Dec. 25, 1962 E. G. ANDERAU 3,069,685

TOOL FOR SEALS

Filed June 2, 1961 2 Sheets-Sheet 1

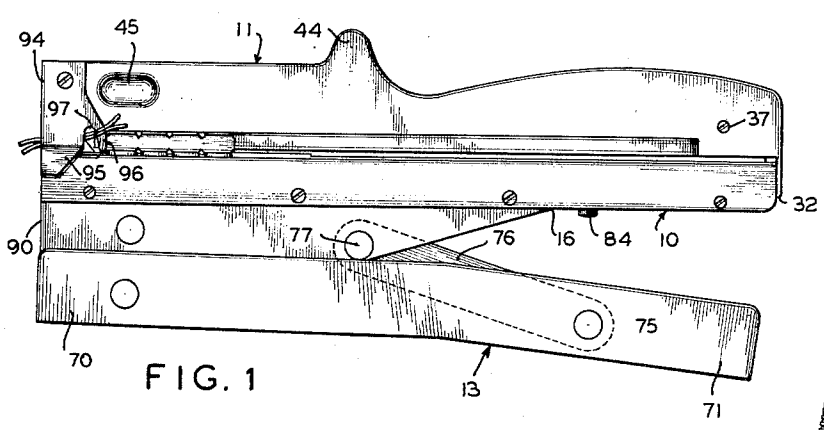


FIG. 1

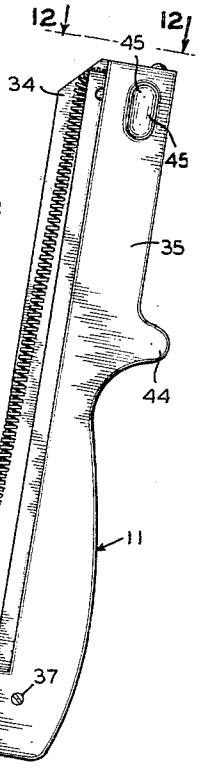
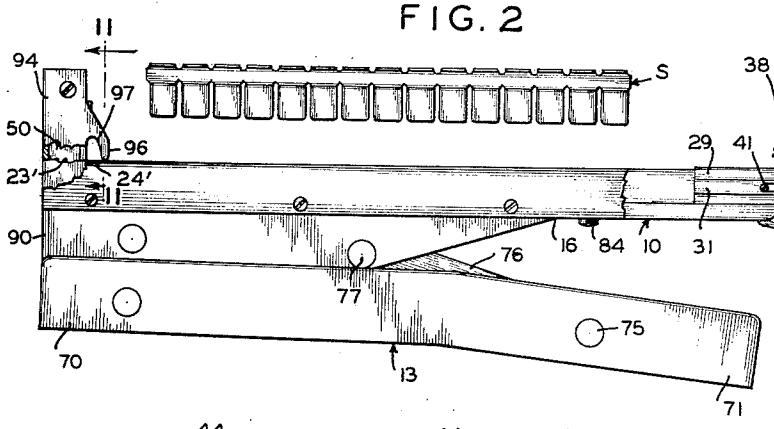


FIG. 2



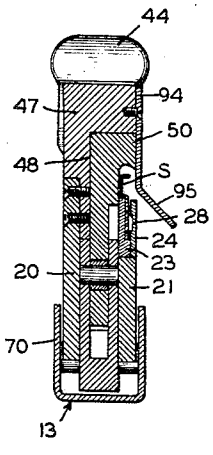


FIG. 7

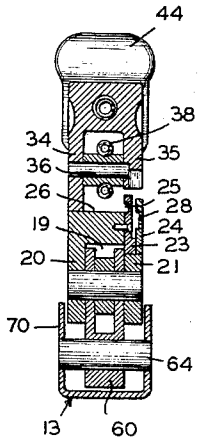


FIG. 8

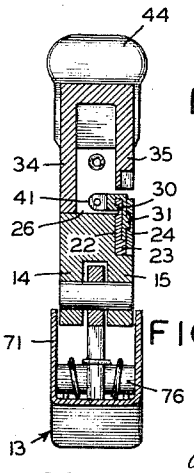


FIG. 9

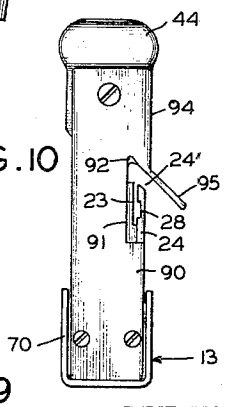


FIG. 10

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Dec. 25, 1962 E. G. ANDERAU 3,069,685

