March 13, 1951 L. A. FRUM 2,544,784

TOOL FOR DISPENSING, CLAMPING, AND CUTTING FLEXIBLE STRANDS

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Fig. 1.

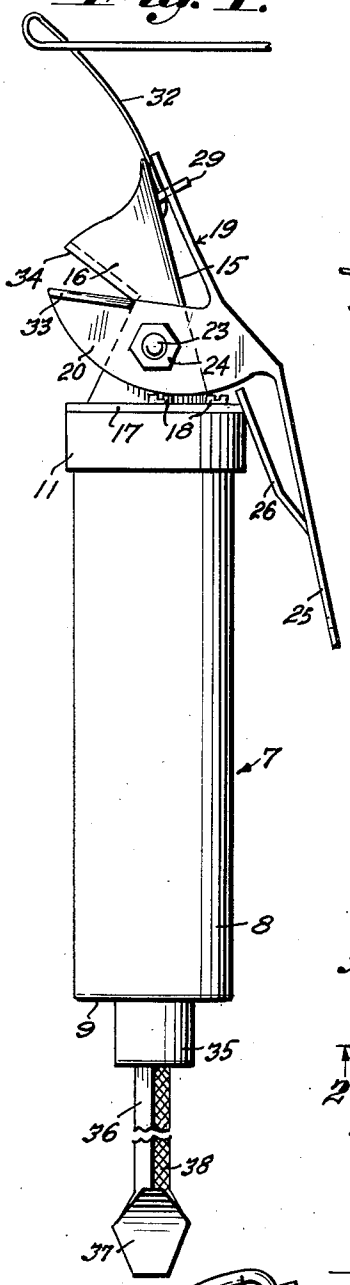


Fig. 2.

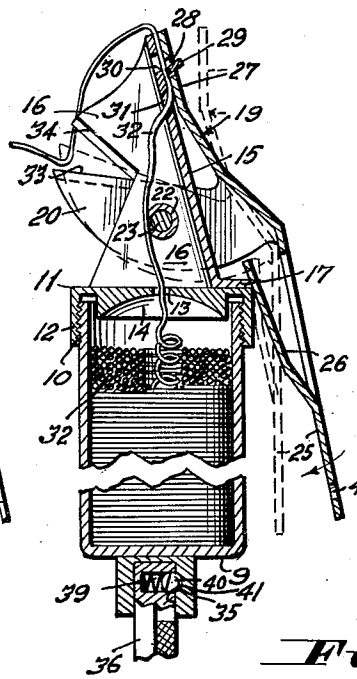


Fig. 3.

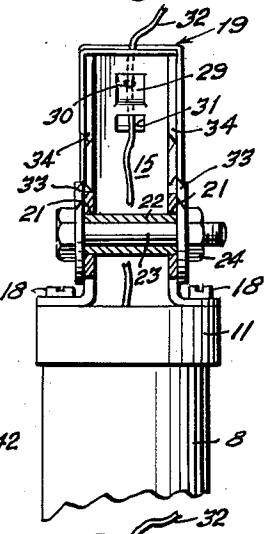


Fig. 4.

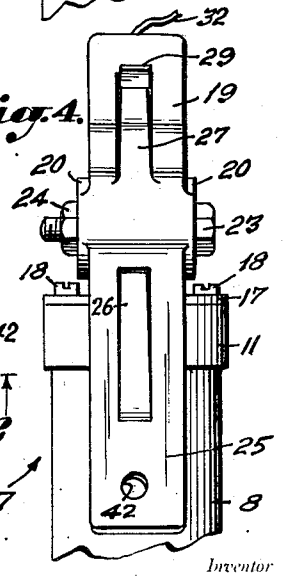


Fig. 5.

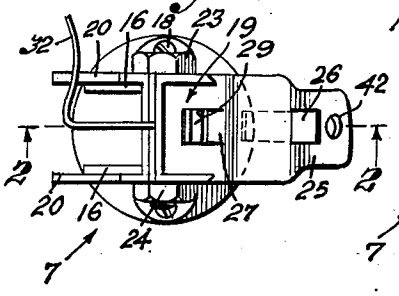
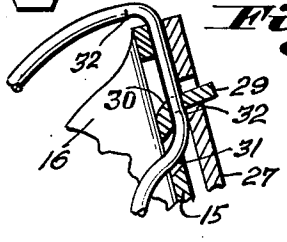


Fig. 6.



