

Dec. 6, 1955

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2,725,737

LIGHTER FLINT PROJECTING MECHANISM

Filed March 12, 1954

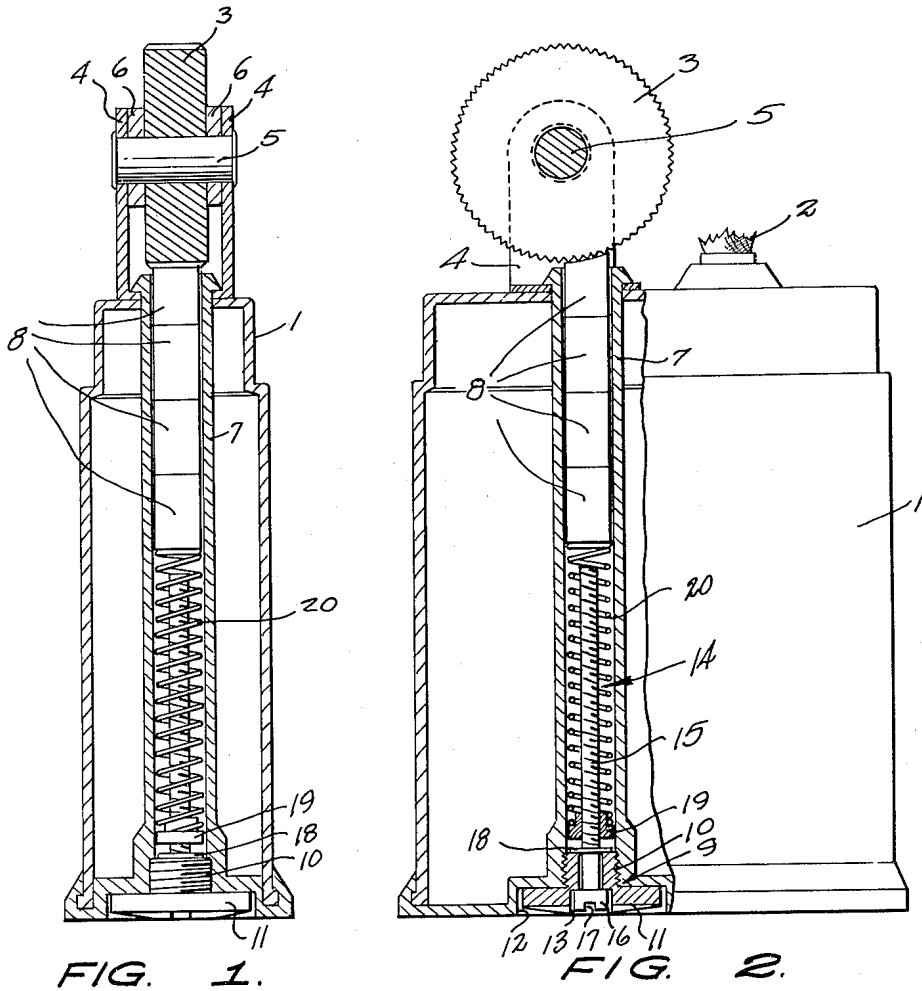


FIG. 1.

FIG. 2.

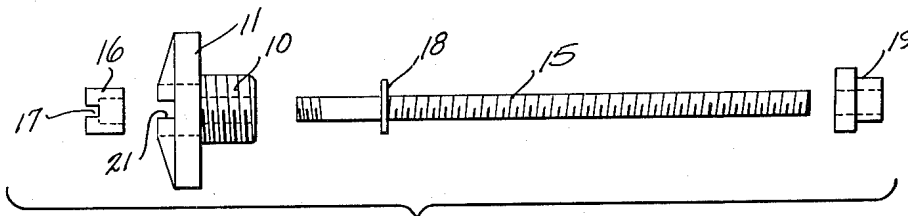


FIG. 3.

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1

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LIGHTER FLINT PROJECTING MECHANISM

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Application March 12, 1954, Serial No. 415,839

1 Claim. (Cl. 67-7.1)

This invention relates to improvements in lighter flint projecting mechanisms.

An object of the invention is to provide a flint projecting mechanism for cigarette lighters which automatically and continuously moves a flint into contact with the sparking wheel of a lighter in compensation for wearing down of a flint.

Another object of the invention is to provide a flint projecting mechanism for cigarette lighters which is of simple and inexpensive construction and which is easily opened for the insertion of new flints when the flints previously in use have been worn away.

Other objects and advantages of the invention will appear from the following description considered in conjunction with the attached drawing, in which:

Figure 1 is an end elevational view in section of a device of the present invention installed within a conventional cigarette lighter.

Figure 2 is a side elevational view of the assembly of Figure 1, partially in section.

Figure 3 is an exploded view of the threaded elements of the device of the present invention.

Referring now to the drawing in more detail, the illustrated device comprises a casing 1 of a conventional cigarette lighter form having a wick 2 projecting from its top. An upright sparking wheel 3 is rotatably mounted upon the top of the casing 1 between a pair of spaced supports 4 by means of a pintle 5 journaled in the supports 4. A washer 6 interposed upon the pintle 5 between each of the opposed faces of the wheel 3 and the adjacent support 4 prevents longitudinal movement of the wheel 3 along the pintle 5. The periphery of the wheel 3 is provided with teeth for producing sparks when brought into striking contact with an impinging flint. An open-ended tube 7 extends upwardly through the casing 1 and has its upper end adjacent to and aligned with the sparking wheel 3. A flint projecting mechanism embodying the present invention, is positioned within the lower portion of the tube 7 for moving a flint 8, positioned in the upper portion of the tube 7, into striking contact with the wheel 3.

