Sept. 4, 1945. L. C. BASS 2,383,951

WELDROD HOLDER AND EJECTOR

Filed Oct. 30, 1943 2 Sheets-Sheet 1

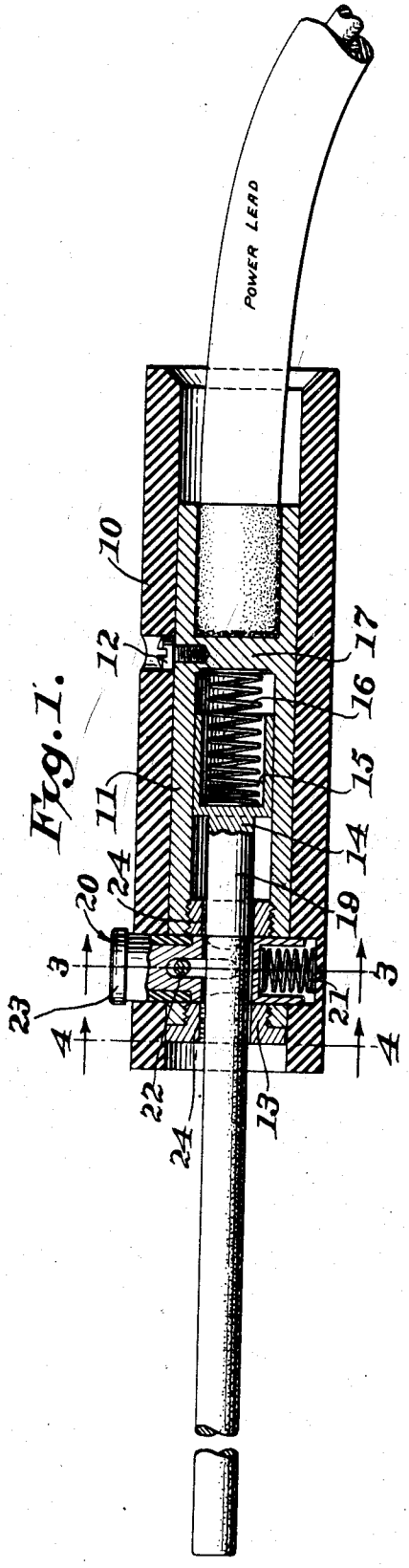


Fig. 1.

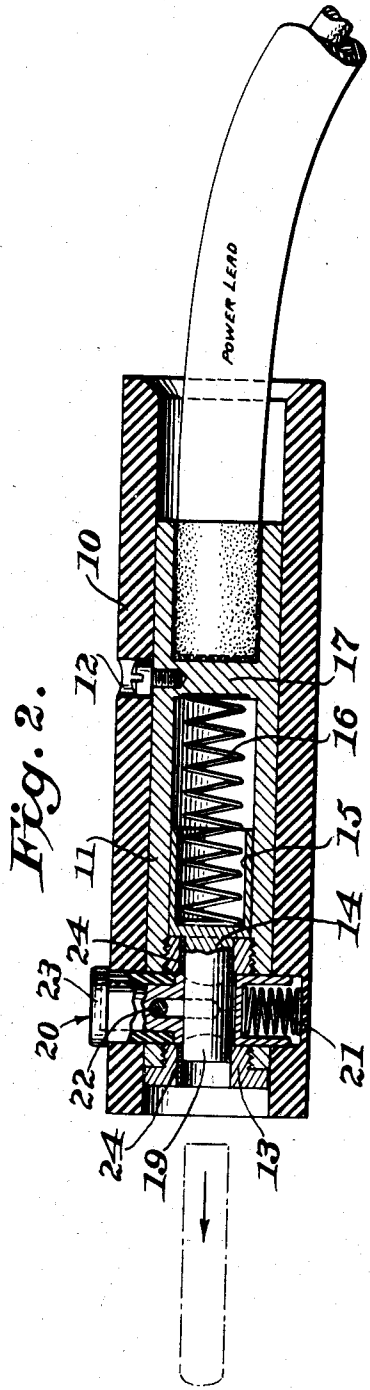


Fig. 2.

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Fig. 3.

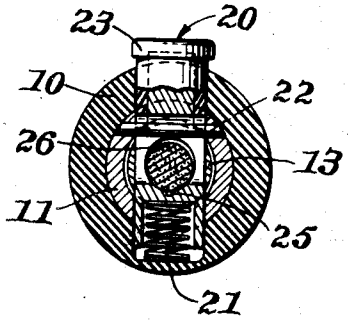


Fig. 4.

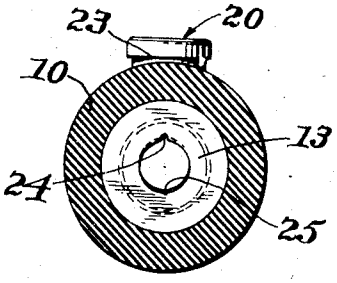


Fig. 5.

