

June 9, 1953

K. BYGBJERG
THUMB TACK APPLICATOR

2,640,985

Filed March 22, 1949

2 Sheets-Sheet 1

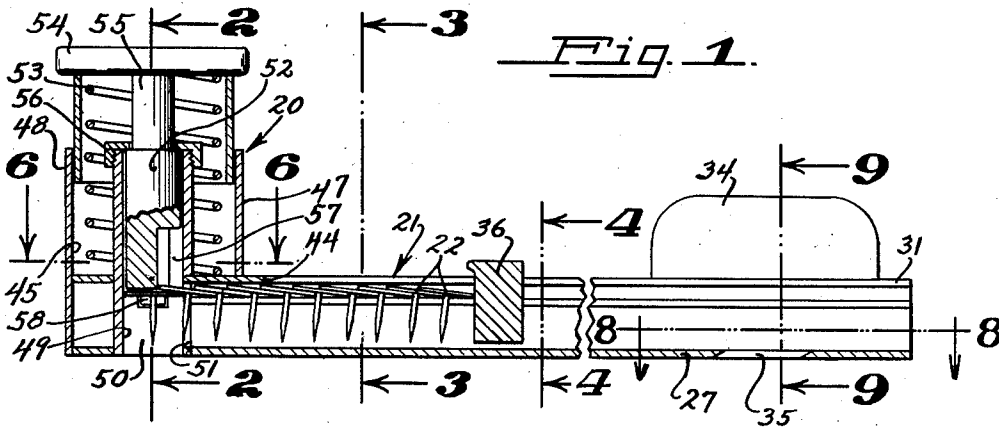


Fig. 2.

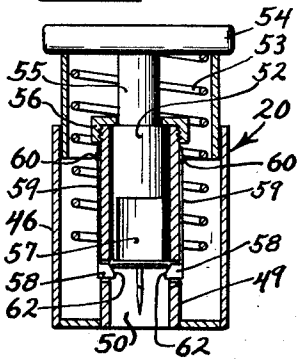


Fig. 3.

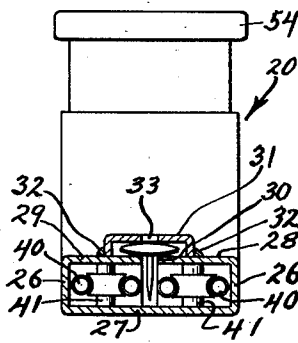
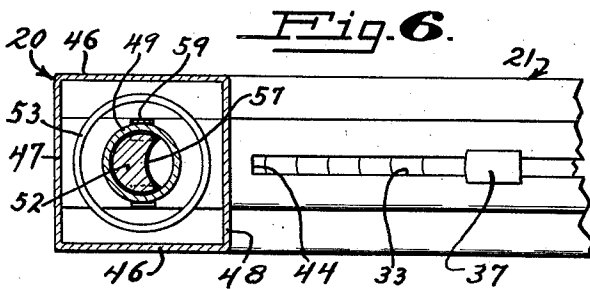
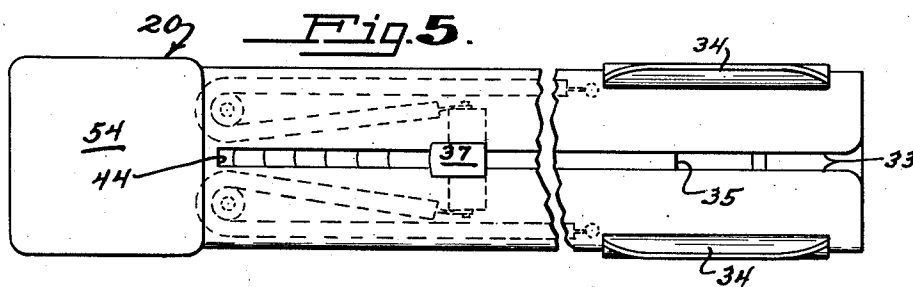
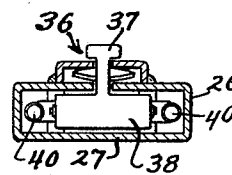


Fig. 4.



