July 24, 1951 J. S. PFLUM 2,561,480

WELDING TORCH IGNITER

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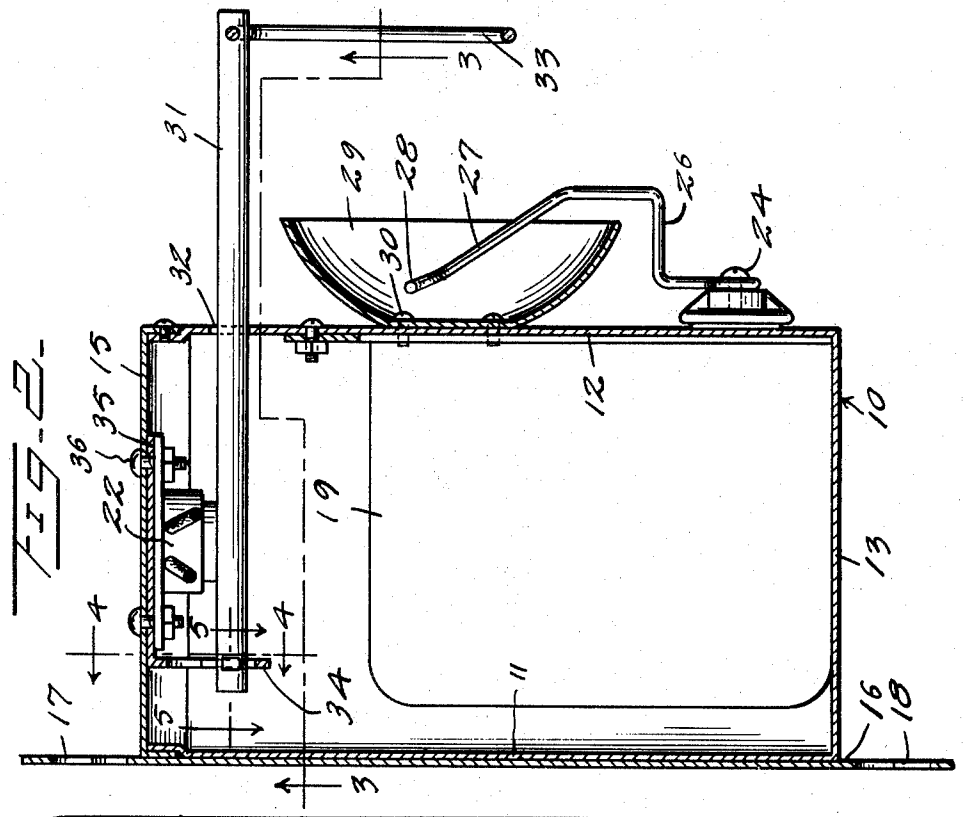

FIG. 2.

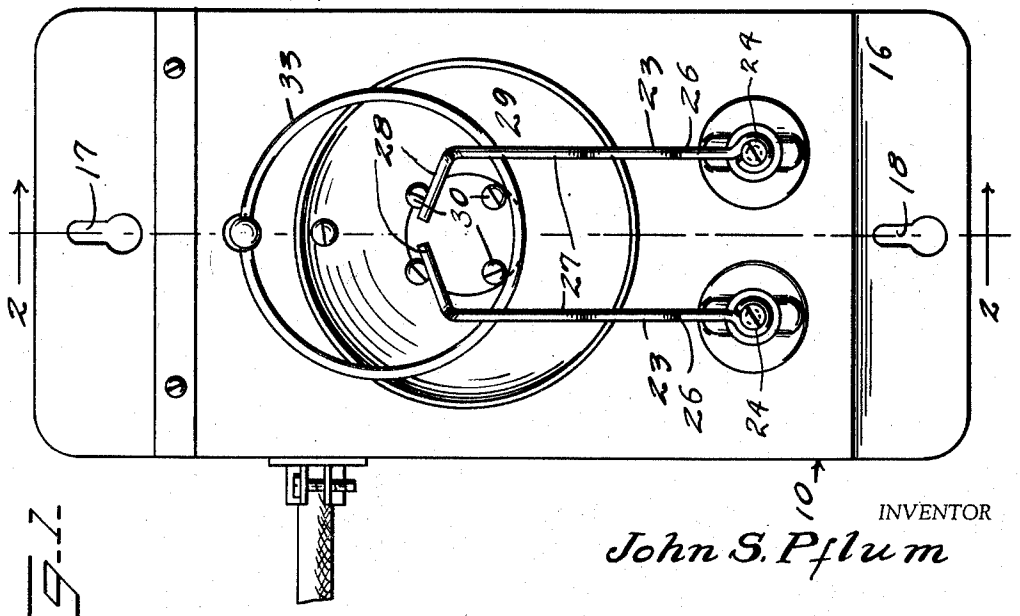

FIG. 1.

