

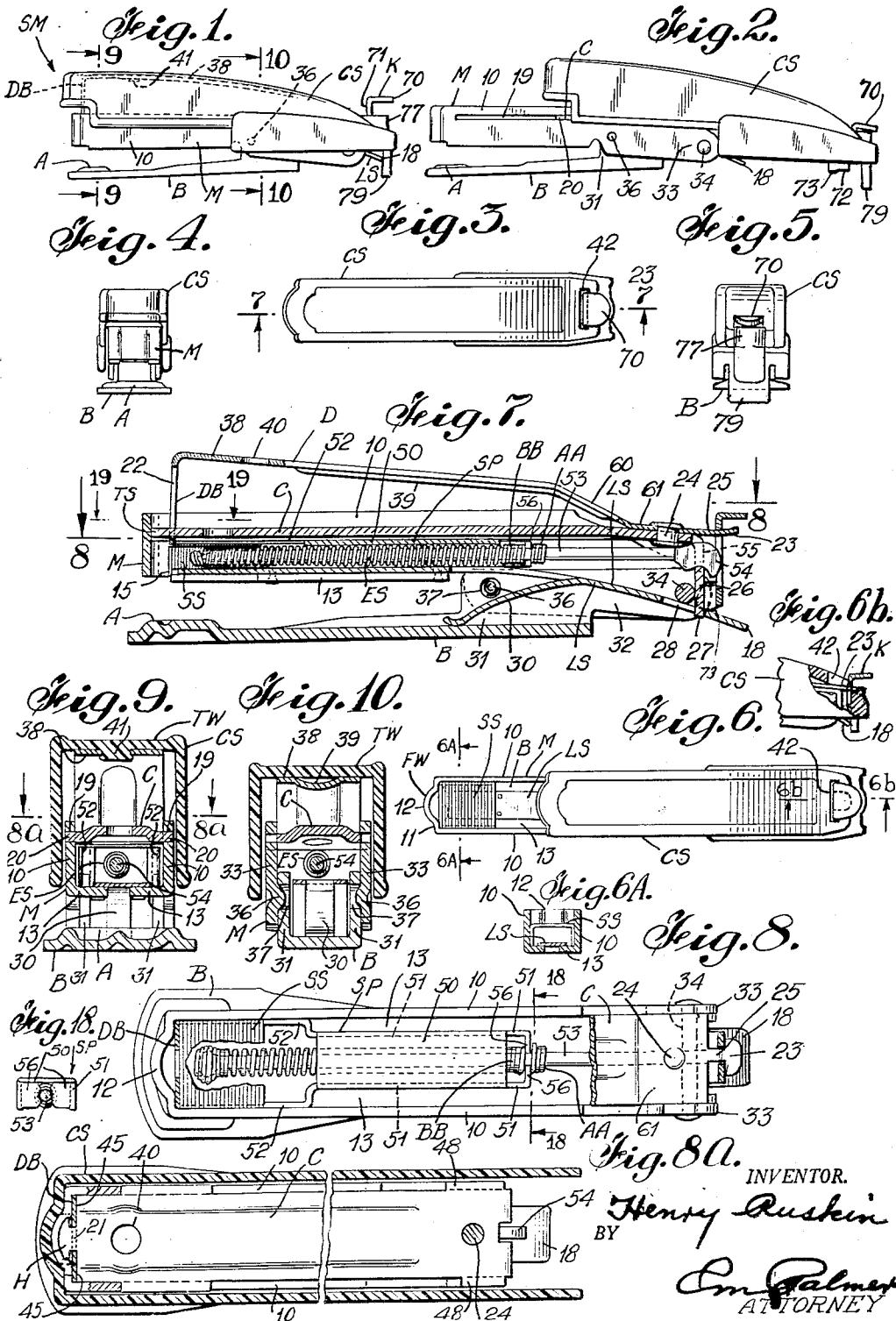
Feb. 22, 1955

H. RUSKIN
STAPLING MACHINE

2,702,384

Filed Dec. 7, 1949

2 Sheets-Sheet 1



INVENTOR.