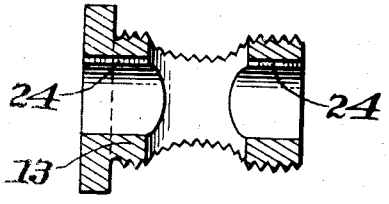


Fig. 6.

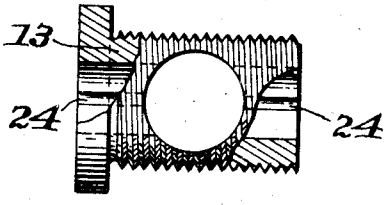


Fig. 7.

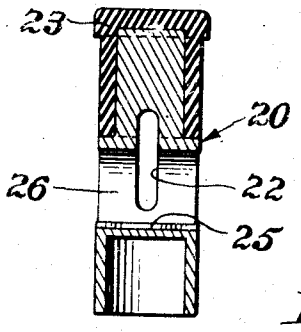


Fig. 8.

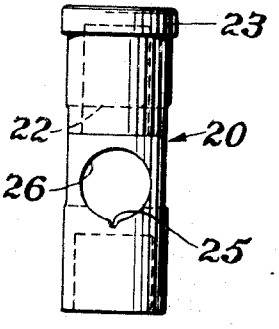
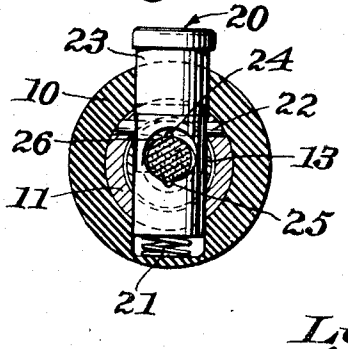


Fig. 9.



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UNITED STATES PATENT OFFICE

2,383,951

WELDROD HOLDER AND EJECTOR

Lyman C. Bass, Lake Grove, Oreg.

Application October 30, 1943, Serial No. 508,328

9 Claims. (Cl. 219—8)

The present invention relates to weldrod holders, and has for its object to provide a holder in which the weldrod may be quickly inserted and firmly held, and in which the stub of the weldrod, after the rod has been consumed in the welding operation, may be automatically ejected from the holder. Further, the construction is such that the holder is completely insulated; the power lead is protected against displacement or injury, and the weldrod mounting is such that the rod is firmly held without danger of displacement until such time as it is desired to eject the stub.

In the drawings herewith I have illustrated one form of my invention, and this the best now known to me, but the disclosure is illustrative and in no sense restrictive, as variations in mechanical make-up can be made from the particular arrangement here shown.

In the drawings:

Figure 1 is a longitudinal sectional view of the holder with a weldrod in place and the ejector in retracted position.

Figure 2 is a view similar to Figure 1 with the ejector projected in position after the stub has been ejected.

Figure 3 is a sectional view substantially on the line 3—3 of Figure 1, looking in the direction of the arrow.

Figure 4 is a sectional view on substantially the line 4—4 of Figure 1, looking in the direction of the arrow.

Figure 5 is a longitudinal sectional view of the rod holding section.

Figure 6 is a plan view of the rod holding section, parts being broken away for clearness of illustration.

Figure 7 is a vertical sectional view of the rod holding clamp.

Figure 8 is a view of the rod holding clamp in side elevation.

Figure 9 is a sectional view to show the clamping of a weldrod of smaller dimensions in the holder.

Referring to the drawings by numbers, like numbers indicating like parts in the several views, 10 indicates a housing of any suitable insulating material and of any desired form, here being shown as a cylindrical housing which may be grasped by the operator in manipulating the device for welding operations.

Within the housing 10 is the weldrod holding and current-conducting member 11, chambered at its rear end to receive the power lead, and preferably the power lead will be soldered in the chambered end of the member 11, although other suitable means of securing the power lead may be adopted so long as a good connection is secured.

The insulating housing 10 has its ends extended beyond the ends of the weldrod holding member 11, so as to protect the power lead connection and guard against any contact at either end of the device with the power lead or the charged rod holder and avoid short circuiting and injury to the operator.

The rod holding member is made up of the section 11 which may be secured to the insulated housing 10 in any suitable manner, a screw connection 12 being here shown, the head of the screw being countersunk in the insulation 10, as shown, so that danger of contact is eliminated, although any means, such as an insulated screw head, may be provided.

Secured to the opposite end of the section 11 is the section 13, here shown as a cylindrical section, provided with a head which fits snugly within the insulating housing 10 and abuts the end of section 11. The section 13 is removably coupled to the section 11 in any suitable manner, as by a screw threaded connection, although a press fit or other suitable coupling may be made. The section 13 forms a mounting for the rod and such mounting is here shown as a longitudinally disposed recess, circular in cross section, and of a diameter which will take full diameter and smaller rods. The mounting is such that it receives the end of a rod and holds it in longitudinal alignment with the tool.

