United States Patent

[11] **3,554,428**

[72] Inventor **George M. Smith**
Pawcatuck, Conn.

[21] Appl. No. **802,885**
[22] Filed **Feb. 27, 1969**
[45] Patented **Jan. 12, 1971**
[73] Assignee **Textron Inc.**
Providence, R.I.
a corporation of Delaware

[54] **MAGAZINE ASSEMBLY FOR A FASTENER-DRIVING DEVICE**
12 Claims, 19 Drawing Figs.

[52] **U.S. Cl.** **227/109,** 227/127, 227/139
[51] **Int. Cl.** **B25c 5/06**
[50] **Field of Search** 227/109, 120, 127, 139

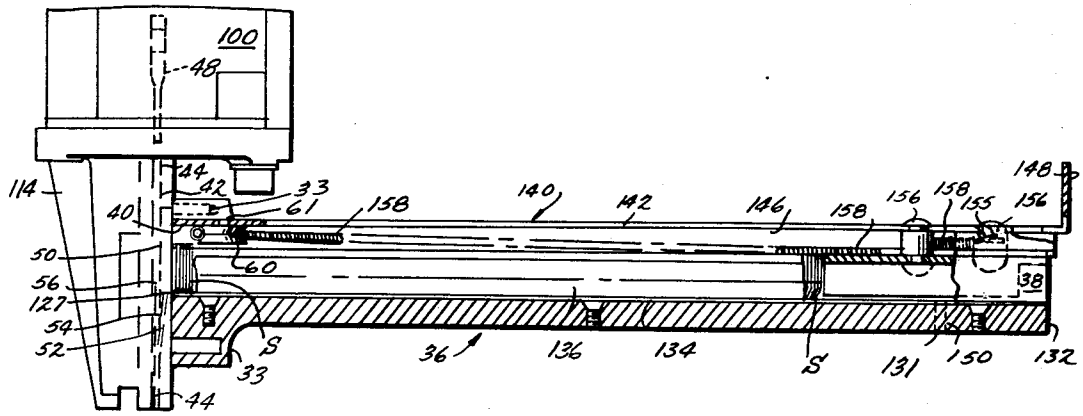
[56] **References Cited**

UNITED STATES PATENTS

2,401,840	6/1946	Olson	227/127
2,781,515	2/1957	Juilfs	227/127
3,037,207	6/1962	Pazan	227/109

Primary Examiner—Granville Y. Custer, Jr.
Attorney—Cushman, Darby & Cushman

ABSTRACT: A magazine assembly for a corrugated fastener-driving device is described in which the magazine includes an elongated member having a U-shaped cross section. Longitudinal grooves opening inwardly of the U-shaped member are placed in the outermost ends of the legs of the U-shaped member forming opposed pairs of longitudinal grooves progressively more distant from the base of said U-shaped member. An elongated cover means of substantially inverted U-shaped cross section is provided to cover the U-shaped magazine. The cover means has out-turned flanges adapted to be received by the above-mentioned grooves so that the magazine may be opened and closed by sliding the cover within the grooves. The distance of the cover from the base of the U-shaped magazine may be adjusted by placing the cover in different pairs of grooves. A pusher assembly for yieldably urging the fasteners toward the driving means is mounted on the cover and entirely contained thereon. The pusher which engages with the fasteners rides in a longitudinal slot in the bight of the U-shaped cover. The longitudinal slot opens at the rear end of the cover and extends forwardly toward the driving element. A tension spring having one end anchored to the pusher extends forwardly around a pulley at the forward end of the cover and then rearwardly to be anchored at the rear end of the cover. Proper spacing of the pusher from the cover in order that the pusher will engage with the fasteners in the magazine is obtained by spaced studlike members extending from the pusher to engage with the longitudinal slot in the cover. A detent means, which is either vertically acting or side acting, mounted in the U-shaped magazine member cooperates with the cover to secure the cover in the fully-closed position. The detent means may be released to a first position permitting the cover to slide rearward away from the driving element to a fastener loading position. At this point, the detent means, in said first release position, cooperates with the cover to limit the rearward movement of the cover from the fastener loading position. The detent means may be released further, allowing the cover to slide rearward from the fastener loading position, permitting the cover to be removed from the U-shaped magazine member so that it may be placed in a different pair of grooves in the U-shaped magazine member thereby adjusting the magazine assembly for a different fastener height. The preferred embodiment of the magazine assembly constructed according to the principles of this invention is adapted for use in fastener-driving devices for corrugated fasteners of the type which positions the leading fastener to be engaged by the driving element and subsequently cammed into alignment with the driver element and driven into the workpiece. Thus, a wear plate and blade guide are provided and adapt the drive track to cooperate with the magazine assembly to perform this function.



PATENTED JAN 12 1971

3,554,428

SHEET 1 OF 5

Fig. 3.

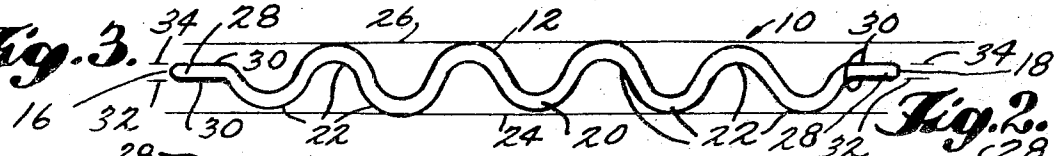


Fig. 2.

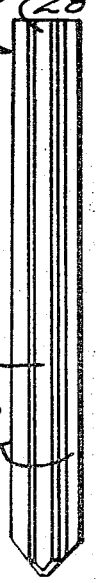


Fig. 1.

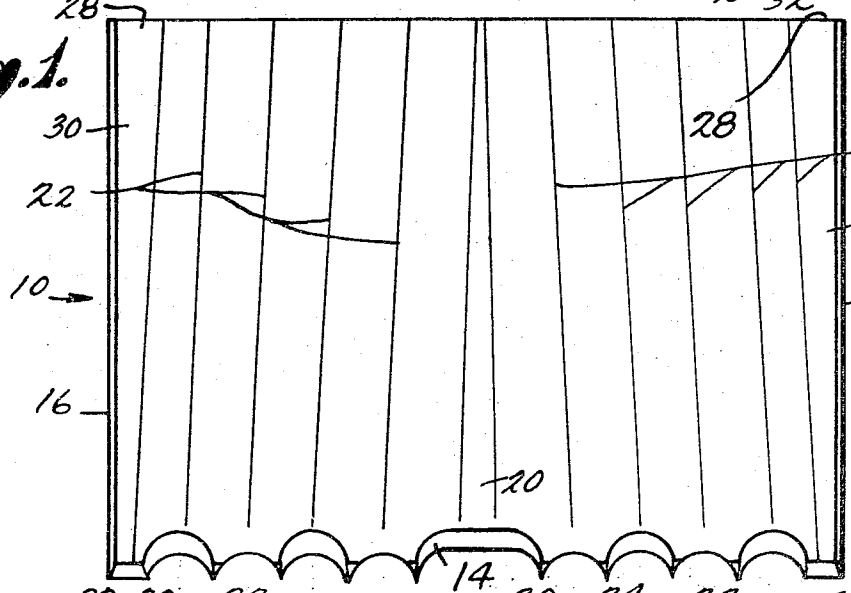
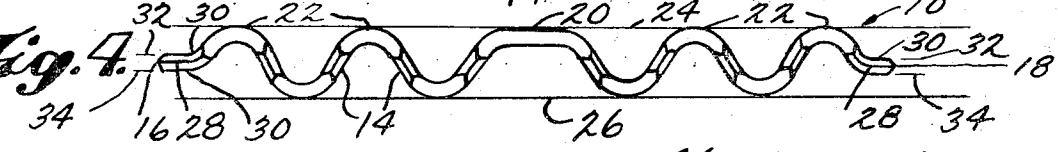


Fig. 4.



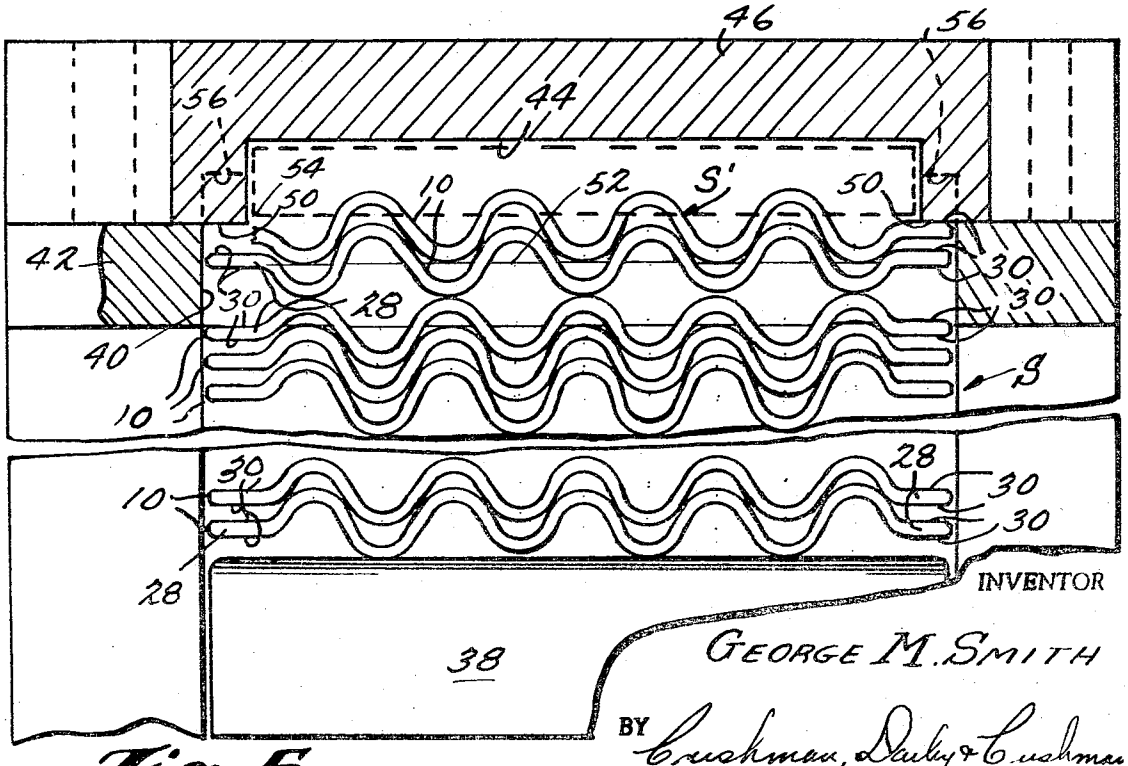


Fig. 5.

