapered surface, the function of this tapered or wedge-shaped surface being to cam the spring bolt 66 to the right, Fig. 9, and create friction between the body of the bolt and the walls of the holes 64 and 65 in the side plates 49 and 50, thus securely holding the spring in adjusted position. One end of the bolt may be slotted, as indicated in Figs. 1, 5, 6, and 9, in which one end of the spring 67 may be anchored and which may be engaged by a screw driver inserted through a hole in the casing E.

The free end of the spring 67 is connected by means of an anchor bolt to a finger piece 71 which may be constructed as shown in Figs. 1 and 5, and which may be provided with a slot for freely and detachably receiving an upwardly and rearwardly projecting portion 72 on a plate 73 riveted to the follower D, as shown in Figs. 5 and 13.

The side members 49 and 50, Fig. 10, are also provided with slots 74 and 75 for receiving projections on one leg of a U-shaped spacing and locking member 76, Figs. 5 and 7. The plunger C, as shown in Fig. 5, is provided with a slot 77 in which operates a bolt 78 which limits the movement of the plunger under the operation of the spring 58. For the purpose of retaining the bolt 78 in position the U-shaped locking plate 76 may be compressed or otherwise placed under tension as the bolt is threaded into it in position to control the operation of the plunger.

The spring 67 and the various parts of the head are preferably encased in the casing E which comprises two members, 79 and 80. The member 79 comprises a front wall and side walls and is secured in position by the bolts 47 and 48, 75

heretofore referred to. The rear member 80 may be shaped as shown in Fig. 1. The members 79 and 80 may be provided with interlocking tongues and grooves, as indicated at 81, Fig. 1, by means of which the part 80 will be securely held in position on the part 79 after the bolt 78, as shown in Fig. 5, is inserted in place to perform its function in controlling the plunger C.

The driving or setting plate 36 is provided with a slightly elongated aperture, Figs. 5 and 10, which receives a rivet 82 fastened to the plunger C, and by means of which movement in an upward direction is communicated from the plunger C to the driving or setting plate 36. The upper end of the driving plate is provided with a tongue 83 which extends into the inner member 84 of the cap 59 and provides lateral shoulders in contact with the inner face of the member 84 for driving the driving plate 36 directly from the cap. The upper end of the plunger C is also preferably provided with tongues 86 which extend into said member 84 and which may be secured therein by any suitable means. The shoulders defined by said tongue abut the inner face of the member 84. The lower end of the driving and setting plate 36 is provided with a slot 85 for receiving the end of the staple supporting arm 30 as the staple is being clenched, as shown in Fig. 11, to prevent binding.

The arm B is held in the position shown in Fig. 5 by means of a spring 90 which is received in an aperture in the top plate 1 of the base A and is seated at one end on the plate 8 secured to the base, and at its other end against a shoulder on a limiting arm 91 pivoted to the operating arm B, as indicated, and which is provided with a hook or shoulder 92 at its free end to limit the upward movement of the operating arm B. The spring 90 surrounds the arm or latch 91, and the construction is such that the pressure of the spring bearing on the shoulder of the arm 91 causes the arm to rotate in a counterclockwise direction, maintaining the hook 92 in engagement or interlocking with the marginal portion or edge of the elongated slot in the plate 8 of the base. The elongated slot in the plate 8 provides for clockwise movement of the arm 91 to disengage the hook 92 from the plate 8 to release the arm B for greater movement for purposes of providing access to various parts of the arm, and also for the purpose of stapling a larger number of sheets of paper or the like, that is, when latch 91 is released from the base, spring 90 pivotally moves arm B upwardly and away from the base, thus increasing the gap at the forward part of the machine between the arm and base. The movable latch 91 as illustrated in Fig. 5 has a lower curved terminal which for purposes of specification may be considered as a cam portion and the shoulder 92 above the cam portion may be considered as laterally extending from the body of the latch. It should be appreciated that although block 8 is fastened to the base 1, it may be considered as a part of the base 1 and constitutes a stop adapted to removably interlock with laterally extending shoulder 92. The latch receiving opening in stop 8 may be considered as a part of the enlarged opening in the base above it. This enlarged opening receives the lower convolution of spring 90 and the upper part of the block is an abutment for the lower convolution of the spring. For the purposes of compelling a complete downward and upward stroke of the plunger C, the plunger is preferably provided with a full stroke rack 93

with which cooperates a reversible pawl 94, spring-controlled as by spring 95, anchored as at 96 to the frame plate 49, as indicated in Fig. 6.