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FIG. 3.

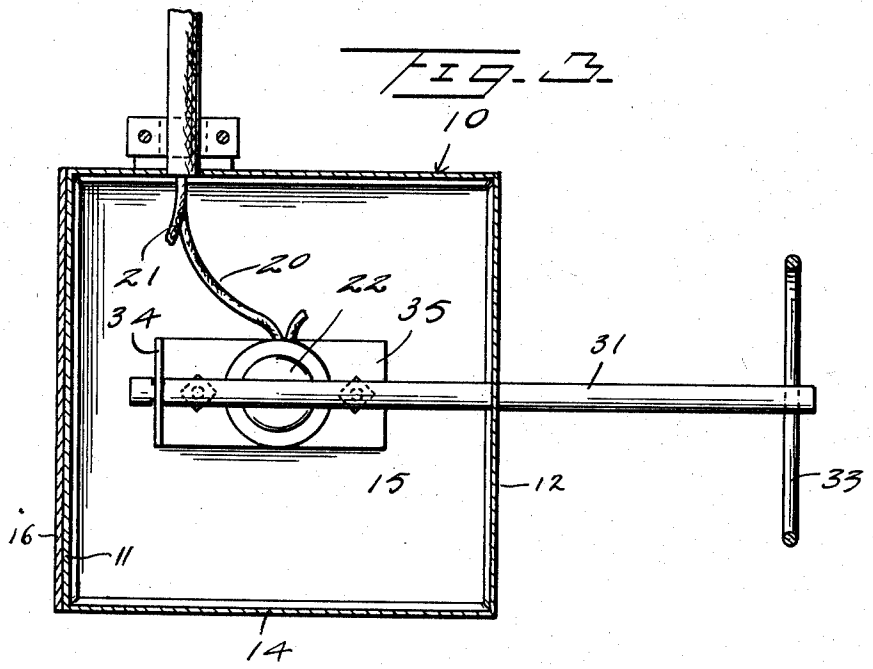


FIG. 4.

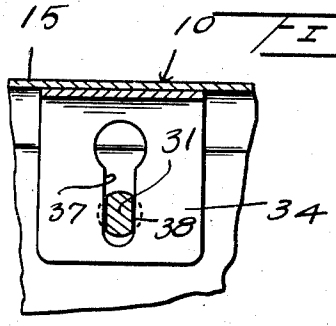


FIG. 5.

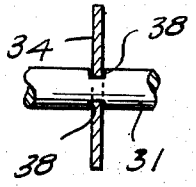
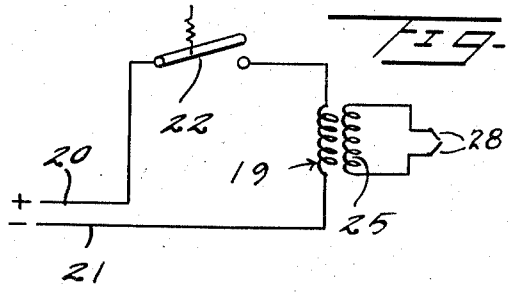


FIG. 6.



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WELDING TORCH IGNITER

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Application December 19, 1949, Serial No. 133,828

4 Claims. (Cl. 175—116)

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This invention relates to a welding torch lighting means.

In the lighting of a welding torch of the gas type it is desirable that the operator have at least one hand free to manipulate the valves so that the proper amount of gas is discharged from the nozzle. It is, therefore, an object of this invention to provide a lighting means for a welding torch which will quickly light the torch and permit the operator to manipulate the valves with a free hand.

Another object of this invention is to provide a torch lighter which is normally inoperative, being automatically cut off when the torch is removed and rendered automatically operative when a torch is engaged therewith.

A further object of this invention is to provide in a torch lighter of this kind a cup-shaped reflector for confining the discharged gases about the end of the nozzle to thereby assure the quick lighting of the torch.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a detailed front elevation of a welding torch lighter constructed according to an embodiment of this invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a fragmentary sectional view taken on the line 5—5 of Figure 2.

Figure 6 is a diagrammatic view showing the electric circuits embodied in this invention.

Referring to the drawings, the numeral 10 designates generally a housing which is formed of a rear wall 11, a front wall 12, a bottom wall 13, and opposite side walls 14. A cap or a cover 15 is mounted on the upper end of the housing 10 and provides means whereby access may be had to the interior of the housing 10. A rear plate 16 is secured by any suitable means, such as welding or the like, to the back wall 11 and projects above and below the housing 10 being formed with upper and lower key hole openings or slots 17 and 18 for receiving supporting members to support the housing in operative position.

A high tension coil 19 is mounted within the housing 10 being secured to the inner side of the

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front wall 12 and is adapted to be connected to a source of electric current supply by means of conductors 20 and 21. A switch 22 is interposed in conductor 20 being dependingly secured to the lower side of the cover or closure 15 and is normally spring pressed to a circuit breaking position.

