May 25, 1954 A. RACEK ET AL 2,679,150

GAS IGNITER

Filed Feb. 28, 1951

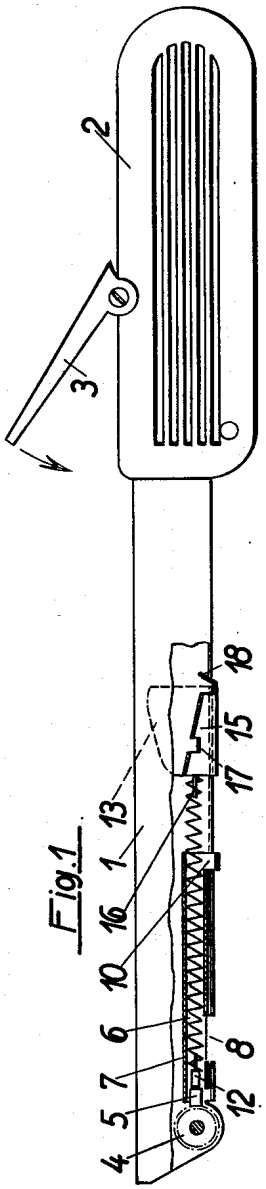

Fig. 1

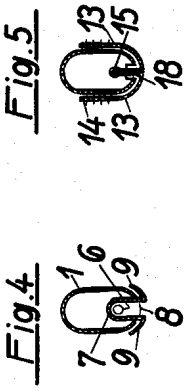

Fig. 5

Fig. 4

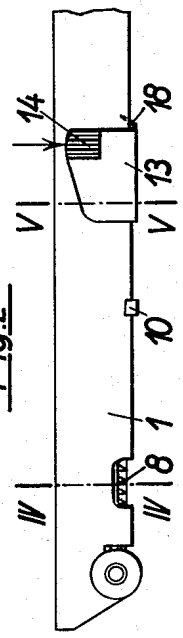

Fig. 2

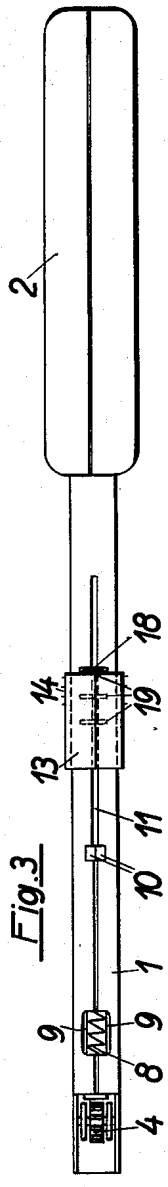

Fig. 3

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Patented May 25, 1954 2,679,150

UNITED STATES PATENT OFFICE

2,679,150

GAS IGNITER

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Application February 28, 1951, Serial No. 213,266

6 Claims. (Cl. 67—6.1)

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This invention relates to igniting devices, such as lighters and gas igniters.

In such devices it has been found of advantage to provide for variable initial resilience of the flint spring in order to obtain the most favorable value of the holding-on pressure of the flint in the case of different lengths of the flint. A possibility of adjustment only to a small extent is provided by the closing screw of the flint guiding tube, often employed in lighters. The longitudinal adjustment of the spring support by means of a lead screw and a travelling nut, as used also in gas igniters already, has been found complicated and expensive in mass production. Other known gas igniters and lighters use for the support of the spring a slide which slides in the flint tube and can be set in different positions by means of a set screw extending through a longitudinal slot in the tube, or by a radial projection cooperating with cuttings-out in the tube. The locating of the spring end by means of a set screw has been found unsuitable because the screw stands laterally off the tube and because during the adjustment and tightening the spring resilience must be held by the screw itself. The snapping-in of a projection by a turning of the slide requires that the guide tube be circular and respective tube end accessible.

The adjusting device for the flint spring, which forms the subject of the invention and is suitable in particular for gas igniters is provided with a slide, which supports the spring end and is longitudinally movable along the outside shell surface of a tubular casing part of the gas igniter or lighter. This slide can be located at this casing part in different positions by means of rests and has a support for the flint spring which support projects into the interior of the casing part.