TOOL FOR SEALS

Filed June 2, 1961 2 Sheets-Sheet 2

FIG. 3

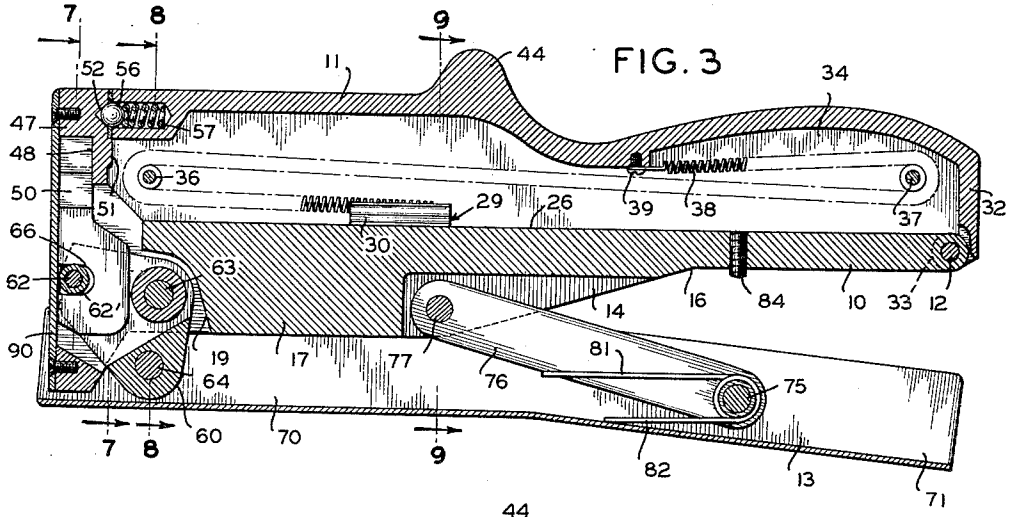


FIG. 4

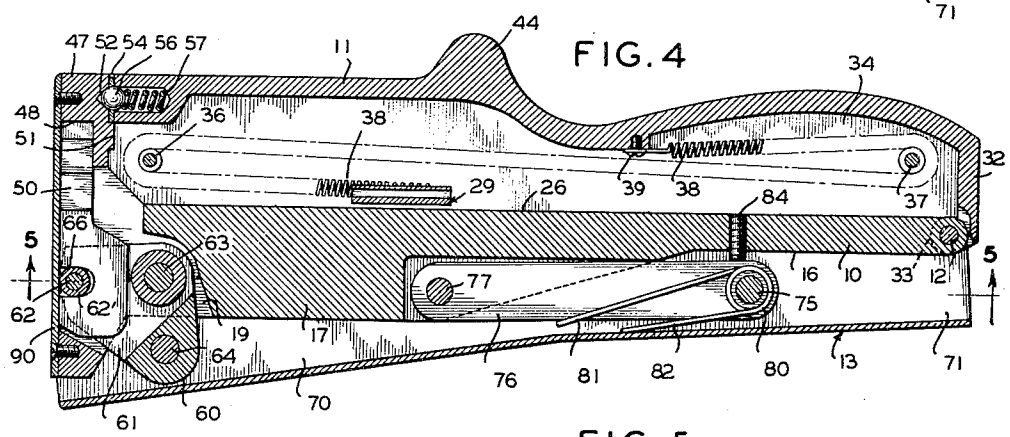


FIG. 5

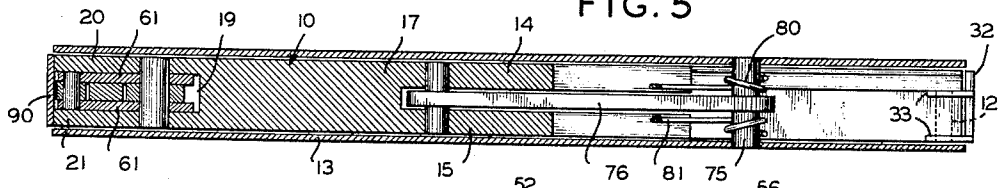
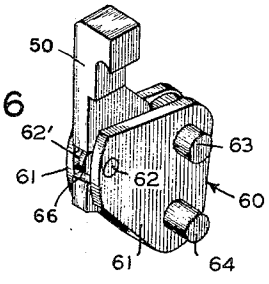


FIG. 6



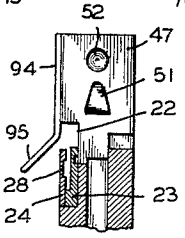


FIG. 11

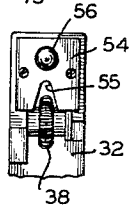


FIG. 12

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United States Patent Office

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TOOL FOR SEALS

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10 Claims. (Cl. 1—177)

This invention relates to seals and more particularly to a tool for holding a strip of interconnected seals and for attaching one seal at a time from the strip to a tying element as the seal is detached from the strip.

This application is a continuation-in-part of my application S.N. 801,259, filed March 23, 1959, entitled, "Tool for Seals."

Although the seals employed with the tool of the present invention have various applications, one principal use is that of connecting the ends of cords or other tying elements holding a price tag or mounted on a garment or other item in such a way as to be visible during normal use. Since the seal may not be opened or reused, effective protection is afforded against those who would attempt to defraud a store by switching price tags or returning a garment or other item after using the same. Seals of this type are further described in application of William Stelzer, S.N. 803,259, entitled "Seals and Method of Attaching Them to Tying Elements," Patent 3,009,276 of November 21, 1961.

Heretofore, relatively cumbersome seals have been provided for a similar purpose. However, these have been expensive to produce and provided less protection, since anyone obtaining a seal of such type might apply the same without using a special tool.