INVENTOR

GEORGE M. SMITH

BY Cushman, Darby & Cushman

ATTORNEYS

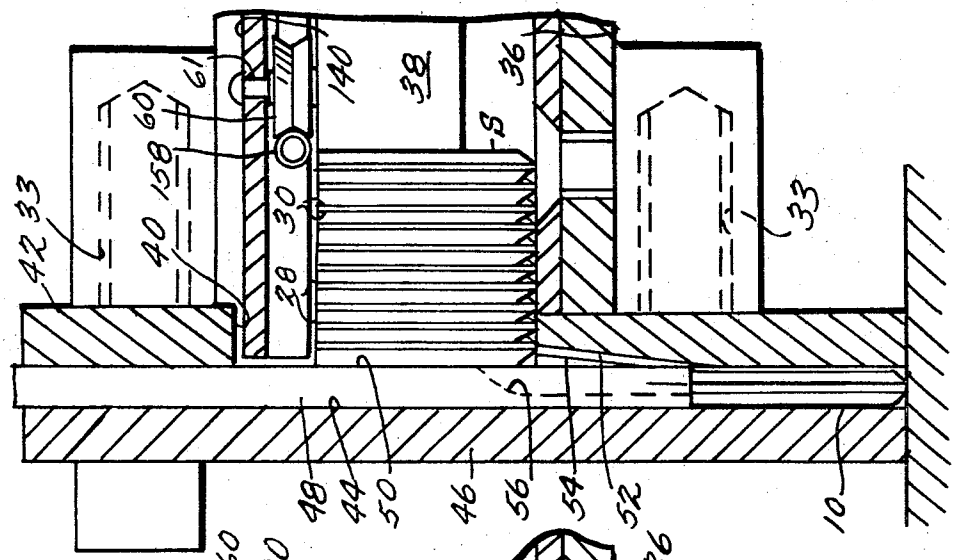


Fig. 8.

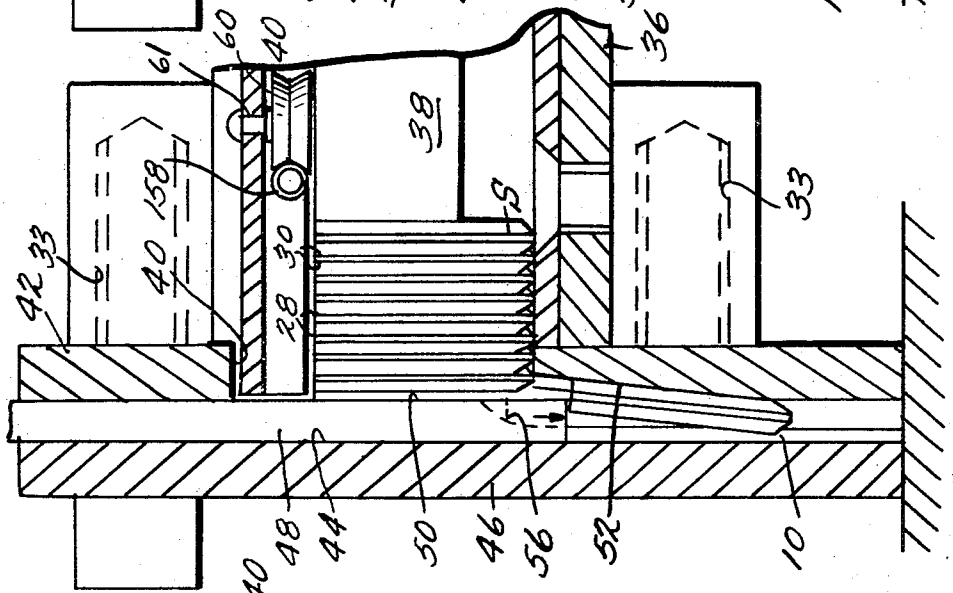


Fig. 7.

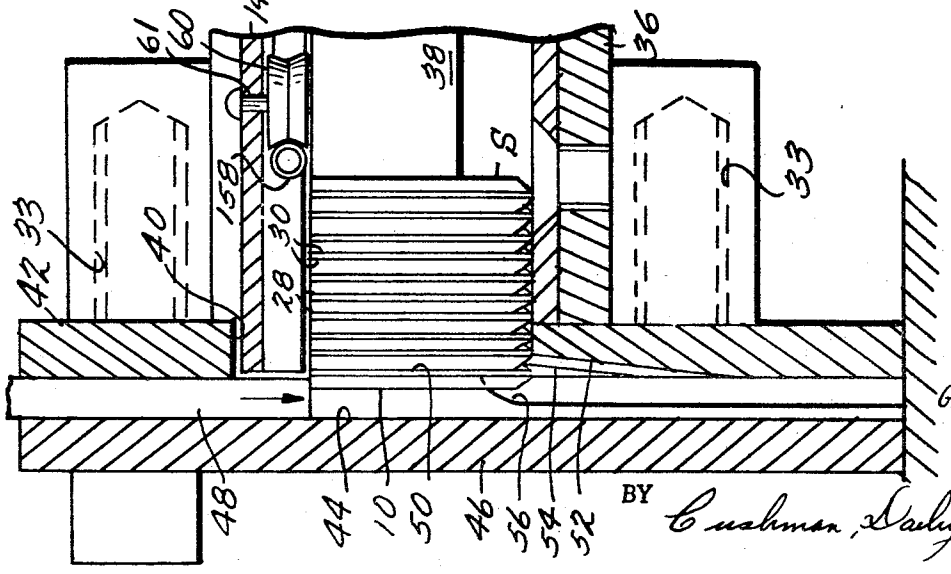


Fig. 6.

INVENTOR
GEORGE M. SMITH

BY Cushman, Darby & Cushman
ATTORNEYS

Fig. 9.

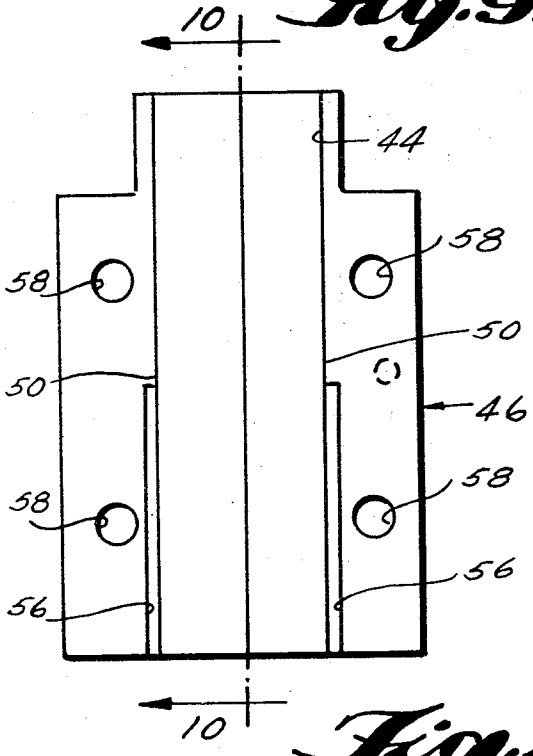


Fig. 10.

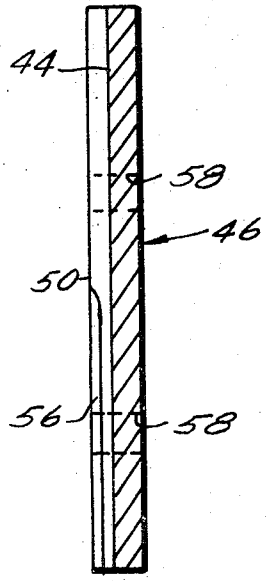


Fig. 11.

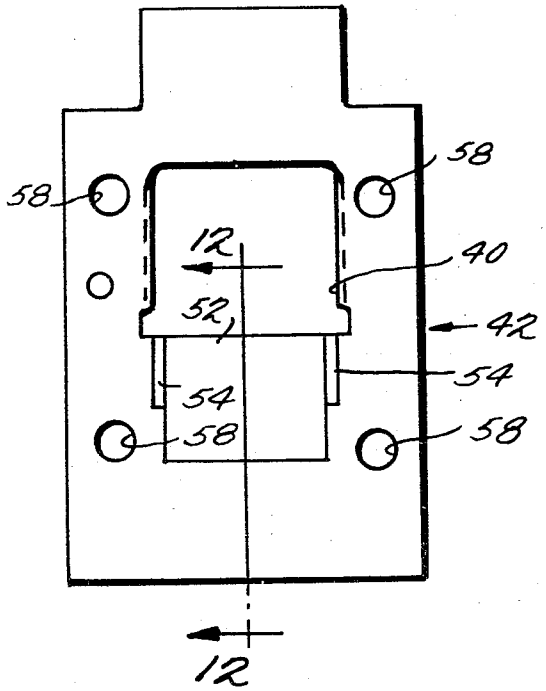
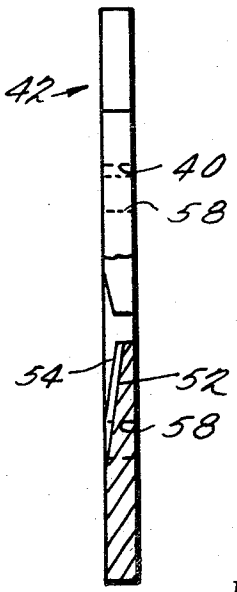


Fig. 12.