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TOOL FOR DISPENSING, CLAMPING, AND CUTTING FLEXIBLE STRANDS

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7 Claims. (Cl. 30—125)

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This invention relates to a tool particularly adapted to be used in the neon sign trade for holding a spool or roll of flexible wire used to fasten glass neon tubes to "standout" posts or tube supports and has for its primary object to provide a tool of relatively simple construction which may be utilized to hold a large supply of such wire and by means of which desired lengths of the wire may be extracted therefrom and cut off and which will ordinarily clamp the end of the strand in a convenient position to be grasped for withdrawing additional wire from the tool.

A further object of the invention is to provide a tool capable of being conveniently carried and easily operated for cutting off lengths of wire or other flexible strands of any desired length and which may be conveniently employed or operated while wearing gloves thereby greatly facilitating the work of neon sign servicemen out of doors and in cold weather.

Still a further object of the invention is to provide a tool which may be utilized for accomplishing all of the operations requiring a tool and in connection with the mounting of neon tubes.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a preferred embodiment thereof, and wherein:

Figure 1 is a side elevational view showing the tool in its normal position;

Figure 2 is a fragmentary central sectional view thereof taken substantially along a plane as indicated by the line 2—2 of Figure 5;

Figure 3 is a fragmentary side elevational view, partly in section looking from left to right of Figure 1;

Figure 4 is a view similar to Figure 3 but looking from right to left of Figure 1;

Figure 5 is an end elevational view of the tool looking from the top toward the bottom of Figure 1, and

Figure 6 is a fragmentary vertical sectional view on an enlarged scale of a portion of the structure as illustrated in Figure 2.

Referring more specifically to the drawing, the wire dispensing, clamping and cutting tool in its entirety is designated generally 7 and includes a hollow handle 8 which is preferably but not necessarily cylindrical in cross section and which has a closed end 9 and an open externally threaded opposite end 10.

A cap or closure 11 is detachably mounted on the open end 10 and has an internally threaded flange 12 for detachably engaging the externally threaded end 10. The cap 11 is provided with a central opening 13 and is internally thickened therearound and provided with a concave inner portion 14 which is disposed around the opening 13. An elongated clamping jaw 15 projects outwardly from the cap 11 at an angle to the axis of the handle 8, as best illustrated in Figure 2. Said clamping jaw 15 has flanges 16 projecting from the side edges thereof and disposed at right angles thereto. The jaw 15 and flanges 16 are provided with outturned flange portions 17 at corresponding ends thereof which seat against the outer side of the cap 11 and are secured thereto by fastenings 18.

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A movable clamping jaw 19 is provided with corresponding extensions 20 which project from portions of the side edges of the jaw 19 and which extend substantially at a right angle thereto. The extensions 20 like the flanges 16 are disposed substantially parallel and are spaced to straddle said flanges 16. The flanges 16 are provided with aligned openings 21 for receiving the ends of a spacer sleeve 22 which extends therebetween and the bore of which aligns with openings, not shown, in the extensions 20 for receiving the shank of a headed bolt 23 which extends through the sleeve 22 and through said extensions 20 and which carries a nut 24 on its threaded end. The sleeve 22 forms a bearing for the bolt 23 to permit the extensions 20 to swing relatively to the flanges 16 for swinging movement of the jaw 19 toward and away from the jaw 15, as illustrated in full and dotted lines in Figure 2.

The jaw 19 is provided with an integral extension extending beyond the end thereof, provided with the extensions 20 and forming an operating lever 25 which projects along a portion of the handle 8 and normally in diverging relationship thereto. A portion of the handle 25 is struckout to form an inwardly extending resilient tongue 26 which extends toward the jaw 19 and which is disposed between the lever 25 and the cap 11 and a portion of which slidably and yieldably bears against a part of the flanged portion 17. The movable jaw 19 is provided with a longitudinally extending struck out strip forming a resilient tongue 27 which extends toward the outer, free end of the jaw 19 and which is cut off to provide an opening 28 beyond its free end and adjacent the free end of the jaw 19. A lip 29 is struck out from the stationary jaw 15 and extends outwardly loosely through the opening 28 and has an opening 30 formed therein, near its secured end. The stationary jaw 15 is also provided with an opening 31 which is spaced inwardly from the lip 29. The hollow handle 8 forms a container adapted to contain a spool or roll of wire as seen at 32 or other flexible material. One end of the roll strand 32 extends outwardly through the opening 13 between the flanges 16 and is passed outwardly through the opening 31 thence through the opening 30 and extends outwardly between and beyond the free ends of the jaws 15 and 19.