A pair of electrodes 23 are disposed on the outer front side of the housing 10 being secured to terminals 24 which are connected with the secondary 25 of the coil 19. The electrodes 23 are formed with an L-shaped intermediate portion 26 and upwardly and inwardly inclined extensions 27. The extensions 27 have projecting therefrom terminal points 28 which are disposed in upwardly convergent relation as shown in Figure 1.

A bell-shaped reflector 29 is secured by fastening means 30 to the front wall 12, and the electrode points 28 are disposed within the open front side of the reflector 29.

An elongated torch supporting rod or bar 31 is rockably disposed through an opening 32 formed in the front wall 12 and is provided at its outer end with a ring shaped supporting member 33.

A depending plate 34 is disposed in the housing 10 being provided with an upper base 35 which is secured by fastening means 36 to the lower side of the closure or cap 15. The plate 34 is positioned inwardly from the switch 22 as shown in Figure 2 and is formed with a key hole slot or opening 37 within which the inner end of the rod 31 slidably engages. The rod 31 is formed with a pair of opposed transversely disposed slots 38 engaging in the narrow portion of the opening 37 so as to hold the rod 31 against endwise movement while permitting vertical rocking of the inner end of rod 31 to thereby move the switch 22 to a circuit closing position.

In the use and operation of this lighter the housing 10 is secured to a suitable support and coil 19 is connected to a source of electric current supply by conductors 20 and 21. When it is desired to light the torch the nozzle is extended through the ring 33, and rod 31 is rocked downwardly at its outer end by weight of the nozzle so as to thereby move switch 22 to a circuit closing position. When the circuit to the primary of coil 19 is closed a spark will jump between the electrode points 28 so that the gas being discharged from the nozzle and passing between the points 28 will be ignited. The reflector 29 will provide a means for confining the discharged gases before lighting of the torch so as to thereby facilitate the ignition of the gas or gases by

the spark jumping between the points 28 of electrodes 23.

With a torch lighter as hereinbefore described the operator can readily adjust the valve or valves regulating the discharge of gas from the nozzle so that the desired lighting of the gas will be effected.

What is claimed is:

1. A torch lighter comprising a housing, a high tension coil in said housing, a pair of spark-gap forming electrodes connected to said coil and disposed on the forward side of said housing, a bell-shaped reflector fixed to the forward side of said housing, said spark-gap forming electrodes projecting into the open side of said reflector, a normally open switch in said housing connected to said coil, a switch operating rod rockably carried by said housing and projecting from the forward side thereof, and a torch supporting member carried by the forward end of said rod for supporting the torch nozzle in a position confronting said spark-gap forming electrodes, downward rocking of the forward end of said rod moving said switch to circuit closing position.

2. A torch lighter comprising a housing, a high tension coil in said housing, a pair of spaced electrodes connected to said coil and disposed on the forward side of said housing, a normally open switch in said housing connected to said coil, said housing having an opening in the forward side thereof above said electrodes, a bar loosely engaging through said opening adjacent said switch, a guide carried by said housing an engaging the inner end of said bar for guiding the vertical movement of said bar when said bar is moved to close said switch, and a ring carried by the outer end of said bar for supporting a torch nozzle in a position whereby the gas discharged therefrom will flow between said electrodes for igniting thereby when said switch is closed.

3. A torch lighter comprising a housing, a high tension coil in said housing, a pair of spaced electrodes connected to said coil and disposed on the forward side of said housing, a normally open switch connected to said coil and disposed in said housing, a depending guide in said housing

formed with a keyhole slot, said housing having an opening in the front wall thereof, a bar loosely engaging through said opening, said bar having a pair of transverse slots whereby the inner end of said bar may slidably engage in said keyhole slot, the fulcrum for said bar comprising the opening in said housing whereby downward rocking of the outer end of said bar will raise the inner end thereof and move said switch to circuit closing position causing an arc between said electrodes, and a ring carried by the outer end of said bar for supporting the torch nozzle in confronting position to said electrodes.

4. A torch lighter comprising a housing, a high tension coil in said housing, a pair of spaced electrodes connected to said coil and disposed on the forward side of said housing, a normally open switch connected to said coil and disposed in said housing, a depending guide in said housing formed with a keyhole slot, said housing having an opening in the front wall thereof, a bar loosely engaging through said opening, said bar having a pair of transverse slots whereby the inner end of said bar may slidably engage in said keyhole slot, the fulcrum for said bar comprising the opening in said housing whereby downward rocking of the outer end of said bar will raise the inner end thereof and move said switch to circuit closing position causing an arc between said electrodes, a ring carried by the outer end of said bar for supporting the torch nozzle in confronting position to said electrodes, and a cup-shaped reflector carried by said housing in confronting position to said electrodes.

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