INVENTOR
GEORGE M. SMITH

BY Cushman, Darby & Cushman
ATTORNEYS

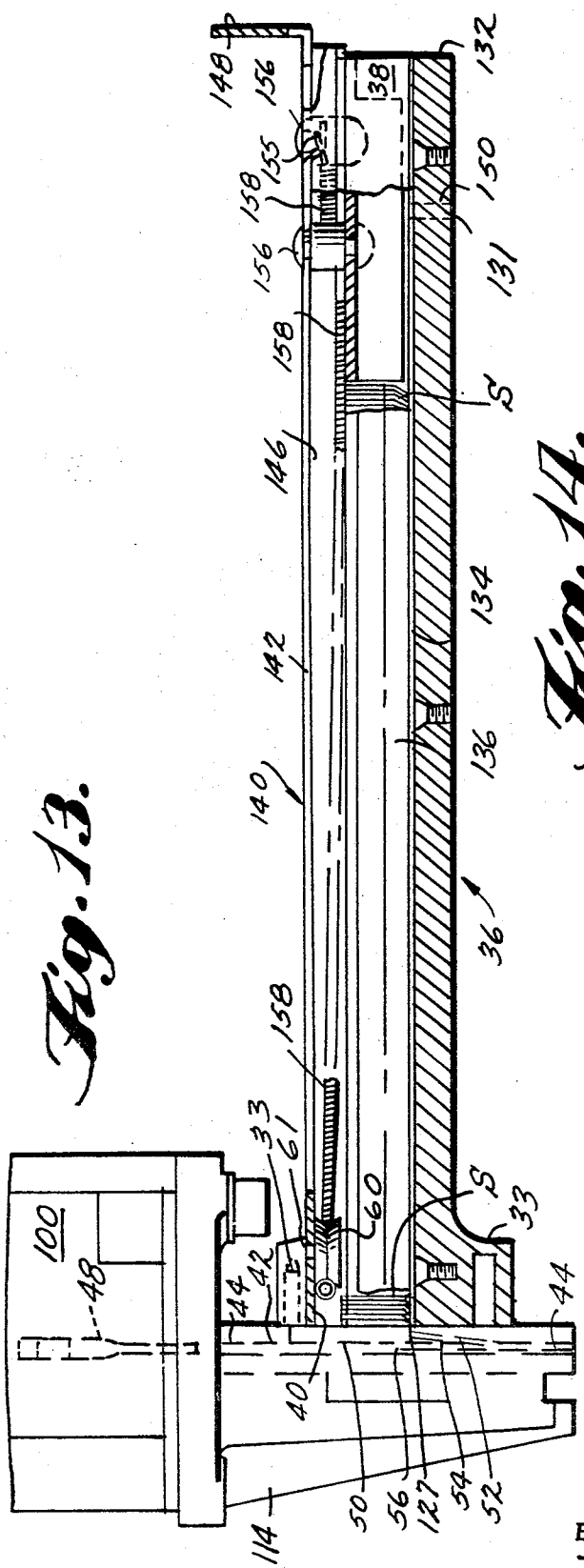


Fig. 13.

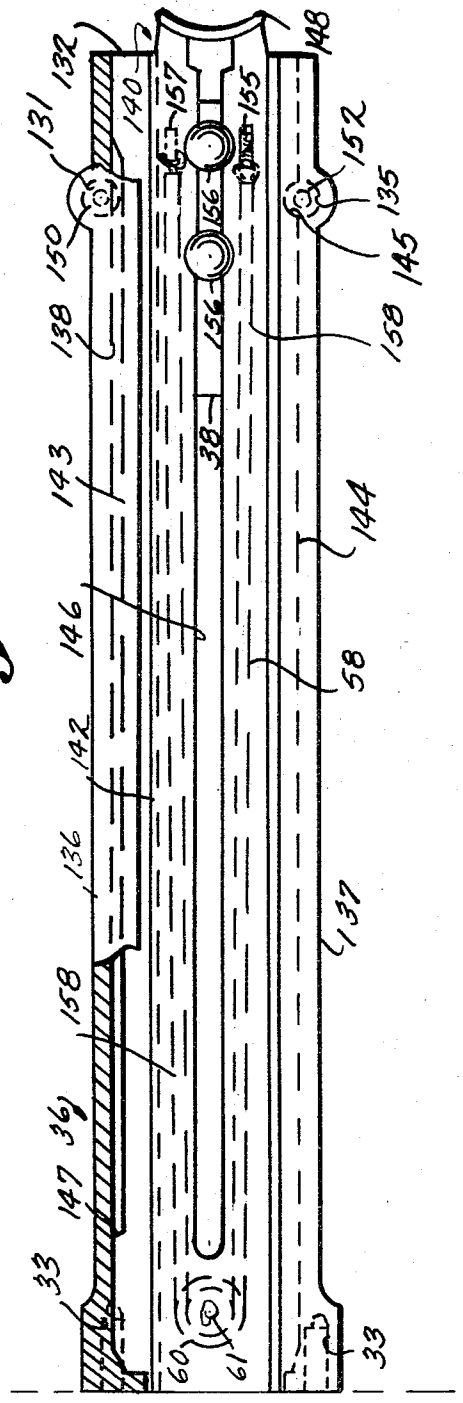


Fig. 14.

INVENTOR
GEORGE M. SMITH

BY Cushman, Darby & Cushman
ATTORNEYS

Fig. 16.

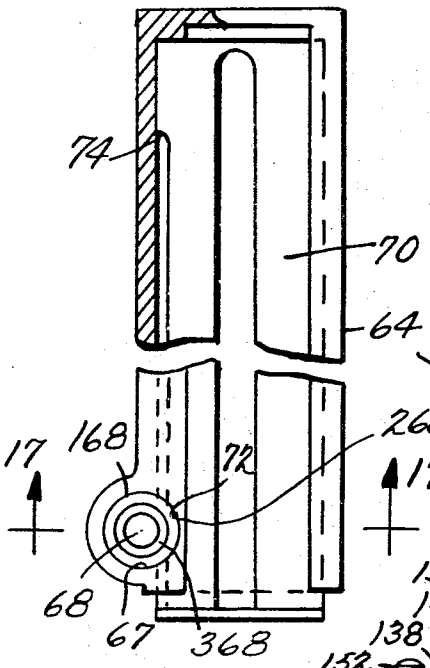


Fig. 18.

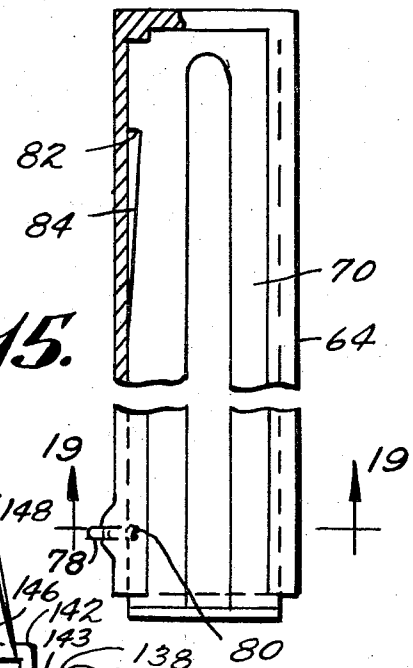
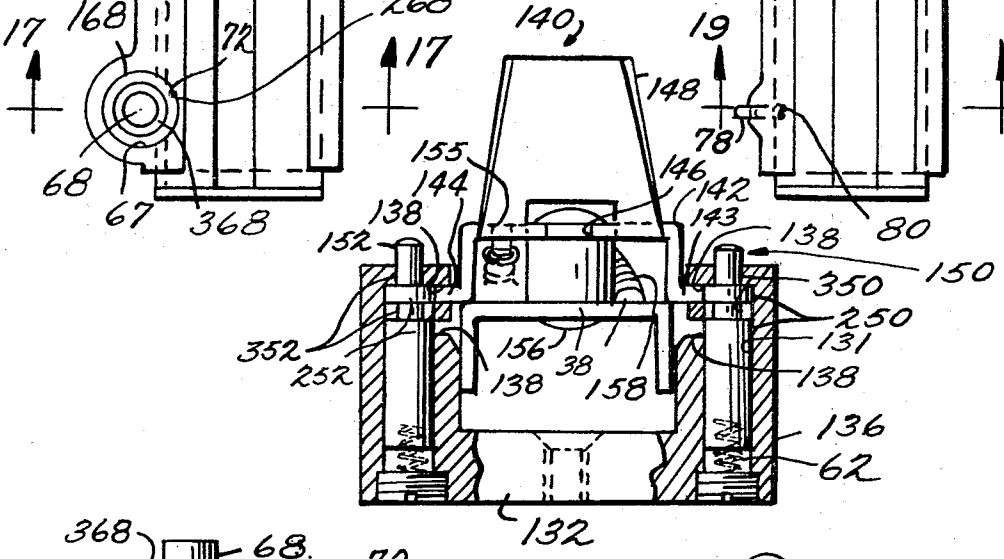


Fig. 15.