INVENTOR,
KARL BYGBJERG.
BY
Stephen L. Townsend
ATTORNEY.

June 9, 1953

K. BYGBJERG
THUMBTACK APPLICATOR

2,640,985

Filed March 22, 1949

2 Sheets-Sheet 2

Fig. 7.

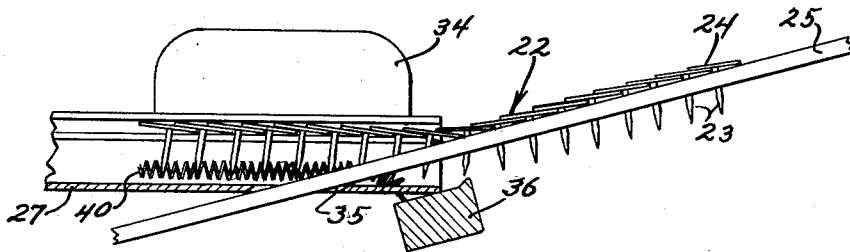


Fig. 8.

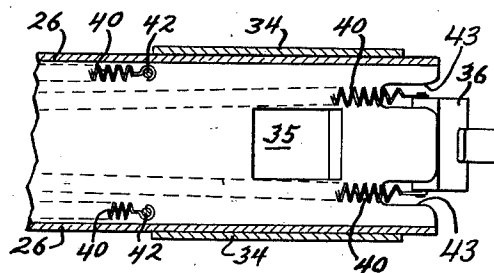


Fig. 9.

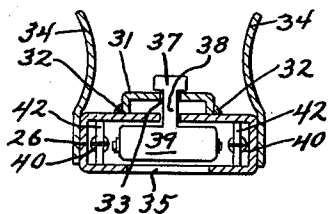


Fig. 10.



Fig. 11.



INVENTOR,
KARL BYGBJERG.
BY
Stephen. Townsend
ATTORNEY.

UNITED STATES PATENT OFFICE

2,640,985

THUMBTACK APPLICATOR

Karl Bygbjerg, San Francisco, Calif.

Application March 22, 1949, Serial No. 82,836

5 Claims. (Cl. 1—46)

1

This invention relates to an improved thumb tack applicator.

The primary object of the invention is to provide a thumb tack applicator operable in the manner of the usual staple applicator and adapted to drive an individual thumb tack with each blow struck upon the operating knob of the applicator.

Another object is to provide a thumb tack applicator in which a supply of thumb tacks is carried in a magazine and which, upon striking the operating knob of the applicator, operates to feed automatically a thumb tack from the magazine into position for proper driving operation.

A further object is to provide a thumb tack applicator in which the thumb tacks are fed into the applicator in overlapping head relationship upon a readily removable carrier so that the tack carrier will not interfere with proper operation of the thumb tack applicator.

Another object is to provide a carrier for thumb tacks to enable facile and convenient loading of a thumb tack applying device.

Another object is to provide a readily removable carrier for feeding thumb tacks into a thumb tack applicator in overlapping head relationship.

An additional object of the invention is to provide a device of this character which is rugged in construction and relatively inexpensive to manufacture.

The invention resides in the construction, combination, and arrangement of parts, hereinafter described in connection with the accompanying drawings which illustrate one embodiment of the invention, the invention itself being defined in the appended claims.

In the accompanying drawings:

Fig. 1 is a vertical longitudinal section of a thumb tack applicator embodying the invention;

Fig. 2 is a vertical cross-section of the structure shown in Fig. 1, this view being taken on the line 2—2 of Fig. 1;

Fig. 3 is a vertical cross-section of the structure shown in Fig. 1, this view being taken on the line 3—3 of Fig. 1;

Fig. 4 is a vertical cross-section of the structure shown in Fig. 1, this view being taken on the line 4—4 of Fig. 1;

Fig. 5 is a plan view of the thumb tack applicator shown in Fig. 1;

Fig. 6 is a longitudinal cross-section of the applying head section and a plan view of a portion of the magazine section shown in Fig. 1, this view being taken on the line 6—6 of Fig. 1;

2

Fig. 7 is a vertical longitudinal section of the magazine portion of the structure shown in Fig. 1, this view showing the magazine section in section and illustrating the feeding of a strip of thumb tacks into the magazine section;