As stated before, the anvil F is provided with a single clenching recess 12 which, when the anvil is in the position shown in Fig. 5, is aligned with the staple driving and setting plate 36 which, upon operation of the machine, will cause the staple to assume the form shown in Fig. 15 in which the sheets of paper are permanently secured together. The anvil is provided with a pair of clenching recesses 13 which may be aligned with the staple driving and setting plate 36 by shifting the plate rearwardly of the machine; that is, to the left, as indicated in Figs. 1 and 5. When the machine is then operated the staple will be bent into the form shown in Fig. 16, in which the sheets of paper are temporarily secured together, the staple being readily removable by lengthwise movement in one direction to disengage one end thereof, and then lengthwise movement in the opposite direction to disengage the other end, or by a single continuous lengthwise movement of the staple until the staple is entirely disengaged from the sheets.

By locating the clenching depressions in different transverse lines on the anvil the anvil may be shifted lengthwise of the machine so that the anvil in either of its positions will lie entirely within the confines of the base of the machine. This also permits forming the seat for the anvil by merely depressing the top plate of the base of the machine, and also permits the side flanges of the base of the machine to be slotted to permit adjustment of the anvil and to cooperate with the manipulative means carried by the anvil for holding the anvil in either of its adjusted positions and for securely aligning the clenching recesses in the anvil in alignment with the driving and setting plate 36.

By constructing the base as shown, the base may either be cast or formed of sheet metal. The operating arm B may readily be assembled by means of several cross bolts which pivotally secure the arm to the base, and which secure the side guide members 40 and 41 to the main body member 25, and also secure the member 79 of the casing in position. As the guide members 40 and 41 are secured in position, the plate 55, which constitutes a seat for the spring 58, the spring retaining bolt 66 and the U-shaped washer plate 76 are thereby secured in position. The upright flanges 49 and 50 on the side members 40 and 41 also provide means for guiding the plunger C which is also guided by the member 79 of the housing E which is secured in position by the same bolts 47 and 48 which secure the side members 40 and 41 in position. By constructing the operating arm B of the parts described, the central body member 25 may be, if desired, die cast; the side members 40 and 41 may be made of pressed and stamped material; the guide rail 24 may be made of pressed sheet material and preferably extends forwardly into engagement with the rear guide plate 33 which is made of steel and which, together with the front guide plate 27, is removably secured to the forward end of the main body member 25, whereby these parts which receive wear may be readily replaced.

The staple driving and setting plate 36 is provided at its upper end with a tongue defining lateral shoulders which abut against the inner face of the cap 59 so that the force is directly communicated from the cap to the end of the

driving plate. The rivet 82 is employed for the purpose of causing the driving plate to move upwardly with the plunger. This rivet engages an elongated hole, as shown in Fig. 5, to prevent the rivet from operating to transmit the driving force from the plunger to the driving and setting plate 36. The lower end of the plate is slotted, as shown in Figs. 10 and 11, in order that the end of the staple supporting arm 30 may rest against the end of this slot when the plate 36 is in its lowermost position, as shown in Fig. 11, after the staple has cleared the end of the arm 30. This prevents any binding and locking action between the end of the arm 30 and the plate 36, such as would occur if the slot were not provided. The rear end of the arm 30 is preferably shaped so that the pressure of the spring tending to restore the arm is substantially constant throughout the length of the travel of the arm.

The construction provides means for securely holding the spring seat 55 in place and the rearward extension on the seat provides a means for preventing the convolute spring 67 from interfering with the operation of the staple follower, as this spring is substantially fully expanded near the end of the forward movement of the follower.

The U-shaped locking plate 76 provides a means for locking the plunger limiting bolt 78 in position which holds the rear casing member 80 in assembled position on the arm B and on the front member 79 of the casing.

By means of the construction shown in Fig. 7, the spring supporting and tensioning bolt 66 may be locked in position after a proper adjustment has been effected in the tension of the spring.

The construction shown in Fig. 9 has the additional advantage of creating friction between the side of the bolt 66 and the walls of the apertures in the members 49 and 50.