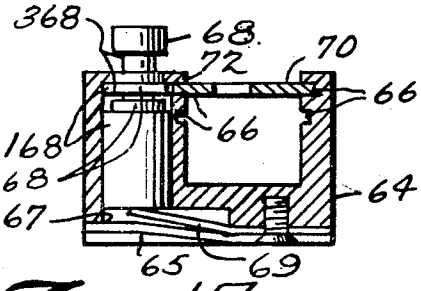


Fig. 17.

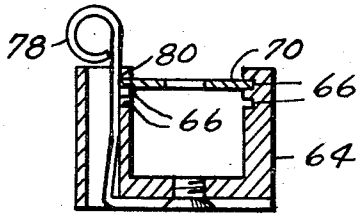


Fig. 19.

INVENTOR

GEORGE M. SMITH

BY Cushman, Darby & Cushman

ATTORNEYS

MAGAZINE ASSEMBLY FOR A FASTENER-DRIVING DEVICE

This invention relates to a magazine assembly in a fastener-driving device for storing a columnar supply of corrugated fasteners or fastener stick including means for resiliently urging the fastener stick toward the path of the driving element so that the driving element, during its driving stroke, will strip the outermost fastener from a stick and drive it into a workpiece, and including a nosepiece means for camming a corrugated fastener from a nested stick arrangement into alignment with the path of the driving element.

There are many power-operated fastener-driving devices presently available on the commercial market having magazine assemblies for accommodating fasteners such as staples and T-head nails. Fasteners of this type are conventionally packaged in stick formation. A conventional fastener stick includes a multiplicity of fasteners assembled in a coextensive abutting relationship and secured in such assembled relationship by any suitable means, such as tape, adhesive or the like. In this way a multiplicity of fasteners are packaged as a unit which can be easily handled both prior to use in the fastener-driving device and when necessary to reload the fastener magazine of the fastener-driving device.

A characteristic of conventional fastener sticks, consisting either of staples or of T-head nails, is that each fastener is of substantially uniform thickness and extends transversely across the stick making it a relatively simple matter to feed the leading fastener of the stick into the drive track of the fastener-driving device to be stripped off of the stick during the drive stroke of the driving element of the fastener-driving device.

Corrugated fasteners have been known for many years, but they present a peculiar problem in feeding a stick of corrugated fasteners to the drive track so that the leading fastener can be properly stripped off and driven, because the corrugations in these fasteners have a longitudinal component of extension. That is, it is not practical to provide the driving element with a corrugated configuration corresponding to that of the leading fastener so that during the drive stroke the leading fastener may be simply stripped off, as is the case with staples and T-head nails.

This problem was first solved by assembling the corrugated fastener stick with alternate fasteners oriented in opposite directions so that the outer extremities or ribs of each pair of adjacent fasteners in the stick are disposed in an abutting relationship. With a fastener stick of this configuration the driver element may be of a conventional rectangular cross section operating in a conventional rectangular cross section drive track and operating in the usual manner to strip the fastener from the stick and drive it into a workpiece. This fastener stick configuration was found to be highly disadvantageous, however, because only a minimal number of fasteners could be included in the stick on a per unit length basis necessitating frequent reloading.

The density of a corrugated fastener stick can obviously be increased by nesting the fasteners in abutting relationship with their corrugations similarly oriented. Indeed, the density can be improved as much as 100 percent with a stick arrangement of this type where the corrugations have a 50 percent overlap. However, due to the overlap, the feeding and driving of a stick of this type cannot be accomplished by a simple stripping action as is the case with the alternately oppositely oriented corrugated fastener stick or the conventional staple or T-head nail stick.

While there have been many proposals advanced to solve the feeding and driving problems inherently presented in a nested corrugated fastener stick, one method which has achieved a measure of commercial acceptance involves the utilization of stop means in the drive track which serves to engage the outermost corrugation or corrugations of the leading fastener so as to initially position the leading fastener so that it extends only partially within the drive track and the next adjacent fastener is wholly without the drive track. With this arrangement, during the initial portion of the downward movement of the fastener driving element, the portion of the upper surface of the leading fastener extending into the drive track, is engaged by the fastener driving element and is moved downwardly therewith to strip it from the remaining fasteners of the stick. During the initial downward movement of the leading fastener with the fastener-driving element, the fastener is cammed into longitudinal alignment with the drive track so that as it issues from the end of the drive track it will be in proper alignment beneath the fastener-driving element to be moved thereby into the workpiece. Examples of this type of arrangement are disclosed in U.S. Pat. No. 3,301,456 and German Pat. No. 846,161.

While this general arrangement of feeding and driving a nested corrugated fastener stick has proved satisfactory in operation, orientation problems may be presented as a result of improper orientation of the sticks when loading the magazine assembly. While no solution to this problem is contemplated in the aforesaid German patent, the aforesaid U.S. patent contemplates solving this problem by providing a stop surface, which serves to engage and initially position the leading fastener partially within the drive track, with a width which is sufficiently larger that the corrugation pitch to contact at least one rib of the leading corrugated fastener irrespective of its orientation. To accommodate this enlarged stop surface an enlarged slot must be cut out of the fastener driving element which materially reduces the contact area which the fastener-driving element has with the upper surface of the corrugated fastener during the driving action and renders the driving action nonsymmetrical.

In the commonly assigned application Ser. No. 677,224, now U.S. Pat. No. 3,507,384, filed by Raymond F. Lippitt a solution is offered to the above discussed orientation problems with respect to nested corrugated fastener sticks adapted for use in power-operated fastener-driving devices. The corrugated fasteners constructed according to the principles of the invention disclosed in the latter application are provided with relatively narrow, substantially flat centrally located end portions for cooperating with spaced relatively narrow stop surfaces positioned adjacent the ends of the drive track in the fastener-driving device so as to insure proper initial positioning of the leading fastener partially within drive track of the device irrespective of the orientation of the corrugations, thus enabling the fastener-driving element to have a fastener-contacting surface of maximum full rectangular dimensions. A more complete description of the fastener constructed according to the principles of the Lippitt invention is given hereinbelow.

With the advent of the above described fastener it has become necessary to provide a fastener-driving device constructed to provide the desired positioning action which is of simple construction and easy to assemble. Further, it has become necessary to provide a magazine assembly which will readily cooperate with the fastener-driving device constructed to utilize the benefits of the fastener design disclosed in the aforementioned Lippitt application.

Within each of the above mentioned type groups of fasteners, not only corrugated fasteners, a variety of sizes are available, and a dimension which is varied frequently is the height of the fastener. It is obviously desirable to be able to accommodate fastener sticks of the same type of several different heights in a single fastener-driving device in that the cost of having a number of fastener-driving devices for accommodating the various fastener sizes encountered would be prohibitive. Furthermore, it would be costly and highly inconvenient for an operator to be required to change magazines or substitute magazine parts each time it is necessary to use a different fastener size.

It has been suggested previously that the magazine dimensions be altered to accommodate the specific fasteners being used by moving the top or bottom surfaces as needed. Generally, that surface is used which has the pusher mounted thereon, usually the cover, because that surface is usually al-

ready slidable or otherwise movable for fastener-loading purposes. In most available fastener magazines, however, the spring which actuates the pusher is connected to the stationary part of the magazine, and this presents an obvious problem of having to work against the spring force to disconnect and reconnect the spring when one is seeking to remove the cover to place it at a different height.

While there are in existence magazine covers on which the pusher and actuating spring are entirely self-contained, these covers do not lend themselves to removal for height adjustment in that pins or other stop means are used, replacing the spring connection to the stationary part of the magazine, to keep the cover from accidentally being removed from the magazine while a fastener stick is being loaded therein. Therefore, each time it is required that the cover be removed from the magazine to make a height adjustment, these magazines will have to be dismantled or parts removed therefrom to an extent necessary to remove the above described stop means.

In the corrugated fastener art the problem of accommodating fastener height variation in the magazine becomes more difficult because of the peculiar problems surrounding stripping this particular type of fastener from a fastener stick and driving it into a workpiece as discussed above. In the fastener-driving devices constructed according to the principles of this invention a stop means is utilized on the sides of the drive track for engaging the centralized end portions of the leading fastener so as to initially position the leading fastener so that it extends only partially within the drive track and the next adjacent fastener is wholly outside the drive track. With this arrangement, during the initial portion of the downward movement of the fastener-driving element, the portion of the upper surface of the leading fastener extending into the drive track is engaged by the fastener-driving element and is moved downwardly therewith to strip it from the remaining fasteners on the stick. During the initial downward movement of the leading fastener with the fastener-driving element, the fastener is cammed into longitudinal alignment with the drive track so that as it issues from the end of the drive track it will be in proper alignment beneath the fastener-driving element to be driven by it into the workpiece.

In the fastener-driving devices so constructed the portion of the rear surface of the drive track, the wear plate, extending downwardly from the opening of the magazine into the drive track must be inclined outwardly and downwardly from the magazine floor until it coincides with the path of the driving element. Further, the blade guide, or that portion of the drive track opposite the magazine opening into the drive track must have a projection or plurality of projections extending into the path of the driver element so that the leading fastener will be stopped when it is partially within the drive track. These projections must approximately coincide with the upper portion of the fasteners. Cammed surfaces must be provided extending downwardly from the outermost edges of the projections until the blade guide surface again coincides with the path of the driving element thereby providing relief for the working surface of the corrugated fastener allowing it to be cammed into longitudinal alignment with the drive track.

It is fundamentally important that the upper edge of the portion of the wear plate extending downwardly and forwardly from opening of the magazine into the drive track in fact coincides with the magazine floor if the fasteners are to be allowed to move smoothly out of the magazine and the camming operation described above is to properly take place. Therefore, if different fastener heights are to be accommodated, it would be undesirable to move the portion of the fastener magazine supporting the bottom working surfaces of the fasteners either up or down, because a wear plate of a different size would then have to be provided also. It can, therefore, be seen that in order to vary the height of the magazine used in fastener-driving devices of this type, the height variation must be accomplished by changing the position of the cover relative to the position of the magazine floor. Again, it is desirable that the spring actuated pusher means engaging the fastener stick and urging it forwardly be entirely self-contained on the cover so that the cover may be readily removed from the magazine to be placed in a different position. Moreover, a suitable detent means must be provided which will stop the cover in the fastener-loading position, which means is releasable to allow the cover to be removed from the magazine.