Fig. 8 is a horizontal longitudinal section of the magazine portion of the structure shown in Fig. 1, this view being taken on the line 8—8 of Fig. 1;

Fig. 9 is a vertical cross-section of the structure shown in Fig. 1, this view being taken on the line 9—9 of Fig. 1;

Fig. 10 is a plan view of the removable thumb tack carrying strip used to feed the thumb tacks into the magazine of the structure shown in Fig. 1, this view showing some of the thumb tacks in place; and

Fig. 11 is a side elevation of the structure shown in Fig. 10.

The device shown in the drawings comprises, in general, an applicator head section 20 and a magazine section 21. The device is used in connection with thumb tacks 22 which are provided with sharpened legs 23 and enlarged heads 24. These thumb tacks, while made as individual pieces, are assembled together in overlapping head relationship upon a long flattened strip 25 made of a flexible material, such as cardboard, so that they can be handled as a unit. This strip 25 may be placed into the magazine of the device endwise so as to feed the thumb tacks into the magazine, and it is removable after the thumb tacks have entered the magazine so that the strip will not interfere with the normal operation of the thumb tack applicator.

The magazine section of the device is preferably made from a single sheet of metal which is formed in the general shape of a box open at both ends. The magazine section has upright parallel walls 26 and a connecting bottom wall 27. The top wall 28 and 29 is so formed that the inner edges of the portions 28 and 29 define an opening 30 slightly wider than the diameter of the sharpened legs 23 of the thumb tacks 22. This opening 30 acts as a thumb tack guiding member and extends the length of the magazine section 21.

The top of the magazine section is enclosed by a cover plate 31 which is attached on the upper side of the magazine section 21 by welds 32. A slot 33, the purpose of which will be explained later, extends lengthwise the cover plate 31. A suitable hand grip 34 encompasses the magazine section 21 and cover plate 31, as illustrated.

The bottom of the cover plate 31 is spaced from the upper surface of the top wall 28—29 of the

3

magazine a sufficient distance to permit easy passage of a plurality of thumb tacks with the heads in overlapping relationship.

A strip of thumb tacks arranged in overlapping head relationship is placed in upright position in the magazine defined by the opening 30, the upper surfaces of the top wall 28—29 and the lower wall of the cover plate 31 so that the lower surfaces of the enlarged heads 24 of the thumb tacks ride or slide along the upper surfaces of the top wall 28—29 and so that the sharpened legs 23 of the thumb tacks extend downwardly through the opening 30 into the interior of the magazine section. These thumb tacks 22 are mounted upon the strip 25 in overlapping head relationship as appears more fully in Figs. 10 and 11. An opening 35 is provided in the bottom wall 27 of the magazine section near to the end of the magazine section remote from the applicator head section 20. The strip 25 and its associated thumb tacks are threaded through the open end of the magazine section and through the opening 35 so that the under surfaces of the enlarged heads 24 of the thumb tacks 22 will engage the upper surface of the top wall 28—29. As the strip 25 is threaded through the opening 35 and moved to the left, as viewed in Fig. 7, the thumb tacks 22 will be withdrawn from the strip 25 and will be threaded, still in overlapping head relationship, into the magazine section of the device.

The strip of thumb tacks so formed is fed to the applicator head section 20 of the device by a pusher or feeder member 36. This pusher member 36 has the cross-section of a distorted I-beam with an upper portion 37, a lower portion 38 and a connecting web 39. The upper portion 37 extends above the top surface of the cover plate 31 and forms a convenient finger-hold for moving the feeder member 36 manually. The connecting web portion 39 extends through the opening 30 and the slot 33 and bears against the outer end of the strip of thumb tacks 22. The lower portion 38 lies within the main portion of the magazine section 21 and carries two springs 40 for yieldingly acting upon the feeder member 36 to feed the strip of thumb tacks 22 to the applicator head section of the device. The springs 40 extend around pins 41 and are anchored to the magazine section 21 at 42.