Other tools provided for a similar purpose have been heavy or cumbersome or difficult to use and store when not in use or have had protruding parts which are likely to catch on closely spaced garments.

It is an object of the invention to provide a special tool for holding a supply of simple, inexpensive seals, which seals may be applied quickly and easily by means of the tool, and by means of which the labor and other expense of attaching sealed tags to an object may be minimized.

A further object of the invention is to provide a tool which is easy to operate, and with little force required, for holding and feeding a strip of seals and closing and separating one seal at a time from the strip, and in which means is provided to insure complete closing of each seal.

Other objects and advantages of the invention will be apparent from the following description in conjunction with the accompanying drawings, wherein:

FIG. 1 is a side elevation of the tool with a strip of seals in its magazine;

FIG. 2, a view similar to FIG. 1, showing the head raised in position for receiving a strip of seals, and a strip of seals illustrated superimposed above the tool for use therein;

FIG. 3, an enlarged vertical section of the tool illustrating the working parts in position prior to closing;

FIG. 4, a view similar to FIG. 3, illustrating the working parts in closed position;

FIG. 5, a section on the line 5—5 of FIG. 4;

FIG. 6, a perspective of the bell crank and seal closing member;

FIGS. 7, 8 and 9, sections on the lines 7—7, 8—8 and 9—9 of FIG. 3;

FIG. 10, an elevation of the closing end of the device;

FIG. 11 is a section on the line 11—11 of FIG. 2; and

FIG. 12, an elevation on the line 12—12 of FIG. 2 illustrating the end of the head 11.