It is therefore an object of this invention to provide a magazine assembly and cooperating nose assembly for a fastener-driving device which is of simple construction and easy to assemble and is adapted to cooperate with a nested corrugated fastener stick having a plurality of individual corrugated fasteners having flat portions at the ends thereof providing opposed surfaces of a relatively narrow width positioned centrally with respect to the corrugation thickness thereof for positioning the lead fastener on said stick partially within the drive track and to allow it to be stripped therefrom and cammed into longitudinal alignment with the drive track by the driving element.

It is another object of this invention to provide a magazine assembly for a fastener-driving device, including a spring-actuated pusher means for yieldably urging the fastener stick toward the drive track of the fastener-driving device permitting the driving element to strip the leading fastener from the fastener stick and drive it into a workpiece, capable of storing fastener sticks of different heights in which the pusher means and its actuating spring are entirely self-contained on the cover making the cover easily removable from the remainder of the magazine assembly for adjustment of its height from the base of the magazine, and in which a means is provided for retaining the cover in the fully closed or operative position and in the fastener-loading position, the means being easily releasable allowing the cover to be readily removed from the magazine.

A further object of this invention is to provide a magazine assembly for a corrugated fastener-driving device of the type having a wear plate and blade guide adapted to cam a corrugated fastener having flat portions at the ends thereof providing opposed surfaces of relatively narrow width positioned centrally with respect to the corrugation thickness thereof extending partially into the drive track into full alignment with driving element in which the magazine assembly meets the object immediately above and in which the magazine assembly is easily adjustable to accommodate fasteners of different heights without disturbing the relationship of the magazine surface supporting the fasteners to the wear plate.

Still another object of this invention is to provide a magazine assembly for a fastener-driving device a detent-type locking mechanism having a detent means cooperating with stop means in the magazine cover for securing the cover in a fully closed or operative position, the locking mechanism being easily releasable to allow the cover to be moved from its operative position to a fastener-loading position, but limiting the rearward movement of the cover from the fastener-loading position, and then being further releasable allowing the cover to be removed from the magazine assembly to be replaced therein at a different height.

The aforementioned and other objects may be obtained by adhering to the principles of this invention as defined in this specification and claims hereinbelow.

The invention may be best understood by referring to the description of a preferred embodiment given below and accompanying drawings in which:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of a corrugated fastener with which the nose piece constructed according to the principles of this invention is constructed to cooperate;

FIG. 2 is an end view of the corrugated fastener shown in FIG. 1;

FIG. 3 is a view looking down on the corrugated fastener of FIG. 1 showing the outline of the upper striking surface thereof;

FIG. 4 is a view looking up on the corrugated fastener shown in FIG. 1 showing the outline of the lower, sharpened workpiece entering surface thereof;

FIG. 5 is a top cross-sectional view of a nosepiece for a fastener-driving device constructed in accordance with the principles of this invention having a partially depleted corrugated fastener stick therein, and a full corrugated fastener stick loaded in oppositely oriented condition within the magazine assembly constructed according to the principles of this invention and adapted to cooperate with said nosepiece;

FIGS. 6, 7 and 8 are fragmentary vertical sectional views of the structure depicted in FIG. 5 showing the manner in which the leading corrugated fastener is first stripped from the remainder of the fasteners on the stick, second, cammed into full alignment with the drive track and third, driven into the workpiece during the drive stroke of the fastener driving element of the fastener-driving device;

FIG. 9 is a rear elevational view of the blade guide having the drive track formed therein;

FIG. 10 is a cross-sectional view of FIG. 9 taken along the line 10–10;

FIG. 11 is a front elevational view of the wear plate forming a part of the nose assembly;

FIG. 12 is a cross-sectional view of FIG. 11 taken along the line 12–12;

FIG. 13 is a side elevation cross-sectional view of a preferred embodiment of the magazine assembly and nosepiece constructed according to the principles of this invention with a fragmentary view of a fastener-driving device to which said magazine assembly and nosepiece are attached;

FIG. 14 is a top view of the preferred embodiment illustrated in FIG. 13;

FIG. 15 is a fragmentary end cross-sectional view of the magazine assembly depicted in FIG. 13;

FIG. 16 is a top view, partially broken away, of a magazine assembly including a first alternate embodiment of a detent means constructed according to the principles of this invention;

FIG. 17 is an end cross-sectional view of the FIG. 16 magazine depicting the structural details of the first alternate embodiment of the detent means;

FIG. 18 is a top view of a magazine assembly including a second alternate embodiment of a detent means constructed according to the principles of this invention; and

FIG. 19 is an end cross-sectional view of the FIG. 18 magazine illustrating the structural details of the second alternate embodiment of the detent means.

DETAILED DESCRIPTION OF THE DRAWINGS

FIGS. 1 through 4 illustrate examples of the corrugated fastener with which the nosepiece and magazine assembly constituting one aspect of this invention are designed to cooperate. It is to be noted that the structural details of the corrugated fastener are included herein for purposes of clarifying the description of the invention, and these details of the fastener constitute no part of the invention disclosed herein.

A corrugated fastener 10 is made of a strip of metal, preferably steel or the like, having an upper striking en edge or surface 12, a lower sharpened work-penetrating edge or surface 14 and opposed end edges or surfaces 16 and 18 formed in the central portion of the strip. Extending between the upper and lower edges 12 and 14 is a central rib or corrugation 20 tapered outwardly in a direction from the upper edge to the lower edge. The portions of the strip adjacent the central corrugation 20 are formed into a plurality of ribs or corrugations 22, the corrugations 22 being inclined in a direction parallel to the taper of the central rib or corrugation and providing the main portion of the strip with corrugations which are essentially sinusoidal in cross-sectional configuration.

An essential feature of the construction of the corrugated fastener is the provision of relatively narrow, flat, centrally located end portions or sections 28. As best shown in FIGS. 3 and 4, each end portion includes opposed parallel planar stop-engaging surfaces 30 which are disposed in parallel planes, indicated at 32 and 34, disposed centrally between the planes 24 and 26 so that the plane 32 is spaced from the plane 24 a distance the same as the plane 34 is spaced from the plane 26.

A multiplicity of corrugated fasteners are assembled in a coextensive row formation with their corrugations oriented in the same direction so that the corrugations of adjacent fasteners in the row formation are nested with respect to each other as shown in FIGS. 5 through 8. In accordance with the present invention, a plurality of fasteners assembled as aforesaid are secured in assembled relation to form a stick by any conventional means as, for example, an adhesive or the like.

High density in the fastener stick construction is desirable when the stick is used for its intended purpose in conjunction with power-operated fastener-driving devices since it minimizes the downtime in operation necessary to effect reloading. However, the advantages of the above described corrugated fastener stick construction can be realized only if a fastener-driving device may be constructed which is capable of stripping the fasteners from the stick one at a time in order to drive them into a workpiece. Thus, the advantages of the above corrugated fastener stick construction flow primarily from the manner in which the corrugated fasteners cooperate with the fastener-driving device during operation. The camming principle, discussed above, is presently the best means known for allowing fasteners to be stripped from a nested stick and driven. Heretofore, however, fastener-driving devices utilizing this principle have been of relatively complex construction, thereby difficult to manufacture and maintain. The nosepiece and cooperating magazine assembly construction described hereinbelow in FIGS. 5 through 12, substantially alleviate this problem by allowing a fastener-driving device using the camming technique to be constructed which is of simple manufacture and may be assembled with relatively few steps. Further, the fastener driving operation resulting from a fastener-driving device constructed according to the principles of this invention will be more efficient because a more symmetrical driving force will be realized.

The portion of the fastener-driving device shown in FIGS. 5 through 8 includes a magazine 36 of a size to receive therein a fastener stick made of the fasteners discussed above with respect to FIGS. 1 through 4. A spring-biased pusher 38 is provided which effects a longitudinal feeding movement of the fastener stick within the magazine 36 toward the discharge end thereof which communicates with an opening 40 formed in a wear plate 42. The details of the construction and operation of the magazine will be discussed more fully hereinbelow with reference to FIGS. 11 through 17. The opening 40 enters into a drive track 44 which is formed by a groove in a blade guide 46 and adjacent surface of the wear plate 42. A fastener-driving element 48 of rectangular cross-sectional configuration is mounted within the drive track 44 for vertical reciprocation through a drive stroke and a return stroke by any conventional power-operated mechanism as, for example, the mechanism disclosed in commonly assigned U.S. Pat. No. 3,051,135.

As best shown in FIG. 5, the width of the drive track 44 provided by the groove in blade guide 46 is slightly less than the width of the opening 40 and the interior dimension of the magazine 36 so as to provide narrow vertically extending stop surfaces 50 at the sides of the magazine outlet. The width of these stop surfaces is slightly less that than the minimum width of the centralized flat end portions 28 of the corrugated fasteners.

With reference to FIG. 5 it will be noted that the pusher 38 serves to resiliently urge the leading corrugated fastener of the stick within the magazine toward drive track 44 and that stop surfaces 50 serve to position the leading fastener partially within the drive track and the next adjacent fastener and the stick wholly without the drive track. The leading fastener is thus presented in a position partially extending into the drive

track so that a portion of its upper striking surface 12 will be engaged by the lower surface of the fastener-driving element during its downward drive stroke. The engagement of the fastener-driving element with striking surface of the leading fastener serves to move it downwardly and hence strip it from the remaining corrugated fasteners forming the stick. The wear plate 42 and blade guide 46 are formed so as to cam the leading fastener fully into the drive track in alignment with the fastener-driving element during the initial portion of its downward movement with the fastener-driving element 48.