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BY

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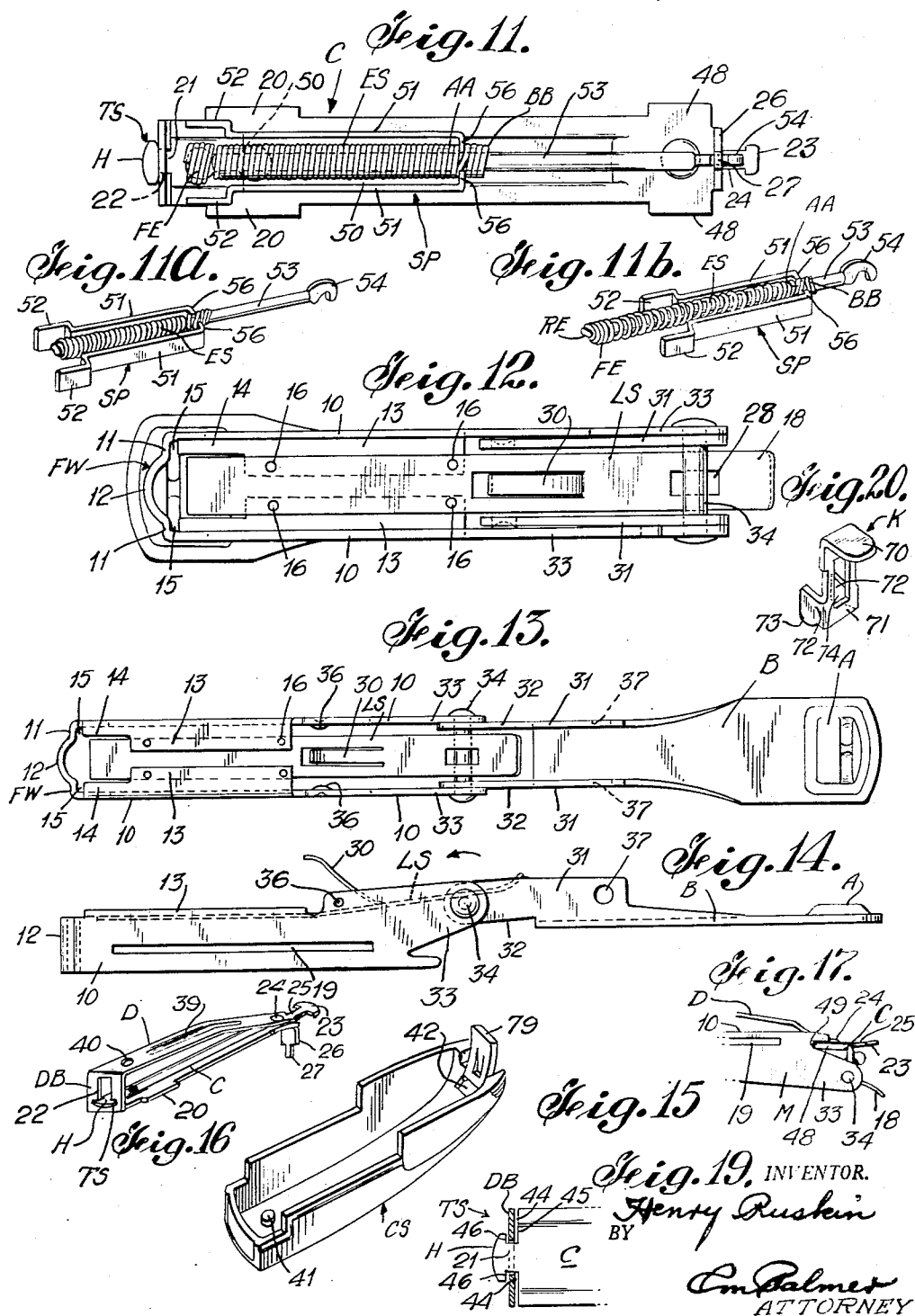
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STAPLING MACHINE

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41 Claims. (Cl. 1—3)

This invention is a miniature stapling machine wherein the cover is adapted to be bodily shifted rearwardly relative to the magazine for promptly inserting a staple strip in the latter. One object of the invention is concerned with the provision of a normally compressed coiled spring straddled by spaced cheeks of a slidably guided staple pusher adapted to extend this coiled spring in proportion to the size of the staple strip inserted within the magazine and adapted to apply a reactive thrust to the staple strip for urging the latter towards the staple ejecting guideway at the front part of the magazine. Another important object resides in the provision of a cover slidably guided by the magazine to prevent upward displacement of the staple strip within the magazine and carrying a normally elevated staple driver having a biased shank spaced from and above the cover and including a rear part anchored to the rear portion of the cover and including at its forward end a depending blade slidably guided at the front end of the linearly guided cover. Another salient object resides in the provision of a spindle or rod to which the front end of the extendible but normally compressed spring is anchored and having at its rear end a hooked shaped member detachably interlocked with a depending rear portion or block of the linearly guided cover. Another object resides in the provision of a one piece magazine to which is secured in part a leaf spring having a rear arcuate portion constituting a cantilever for disconnectably interlocking with the slidable cover to maintain the latter in a closed relation with the magazine. A further object has to do with the provision of means on the driver for interlocking with a plastic casing which conceals the driver. Other important objects will appear from the following description taken with the accompanying drawings:

Fig. 1 is a side elevational view of the miniature stapling machine according to my invention shown in its actual full size.

Fig. 2 is a view similar to Fig. 1 however showing the magazine opened to receive a supply of staples.

Fig. 3 is a plan view of Fig. 1.

Fig. 4 is a front view of Fig. 1.

Fig. 5 is a rear view of Fig. 1.

Fig. 6 is a plan view of Fig. 2.

Fig. 6A is a sectional view on the line 6A—6A of Fig. 6.

Fig. 6b is a sectional view on the line 6b—6b of Fig. 6.

Fig. 7 is a sectional view on the line 7—7 of Fig. 3 however with the case removed to illustrate the rectilinearly guided cover carrying the depressible catch and having its rear block interlocked with an arcuate cantilever portion of a leaf spring secured to the bottom wall of the magazine, and illustrating the driver normally raised with the blade thereof slightly above the foremost staple of the staple strip confined within the magazine.

Fig. 8 is a sectional view taken on the line 8—8 of Fig. 7 however with the staple strip partly broken away to illustrate the expanded relation of the normally compressed follower spring.

Fig. 8A is a sectional view on the line 8a—8a of Fig. 9.

Fig. 9 is a sectional view on the line 9—9 of Fig. 1.

Fig. 10 is a sectional view on the line 10—10 of Fig. 1.

Fig. 11 is an underneath plan view of the staple follower and slidable cover and illustrating the extendible follower spring in its normally compressed relation.

Fig. 11* is a perspective view of the follower shown

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inverted on its guide spindle to illustrate the normally compressed spring.

Fig. 11^b is a view similar to Fig. 11^a but showing the normally compressed follower spring extended.

Fig. 12 is a top view of the magazine shown attached to the swingable base.

Fig. 13 is a bottom view of the magazine and base in an unfolded relation.

Fig. 14 is a side view of Fig. 13 with the magazine swung away from the base in the direction indicated by the arrow.

Fig. 15 is a perspective and inverted view of the plastic case.

Fig. 16 is a perspective view showing the driver secured to the cover.