The construction of means for limiting the upward movement of the operating arm and of the seats for the spring effecting such movement insures that the hook 92 of the arm is always in functioning position under the influence of the spring 90, but permits the hook to be readily withdrawn to permit the operating arm to be raised high enough to accommodate a large number of sheets.

While the invention has been shown in connection with an embodiment constructed in accordance with the principles of the invention, it is to be understood that various changes may be made without departing from the principles of the invention, and it is to be understood that it is the intention to cover all equivalent constructions in the claims regardless of any descriptive language that may be imported from the specification into the claims.

60 What I claim is:

1. In a stapling machine, the combination of a base, an operating arm pivoted thereto, a driving plunger carried by said arm, a staple driving and setting plate operated by said plunger, means for feeding staples under said plate, a staple supporting arm pivoted in said operating arm and functioning to hold staples in contact with the end of said driving plate, said driving plate being recessed at its lower end to form a shoulder with which the free end of said supporting arm engages as the driving plate moves into its final position.

2. In a stapling machine, the combination of a base, an operating arm pivoted thereto, a spring, a limiting hook pivoted to said operating arm and

having its hooked portion engaging said base to limit the upward movement of said arm, and a shoulder on said hook constituting a seat for one end of the spring, the other end of which is seated against said base, the pressure of said spring on said shoulder operating to hold the hook in engagement with said base, said base being slotted to permit of a pivotal movement of said hook to disengage same from said base.

3. In a stapling machine, the combination of a base, an operating arm pivoted thereto, a driving plunger mounted in the head of said operating arm, a spring bearing against said plunger, a seat on said arm for said spring, a follower spring for feeding staples to be driven by said plunger, and an extension on said seat overlying said staples, said extension being offset with respect to said seat in a direction toward said follower spring for preventing interference between said follower spring and said staples.

4. In a stapling machine, the combination of a base, an operating arm pivoted thereto comprising a central body member over which staples are fed, separate side members including inwardly extending flanges for retaining staples on said body member and for guiding the same in their movement toward the front end of said body member, upwardly extending frame members formed on said flanges, a staple driving plunger carried by the forward end of said arm, laterally and outwardly extending flanges on the front edges of said frame members for guiding the rear side of said plunger, a housing cooperating with said last mentioned flanges for enclosing and guiding said plunger, downwardly extending flanges on said housing overlapping said side members, and means for securing said downwardly extending flanges on said housing, said side members and said body member together.

5. In a stapling machine, an operating arm comprising a main body member, upwardly extending shoulders formed on the sides and the forward end of said body member, separate side members secured to said body member including inwardly extending flanges for guiding staples on said body member and including also upwardly extending guiding surfaces for guiding the rear side of a staple driving plunger, and a housing cooperating with said guiding surfaces for guiding said driving plunger, said housing resting on said shoulders and being provided with portions overlapping said side members, and means for securing said overlapping portions, said side members and said body member together.

6. In a stapling machine, the combination of a base, an operating arm pivoted on said base comprising a main body member provided with a staple rail, side members provided with flanges overlying said rail, upwardly extending frame members formed on the free edges of said flanges near the front ends thereof, laterally extending flanges on said frame members constituting guiding means for a staple driving plunger, and a casing enclosing said frame members and comprising a portion constituting guiding means for a staple driving plunger, and a staple driving plunger guided by said guiding means.

7. In a stapling machine, the combination of a base, of an operating arm pivoted on said base comprising a main body member provided with a staple rail, side members provided with flanges overlying said rail, upwardly extending frame members formed on the free edges of said flanges near the front ends thereof, laterally extending

flanges on said frame members constituting guiding means for a staple driving plunger and a casing enclosing said frame members and comprising a portion constituting guiding means for a staple driving plunger, a staple driving plunger guided by said guiding means, a staple follower movable on said rail, a convolute follower spring located between said frame members, a follower spring supporting and tensioning bolt rotatable in said frame members, one end of which is slotted and is accessible through an opening in said casing, a head on the other end of said bolt in contact with the outer face of the adjacent frame member, and a locking screw bolt mounted in said adjacent frame member and provided with a head bearing on the head of said screw bolt and accessible through an opening in the casing.