This camming function is obtained in the embodiment shown by forming a slot in the leading surface of the wear plate 42 below and in communication with the opening 40 so as to provide an inclined cam surface 52 having a width substantially equal to the width of the drive track 44 and a pair of a narrow parallel inclined surfaces 54 at each end thereof having a width generally equal to the width of the associated stop surface 50. This wear plate construction is best shown in FIGS. 11 and 12. In addition, the blade guide 46, as best shown in FIGS. 6 through 10, is formed with parallel grooves 56 extending inwardly and downwardly from a position spaced above the lower surface of the opening 40 and then vertically downwardly to lower end of the blade guide adjacent each side of the drive track 44. Each groove 56 has width generally equal to the width of the associated stop surface 50 and a depth slightly greater than the distance between the planes 32 and 26 of the corrugated fasteners.

In order to understand how the construction of the blade guide and wear plate cooperate with the construction of the corrugated fastener described above in order to operate according to the camming principle, reference is now made to FIGS. 6 through 8. The engagement of the centralized flat end portions 28 with the stop surfaces 50 serves to position the leading corrugated fastener of the stick within the magazine 36 so that a portion of the striking surface 12 thereof extends into the drive track 44 to be engaged by the lower end of the fastener-driving element as it descends during its drive stroke. The relief provided by the inclined surfaces 52 and 54 is such that the work penetrating surface 14 of the leading fastener is unsupported. It will be noted, however, that the relief provided by the inclined surfaces 52 and 54 is such that support is provided for the work penetrating surface 14 of the next adjacent fastener, at least at the end portions thereof. Thus, as shown in FIG. 6, when the lower edge of the fastener-driving element 48 engages the portion of the striking surface 12 extending into the drive track, the leading corrugated fastener 10 of the stick will be moved downwardly with respect to the remaining corrugated fasteners and thus stripped from the stick. As the leading corrugated fastener moves downwardly with the fastener-driving element, the inclined surfaces 52 and 54 are engaged by the leading corrugated fastener to effect a tilting forward movement thereof into a position of alignment with drive track 44 and the fastener-driving element 48. As shown in FIG. 7, the relief provided by the grooves 56 permits entry of end portions 28 into the drive track during this camming motion. As shown in FIG. 8, the leading corrugated fastener 10 is fully aligned with the drive track 44 and the fastener-driving element 48 as the fastener is moved outwardly of the drive track and into the workpiece during the final portion of the drive stroke of the fastener-driving element.

A more detailed illustration of the structural details of blade guide is shown in FIGS. 9 and 10. The blade guide is formed from a metal plate of rectangular cross section in which a longitudinal groove has been centrally disposed therein to form drive track 44. In order to provide the narrow vertically extending stop surfaces 50, the groove in blade guide 46 is slightly less than the width of the opening 40 and the interior dimensions of magazine 36. The width of the stop surfaces is slightly less than the centralized flat end portions 28 of the corrugated fasteners described above. The blade guide is provided with parallel grooves 56 on each side of the drive track curving inwardly from the lower edges of the stop surfaces 50 and then downwardly to lower end of the blade guide. Each of the grooves 56 is of a width approximately equal to the width of the associated stop surface 50 and a depth slightly greater than the distance between the planes 32 and 26 of the corrugated fasteners. Four holes 58 are provided on the blade guide 46 corresponding to the positions of four similar holes on the wear plate 42, the forward end of the magazine 36 and the nosepiece 114. These holes are for simultaneously bolting these elements together to form the drive track assembly of the fastener-driving device.

In FIGS. 11 and 12 the structural details of the wear plate are shown. The wear plate is a flat metal plate having centrally formed therein an opening 40 through which fasteners may move from the magazine to the drive track. As discussed above, an inclined surface 52 extends downwardly and forwardly from the lower edge of opening 40 until that surface becomes flush with the surface of the wear plate at the lower portion thereof. On each side of inclined surface 52 are formed parallel inclined surfaces 54 each of which has a width approximately equal to the width of the stop surfaces 50 on the blade guide. As was the case with blade guide 46, four screw holes 58 are provided on wear plate 42 which correspond to similar holes on the blade guide, the magazine assembly and the nosepiece. Thus, the drive track 44 may be formed by placing the rear surface of blade guide 46 adjacent the forward surface of wear plate 42 and attaching these elements and the magazine assembly 36 to the nosepiece 114 of the fastener-driving device by means of the four screws or bolts. It can be seen, therefore, that when a drive track and magazine assembly is constructed according to the principles of this invention, the results will be a fastener-driving device that is easy to manufacture and assemble.

FIGS. 13 through 19 illustrate preferred embodiments of a magazine assembly constructed according to the principles of this invention. While preferred embodiments disclosed are shown as operating to drive corrugated fasteners of the type described above, it will be appreciated that the principles of this invention with respect to the adjustable characteristic of the magazine assembly may be applied to any magazine designed to accommodate a fastener stick which can be supported on its bottom surfaces. Furthermore, the locking mechanism for the magazine cover constructed according to the principles of this invention may well be utilized with any type of fastener magazine assembly.

As shown FIG. 13, the magazine assembly 36 is attached directly to the blade guide 46, wear plate 42 and the nosepiece 114 in the manner described above. The magazine opens directly into drive track 44 and the fastener stripping and driving operation takes place as was described hereinabove.

The fastener-driving device described in conjunction with the preferred embodiment of the magazine assembly constructed according to the principles of this invention is shown as operating to drive a fastener vertically downward into a horizontal workpiece with the magazine being mounted transversely to the drive track of the fastener-driving device. Thus, the terms indicating direction, such as "upwardly," "downwardly," "forwardly," or "rearwardly" are with reference to this configuration. It will be appreciated that other structural configurations and operating positions may be used within the principles of the invention defined hereinbelow, making directional terms such as those used herein only relative.

Referring to FIGS. 13 through 15 magazine assembly 36 includes a magazine or fastener guideway 132 which is an elongated U-shaped casting, preferably, but not limited to, aluminum, with the upright legs 136 and 137 thereof defining a longitudinally extending guideway flared upwardly and downwardly at the forward end of the magazine which attaches to nosepiece 114, blade guide 46 and wear plate 42 of fastener-driving device 100. The flared portions of legs 136 and 137 contain holes 33 in the upper and lower ends thereof to receive screws or bolts for attaching the guideway 132 to the nose portion of the fastener-driving device. The forward

end of guideway **132**, which is open, communicates with opening **40** in wear plate **42** permitting fasteners to be introduced into drive track **44** when the magazine assembly is attached to the fastener-driving device. When guideway **132** is attached to nosepiece **114**, the magazine floor **134**, which is the base of the U-shaped member, exactly coincides with the lower edge **127** of the opening **40** in wear plate **42** which is also the upper edge of inclined surfaces **52** and **54**. The magazine further includes, near its rearward end, vertical holes **131** and **135** in the legs **136** and **137**, respectively, for receiving detent mechanisms generally indicated as **150** and **152**, respectively. In the upper end of each of the legs, longitudinal grooves **138** opening inwardly of the U-shaped member are formed. The grooves **138** in each leg are directly opposite grooves in the other leg so that each horizontally opposed pair may slidably receive a member such as a cover means **140**, to be described below. In the preferred embodiment, two grooves are placed in a vertical stacked relationship in each leg, thereby allowing magazine assembly **36** to accommodate two different fastener heights, but it will be appreciated that any number may be used to accomplish the desired height variation.

A cover means, identified generally as **140**, is formed by a generally inverted U-shaped elongated member **142** having out-turned flanges **143** and **144** which are adapted to be received by an opposed pair of grooves **138** in the guide way **132**. The bight portion of the U-shaped member **142** extends rearwardly beyond the inverted U-shaped member and is turned upwardly to form a handle **148** by which the cover may be grasped to be moved rearwardly of the magazine. An elongated slot **146**, centrally disposed on the bight of the inverted U-shaped cover means and open at the rear end thereof, extends inwardly substantially the length of the cover means.

A pusher **38**, which is also of a substantially inverted U-shape is provided for yieldably urging fasteners through opening **40**. On the bight of pusher **38**, two studlike members **156** are attached for slidably mounting the pusher in slot **146**. These studlike members are of a length so as to perform the additional function of properly spacing pusher **38** from the cover in order to properly engage with the rear end of fastener stick S. A tension spring **158** is provided having one end anchored to a tab **155** in the interior of the cover **140** and adjacent the rear end thereof. The spring **158** extends forwardly around a pulley **60** journaled on a vertical shaft **61** mounted on the forward end of the cover and then extends rearwardly having its other end anchored to a tab **157** extending upwardly from pusher **38**. Thus, tension spring **158** serves to resiliently urge pusher **38** forwardly towards opening **40**.

Cover means **140** also includes an arcuate slot **145** in flange **144** which engages with detent means **152** when cover means **140** fully closes the magazine. Flange **143** is flared outwardly at the forward end thereof to form an abutment **147** which engages with detent means **150** when the cover has been moved rearwardly to a position permitting fasteners to be placed in guideway **132**.

Detent means **150** and **152** are each cylindrical pins having wider diameter sections **250** and **252**, respectively, and relatively narrower diameter sections **350** and **352**, respectively. The number of each of the wider and narrower diameter sections on each detent corresponds to the number of grooves in each leg of guideway **132**, and each groove communicates with the detent means on its side of the magazine. Each detent is mounted on one of the vertically compressed coil springs **62** placed in each of the holes **131** and **135** thereby biasing detent means **150** and **152** upwardly.