When it is desired to load the magazine section 21 with a strip of thumb tacks 22, the pusher or feeder member is removed from the opening 30 and the slot 31 so as to permit the strip of thumb tacks to have access to the magazine. This is accomplished by providing two slots 43 at the outer end of the connecting bottom wall 27 of the magazine section 21. These slots 43 are spaced so that their center lines correspond with the sides of the lower portion 38 of the pusher member 36. Thus, the springs 40 may be lodged in the slots to hold the pusher or feeder member in disengaged position as appears more fully in Figs. 7 and 8. After the strip of thumb tacks 22 has been fed into the magazine, then the pusher or feeder member 36 may be reinserted into the magazine section with the connecting web 39 extending through the opening 30 and slot 33.

The end 44 of the slot 33 in the cover plate 31 serves as a stop when the strip of thumb tacks is within a few tacks of being exhausted and thus prevents the feeder member from entering the applicator head section 20 of the device.

The applicator head section of the device in-

4

cludes an outer casing 45 which is preferably made from a single sheet of metal in the general shape of a box and which is preferably secured to the magazine section 21 as by welding. The outer casing 45 of the applicator head section 20 has side walls 46, a posterior wall 47 and an anterior wall 48. This outer casing 45 is open at the top.

Coaxial with and within the outer casing 45 there is mounted a cylinder 49 which is open at the top and bottom ends. The bottom end of the cylinder 49 is secured to the lower wall 27 of the magazine section 21 and forms a discharge throat through which the thumb tacks 22 are discharged one-by-one. The wall of the cylinder 49 adjacent the entrant strip of thumb tacks 22 is cut-out so as to provide for entry of the thumb tacks, as at 51, Figs. 1, 2 and 3.

The cylinder 49 also provides a bearing and aligning means for a generally cylindrical driving plunger 52. This driving plunger 52 is normally urged into the upper portion of the cylinder 49 by means of a spring 53 which presses against the lower surface of a hand knob 54, secured to the upper end of the driving plunger 52. In order to prevent too great movement of the driving plunger 52 in an upward direction, a reduced portion 55 is provided on the driving plunger 52. Around this reduced portion 55, there is mounted a cap nut 56 which is threaded upon the upper end of the cylinder 49.

The lower end of the applicator plunger 52 is provided with a cut-out portion 57 so formed that the bottom surface of the applicator plunger 52 corresponds with the uncovered portion of the enlarged head 24 of the thumb tack 22 which is in furthest advanced position within the discharge throat 50.

Spring mounted keepers 58 maintain the farthest advanced thumb tack 22 within the discharge throat 50 until ejection is desired. These spring mounted keepers 58 are preferably made integral with springs 59 secured at their upper ends to the exterior wall of the cylinder 49, as at 60. The keepers 58 extend through openings 61 in the wall of the cylinder 49 and are provided with slanting inner walls 62.

In operating the device the procedure is as follows. The pusher or feeder member 36 is pulled outwardly beyond the far end of the magazine section 21 so that the springs 40 lie within the slots 43, as appears in Figs. 7 and 8. A strip 25 carrying a plurality of thumb tacks 22 arranged in overlapping head relationship is threaded into the magazine section 21, as appears in Fig. 7, and the strip 25 is withdrawn through the opening 35 in the bottom wall 27 of the magazine section, whereupon it can be either disposed of or saved for reuse as the operator desires. The magazine is now loaded with a plurality of thumb tacks arranged in overlapping head relationship. The pusher member 36 is then reinserted into the magazine section with the web 39 pressing against the outer one of the strip of thumb tacks 22. This pusher urges the strip of thumb tacks inwardly until the most forward thumb tack 22 strikes the anterior inner surface of the cylinder 49 and lies within the discharge throat 50. The hand knob 54 is then struck downwardly by hand thus urging the lower surface of the driving plunger 52 to eject the forward thumb tack without urging the second thumb tack downwardly. As the forward thumb tack is urged downwardly the periphery of its enlarged head 24 contacts the slanting

5

inner wall 62 of the spring mounted keepers 58 thus urging the keepers 58 out of the way and permitting ejection of the thumb tack. After the thumb tack has been struck home, the hand knob is released, whereupon the spring 53 urges the driving plunger upwardly into normal position and permits the pusher or feeder member to urge the next thumb tack into the forward position. The foregoing procedure may be repeated at will until the magazine is nearly empty.