8. In a stapling machine, a base, an arm pivoted to said base and having spaced upstanding frame members, a transversely disposed bolt rotatably sustained by said members and having an overhanging portion adapted to bear against one of said frame members, settable means carried by said last mentioned frame member and out of axial alignment with said overhanging portion and adapted to frictionally cooperate therewith to prevent rotation of said bolt, said arm having means for guiding staples, a follower slidably mounted on said arm, and a spring adapted to be adjusted upon rotation of said bolt and connected to the latter and said follower.

9. In a stapling machine, a base, an arm pivoted to said base and having spaced upstanding frame members, a transversely disposed bolt rotatably sustained by said members and having an overhanging portion adapted to bear against one of said frame members, an adjustable set screw out of axial alignment with said bolt and having a head adapted to frictionally cooperate with said overhanging portion for clamping the latter against its adjacent frame member to prevent rotation of said bolt, a staple follower slidably mounted in said arm, and a spring adapted to be adjusted upon rotation of said bolt and connected to said follower and bolt.

10. In a stapling machine, an operating arm comprising a main body member, spaced cheek members on the forward end of said member extending laterally and forwardly beyond said main body member and integral therewith, a rear staple guide plate located between said cheek members and secured against the front end of said body member, and a front staple guide plate secured to the front faces of said cheek members and defining with said rear staple guide plate a vertically disposed passageway for slidably guiding a staple.

11. In a stapling machine, an operating arm comprising a main body member, spaced cheek members on the forward end of said member extending laterally and in part forwardly beyond said member and integral therewith, a rear staple guide plate located between said cheek members and secured against the front end of said body member, a front staple guide plate secured to the front faces of said cheek members and defining with said rear staple guide plate a vertical passageway to receive a staple, and a guide rail on said body member, said rear guide plate being provided with an inverted U-shaped passageway through which staples fed over said rail enter said vertical passageway between said guide plates.

12. In a stapling machine, a staple driving plunger, a head on said plunger, a staple driving and setting plate provided with a tongue entering a recess in said head and defining a shoulder engaged by said head, and a loose connection between said plunger and setting plate for moving said plate with the plunger as the plunger is restored to normal position, said connection between the setting plate and the head on the plunger and the plunger providing for readily mounting and dismounting the setting plate and providing means of self-alignment of said setting plate.

13. In a stapling machine, a staple driving and setting plate, a staple rail over which staples are fed under said driving and setting plate, a spring-pressed staple supporting arm pivotally supported in said staple rail with its free end projecting under said setting plate to hold staples in contact with the end of the driving and setting plate, and a shallow recess in the lower end of the driving and setting plate for receiving the end of said supporting arm as a staple is moved past said end of the supporting arm during the final movement of the driving and setting plate.

14. In a stapling machine, the combination of, a base having spaced longitudinally disposed slots, a slidable anvil provided with several types of staple clinching recesses and having spaced depending lugs projecting downwardly through said slots, said base having spaced sides each including a cam slot, a transversely disposed rod connected to said lugs and having terminal manipulating portions extending through said cam slots and overhanging said sides, and an arcuate spring carried by said lugs and cooperating with said rod for removably holding the latter at corresponding terminal portions of said cam slots.

15. In a stapling machine, the combination of, a base having spaced longitudinally disposed slots, a slidable anvil mounted on said base and provided with several types of staple clinching recesses, spaced lugs depending from said anvil and projecting downwardly through said slots and slidably guided by the latter, said base having spaced aligned cam means, a transversely disposed rod slidably displaceable longitudinally of said base and having reduced portions cooperating with said cam means, manipulating means extending laterally of said rod and overhanging said sides, and a spring carried by said lugs and cooperating with said rod for removably holding the latter at corresponding terminal portions of said spaced aligned cam means.

16. In a stapling machine, the combination of, a base having an opening and constituting a stop, a staple carrying arm pivoted to said base, a displaceable latch projecting downwardly from said arm and having a lower part adapted to extend within said opening and comprising a laterally extending shoulder adapted to be free of said stop and above the latter whereby said arm may be upwardly displaced relative to said base and adapted to removably project underneath and against said stop upon downward displacement of said arm relative to said base to disconnectably interlock with said stop to prevent upward displacement of said arm relative to said base, and spring means for holding said shoulder against said stop.