Fig. 17 is a fragmentary view illustrating the manner of interlocking the rear end of the cover with the rear end of the magazine.

Fig. 18 is a sectional view on the line 18—18 of Fig. 8.

Fig. 19 is a fragmentary view on the line 19—19 of Fig. 7, and

Fig. 20 is a perspective view of the catch.

The miniature stapling machine SM includes inter alia the swingable base B, the magazine M, the slidable cover C, the case CS, the staple pusher SP, the normally compressed but extendible coiled spring ES, the staple driver generally denoted D and the locking leaf spring LS.

The staple magazine M (Figs. 6 and 9) is a one piece hollow member having the spaced upstanding sides 10 merged with the front transverse wall FW, having margins 11 and the intermediate outwardly convexed portion 12. The lower wall of the magazine is characterized by the inwardly turned flanges 13 defining with the front wall 11 the aligned gaps 15 constituting a staple guideway for the foremost staple of the staple strip SS closely guided by the spaced sides 10.

Fixedly anchored within the magazine along spaced flanges 13 by (Fig. 13) suitable pins 16 is the flat leaf resilient spring LS which extends rearwardly beyond flanges 13 and between sides 10 and embodies the downwardly curved terminal 18 (Fig. 7) to constitute a reflexed cantilever spring extending beyond the magazine.

Sides 10 of the magazine are interrupted by the aligned slots 19 which receive wings or lugs (Figs. 9 and 11) extending laterally of the cover C. By such construction cover C is slidably or linearly guided relative to the magazine to provide for opening of the magazine (Fig. 2) to allow loading or dropping a strip of staples therein when desired. The laterally extending lugs 20 strike the rear walls of slots 19 to limit opening of the cover C which when closed serves to limit upward displacement of the staple strip.

The slidable guided cover C is provided at its front end with a T-shaped extension TS having its reduced portion or neck 21 projecting into elongated rectangular opening 22 of the driving blade DB forming a part of the staple driver generally denoted D which is in the form of a one piece spring having its rear part 61 fastened by spot welding to the rear end of cover C or by rivet 24. The T-shaped lug 23 is integral with part 61 and extends beyond the downwardly turned lug or block 26 of the cover C. This block 26 is provided with a reduced projection 27 adapted to snap into and interlock with opening 28 at the rear part of the locking spring LS having struck out therefrom the downwardly extending arcuate spring finger 30 coacting with base B to hold magazine M in spaced relation to the base and appreciably away from the staple clinching anvil A.

The base B is a one piece metal stamping embodying the spaced upstanding sides 31 having rear extensions 32 (Fig. 14) interposed between and straddled by the spaced ears 33 extending from and at the rear of the spaced sides 10 of the magazine. Fulcrum pin 34 pivotally holds ears 33 to extensions 32. By the present arrangement base B when in an opened relation may be swung under the magazine to its clinching position shown in Fig. 1 or base B may be swung to rear of the magazine (Figs. 13 and 14) in which case the stapling machine may be employed as a tacker as is well understood.

The spaced sides 10 of the magazine include the aligned detents or projections 36 adapted to snap into and re-

movably interlocked with the alined apertures 37 in the spaced upstanding sides 31 of the base B at which time spring or tongue 30 holds base yieldingly spaced from the magazine.

Referring back to the flat spring driver D, the intermediate part or shank 38 thereof slopes upwardly and forwardly away from the rear part of cover C. For strengthening purposes shank 38 includes the longitudinally arranged rib 39. The sloping shank 38 also includes the locating opening 40 (Fig. 7) for receiving projection 41 (Fig. 9) depending from the top wall TW of the floating but ornamental plastic case CS pursuant to projection of manipulating portion 70 and the upper part of wall 71 of the depressible catch K into opening 42 at the rear of the case CS.

Catch K has its forwardly projecting wings or sides 72 extending from wall 71 provided with depending shoulders or cams 73 seated on the arcuate terminal 18 of leaf spring LS, thus holding catch K normally elevated. Of importance, depending shoulders permit catch K to be rocked or tilted when the head or manipulating portion 70 is depressed, thereby downwardly deflecting terminal 18 from projection or lug 27 of the cover C thus unlocking the latter to permit both casing CS and cover C to be linearly and bodily displaced from the front part of the magazine. This action is possible in that after casing CS has been mounted on and to straddle the slidable cover C, projection 41 is upset, thereby retaining the casing CS in place. However it should be observed that the tiltable catch K is also retained in place and loosely on the reduced neck 25 which forms a part of the T shaped lug or tongue 23 extending rearwardly from the slidable cover. Specifically neck 25 projects through vertical slot 74 in wall 71 of catch K and the latter is maintained thereon by the head of the T shaped lug 23. By the arrangement disclosed, catch K may be said to freely and slidably straddle the T shaped lug 23 and may be conveniently displaced relatively thereto by depressing the accessible crank or manipulatable portion 70. In the assembled relation of the stapling machine, catch K is normally held raised by the cantilever spring 18 permitting manipulating portion 70 to be spaced from and above boss 77 of casing CS provided with depending lug 79 which serves to conceal parts of the internal construction of the stapling machine and also serves as a rest to support the latter.

The driving blade DB of the one piece driver D is slidably confined and guided in the spaced notches 44 (Fig. 19) defined by the web or neck 21, the shoulders 45 of the cover C and the shoulders 46 of the head H of the T shaped extension TS.

On closing of the magazine, cover C slides towards the front wall of the latter at which time reduced projection 27 of the block 26 of the cover snaps into opening 28 of the locking spring LS. At such time the cover or staple driving carrier C is prevented from longitudinal displacement relative to the magazine at which time also (see Fig. 17) the rear laterally projecting flanges or wings 48 of the cover C are within the reentrant and alined notches 49 at the rear of the magazine to interlock therewith to prevent bodily upward tilting of the cover or carrier and driver.