Changes may be made in the form, construction and arrangement of the parts without departing from the spirit of the invention, the scope of my invention being defined by the following claims.

The invention is claimed as follows:

1. In a tack driver, the combination of an applicator head section, a magazine section for carrying a series of tacks in overlapping head relationship with the head of the foremost tack partially underlying the head of a subsequent head of the series, a discharge throat connected to one end of said magazine section and located in said applicator head section, a feeder member for urging said series of tacks from the magazine section to said discharge throat, a stop for the head of the forward one of said series of tacks, said stop being defined by a wall of said discharge throat, and an applicator member reciprocable in said throat, the lower surface of said applicator member being shaped so as to contact the upper surface of the head of only the forward one of said series of tacks.

2. In a tack driver, the combination of an applicator head section, a magazine section for carrying a series of tacks in overlapping head relationship with the head of the foremost tack partially underlying the head of a subsequent head of the series, a discharge throat connected to one end of said magazine section and located in said applicator head section, a feeder member for urging said series of tacks from the magazine section to said discharge throat, a stop for the head of the forward one of said series of tacks, said stop being defined by a wall of said discharge throat, an applicator member reciprocable in said throat, the lower surface of said applicator member being shaped so as to contact the upper surface of the head of only the forward one of said series of tacks, and keeper means for preventing discharge of the forward one of said series of tacks until acted upon by the applicator member.

3. In a tack driver, the combination of an applicator head section, a magazine section for carrying a series of tacks in overlapping head relationship with the head of the foremost tack partially underlying the head of a subsequent head of the series, a discharge throat connected to one end of said magazine section and located in said applicator head section, a feeder member for urging said series of tacks from the magazine section to said discharge throat, a stop for the head of the forward one of said series of tacks, said stop being defined by a wall of said discharge throat, and an applicator member reciprocable in said throat, said applicator member being

6

provided with a cutout portion, said cut-out portion being arranged so as to provide relief from the second one of said series of tacks whereby the applicator member will contact only the forward one of said series of tacks.

4. In a tack driver, the combination of an applicator head section, a magazine section for carrying a series of tacks in overlapping head relationship with the head of the foremost tack partially underlying the head of a subsequent head of the series, a discharge throat connected to one end of said magazine section and located in said applicator head section, a feeder member for urging said series of tacks from the magazine section to said discharge throat, a stop for the head of the forward one of said series of tacks, said stop being defined by a wall of said discharge throat, an applicator member reciprocable in said throat, the lower surface of said applicator member being shaped so as to contact the upper surface of the head of only the forward one of said series of tacks, and keeper means comprising at least one spring urged keeper arranged to contact the edge of the head of said forward one of said series of tacks whereby said forward tack is retained in the discharge throat until acted upon by the applicator member.

5. In a tack driver, the combination of an applicator head section, a magazine section for carrying a series of tacks in overlapping head relationship with the head of the foremost tack partially underlying the head of a subsequent head of the series, a discharge throat connected to one end of said magazine section and located in said applicator head section, a feeder member for urging said series of tacks from the magazine section to said discharge throat, a stop for the head of the forward one of said series of tacks, said stop being defined by a wall of said discharge throat, an applicator member reciprocable in said throat, the lower surface of said applicator member being shaped so as to contact the upper surface of the head of only the forward one of said series of tacks, and keeper means comprising two spring urged keepers arranged to contact the edge of the head of said forward one of said series of tacks whereby said forward tack is retained in the discharge throat until acted upon by the applicator member.

KARL BYGBJERG.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
877,165	Borgerding	Jan. 21, 1908
1,146,105	Sabelman	July 13, 1915
1,306,107	Elliott	June 10, 1924
1,485,413	Johanson	Mar. 4, 1924
1,588,989	Polzer	June 15, 1926
2,009,580	Govanus	July 30, 1935
2,014,726	Flood	Sept. 17, 1935
2,078,012	Newell	Apr. 20, 1937
2,237,458	Thayer	Apr. 8, 1941
2,479,190	Wheeler	Aug. 16, 1949