This device provides for an easier setting of the resilience of the spring and for a smooth outer shape of the casing part and, moreover, enables inexpensive mass production.

On the accompanying drawings an embodiment of the adjusting device according to the invention, as applied to a gas igniter, is shown:

Fig. 1 showing the gas igniter in a side view with the adjusting device being shown in a longitudinal sectional view;

Fig. 2 being a fragmentary side view of a casing part;

Fig. 3 a bottom plan view appertaining to Fig. 1; and

Figs. 4 and 5, respectively, showing cross sectional views of the casing part along the lines IV—IV and V—V of Fig. 2.

A gas igniter consisting of a projecting arm 1, constructed as a tubular casing part, and a

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handle 2, to which the trigger 3 is pivotally mounted, has been chosen for receiving the adjusting device. The mechanism required for transmitting the trigger motion to the friction wheel may be of any desired construction and has for this reason not been shown in the drawings. The friction wheel 4 is mounted at the free front end of the projecting arm 1, which has the cross-sectional shape of a flattened tube. A guide tube 7, which is preferably made by rolling up a sheet metal strip, serves for guiding the flint 5 and the flint spring 6. The attachment of the tube 7 to the projecting arm is effected along the butt joint of the projecting arm 1, which is also bent from a sheet metal strip. Close to the friction wheel 4 an opening 8 is provided both in the tube 1 and in the tube 7, for the introduction of the flint. The two outwardly bent lugs 9, which provide for the opening in the tube 7, are flanged around the longitudinal edges of the opening in the projecting arm 1. In the same manner two additional lugs 10 of the tube 7 are stuck through a widened part 11 of the butt joint and flanged.

In the tube 7 one end of the coil spring 6 bears with a pressure stud 12 on the flint 5 whereas the other end of the spring rests on a slide 13. The latter consists of a sheet metal member, which is bent in the shape of a U and adapted to the cross section of the projecting arm 1. The flanges of the slide have corrugated surfaces 14 to facilitate their being gripped with the fingers. The slide 13 is provided in its plane of symmetry with an inwardly projecting longitudinal rib 15, which extends through the widened gap 11 of the tube 1 and has at its front edge a protruding stud 16, on which one end of the spring is stuck. It has been found of advantage to produce the longitudinal rib 15 in the form of an inwardly drawn fold of the sheet metal piece 13 bent in the shape of a U. Moreover, the longitudinal rib 15 carries two laterally bent off retaining lugs 17, which permit of a slight radial lifting of the slide 13 but prevent the complete removal of the same from the projecting arm 1. The rear edge of the slide 13 is provided with a supporting lug 18, which extends at right angles to the longitudinal center plane of the slide and is bent inwardly at an oblique angle and can snap into any of the three transverse slots 19 provided in the projecting arm 1 and extending at right angles to slot 11, when the slide 13 has been adjusted accordingly.

For a safe engagement of the slide 13 at the projecting arm 1 it is necessary that the stud 16, carrying one end of the flint spring 6 and provided at the longitudinal rib 15 of the slide 13, is sufficiently spaced from the shell of the

projecting arm 1. In this case the spring pressure imparts to the slide a turning moment, the supporting lug 18 caught in a transverse slot 19 constituting the fulcrum at the periphery of arm 1 and the slide being pressed against the outside shell surface of the projecting arm.

When a new flint must be inserted into the tube 7, the slide 13 is lifted transversely somewhat from the projecting arm 1, whereby the supporting lug 18 is pulled out of the transverse slot 19. When subsequently the slide is moved backwardly in the axial direction the projecting arm towards the handle 2, the new flint can be inserted through the opening 8. After the slide has been pulled forwardly and snapped into the corresponding transverse slot chosen, the gas igniter is ready for use again.

The described construction of the adjusting device provides for a smooth outside shape of the tubular projecting-arm casing, from which no parts stand off in a disturbing manner and which is closed from the handle to the friction wheel, excepting a short, narrow slot and the opening for the insertion of the flint, so that the mechanism enclosed in said casing appears to be sufficiently protected against being soiled.