Arranged within the magazine and riding along the spaced flanges 13 thereof is the staple pusher SP which is in the form of an inverted U-shaped rectangular member having the top wall 50 (Figs. 8 and 18) and depending spaced sides 51 (Fig. 11a). Offset outwardly at the forward part of sides 51 are the spaced fingers 52 cooperating under the action of the extendible spring ES to urge the staple strip SS forwardly towards the staple guideway defined by the alined gaps 15 (Fig. 12) for receiving the foremost staple of the staple strip and under driving blade DB.

More specifically the staple pusher SP is slidably guided along a cylindrical spindle 53 having a flattened hook 54 at its rear end which is adapted to be received in opening or notch 55 of block 26 of cover C to removably interlock with the latter. By this action the rear end of the spindle is held spaced from the bottom wall of the magazine. The intermediate part of the spindle is also effectively retained between spaced cheeks or bearings 56 turned inwardly of the sides 51 of the pusher SP. Cheeks 56 (Fig. 18) rotatably straddle spindle 53 and when the latter is unhooked from the cover or carrier C

and if this pusher be removed from the magazine, the pusher may be rotated relative to the spindle.

Loosely encircling spindle 53 is the normally compressed coiled spring ES. The rear end of this spring is slightly spaced apart to define parts AA and BB (Fig. 11) to receive and straddle cheeks 56 whereby the rear portion of this spring acts as an abutment when the spring ES is extended from its normally compressed relation. Such action takes place after insertion of a staple strip within the magazine since the forward end of spring ES is anchored to the front of the spindle. This is readily accomplished by flattening the front coils FE against the reduced front end RE of the spindle.

In the assembled and closed relation of the stapling machine, the driver D is raised as illustrated in Fig. 7 with the blade DB thereof just above the front staple. The casing CS is held locked and secured to the carrier or cover C and telescopes over the top part of the magazine and conceals the cover C and the driver. Since as shown there is a supply of staples within the magazine, spring ES is extended, namely, pulled rearwardly due to the coaction of cheeks 56 against coils BB. In this connection, it should be observed that the pusher is also slidably or linearly guided on spindle 53 by the straddling spaced cheeks or guard means 56. Thus the greater the supply of staples within the magazine the greater will be extension of the extendible spring ES away from its anchored front part FE. Stated in another way, spring ES is an elastic member having its front end anchored to the spindle or rod 53. Consequently if the cover be opened and thereafter closed, the action of cheeks 56 of the follower causes the spring ES to stretch away from the anchored end in proportion to the size of the staple strip inserted into the magazine. This tension on spring ES is utilized reactively when the spindle is locked to the carrier C to always urge the staple strip forwardly whereby upon depressing of the casing CS, the driver D which is secured to the casing, is correspondingly depressed to permit blade DB to expel the foremost staple against the anvil A for clinching purposes.

To unlock the cover, terminal 18 is flexed away from the stop or fulcrum pin 34 and downwardly by cams or curved lips 73 on depressing of the slidably guided but tiltable catch K, thus unlocking block 26 of the cover C from leaf spring LS. With this accomplished and where the magazine is empty of staples the casing is initially shifted automatically, that is, partially rearwardly to open the magazine due to the residual tension in the extension spring ES and thereafter the casing is manually shifted to further and fully open the magazine to allow full reloading thereof.

Where the last staple in the magazine has been ejected by the driving blade DB, spring ES is almost fully compressed. To reload the stapling machine, catch K is actuated to permit opening of the magazine, and the cover C is rearwardly displaced. At this time the staple pusher SP is correspondingly and rearwardly displaced, permitting dropping of a staple strip into the empty magazine. On closing of the magazine, casing CS is thrust towards the guideway. Thus fingers 52 of the staple pusher abut the rear end of the staple strip and come to a stop yieldingly abutting the staple strip. However cover C and casing CS continue to slide towards the staple guideway of the magazine, causing spring ES to progressively expand. Eventually cams or shoulders 73 ride up on the inclined terminal 18 of cantilever spring LS, deflecting the latter downwardly and ultimately projection 27 snaps into opening 28, that is, terminal 18 retracts to lock the cover against rearward displacement at which time if the magazine be fully loaded spring ES is under maximum tension or extension which progressively decreases in proportion to the number of staples driven from the magazine but as previously mentioned, spring ES is never completely collapsed, hence always at this time urging the staple pusher forwardly. Where the hinged magazine is loaded with staples and the slidable cover C is closed and locked, spring ES is under appreciable tension. If therefore catch K be depressed, cover C is unlocked and spring ES contracts, thus automatically sliding cover C to fully open the magazine.

It should be observed that due to the biased or offset part 60 of shank 38, the swingable driver D is normally maintained in a raised position. This action is possible in that rear part 61 which embodies the overhanging T shaped projection or tongue 23 is permanently an-

chored to the cover, thereby also providing a localized hinging area for shank 38 at the confluence of the rear part 61 and the stiffened biased portion 60 of the driver. It should also be observed that terminal 18 is maintained normally under tension against fulcrum pin 34, preventing its full retraction.

If desired, the herein described machine may be employed as a tacker by first overcoming the frictional relation between detents 36 in apertures 37, and thereafter swinging the hinged base rearwardly and away from the magazine.

The stapling machine just described is of the miniature type and particularly adapted to be carried about the person for prompt use. It is also adapted for children's use in schools or within the home, since it is convenient to operate and requires no special skill to load with staples.

Various changes may be made in details of construction and arrangement of parts without departing from the scope of the invention or sacrificing any of the advantages thereof inherent therein.