Briefly stated, the tool of the present invention includes a body or magazine portion having a seal moving

member or follower connected to an elongated spring, and a head which is pivotally attached at the rear of the body; at its seal closing end the body has a block slidably receiving a seal closing member which is operated by a bell crank mounted in the lower portion of the body, the bell crank being operated by an actuator lever connected thereto and by other linkage to the body. Although the description is directed to a hand tool, the invention is intended also to include power operated seal holding and closing instrumentalities.

With further reference to the drawings, the tool includes a main body portion or frame 10, a head 11 pivoted at hinge pin 12 to the rear of said frame, and an actuator lever 13 which is movably mounted with relation to said frame.

Frame 10 is relatively long and narrow and has a pair of spaced wall portions 14, 15 which taper from a rear extremity 16 to a main portion 17. At its forward end a slot 19 provides spaced wall portions 20, 21.

Along its upper side the frame has a slot 22 within which a pair of longitudinal guide members 23, 24 are mounted. Inner guide member 23 is L-shaped and has a longitudinal slot 25 along the rear face of its upper portion, the lower edge of said slot being at the level of the upper face 26 of said frame member.

The outer guide member 24 is of slightly less height than guide member 23 and has a longitudinal slot 28 on the side adjacent guide member 23.

A follower 29 has portions 30, 31 engaging the slots 25, 28 respectively and is reciprocable along and between said guide members.

The head 11 is mounted by plate 32 having ears 33 which receive the pivot pin mounted at the rear of the frame. The head includes a pair of spaced walls 34, 35 between the ends of which rollers 36, 37 are mounted for guiding a spring 38 having one end mounted within the head by fastener 39 and the other connected to the follower by offset portion 41.

Due to the mounting of the head and the arrangement of the spring, the spring tends to close the head against the frame except when the head is open to a position past dead center so that in the position of FIG. 2 the spring tends to maintain the head in open position and with the follower 30 fully retracted. In any closed position of the head the spring tends to move the follower toward the opposite end of the frame in order to feed the seals into position for being closed or ejected.

The upper portion of the head preferably has a pistol grip 44 and a depression 45 to facilitate manual operation of the head.

At its forward or feeding end the frame has a transverse block 47 with an L-shaped slot 48 for receiving a seal closing member 50.

The block has a tapered stop member 51 on its rear surface and an opening or socket 52 at its upper portion. The head has a stop plate 54 at its forward end with a notch 55 for engaging the stop member 51 when the head is closed. Protruding from the stop plate is a detent 56 loaded by a spring 57 in the head, the detent engaging the socket and tending to hold the head in closed position.

Mounted substantially between the walls 20, 21 at the forward portion of the frame is a bell crank assembly 60, shown in perspective at FIG. 6. The assembly includes spaced walls 61 connected by pins 62, 63, 64, the latter two pins extending outside of the members 61. Mounted intermediate the wall members 61 is the seal closing member 50 which has a slot 66 at its lower front portion for receiving spacer 62' on the pin 62. Pin 63 is rotatably mounted by its protruding ends within the walls 20, 21 of the frame.

The actuator lever 13 of the drawing is a channel member having a forward portion 70 and an outwardly inclined

rear portion 71. The forward portion 70 receives the lower portions of the walls 20, 21 of the frame and mounts the pin 64. Approximately midway of the rearward portion 71 a pin 75 pivotally engages one end of a link 76, the other end of which pivotally engages pin 77 mounted between the spaced walls 14, 15 of the frame. A spring member 80 is coiled about the pin 75 and its opposed arms 81, 82 tend to urge the link away from the operating lever.

An adjustable stop pin 84 is mounted in the lower side of the frame for engaging the link 76 to thereby limit closing movement of the operating lever relative to the frame.

At its forward extremity the tool has a cover plate 90 extending across the face of the tool, including the block 47. The plate engages the front surface of the seal closing member 50 which is flush with the block 47 and maintains the same in parallel relationship as the seal closing member is reciprocated. The cover plate has a notch 91 at one side for receiving the ends of the guide members 23, 24. The notch extends upwardly at 92 to a height sufficient to permit a crimped seal to slide therethrough but insufficient to permit passage of an uncrimped seal. Cover plate 90 has a portion 94 at right angles to the front end portion. Portion 94 has an angularly disposed lip 95 spaced from finger 96 by slot 97.