17. In a stapling machine, the combination of, a base having a pivoted arm, a latch pivoted to said arm and projecting downwardly through said base, said latch having a laterally extending

shoulder adapted to removably interlock with said base upon pivotal movement of said latch to prevent pivotal displacement of said arm in one direction, and a spring surrounding said latch cooperating therewith and said arm to hold the latter elevated, said shoulder upon reverse pivotal movement of said latch adapted to be disconnected from said base whereby said spring automatically pivotally displaces said arm to increase the gap between said arm and base.

18. In a stapling machine, the combination of, a base comprising a stop, a staple carrying arm pivoted to said base, a latch pivoted to said arm and projecting downwardly through said base, said latch having a laterally extending shoulder adapted to be above said stop when said arm is in a raised position and adapted when said arm is in a depressed position to removably interlock with said stop to prevent upward pivotal displacement of said arm relative to said base, a spring surrounding said latch for holding said arm in a pivoted raised position relative to said base pursuant to interlocking of said shoulder and stop, said spring pursuant to disengagement of said shoulder and stop cooperating with said base and arm to pivotally elevate the latter and increase the gap between said arm and base.

19. In a stapling machine, the combination of, a base having a pivoted arm, a latch pivoted to said arm and having a laterally extending shoulder adapted to removably interlock with said base to prevent upward pivotal movement of said arm relative to said base, and spring means for holding said latch in an interlocked relation with said base whereby said arm defines with said base a gap, said latch upon manual displacement thereof adapted to shift said shoulder out of interlocking relation with said base, said spring means upon removal of said interlocked relation automatically cooperating with said base and arm to increase the gap formed thereby.

20. In a stapling machine, means for supporting a rotatable arbor having a slot, a coiled spring having one end retained in said slot, the latter providing means for receiving a tool to permit rotation of said arbor and winding or unwinding of said spring, and clamping means out of alignment with the axis of and cooperating with said arbor to hold the latter in a set position of adjustment.

21. In a stapling machine, the combination of, means for supporting a transversely disposed rotatable arbor having a slot, a coiled spring having one end retained in said slot, the latter providing means for receiving a tool to permit rotation of said arbor to adjust the tension of said spring, and adjustable means out of alignment with the axis of and adapted to frictionally cooperate with said arbor to hold the latter in a set position of adjustment.

22. In a stapling machine, the combination of, means for supporting a transversely disposed rotatable arbor having a diametrically arranged slot, a coiled spring about said arbor and having one end retained in said slot, the latter providing means for receiving a tool to permit rotation of said arbor to adjust the pressure of said spring, and an adjustable set screw having a head adapted to frictionally engage said arbor to hold the latter in a set position of adjustment.

23. In a stapling machine, the combination of, a pivoted arm having upstanding spaced wings, a rotatable arbor carried by said wings and having a slot, a coiled spring about said arbor and having one end retained in said slot, the latter

providing means for receiving a tool to permit rotation of said arbor to adjust the pressure of said spring, a housing secured to said arm and having sides spaced from said wings, and clamping means rotatably carried by one of said sides for cooperating with said arbor to retain the latter in a set position of adjustment.

24. In a stapling machine, the combination of, a pivoted arm having spaced upstanding wings, a rotatable arbor carried by said wings and having a diametrically disposed slot, a coiled spring about said arbor and having one end retained in said slot, the latter providing means for receiving a tool to permit rotation of said arbor to adjust the pressure of said spring, said arbor having a flange overhanging one of said wings, a housing secured to said arm, and adjustable clamping means rotatable relative to said housing for frictionally engaging said flange to hold said arbor in a set position of adjustment.

25. In a stapling machine, the combination of, a base having a pivoted arm, a latch having an upper portion pivoted to said arm and a lower portion adapted to project through an opening of said base, said lower portion defining a shoulder adapted to be projected through said opening to removably engage the lower face of base adjacent said opening and prevent upward pivotal displacement of said arm relative to said base, and spring means to hold said shoulder against said base, said spring means upon removal of said shoulder causing said arm to pivotally and upwardly displace relative to said base to increase the gap between the forward part of said arm and base.