I claim:

1. In a stapling machine, a magazine for housing a strip of staples and having a guideway, a cover for said magazine, said cover and magazine including means for slidably guiding said cover to open or close said magazine, a spindle within said magazine, means holding said spindle to said cover, a normally contracted coiled spring loosely surrounding said spindle but having its front end anchored to the front part of said spindle, a staple pusher within and slidably guided by said magazine and shiftable relative to said spindle and having means retaining the rear loose end of said coiled spring for extending the latter pursuant to reception of said strip of staples within said magazine and upon closing of said magazine by said cover to urge said strip towards said guideway, spring means secured to said magazine, said spring means and cover having cooperative disengageable means to prevent longitudinal displacement of said cover relative to said magazine, and normally raised spring driving means above said cover and secured at the rear part of the latter for ejecting the foremost staple of said strip out of said guideway.

2. In a stapling machine, a magazine for housing a strip of staples and having a guideway, a cover for said magazine including a depending portion having an opening, said cover and magazine including means for slidably guiding said cover to open or close said magazine, a spindle within said magazine having at its rear end a hook for interlocking with walls of said opening, a normally contracted coiled spring loosely surrounding said spindle but having its front end anchored to the front part of said spindle, a staple pusher within and slidably guided by said magazine and shiftable relative to said spindle and having means straddled by the rear loose end of said coiled spring for extending the latter pursuant to reception of said strip of staples within said magazine and upon closing of said magazine by said cover to urge said strip towards said guideway, spring means secured to said magazine and having means cooperating with said depending portion to prevent longitudinal displacement of the latter relative to said magazine, and a one piece normally elevated resilient driver including a shank above and extending longitudinally of said cover and including a rear portion secured thereto and including a depending blade for ejecting the foremost staple of said strip out of said guideway.

3. In a stapling machine, a magazine for housing a strip of staples and having a guideway, a cover for said magazine, said cover and magazine including means for slidably guiding said cover to open or close said magazine, a spindle within said magazine, means detachably holding said spindle to said cover, a normally contracted coiled spring loosely surrounding said spindle but having its front end anchored to the front part of said spindle, a staple pusher within and slidably guided by said magazine and shiftable relative to said spindle and having means straddled by the rear loose end of said coiled spring for extending the latter pursuant to reception of said strip of staples within said magazine and upon closing of said magazine by said cover to urge said strip towards said guideway, spring means secured to said magazine, said spring means and cover having disengageable means to prevent longitudinal displacement of said cover relative to said magazine, a casing mounted over said

cover and having sides straddling said magazine, a one piece normally elevated resilient driver having a sloping shank above and spaced from said cover and extending longitudinally thereof and including a rear portion anchored to said cover and having a depending blade for ejecting the foremost staple of said strip out of said guideway, and means securing said casing to said cover.

4. In a stapling machine, a magazine for housing a strip of staples and having a guideway, a cover for said magazine, said cover and magazine including means for slidably guiding said cover to open or close said magazine, a spindle within said magazine, means holding said spindle to said cover, a normally contracted coiled spring loosely surrounding said spindle but having its front end anchored to the front part of said spindle, a staple pusher within and slidably guided by said magazine and shiftable relative to said spindle and having means straddled by the rear loose end of said coiled spring for extending the latter pursuant to reception of said strip of staples within said magazine and upon closing of said magazine by said cover to urge said strip towards said guideway, leaf spring means secured to said magazine and having means for receiving a part of said cover to prevent longitudinal displacement of the latter relative to said magazine, a casing mounted over and secured to said cover including an opening at the rear end thereof, a one piece normally elevated resilient driver having a shank spaced from and extending longitudinally of said cover and including a rear portion secured to the latter and having a tongue extending from said rear portion, said driver having a depending blade for ejecting the foremost staple of said strip out of said magazine, a movable catch guided by said tongue and having means projecting through said opening and accessible outside of said opening and adapted to be manipulated for deflecting said leaf spring means to unlock said cover to permit displacement thereof lengthwise of said magazine.

5. The stapling machine in accordance with claim 4 wherein said catch embodies spaced sides loosely seated on the rear end of said leaf spring means.

6. The stapling machine according to claim 4 further characterized in that the catch includes cam shaped portions seated on the terminal of said leaf spring means.

7. The stapling machine according to claim 6 wherein said cam shaped portions are spaced apart and are at the lower parts of said catch and ride up on said terminal on closing of said magazine by said cover.

8. The stapling machine according to claim 7 wherein the spindle embodies a hook receivable in an opening in a depending block of the cover and adapted to interlock with said block.

9. The stapling machine in accordance with claim 8 wherein said catch also has an opening for receiving said hook.

10. In a stapling machine, a magazine for holding a strip of staples and embodying at its front end a staple guideway and including upwardly extending spaced sides having aligned rectilinear slots, a cover between said sides and having means projecting into said slots for slidably guiding said cover longitudinally of said magazine, a one piece resilient staple driver having an inclined shank above and spaced from said cover and having a rear intermediate portion biased relative to said shank and including a portion extending rearwardly of said intermediate portion and permanently secured to the rear part of said cover, a blade for ejecting the foremost staple of said strip out of said guideway and forming a part of and depending from the forward portion of said driver and including a gap, a head extending from the front part of said cover and having a reduced portion projecting into said gap for slidably guiding said blade, a spindle within said magazine, means holding said spindle to said cover, a normally contracted coiled spring loosely surrounding said spindle but having its front end anchored to the front end of said spindle, a staple pusher within and slidably guided by said magazine and shiftable relative to said spindle and having means straddled by the rear loose end of said coiled spring for extending the latter pursuant to reception of said strip of staples within said magazine and upon closing of said magazine by said cover to urge said strip towards said guideway, and locking means to prevent longitudinal displacement of said cover relative to said magazine.