The extensions 20 form blades the upper edges of which are beveled on their outer sides and adjacent their outer ends to form cutting edges 33. The flanges 16 have upwardly inclined edges 34 which are beveled on their inner sides to form complementary cutting edges. The edges 33 and 34 of the adjacent blades 20 and flanges 16 are normally disposed in outwardly diverging relationship when the movable jaw is held by its spring 26 in a closed position as seen in Figures 1 and 2. When the lever 25 is pressed toward the handle 8 the edges 33 move across the edges 34 to function similar to shears, as illustrated in dotted lines in Figure 2 and it will be readily apparent that said complementary edges 33 and 34 may be employed for cutting off the strand 32 in any desired length.

The handle bottom 9 is preferably provided with an outwardly projecting socket 35 for receiving the shank end of a tool bit 36 which may have any suitable blade, such as the screwdriver 37 at its opposite end. Two sides of the shank 36 are preferably suitably cut to provide a file 38. The shank end which engages the socket 35 is transversely recessed as seen at 39 to contain a spring pressed ball 40 which seats in a recess 41 of the socket 35 and for releasably holding the tool shank 36 therein.

The tool 7 with the tool shank 36 provides a combination tool as a unitary structure which may perform all of the functions required in attaching or detaching a neon tube. The wire or strand 32 may be withdrawn from the handle 8 by exerting a pull on the exposed end thereof for pulling it through the handle against the pressure exerted thereon by the spring tongue 27 which yieldably holds the wire in gripping engagement with the jaw 15 or by exerting a pressure on the lever 25 for moving it toward the handle 7, the movable jaw 19 and with it the spring clamping tongue 27 may be displaced out of engagement with the wire 32, so that the wire can be freely withdrawn from the tool 7 and by placing any desired portion thereof between complementary cutting edges 33 and 34 and by then moving the lever 25 to its dotted line position of Figure 2, a length of the wire or strand of any length may be readily cut off. A hole 42 to receive a chain or tether, not shown, is provided in the lever 25.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A tool for holding, dispensing, clamping and cutting a flexible strand comprising an elongated hollow handle adapted to contain a roll or spool of a flexible strand and having an open end, a detachable closure for said open end having an opening therein through which an end of the strand extends, a stationary clamping jaw supported by and projecting outwardly from the closure and having an opening therein through which the strand loosely extends, a movable clamping jaw pivotally mounted on the stationary clamping jaw, spring means for urging the movable clamping jaw toward the stationary clamping jaw for clamping a portion of the strand therebetween, said jaws having angularly extending flanges pivotally connected to one another and forming the pivotal mounting of the movable jaw on the stationary jaw, and said flanges having complementary cutting edges combining to form co-acting shear blades which are movable toward closed or cutting positions by the pivotal movement of the movable jaw away from the stationary jaw for cutting off a part of said flexible strand.

2. A tool as in claim 1, said movable jaw having an extension forming a lever disposed along and spaced from the handle and movable toward said handle for displacing the movable jaw away from the stationary jaw and for executing the shearing operation of said cutting edges.

3. A tool as in claim 1, said movable jaw having an extension forming a lever disposed along and spaced from the handle and movable toward said handle for displacing the movable jaw away from the stationary jaw and for executing the shearing operation of said cutting edges, said lever having a struck out resilient tongue yieldably bearing against a part of the tool and forming said spring means for biasing the movable jaw toward a clamping position.

4. A tool as in claim 1, said movable jaw having an opening adjacent its outer, free end, said stationary jaw having a struck out lip beyond the opening thereof and which is loosely receivable in the opening of the movable jaw, said lip having an opening therein through which the strand loosely extends.

5. A tool as in claim 1, said movable jaw having a struck out spring tongue yieldably biased toward the stationary jaw for yieldable engagement with a portion of the strand.

6. In combination with an elongated container adapted to contain a rolled flexible strand and having an open end, a closure for said open end having an opening therein through which an end of the strand loosely extends, and pair of pivotally mounted shear blades supported on said closure and spaced outwardly therefrom including a stationary shear blade and a movable shear blade for cutting off lengths of the strand, said stationary shear blade having an angular flange forming a stationary clamping jaw, said movable shear blade having an angular flange forming a movable clamping jaw, said strand extending between portions of the clamping jaws, and spring means for urging the movable clamping jaw toward the stationary clamping jaw and the cutting edge of the movable shear blade away from the cutting edge of the stationary shear blade.

7. A tool as in claim 6, and a lever forming an extension of the movable shear blade and adapted to be displaced toward said container for displacing the movable jaw away from the stationary jaw.

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