In the use of the device, the strands or cord to be fastened within the seal may be looped beneath the member 95 and drawn up into the slots 92 and 97 in order to guide the same into the recessed portion of a seal. In order to facilitate this, the forward end of the guide 24 has a beveled portion 24'. Guide member 23 has a recess 23' to crimp the seal after it has been closed to increase the holding strength of the seal.

In the operation of the device, a strip of seals is placed in the space between the guide members 23, 24, the tool being in the position of FIG. 2, with the head raised and the follower 30 retracted. Then the head is closed to the position of FIG. 1, in which the spring 38 within the head exerts forward pressure on the strip of seals, urging them toward the front end of the device, the foremost seal being engaged by the cover plate 90 just above the slot 92. The position of the head is fixed by the engagement of the stop member 54 on the head with the abutment 51 on the block, and the parts are resiliently held in such position by engagement of the ball 52 with the recess in the block.

As described, the device is fully loaded and ready for use. In the use of the device the operator depresses the lever 13 to the position shown in FIG. 4, while the strands to be joined are held within the apertures 97 and 92 of the cover plate 90 which positions such strands within the upper portion of the seal which is engaged by the sealing member 50. Operation of the lever 13 acts through the link 76 and the bell crank 60 to move the sealing member 50 to the lower position of FIG. 4, thus rolling over the edge of the seal and thereby closing the same with the strands therewithin. Such action separates the end seal from the next seal and decreases its effective height so that it may pass through the slot 92 and is thereby ejected by the action of the follower 30, the next remaining seal then engaging the cover plate.

Accordingly, it will be understood that the invention includes a tool having a magazine for holding a strip of seals, a head and a follower for urging the strip into forward position where the front seal may be closed and simultaneously removed from the strip and urged forwardly out of the tool, leverage mechanism for closing each seal with great force, and a cover plate for facilitating engagement of the strands with the seal and which prevents forward movement of the seal until the same has been completely closed. The device is small and compact, of light weight, easy to operate, and has no protruding parts which are likely to catch upon garments as the device is used in a congested place.

It will be obvious to those skilled in the art that various changes may be made in the embodiment of the invention described without departing from the spirit and scope thereof, and therefore the invention is not limited to what is shown in the drawings and described in the specification but only as set forth in the following claims.

What is claimed is:

1. A seal tool comprising an elongated body, a pair of grooved guide members on one side of said body, a seal follower mounted in said grooves, a transverse block at one end of said body, a cover plate overlying said block, said cover plate having an offset portion for receiving strands to be sealed, a stop on the rear portion of the block, a socket adjacent to said stop, a head pivotally mounted on said body at the end thereof remote from said block, a loaded detent in said head for engagement with the socket in said block, said head having means for engaging said block stop, a pair of guide rollers located one adjacent to each end of said head, an elongated coil spring connected at one end to said head and extending around said guide rollers and connected at its other end to said seal follower, a seal closing member mounted for reciprocable movement within said block, said seal closing member having a ledge portion for engaging a seal when the same is positioned between said guide members, a bell crank pivotally mounted within said body, one arm of said bell crank being pivotally connected to said seal closing member, an operating lever positioned adjacent to said body, the other arm of said bell crank being pivotally connected to said operating lever adjacent to one end, a link having one end pivotally connected to said operating lever remote from said bell crank arm and the other end pivotally connected to said body intermediate the ends thereof, spring means urging said operating lever away from said body, and a stop pin adjustably mounted in said body for engaging said link to limit movement of said operating lever toward said body.