11. In a stapling machine, a magazine for holding a strip of staples and embodying at its front end a staple

guideway and including upwardly extending spaced sides having aligned rectilinear slots, a cover between said sides and having means projecting into said slots for slidably guiding said cover longitudinally of said magazine, a one piece resilient staple driver having an inclined shank above and spaced from said cover and having a rear intermediate portion biased relative to said shank and including a portion extending rearwardly of said intermediate portion and permanently secured to the rear part of said cover, a blade for ejecting the foremost staple of said strip out of said guideway and forming a part of and depending from the forward portion of said driver and including a gap, a head extending from the front part of said driver and having a reduced portion projecting into said gap for slidably guiding said blade, a spindle within said magazine, means holding said spindle to said cover, a normally contracted coiled spring loosely surrounding said spindle but having its front end anchored to the front end of said spindle, a staple pusher within and slidably guided by said magazine and shiftable relative to said spindle and having means straddled by the rear loose end of said coiled spring for extending the latter pursuant to reception of said strip of staples within said magazine and upon closing of said magazine by said cover to urge said strip towards said guideway, locking means to prevent longitudinal displacement of said cover relative to said magazine in the closed relation of the latter, and supplementary locking means to prevent upward tilting of said cover in the closed relation of said magazine.

12. In a stapling machine, a magazine for holding a strip of staples and embodying at its front end a staple guideway and including upwardly extending spaced sides having aligned rectilinear slots, a cover between said sides and having means projecting into said slots for slidably guiding said cover longitudinally of said magazine, a one piece resilient staple driver having an inclined shank above and spaced from said cover and having a rear intermediate portion biased relative to said shank and including a portion extending rearwardly of said intermediate portion and permanently secured to the rear part of said cover, a blade for ejecting the foremost staple of said strip out of said guideway and forming a part of and depending from the forward portion of said driver and including a gap, a head extending from the front part of said cover and having a reduced portion projecting into said gap for slidably guiding said blade, a spindle within said magazine, means holding said spindle to said cover, a normally contracted coiled spring loosely surrounding said spindle but having its front end anchored to the front end of said spindle, a staple pusher within and slidably guided by said magazine and shiftable relative to said spindle and having means straddled by the rear loose end of said coiled spring for extending the latter pursuant to reception of said strip of staples within said magazine and upon closing of said magazine by said cover to urge said strip towards said guideway, locking means to prevent longitudinal displacement of said cover relative to said magazine, said sides embodying reentrant means, and means extending from said cover adapted to be received by said reentrant means to preclude upward displacement of said cover relative to said magazine.

13. In a stapling machine, a magazine for holding a strip of staples and embodying at its front end a staple guideway and including upwardly extending spaced sides having aligned rectilinear slots, a cover between said sides and having means projecting into said slots for slidably guiding said cover longitudinally of said magazine and including a depending block having a projection, a one piece resilient staple driver having an inclined shank above and spaced from said cover and having a rear intermediate portion biased relative to said shank and including a portion extending rearwardly of said intermediate portion and permanently secured to the rear part of said cover, a blade for ejecting the foremost staple of said strip out of said guideway and forming a part of and depending from the forward portion of said driver and including a gap, a head extending from the front part of said cover and having a reduced portion projecting into said gap for slidably guiding said blade, a spindle within said magazine, means holding said spindle to said cover, a normally contracted coiled spring loosely surrounding said spindle but having its front end anchored to the front end of said spindle, a staple pusher within and slidably guided by said magazine and shiftable relative to said

spindle and having means straddled by the rear loose end of said coiled spring for extending the latter pursuant to reception of said strip of staples within said magazine and upon closing of said magazine by said cover to urge said strip towards said guideway, a sloping cantilever leaf spring secured to said magazine and including an opening for interlocking with said projection on complete closing of casing and to prevent longitudinal displacement of the latter relative to the magazine.

14. The stapling machine according to claim 13 wherein a base is pivotally secured to said magazine and said leaf spring embodies a spring finger for yieldingly holding said magazine spaced from said base.

15. In a stapling machine, a magazine for holding a strip of staples and embodying at its front end a staple guideway and including upwardly extending spaced sides having aligned rectilinear slots, a cover between said sides and having means projecting into said slots for slidably guiding said cover longitudinally of said magazine, a one piece resilient staple driver having an inclined shank above and spaced from said cover and having a rear intermediate portion biased relative to said shank and including a portion extending rearwardly of said intermediate portion and permanently secured to the rear part of said cover, a blade for ejecting the foremost staple of said strip out of said guideway and forming a part of and depending from the forward portion of said driver and including a gap, and a head extending from the front part of said cover and having a reduced portion projecting into said gap for slidably guiding said blade.

16. In a stapling machine, a magazine for holding a strip of staples and embodying at its front end a staple guideway and including upwardly extending spaced sides having aligned rectilinear slots, a cover between said sides and having means projecting into said slots for slidably guiding said cover longitudinally of said magazine, a one piece resilient staple driver having an inclined shank above and spaced from said cover and having a rear intermediate portion biased relative to said shank and including a portion extending rearwardly of said intermediate portion and permanently secured to the rear part of said cover, a blade for ejecting the foremost staple of said strip out of said guideway and forming a part of and depending from the forward portion of said driver and including a gap, a head extending from the front part of said cover and having a reduced portion projecting into said gap for slidably guiding said blade, a base hingedly connected to said sides, an anvil carried by said base, spring means for normally holding said magazine spaced from said base, and disconnectable means interlocking said base and magazine.