A plug 9, constituting a portion of the mechanism of the present invention, closes the lower end of the tube 7. The plug 9 has an externally threaded reduced upper portion 10 which engages an internally threaded portion adjacent the lower end of the tube 7 to hold the plug 9 in the tube 7. The plug 9 also has an enlarged head 11 which seats in a recess 12 provided in the bottom of the casing 1 when the plug 9 is screwed home. A bore 13 extends centrally through the plug 9 and is enlarged at its lower end portion. A slot 21 is provided in the lower face of the head 11 of the plug 9.

A threaded bolt 14 is positioned within the tube 7 with one end spaced from the upper end of the tube and with the portion adjacent the other end rotatably supported in the plug 9. The bolt 14 consists of a shank 15 and an enlarged detachable head 16 threadably engaged upon one end of the shank 15. The head 16 is provided with a slot

2

17 which, when aligned with the slots 21, makes possible the insertion of the end of a screwdriver in said slots to tighten the plug 9 in the tube 7. The shank 15 extends loosely through the smaller portion of the bore 13 and the head 16 seats in the larger portion of the bore 13, preventing inward movement of the bolt 14 into the tube 7. A collar 18 surrounds and is fixedly secured to the shank 15 adjacent the portion thereof and is rotatably engaged within the plug 9 and engages the upper face of the plug 9 to retain the bolt 14 within the tube 7.

A follower 19 is in threaded engagement with the bolt 14 and movable therealong in response to rotation of the bolt in clockwise and counterclockwise directions. The clockwise rotation of the bolt serves to move the follower 19 upwardly therealong and counterclockwise rotation of the bolt 14 causes the follower to move downwardly therealong. The lower portion of the follower 19 is of a diameter only slightly less than that of the tube 7. The upper portion of the follower 19 is of reduced diameter.

A coiled spring 20 surrounds the bolt 14 and has one end operatively connected to the follower 19 and has the other end exteriorly of the upper end of the bolt 14 and engaged with a flint 8 in the tube 7 and biases the flint 8 toward the sparking wheel 3. The lower coil of the spring 20 surrounds and embracingly engages the reduced upper portion of the follower 19, serving to attach the spring 20 to the follower 19. The upper end of the spring 20 abuts directly against the lower end of one or of the lower of a series of flints 8 positioned in end-to-end relation within the upper end of the tube 7, the tendency of the spring 20 to extend itself serving to force the upper end of the upper flint 8 against the teeth of the sparking wheel 3.

It will be apparent from the foregoing, that the mechanism of the present invention automatically and continuously maintains the upper end of the upper flint 8 inserted within the tube 7 in striking contact with the wheel 3. As the upper flints are worn away, a few turns upon the bolt 14, in the clockwise direction, are sufficient to raise the follower 19 and with it the spring 20, so that the upper end of the spring 20 continues to exert upward pressure upon the remaining flints until all flints have been completely worn away. When this condition is reached, a new supply of flints may readily be inserted in the tube 7. By simply unscrewing the plug 9 from its threaded connection in the lower end of the tube 7 the entire mechanism may be removed from the tube. If the lighter is then inverted, a supply of flints inserted, one after the other, into the lower end of the tube 7 will slide to the upper end of the tube with the leading end of the first flint in striking position with respect to the wheel 3. The mechanism of the present invention, with the follower 19 threaded back adjacent the plug 9, may then be inserted into the lower end of the tube 7 and secured therein by the threaded engagement of the plug 9 with the lower end of the tube 7. When the lighter is now returned to the upright position, the lower flint 8 will rest upon the upper end of the spring 20 which will bias the flints upwardly, holding the upper end of the upper flint in striking contact with the wheel 3.

What is claimed is:

In a lighter flint projecting mechanism, a tube having first and second open ends, said first end being arranged to face a sparking wheel, to apply a flint thereto from the tube, a plug having a reduced end threaded in the second end of the tube and having a portion bearing against the second end of the tube, said plug having a smooth axial bore extending therethrough, a bolt comprising a shank smaller in diameter than said tube, said shank having a threaded portion positioned within the tube and a smooth portion rotatably engaged in the bore of the plug, a fixed

3

collar on said shank at the juncture of the threaded and smooth portions of the shank, a follower threaded on the threaded portion of the shank and rotatably engaged in the tube, a helical spring circumposed on the threaded portion of the shank and having an end engaged with said follower, the bore of the plug having an enlarged portion at the end of the plug remote from the collar, said enlarged portion defining a shoulder in said bore, and an enlarged head threaded on the bolt shank and rotatably engaging said shoulder, said enlarged portion of the plug and said enlarged head having transverse slots therein

4

capable of being aligned with each other to accept an implement for rotating the enlarged plug portion and the enlarged head together.

References Cited in the file of this patent

UNITED STATES PATENTS

2,507,203 Finch, Jr. ----- May 9, 1950

FOREIGN PATENTS

358,801 Great Britain ----- Oct. 15, 1931