2. A seal tool comprising an elongated body, guide means on one side of said body, a seal follower mounted in said guide means, a transverse block at one end of said body, a cover plate overlying said block, said cover plate having an offset portion for receiving strands to be sealed, a head pivotally mounted on said body at the end thereof remote from said block, a pair of guide rollers located one adjacent to each end of said head, an elongated spring connected at one end to said head and extending around said guide rollers and connected at its other end to said seal follower, a seal closing member mounted for reciprocable movement within said block, said seal closing member having a ledge portion for engaging a seal when the same is positioned between said guide members, a bell crank pivotally mounted within said body, one arm of said bell crank being pivotally connected to said seal closing member, an operating lever positioned adjacent to said body, the other arm of said bell crank being pivotally connected to said operating lever adjacent to one end, a link having one end pivotally connected to said operating lever remote from said bell crank arm and the other end pivotally connected to said body intermediate the ends thereof, and spring means urging said operating lever away from said body.

3. A tool for holding and feeding a strip of lightly connected sheet metal seals and for closing one seal of such strip at a time, said seals being separated at their adjacent ends, comprising a body member having guide means along its upper portion, a follower in said guide means, means for urging the follower toward an end of said body member, a block mounted at the feeding end of said body member, a closing member reciprocably mounted in said block, said closing member having a ledge portion for engaging said seals one at a time and urging them against said guide means, an operating lever pivotally connected to said seal closing member and the other connected to said operating lever, link means piv-

otally connected at one end to said body member and at the other end to the lever remote from the bell crank, whereby operation of said lever will operate said bell crank to depress said closing member against a seal.

4. The invention of claim 3, and a cover plate over the end of said block, said cover plate restricting said closing member to reciprocable motion and having an opening for the discharge of fully closed seals from said tool, said opening being insufficient to pass a seal not fully closed.

5. A seal tool comprising a relatively long, narrow body member having guide means along its upper portion and spaced wall means along its lower portion, a seal moving member mounted on said guide means, a head pivotally mounted at the rear of said body and having means for urging said seal moving member forwardly, a seal closing member mounted between said spaced wall means, a bell crank mounted within said spaced wall means, means connecting said seal closing member with said bell crank, an operating lever connected to said bell crank, a link having one end pivotally connected to one end of said body between said wall means and its opposite end to said operating lever, and means engaging said link and urging said lever outwardly from said body.

6. A seal tool comprising a body member having guide means, a seal moving member mounted on said guide means, a seal closing member mounted on said body member, a bell crank mounted on said body member, means connecting said seal closing member with said bell crank, an operating lever connected to said bell crank, a link having one end pivotally connected to one end of said body and its opposite end to said operating lever, and means engaging said link and urging said lever outwardly from said body.

7. A seal tool comprising a frame having guide means along one side for receiving a plurality of seals, follower means on said frame for urging seals along said guide means, a seal closing member mounted for transverse

movement relative to said guide means, an end member adjacent to said seal closing member and having an opening for the passage of a closed seal, said member engaging said seals before closing to prevent passage through the opening, said guide means adjacent to said seal closing member providing an anvil against which said member closes said seals.

8. The combination of a multiplicity of seals integrally connected along their lateral edges to form a strip, and a seal closing and separating tool having a magazine for a strip of seals, means for feeding the strip toward a closing and separating end of the tool, stop means for holding unclosed seals against movement by the feeding means, and seal closing means positioned to close and separate an end seal from the remainder of the strip, the closing action simultaneously producing such separation and disengagement from said stop means.

9. A tool for feeding a strip of lightly connected sheet metal seals and for closing one end seal of said strip at a time, comprising a frame member, an operating lever pivotally mounted on the frame member, means on the frame for holding the strip of seals substantially in the plane of the frame member, said means permitting longitudinal movement of the strip substantially parallel to the plane of movement of the operating lever, means operative by movement in one direction of the operating lever to engage an end seal of the strip and to curl a portion thereof, means on the frame member for holding the seal against lateral movement during such curling, strip feed means on the frame and operative to advance the seal strip the length of one seal upon the curling of an end seal, and means on the frame engaging said strip to prevent longitudinal movement until the end seal has been curled.

10. The invention of claim 9 and means on the frame member for engaging said operating lever to limit the movement thereof in the direction in which it operates to close said seals.

No references cited.