17. In a stapling machine, a magazine for holding a strip of staples and embodying at its front end a staple guideway and including upwardly extending spaced sides having aligned rectilinear slots, a cover between said sides and having means projecting into said slots for slidably guiding said cover longitudinally of said magazine, a one piece resilient staple driver having an inclined shank above and spaced from said cover and having a rear intermediate portion biased relative to said shank and including a portion extending rearwardly of said intermediate portion and permanently secured to the rear part of said cover, a blade for ejecting the foremost staple of said strip out of said guideway and forming a part of and depending from the forward portion of said driver and including a gap, a head extending from the front part of said cover and having a reduced portion projecting into said gap for slidably guiding said blade, driving means above and spaced from said cover, means securing the rear end of said driver to the rear end of said cover, and a casing concealing said driving means and movably straddling said magazine.

18. In a stapling machine, a staple magazine comprising a front wall, spaced sides integral with said wall and embodying inwardly turned flanges spaced from said front wall but extending part way along the bottom portion of said magazine along the length of said sides, an anvil carrying base, a hinge pin carried at the rear parts of said sides and swingably sustaining said base, and a leaf spring having its front part secured to said flanges and having its rear part extending beyond the latter and abutting said hinge pin and depressible downwardly relative to the rear parts of said sides.

19. The stapling machine according to claim 18 wherein said leaf spring constitutes a cantilever embody-

ing a downwardly and rearwardly extending terminal disposed under and normally resiliently urged upwardly against said pin.

20. In combination, a spindle, a shiftable staple pusher having sides straddling a part of said spindle and including guard means to permit displacement of said pusher relative to said spindle, and a normally contracted coiled spring having its front end anchored to the front end of said spindle and having its rear end interlocked with said guard means to provide for extension of said spring rearwardly away from said front end in proportion to the displacement of said pusher towards the rear end of said spindle.

21. In combination, a spindle, a shiftable staple pusher having sides straddling a part of said spindle and including inwardly turned guard means constituting an opening about said spindle to permit displacement of said pusher relative to said spindle, and a normally contracted coiled spring having its front end anchored to the front end of said spindle and having its rear end fastened to said guard means to provide for extension of said spring rearwardly away from said front end in proportion to the displacement of said pusher towards the rear end of said spindle.

22. In combination, a magazine, a cover, means movably guiding said cover relative to said magazine, a spindle bodily movable with said cover relative to said magazine, a shiftable staple pusher within said magazine and having sides straddling a part of said spindle and including guard means to provide for displacement of said pusher relative to said spindle, and a normally contracted coiled spring having its front end anchored to the front end of said spindle and having rear parts locked with said guard means to provide for extension of said spring rearwardly away from said front end in proportion to the displacement of said pusher towards the rear end of said spindle.

23. A stapling machine wherein a staple strip is adapted to be housed in an open top magazine and between spaced side walls of the latter and wherein the bottom wall of said magazine embodies a guideway contiguous to the front wall of said magazine, and wherein a cover is substantially coextensive with the length of said magazine and disposed slightly above said strip to prevent displacement of the latter away from said bottom wall, and wherein said cover and side walls include means for slidably guiding said cover longitudinally of said magazine to open or close the latter; comprising, a spindle within said magazine and disposed below said cover, means holding the rear end of said spindle spaced from said bottom wall and to the rear part of said cover to permit bodily displacement of said spindle with said cover, a pusher movable relative to said spindle and supported by said bottom wall and guided between said side walls and having means slidably arranged on said spindle and supporting the latter to maintain said spindle spaced from said bottom wall, helicoidal spring means about said spindle and adapted to be stressed pursuant to insertion of said staple strip through said open top and in to said magazine between said pusher and said front wall and during and after closing of said magazine by said cover for urging said strip towards said guideway, normally raised staple driving means above and spaced from said cover and having a rear portion anchored to the rear part of said cover and having at its front end a depending blade normally above the foremost staple of said strip and adapted to be shifted downwardly against said foremost staple to drive the latter through said guideway upon downward manipulation of said driving means towards said cover in the fully closed relation of the latter, and locking means cooperating to detachably hold said cover in its fully closed position and against longitudinal displacement relative to said magazine.

24. The stapling machine according to claim 23 wherein a casing is secured to and conceals said driving means and includes depending spaced sides straddling the spaced side walls of said magazine.

25. The stapling machine according to claim 24 wherein said casing has a top wall secured to said driving means, said top wall serving as means to receive finger pressure thereon for depressing said driving means relative to said cover and magazine.

26. The stapling machine according to claim 25 characterized in that said top wall of said casing includes a slot, and a catch is movably seated on said downwardly

extending rear part of said leaf spring and includes means projecting loosely through said slot, and an accessible overhanging portion extending from the upper part of said catch and spaced from said slot.

27. The stapling machine in accordance with claim 26 wherein said catch embodies cam means seated on said downwardly extending rear part of said leaf spring.

28. The stapling machine according to claim 23 further characterized in that said spaced side walls of the magazine include aligned slots, and said cover embodies spaced lugs slidably guided by the walls of said slots, said side walls including at their rear ends aligned notches, and said cover having means at its rear end removably receivable in said notches to preclude tilting of said cover relative to said magazine.

29. The stapling machine according to claim 23 wherein said spring means is normally compressed and closely surrounds said spindle and has its front end anchored to the front end of said spindle and has its rear end retained by said means slidably arranged on said spindle.