The axial location of wide sections **252** on detent **152** is such that when the detent is extended fully upwardly by spring **62**, the wide sections **252** will be adjacent grooves **138** in leg **137** of guideway **132**. With cover **140** in its operative position or fully closing magazine **132**, one of the wide diameter sections **252** will engage with arcuate slot **145** in the cover regardless of in which of the opposed pairs of grooves **138** the cover is placed. Thus, by this means the cover **140** is secured in a position fully closing magazine **132**. When detent **152** is manually depressed against the force of spring **62**, the section **252** in engagement with slot **145** is disengaged therefrom.

The axial location of narrow sections **352** is such that when detent **152** is depressed, these sections will be adjacent grooves **138** in leg **137**. Sections **352** are of a width which will permit flange **144** to pass by detent **152** as cover **140** is moved rearwardly in one of the opposed pairs of grooves **138**. It will be noted that as cover **140** is moved rearwardly, flange **144** will exert a downward force on the wide section **252** which had held the cover fully closed, holding detent **152** in the depressed position.

The wide diameter sections **250** on detent **150** are axially located thereon and of a width as to engage with abutment **147** on cover **140** when detent **150** is extended fully upwardly by spring **62**, and when the cover has been moved rearwardly sufficiently to permit fasteners to be loaded into guideway **132**. Obviously, the cover's fastener loading position may be altered by changing the position of abutment **147** on cover **140** with respect to detent **150**. The cover **140** is then prevented from further rearward movement from the fastener-loading position by the engagement of abutment **147** with one of the wide sections **250**, the cover being in any of the opposed groove pairs **138**. It will be noted that cover **140** is thus held in the fastener-loading position without the use of fixed connections, such as a spring connection, with the stationary parts of magazine assembly **36**.

The narrow diameter sections **350** on detent **150** are axially located thereon as to be adjacent grooves **138** in leg **136** when detent **150** is depressed; the width of sections **350** are such that abutment **147** will pass by detent **150** as cover **140** is moved farther rearwardly. Therefore, it is necessary only to depress detent **150** disengaging it from abutment **147** to remove cover **140** entirely from the guideway **132** after the cover has been moved to the fastener-loading position. It will be noted that detent **150** is held in the depressed position as cover **140** is moved rearwardly out of guideway **132** by the downward force brought to bear on the wide section **250**, which had held the cover in the fastener-loading position, by the wider portion of flange **143** commencing at abutment **147**.

Therefore, in order to load a fastener stick into the guideway **132**, it is necessary only to depress detent means **152** which will allow the cover **140** to be moved rearwardly from its closed or operative position to the fastener-loading position at which point detent means **150** in conjunction with abutment **147** will hold it. It is apparent from the above description that when the guideway **132** is empty, pusher **38** will be urged forwardly by spring means **158**, but with the cover in the fastener-loading position the pusher **38** will be in the rearward portion of the guideway **132** permitting a fastener stick S to be loaded therein. Cover means **140** may then be moved forwardly toward its operating position closing the magazine, and as the cover is moved forwardly, the forward motion of pusher **38** will be halted by its engagement with the rear portion of fastener stick S. When the cover is fully forward, arcuate slot **145** will allow detent means **152** to move upwardly under the impetus of the spring **62** upon which it is mounted so that a wider diameter section **252** on the detent means will engage with the arcuate slot, again locking the cover in the fully closed position.

Cover means **140** may readily be removed from the guideway **132**, when it is in the fastener-loading position, by merely depressing detent means **150**. By so doing, the wider diameter section **250** of detent means **150** is removed from engagement with abutment **147**, and the flared portion of flange **143** will be allowed to slide by detent means **150** while holding the wider diameter section thereof downward. Thus, it can be seen that only two simple manual steps are required to completely remove cover means **140** from the guideway **132** in order to replace the cover in a different one of the pairs of opposed grooves **138**. When this is done, in order to replace the cover it is necessary only to simultaneously depress detents **150** and **152** allowing the flanges **143** and **144** to slide by the detent means. It will be noted that in none of the afore-

mentioned steps for removing and replacing cover means **140**, was it necessary in any way to remove any part from or dismantle the magazine assembly. Furthermore, it will be noted that the relationship of base **134** of the guideway **132** to the inclined surfaces **52** and **54** at all times stays the same regardless of the fastener height being used.

FIGS. **16** through **19** illustrate two alternate embodiments of a detent means for retaining the cover in the magazine assembly and for releasing it, allowing it to be removed therefrom, in which a single detent is used to accomplish both operations. It will be noted that the illustrations of these embodiments do not include many of the structural details of the preferred embodiment discussed above. This was done for the purposes of making more clear the description of the detent means to demonstrate that such detent means may be used with a variety of fastener magazine configurations. In each of these FIGS. like numerals are used to identify like elements.

In the FIGS. **16** and **17** embodiment, an elongated U-shaped magazine guideway member **64** is used having inwardly opening grooves **66** in the upper portions of the legs thereof forming opposed pairs. In a vertical hole **67** on one side and to the rear of the guideway, a vertically-acting detent **68** is mounted on a leaf spring **69** which biases the detent upwardly. The detent includes wide diameter sections **168**, intermediate diameter sections **268** relatively narrower than sections **168**, and narrow diameter sections **368** relatively narrower than sections **268**. The number of each of these sections on detent **68** corresponds to the number of grooves **66** in said one side of guideway **64**, and each of the grooves on said one side are in communication with the detent means.

A cover means **70** is provided with an arcuate slot **72** in the rear portion thereof on the edge or flange nearer detent **68**, and when the cover **70** fully closes guideway **64**, slot **72** will be adjacent detent **68**. Sections **168** are of a width which will allow them to engage with slot **72**, and sections **168** are axially located on detent **68** so that such engagement will take place when detent **68** is extended fully upwardly.

Sections **268** are axially located on detent **68** so that when detent **68** is depressed, disengaging one of the sections **168** from arcuate slot **72**, sections **268** will be aligned with grooves **66**. The diameters of sections **268** are such that when detent **68** is in this position, cover **70** can be moved through the opposed pair of grooves **66** in which it has been placed rearwardly past detent **68**.

The edge or flange of cover **70** nearer detent **68** flares outwardly at the forward portion thereof forming an abutment **74**. Sections **268** are of a width that will allow one of them, depending upon in which the opposed pairs of grooves **66** cover **70** is placed, to engage with abutment **74** thereby retaining cover **70** in the fastener-loading position. It will be noted that as cover **70** is moved rearwardly to the fastener-loading position, detent **68** is held in the above-described depressed position by the downward force of the edge of the cover acting on the section **168** previously engaged with slot **72**.

In order to release cover **70** from the fastener-loading position so it can be removed from guideway **64** to be replaced in a different one of the opposed pairs of grooves **66** in order to accommodate a different fastener height, detent **68** may be depressed farther, releasing detent **68** from engagement with abutment **74** thereby aligning sections **368** which are axially located for this purpose with grooves **66**. The widths of sections **368** are such that the flared portion of cover **70** commencing at abutment **74** will pass by detent **68** as the cover is moved rearwardly. At the lower rear portion of guideway **64** and beneath leaf spring **69**, a second leaf spring **65** is provided extending from approximately the center of guideway **64** and inclined upwardly to the side of the guideway. Spring **65** provides resistance to the downward travel of detent **68** allowing an operator to sense the position of the detent.

In the FIGS. **18** and **19** embodiment, a side-acting spring latch **78** is mounted in one side of the guideway **64**, and the grooves **66** on said one side are in communication with the latch. The cover means **70** on the edge adjacent latch **78** includes a slot **80** adapted to engage with the latch in the rear portion of the cover when the cover is in in the operative position, fully closing the magazine. Proceeding forwardly on the cover, the edge adjacent the latch inclines inwardly as indicated at **84** and abruptly outwardly to its normal width forming an abutment **82**. To move the cover rearwardly to the fastener-loading position, it is necessary only to move the latch **78** sideways out of engagement with the slot **80** and slide the cover rearwardly. Because the spring energy of latch **78** biases it laterally inwardly, it will ride along the edge of the cover during the rearward motion thereof, and inclined edge **84** will guide the latch into engagement with abutment **82** preventing further rearward movement of the cover from the fastener-loading position. To remove the cover **70** from the magazine **64**, it is necessary only to move the latch **78** sideways again out of engagement with abutment **82** and slide the cover rearwardly out of the magazine. To replace the cover in the magazine, it can be seen that it is necessary only to hold the latch **78** sideways and allow the cover **80** to slide inwardly to the desired position.

In each of the above described alternate embodiments of the detent means for the magazine cover, it can be seen that removal of the cover for purposes of height adjustment may be accomplished with ease without in any way dismantling the magazine or removing certain parts therefrom.

It will be apparent to those skilled in the art that the embodiments described herein are only exemplary, and modifications to the elements of the structure or their arrangement may be made within the scope of the appended claims.