When the adjustng device according to the invention is used in a lighter, the slide is longitudinally guided at a tubular part, which, e. g., constitutes or contains the flint tube and the length of which corresponds approximately to the height of the lighter body, said part containing the flint and the spring thereof and also being provided with rests at different heights.

What we claim is:

1. An igniting device which comprises a tubular casing having a longitudinal slot, rests in said casing, a rigid slide forming a lever adjoining the outside surface of said casing and embracing the latter, said slide having a longitudinal rib forming a spring support and extending through said longitudinal slot into the interior of said casing in guided relationship with said slot, said rib having retaining lugs to prevent removal of the slide from the casing, an inwardly projecting part on the slide for selectively interlocking with any of said rests to pivotally support said slide, a flint, and a flint spring having one end which bears on said flint and another end which bears on said support to exercise thereon a turning moment urging the slide against the outside surface of the casing.

2. An igniting device which comprises a tubular casing having a longitudial slot, rests in said casing, a rigid slide forming a lever adjoining the outside surface of said casing and embracing the latter, said slide having a longitudinal rib forming a spring support and extending through said longitudinal slot into the interior of said casing in guided relationship with said slot, said rib having transversely protruding lugs to prevent removal of the slide from the casing, an inwardly projecting part on the slide for selectively interlocking with any of said rests to pivotally support said slide, a flint, and a flint spring having one end which bears on said flint and another end which bears on said support to exercise thereon a turning moment urging the slide against the outside surface of the casing.

3. An igniting device which comprises a tubular casing having a longitudinal slot, rests in said casing, a rigid slide forming a lever adjoining the outside surface of said casing and embracing the latter, said slide consisting of a sheet metal member bent in the shape of a U

and adapted to the shape of the casing, a longitudinal rib consisting of an inwardly drawn fold of said slide and arranged in the longitudinal center plane thereof, said rib forming a spring support extending through said longitudinal slot into the interior of said casing in guided relationship with said slot, an inwardly projecting part on the slide for selectively interlocking with any of said rests to pivotally support said slide, a flint, and a flint spring having one end which bears on said flint and another end which bears on said support to exercise thereon a turning moment urging the slide against the outside surface of the casing.

4. An igniting device which comprises a tubular casing having a longitudinal slot, rests in said casing, a rigid slide forming a lever adjoining the outside surface of said casing and embracing the latter, said slide carrying a spring support extending through said longitudinal slot into the interior of said casing in guided relationship with said slot, and transverse retaining members provided inside the casing on said support to prevent removal of the slide from the casing, an inwardly projecting part on the slide for selectively interlocking with any of said rests to pivotally support said slide, a flint, and a flint spring having one end which bears on said flint and another end which bears on said support to exercise thereon a turning moment urging the slide against the outside surface of the casing.

5. An igniting device which comprises a tubular casing having a longitudinal slot, a plurality of transverse slots formed in said casing and extending at right angles to said longitudinal slot, a rigid slide forming a lever adjoining the outside surface of said casing and embracing the latter, said slide carrying a spring support extending through said longitudinal slot into the interior of said casing in guided relationship with said slot, an inwardly bent supporting lug arranged on the slide at right angles to the longitudinal center plane of the slide and selectively interlocking with any of said transverse slots and pivotally supporting said slide at the periphery of said casing, a flint, and a flint spring having one end which bears on said flint and another end which bears on said support to exercise thereon a turning moment urging the slide against the outside surface of the casing.

6. An igniting device which comprises a tubular casing having a longitudinal slot, rests in said casing, a rigid slide forming a lever adjoining the outside surface of the casing and embracing the latter, said slide carrying a spring support extending through said longitudinal slot into the interior of said casing in guided relationship with said slot, an inwardly projecting part on the slide selectively interlocking with any of said rests and pivotally supporting said slide at the periphery of the casing, a flint, and a flint spring having one end which bears on said flint and another end which bears on said support at a point inwardly spaced from said casing to exercise on said support a turning moment urging the slide against the outside surface of the casing.

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