30. A stapling machine wherein a staple strip is adapted to be housed in an open top magazine and between spaced side walls of the latter and wherein the bottom wall of said magazine embodies a guideway contiguous to the front wall of said magazine, and wherein a cover is substantially coextensive with the length of said magazine and disposed slightly above said staple strip to prevent displacement of the latter away from said bottom wall, and wherein said cover and side walls include means for slidably guiding said cover longitudinally of said magazine to open or close the latter; comprising, a spindle within said magazine and disposed below said cover, means holding the rear end of said spindle spaced from said bottom wall and to the rear part of said cover to permit bodily displacement of said spindle with said cover, a staple pusher movable relative to said spindle and supported by said bottom wall and guided between said side walls and having means slidably arranged on said spindle and supporting the latter to maintain said spindle spaced from said bottom wall, helicoidal spring means about said spindle and adapted to be stressed pursuant to insertion of said staple strip through said open top and in to said magazine between said pusher and said front wall and during and after closing of said magazine by said cover for urging said strip towards said guideway, normally raised staple driving means above and spaced from said cover and having a rear portion anchored to the rear part of said cover and having at its front end a depending blade normally above the foremost staple of said strip and adapted to be shifted downwardly against said foremost staple to drive the latter through said guideway upon exertion of finger pressure downwardly on said driving means in a direction towards said cover in the fully closed relation of the latter, and locking means cooperating to detachably hold said cover in its fully closed position and against longitudinal displacement relative to said magazine, said locking means comprising a leaf spring having its front part secured to said bottom wall and including a downwardly and rearwardly extending rear part overhanging said bottom wall and having an opening, and said rear part of said cover including depending means for removably interlocking with the wall of said opening.

31. The stapling machine according to claim 30 wherein the corresponding rear parts of said spaced side walls of said magazine carry a fulcrum pin resiliently and normally abutted by said downwardly extending rear part of said leaf spring.

32. The stapling machine according to claim 30 further characterized in that an anvil carrying base has corresponding rear portions pivotally mounted on said pin, and said leaf spring includes a downwardly extending inclined finger for normally maintaining said magazine spaced from said base.

33. The stapling machine according to claim 30 wherein a catch is movably seated on said downwardly extending rear part of said leaf spring and includes an overhanging extension to receive finger pressure thereon.

34. In a stapling device, a body forming a staple feed chamber having a staple ejection slot adjacent one end thereof and an opening in one side for loading staples therein, a staple driving blade positioned to enter said slot, said blade being formed as a part of a closed V, means slidably mounting one leg on said body to open

and close the loading opening therein, and the other leg serving as an actuator for said driving blade which closes the open end of the V.

35. In a stapling machine, a staple receiving magazine having an open top for loading a staple stack within said magazine and having means constituting a staple ejection raceway, driving means comprising a sheet metal blade normally slightly above said stack for ejecting the foremost staple thereof out of said raceway, a sheet metal actuating member having its upper part integrally merged with the upper part of said blade, a substantially rectilinear cover for said stack having its major part vertically spaced from said member and having its rear part united within the rear part of said member, said cover and magazine having means for linearly guiding said cover to open or close said open top, an extension projecting from the front end of said cover, said blade having a slot for receiving said extension to movably guide said blade towards or away from said raceway, the upper wall of said slot limiting downward displacement of said blade and the lower wall of said slot limiting upward displacement of said blade.

36. In a stapling machine, a staple receiving magazine having an open top for loading a staple stack within said magazine and having means constituting a staple ejection raceway, driving means comprising a sheet metal blade normally slightly above said stack for ejecting the foremost staple thereof out of said raceway, a sheet metal actuating member having its upper part integrally merged with the upper part of said blade and sloping downwardly and rearwardly away from said upper part, a substantially rectilinear cover for said stack having its major part vertically spaced from said member and having its rear part united with the rear part of said member, said cover and magazine having means for linearly guiding said cover to open or close said open top, an extension projecting from the front end of said cover, said blade having a slot for receiving said extension to movably guide said blade towards or away from said raceway, the upper wall of said slot limiting downward displacement of said blade and the lower wall of said slot limiting upward displacement of said blade.

37. In a stapling device, a body forming a staple feed chamber having a staple ejection slot adjacent one end thereof and an opening in one side for loading staples therein, said body being formed of a single piece of metal, a staple driving blade positioned to enter said slot, said blade being formed as a part of a closed V, means slidably mounting one leg on said body to open and close the loading opening therein, and the other leg serving as

an actuator for said driving blade which closes the open end of the V.

38. In a stapling device, a body forming a staple feed chamber having a staple ejection slot adjacent one end thereof and an opening in one side for loading staples therein, said body being formed of a single piece of metal and having a generally U-shaped cross section, a staple driving blade positioned to enter said slot, said blade being formed as a part of a closed V, means slidably mounting one leg on said body to open and close the loading opening therein, and the other leg serving as an actuator for said driving blade which closes the open end of the V.

39. In a stapling device, a body forming a staple feed chamber having a staple ejection slot adjacent one end thereof and an opening in one side for loading staples therein, said body being formed of a single piece of metal and having a generally U-shaped cross section, said one end of said body being closed to form a head plate, a staple driving blade positioned to enter said slot, said blade being formed as a part of a closed V, means slidably mounting one leg on said body to open and close the loading opening therein, and the other leg serving as an actuator for said driving blade which closes the open end of the V.

40. In a stapling device, a body forming a staple feed chamber having a staple ejection slot adjacent one end thereof and an opening in one side for loading staples therein, a staple driving blade positioned to enter said slot, said blade being formed as a part of a closed V, means slidably mounting one leg in opposed slotted means on said body to open and close the loading opening therein, and the other leg serving as an actuator for said driving blade which closes the open end of the V.

41. In a stapling device, a body forming a staple feed chamber having a staple ejection slot adjacent one end thereof and an opening in one side for loading staples therein, a staple driving blade positioned to enter said slot, said blade being formed as a part of a closed V, means slidably mounting one leg on said body to open and close the loading opening therein, and the other leg serving as an actuator for said driving blade which closes the open end of the V, means forming an extension on said one leg, said blade having a slot to engage said extension to limit the opening motion of the legs of the V.

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