I claim:

1. A device for driving successive fasteners from a corrugated fastener stick of the type including a plurality of individual corrugated fasteners each having flat portions at the ends thereof providing opposed surfaces of relatively narrow width positioned centrally with respect to the corrugation thickness thereof, which individual fasteners are secured together in row formation with their corrugations similarly oriented in abutting nested relation, said device comprising:

a vertically extending nosepiece;

a generally laterally extending magazine assembly fixed with respect to said nosepiece;

said magazine assembly including structure defining a corrugated fastener stick receiving guideway and means for biasing a corrugated fastener stick in said guideway toward one end thereof;

the structure defining said guideway including fastener stick bottom-supporting surface means disposed in a generally horizontal plane and opposed fastener stick side guide surfaces means disposed in generally parallel vertical planes;

said nosepiece having a vertical slot formed in the rearward surface thereof of rectangular cross-sectional configuration having a width slightly greater than the thickness of a corrugated fastener and a length substantially equal to the width of a corrugated fastener less the flat end portions thereof;

said slot including an intermediate portion vertically coextensive with the one end of said guideway and communicating therewith, the rearward surfaces of said nosepiece laterally adjacent said slot within the upper extent of said intermediate slot portion presenting stop surfaces at the one end of said guideway for engaging the leading flat end surfaces of the leading corrugated fastener of a stick biased within said guideway so as to retain the leading fastener in a feeding position wherein the forward portion of the fastener is disposed partially within the intermediate portion of said slot;

said nosepiece having a groove of a size to receive a flat end portion of a corrugated fastener formed therein in communication with each side of said slot from a position adjacent the lower extent of said intermediate portion to the lower extremity of said slot;

said magazine assembly including a portion closing the lower rearward portion of said slot, said portion including cam surfaces extending downwardly and forwardly from a position within said guideway relieving the bottom support of the fastener disposed in said feeding position while retaining the bottom support of the corrugated fastener nested therein; and

a driver blade of a size to engage within said slot mounted therein for vertical reciprocating movement through an upward stroke during which the leading corrugated fastener of a stick disposed within said guideway is biased into said feeding position and downwardly through a drive stroke during which the fastener in said feeding position is engaged by said driver blade and moved downwardly therewith so as to be stripped from said stick, then moved forwardly by said cam surfaces wholly into said slot and said grooves in alignment beneath said driver blade and driven into the workpiece.

2. The device for driving fasteners defined in claim 1 wherein said portion closing the lower rearward portion of said slot is a plate including means defining an opening therein of a size to allow said corrugated fasteners to pass therethrough, said opening being positioned as to communicate with said intermediate portion of said slot and said one end of said guideway, and means defining cammed surfaces extending downwardly and forwardly from a lower edge of said opening for relieving the bottom support of said fastener disposed in said feeding position.

3. The device for driving fasteners defined in claim 2 having means defining a plurality of corresponding axially aligned holes in each of said nosepiece, said one end of said guideway and said plate means for allowing a like number of bolts to pass therethrough to secure said nosepiece, said guideway and said plate means together.

4. The device for driving fasteners defined in claim 1 wherein said magazine assembly includes:

means defining a plurality of vertically spaced inwardly facing horizontally extending grooves formed in said guide surfaces in positions to define a plurality of opposed pairs of cooperating horizontally spaced grooves;

a cover member including side portions of a size to engage within any selected one of said pairs of opposed grooves to accommodate the particular height of fastener stick to be received within said guideway, said cover member when engaged in any selected one of said pairs of opposed grooves being mounted for sliding movement within said pair of grooves from an operative position generally enclosing said guideway into a loading position generally exposing said guideway; and

means acting between said magazine and cover members operable to (1) retain said cover member in said operative position when selectively engaged in any of said opposed pairs of grooves, (2) release said cover member from said operative position when selectively engaged in any of said opposed pairs of grooves to permit movement of the cover member away from said operative position toward said loading position, (3) limit the movement of said cover member away from said operative position to said loading position, and (4) release said cover member from said loading position when selectively engaged in any one of said opposed pairs of grooves to permit outward separation of said cover member from said selected one pair of said grooves and engagement of said cover member into another pair of said grooves.

5. A magazine assembly for receiving fastener sticks of varying heights of the type which may be bottom supported secured together in row formation and for feeding the leading fastener of the stick to a drive track to be driven by a fastener-driving element, said magazine assembly comprising:

an elongated magazine member defining a longitudinally extending guideway for receiving a fastener stick of the type described, said member having means defining a fastener stick bottom support and sidewalls extending upwardly on opposed sides thereof, each of said sidewalls having a plurality of vertically spaced inwardly facing horizontally extending grooves formed therein in positions to define a plurality of opposed pairs of cooperating horizontally spaced grooves;

a cover member including side portions of a size to engage within any selected one of said pairs of opposed grooves to accommodate the particular height of fastener stick to be received within the guideway, said cover member when engaged in any selected one of said pairs of opposed grooves being mounted for sliding movement within said pair of grooves from an operative position generally enclosing said guideway into a loading position generally exposing said guideway;

fastener stick pusher means mounted within said magazine assembly for horizontal sliding movement therein;

spring means carried within said magazine assembly and connected with said pusher means for resiliently urging the latter in a direction to engage the trailing end of a fastener stick received within said guideway and resiliently urge the leading fastener thereof toward said drive track; and

means acting between said magazine and cover members operable to (1) retain cover member in said operative position when selectively engaged in any of said opposed pairs of grooves, (2) release said cover member from said operative position when selectively engaged in any of said opposed pairs of grooves to permit movement of the cover member away from said operative position toward said loading position, (3) limit the movement of said cover member away from said operative position to said loading position, and (4) release said cover member from said loading position when selectively engaged in any one of said opposed pairs of grooves to permit outward separation of said cover member from said selected one pair of grooves and engagement of said cover member into another pair of said grooves.

6. The magazine assembly of claim 5 in which said cover member is an inverted elongated U-shaped member having a flange extending laterally outward from each side thereof with a centrally disposed longitudinal slot through said cover extending substantially the length thereof, in which:

said spring means is a tension spring having one end anchored at the rear end of said cover inwardly of said U-shaped member and extending forwardly around a pulley journaled on a shaft mounted on the front end of said cover and then extending rearwardly to be anchored to said pusher means; and in which

said pusher includes a plurality of longitudinally spaced studs engaged with said slot in said cover spacing said pusher downward from said cover to engage with said fasteners.

7. The magazine assembly defined in claim 5 in which said means acting between said magazine and cover members comprises a first detent placed in a first side of said guideway for releasably retaining said cover member in said operative position and a second detent placed on a second side of said guideway for releasably retaining said cover member in said fastener-loading position and means on said cover member adapted on a first side thereof to cooperate with said first detent and on a second side thereof to cooperate with said second detent.

8. The magazine assembly defined in claim 7 wherein:

said cover member includes a first edge on a first side thereof and a second edge on a second side thereof for engaging said cover member with a selected pair of said opposing grooves, said first edge having a slot defined therein adapted to engage with said first detent when said cover is in said operative position, said second edge having an abutment formed thereon adapted to engage with said second detent when said cover is in said fastener-loading position;

said first detent including a plurality of sections axially located thereon so that one of said sections may be aligned with each of said longitudinal grooves in said first side of said guideway when said detent is in a predetermined position, said sections being adapted to engage with said slot in said first edge releasably retaining said cover in said operative position, the remainder of said first detent being of a size as to allow said first edge to slide freely therepast in said longitudinal grooves after said first detent has been disengaged from said slot, said first detent further including resilient biasing means yieldably urging said first detent to a position aligning said sections with said horizontal grooves in said first side of said guideway; and

said second detent including a plurality of sections axially located thereon so that one of said sections may be aligned with one of said horizontal grooves in said second side of said guideway when said second detent is in a predetermined position, said sections being adapted to engage with said abutment on said second edge releasably retaining said cover in said fastener-loading position, the remainder of said second detent being of a size as to allow said second edge to slide freely therepast in said horizontal grooves removing said cover from said magazine after said detent has been disengaged from said abutment, said second detent further including resilient biasing means yieldably urging said second detent to a position aligning said sections thereon with said horizontal grooves in said second side of said guideway.

9. The magazine assembly defined in claim **5** wherein said means acting between said magazine and cover members comprises a single detent placed in one side of said guideway for releasably retaining said cover means in said operative position and for releasably retaining said cover means in said fastener-loading position, said cover means being adapted on a side thereof adjacent said one side of said guideway to cooperate with said single detent.

10. The magazine assembly defined in claim **9** wherein said cover means includes edges extending outwardly therefrom for engagement with a selected one of said pairs of opposed grooves, the edge adjacent said first side of said guideway having a slot defined therein adapted to engage with said detent when said cover is in said operative position and an abutment thereon adapted to engage with said detent when said cover is in said fastener-loading position;

said detent including a plurality of first sections axially located thereon so that one of said first sections may be aligned with each of said horizontal grooves in said one side of said guideway when said detent is in a first position, said first sections being adapted to engage with said slot in said cover releasably retaining said cover member in said operative position, said detent means including a plurality of second sections axially located thereon so that one of said second sections may be aligned with each of said horizontal grooves in said one side of said guideway when said detent is in a second position having been disengaged from said slot in said cover member, said second sections being adapted to engage with said abutment when said cover means has been moved to said fastener-loading position, said detent means including a plurality of third sections axially located thereon so that one of said third sections may be aligned with each of said longitudinal grooves in said one side of said guideway when said detent is in a third position having been disengaged from said abutment in said cover means, said third sections being of a size as to allow said cover means to slide therepast in said grooves to be removed from said magazine, and said detent means further including a resilient biasing means adapted to yieldably urge said detent into said first position.

11. The magazine assembly of claim **9** in which:

said cover member includes edges extending outwardly therefrom for engagement with a selected one of said pairs of opposed grooves, the edge adjacent said first side of said guideway having a slot defined therein adapted to engage with said detent when said cover is in said operative position, said edge, forwardly of said slot, tapering inwardly and forwardly of said cover member to a point where said edge abruptly reverts to a greater width forming an abutment, said abutment being adapted to engage with said detent when said cover is in said fastener-loading position; and

said detent comprising a laterally acting latch spring biased inwardly of said guideway to engage said slot and which, when pressed laterally out of engagement with said slot, allows said cover to slide rearwardly, said spring bias being sufficient to urge said latch inwardly, said latch thereby riding against said tapered edge until said latch engages with said abutment, said latch being movable laterally from said engagement with said abutment to permit said cover to slide farther rearward out said base member.

12. The magazine assembly defined in claim **5** wherein said pusher means is mounted on said cover member for horizontal sliding movement therein and said spring means attached to said pusher is carried by said cover member.