26. In a stapling machine, a base having an anvil and a longitudinally and centrally disposed slot bounded by a peripheral depending flange, a resilient stop having a contracted portion adapted to frictionally and removably engage spaced portions of said depending flange, said guide having oppositely extending transverse portions each including an upstanding manipulatable projection, said projections being movable towards each other to release said contracted portion from said sides to permit displacement of said guide relative to said slot, the forward portion of said guide serving as stop means to prevent rearward displacement of a member mounted on said base.

27. In a stapling machine, the combination of, means for supporting a transversely disposed rotatable arbor having a diametrically arranged slot, a coiled spring about said arbor and having one end retained in said slot, the latter providing means for receiving a tool to permit rotation of said arbor to adjust the pressure of said spring, and an adjustable set screw out of axial alignment with said bolt and having a head comprising cam means adapted to frictionally engage said arbor to hold the latter in a set position of adjustment.

28. In a stapling machine, the combination of, a base, a staple carrying arm, means for pivotally supporting said arm, driving means for ejecting a staple carried by said arm, latch means projecting downwardly from said arm and having a laterally extending shoulder, said base having means for removably receiving a lower terminal of said projecting means and including stop means adapted to engage said shoulder to limit upward pivotal displacement of said arm relative to said base, and spring means for holding said shoulder engaged with said stop means.

29. In a stapling machine, the combination of, a base, a staple carrying arm, means for pivot-

ally supporting said arm relative to said base, driving means carried by said arm for ejecting a staple supported by the latter, pivotally displaceable means projecting downwardly from said arm and having a shoulder, said base having means for removably receiving a lower terminal portion of said displaceable means and including stop means adapted to disengageably cooperate with said shoulder to limit upward pivotal displacement of said arm relative to said base, and spring means for holding said shoulder engaged with said stop means, said terminal portion adapted to be manually displaced to be free of said shoulder preparatory to upward pivotal displacement of said arm relative to said base.

30. In a stapling machine, the combination of, a base having an opening, a staple carrying arm, means for pivotally supporting said arm relative to said base, driving means carried by said arm for ejecting a staple supported by the arm, and projecting means extending downwardly from said arm and movably supported by the latter and comprising a terminal cam portion and an extended shoulder adapted to be removably disposed in said opening, said base having means to actuate said cam portion and shift said shoulder for disconnectably interlocking with said base to prevent upward pivotal displacement of said arm relative to said base.

31. In a stapling machine, the combination of, a base, a staple carrying arm, means for pivotally supporting said arm relative to said base, driving means carried by said arm for ejecting a staple supported by the latter, projecting means extending downwardly from said arm and movably supported by the latter and comprising an extended shoulder, said base having stop means for disconnectably interlocking with said shoulder to prevent upward pivotal displacement of said arm relative to said base, and spring means for holding said shoulder in removable interlocking engagement with said stop means.

32. In a stapling machine, the combination of,

a base, a staple carrying arm, means for pivotally supporting said arm relative to said base, driving means carried by said arm for ejecting a staple supported thereby, a latch movably carried by said arm and having a downwardly projecting portion including a shoulder, and spring means, said base having means for receiving said shoulder and including stop means adapted to engage said shoulder to limit upward pivotal displacement of said arm relative to said base, said spring means cooperating to hold said shoulder in engagement with said stop means, said shoulder adapted to be disengaged from said stop means, said shoulder when disengaged from said stop means permitting upward pivotal displacement of said arm relative to said base, said shoulder upon downward pivotal displacement of said arm relative to said base adapted to move underneath said stop means and be removably retained thereagainst by said spring means.

33. In a stapling machine, the combination of, a base constituting a stop and having an opening, a staple carrying arm, means for pivotally supporting said arm, driving means for ejecting a staple carried by said arm, a latch movably carried by said arm and comprising an extended shoulder and a cam portion adapted to be disposed in said opening, said cam portion on downward pivotal displacement of said arm relative to said base adapted to abut a wall of said opening to be out of interlocking relation with said stop, said cam portion on further downward pivotal displacement of said arm adapted to be free of said wall whereby said shoulder is disposed below and against said stop to prevent upward pivotal displacement of said arm relative to said base, and spring means for holding said shoulder in removable engagement with said stop, said latch adapted to be displaced relative to said wall to disengage said shoulder from said stop to permit upward pivotal displacement of said arm relative to said base.

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