Housed within the section 11 in rear of the section 13 is the ejector 14 having a chambered rear portion 15 to receive the ejector spring 16, the rear end of which abuts a partition 17 in the section 11, the spring 16 tending to force the ejector outwardly into section 13. The ejector 14 is provided with a forward portion 19 of smaller diameter which is aligned with and fits the bore of the section 13, here shown as circular in cross section, although it may take other cross-sectional shapes, if desired. The shoulder between the portions 14 and 19 of the ejector abuts the rear end of the section 13 which limits forward movement of the ejector.

Transversely of the holder at its forward end is a gripper member 20 which passes through an opening in the housing 10, and through registering openings in the section 11 and the section 13, the lower end of the gripper engaging a socket in the wall of the insulating housing 10. The gripper 20 is normally urged outwardly by a

spring 21 mounted in the chambered lower end of the gripper member 20 and the socket in the insulating housing 10, the spring 21 tending normally to hold the gripper member in the position shown in Figure 1. A pin and slot connection 22 is provided to hold the gripper 20 in place and the upper end of the gripper, which projects beyond housing 10, is provided with an insulating cap 23 for manual manipulation, which extends inwardly of the housing 10, so as to surely insulate against escape of current from and short circuiting of the holder.

The section 13, as stated, is provided with a recess which forms a mounting to receive a weldrod, and in order to grip the weldrod surely in its mounting I preferably provide the wall of section 13 with a frictional rod gripping surface, here shown as a groove 24. The gripping face of the gripper 20 is provided with an opposing groove 25. These rod-engaging surfaces, here shown as grooves, hold the weldrod against twisting or displacement and are particularly useful where the weldrod is of less diameter than the circular recess in the section 13 as illustrated in Figure 9.

The gripper 20 is provided with an opening 26 which registers with the opening in the section 13, so that when the gripper is depressed, a weldrod may be inserted, forcing the ejector 14 back against the action of the spring 16. When the gripper is released, the spring 21, exerting its outward pressure, will grip the rod securely between its lower face and the upper face of the recess in the section 13, and hold the parts in the position shown in Figure 1 with the ejector in retracted position.

The construction disclosed is simple and easy of manufacture and assembly. The member 11 and the power lead can be readily assembled, the ejector 14 and its spring 16 inserted in the chamber in the holder, and the forward section 13 of the holder can then be secured in place, holding the ejector 14 in its chamber. The gripper 20, with its spring 21, can then be mounted transversely; the cross pin for the pin and slot connection 22 inserted, and the parts are in assembled and operative position. The holder thus assembled can then be entered into the housing and secured in place by the fastening means, such as the screw 12 or its equivalent, and when thus fastened the opening in the housing 10 and in the holder sections 11 and 13 are in registry.

In operation the weldrod will be thrust into the recess in the section 13, forcing the ejector rearwardly against the spring 16, the gripper 20 being manually held in its inward position against the action of spring 21 to permit this action. Upon release of the gripper the spring will move the gripper outwardly, the weldrod will be gripped and securely held, and the ejector 14 restrained in its chamber. When the weldrod has been consumed, or if for any other reason it is desired to remove it, the operator will press down on the insulated top 23 of the gripper 20, releasing the weldrod, and immediately the portion 19 of the ejector 14 will, under the influence of the spring 16, be thrust forwardly through the recess in the section 13, and through the opening in the gripper 20, ejecting the rod or the stub from the holder.

Such changes from the disclosure here made as are within the range of mechanical skill and the scope of the appended claims are to be regarded as within the purview of my invention.

I claim:

1. A weldrod holder comprising a rod holding member having a longitudinally disposed rod receiving recess to receive the end of a weldrod and a power lead connection, clamping means transversely disposed relative to the recess and having an opening through which said rod passes to hold a rod in the recess in said member, and spring ejector means aligned with the rod receiving recess and operable on release of said clamping means positively to eject a rod stub from the recess.

2. A weldrod holder comprising a rod holding member having a longitudinally disposed rod receiving recess to receive the end of a weldrod and a power lead connection, manually operable spring clamping means transversely disposed relative to the recess and having an opening through which said rod passes to hold a rod in the recess in said member, and manually releasable spring ejector means aligned with the rod receiving recess and operable automatically on release of said clamping means to eject a rod stub from the recess.

3. A weldrod holder comprising a chambered rod holding member, a power lead connection at one end of said member, a rod mounting at the other end of said member having a rod receiving recess therein, a spring pressed manually operable rod clamping member having a rod open ng therein and disposed transversely of said rod mounting and reciprocable to engage or release a rod in said mounting, and a spring ejector in said member operable on release of said clamping member to eject a rod stub from its mounting.

4. A weldrod holder comprising a chambered rod holding member, a power lead connection at one end of said member, a rod mounting provided with a longitudinally disposed recess to receive a weldrod at the other end of said member, and a spring pressed manually operable rod clamping member disposed transversely of the rod rece v'ng recess in said rod mounting, said clamping member being reciprocable to engage or release a rod in the recess of said mounting.

5. A weldrod holder comprising an insulating housing having extended end portions, a chambered rod holding member in said housing with its ends housed within the extended ends of said housing, a power lead connection at one end of said member, a rod mounting at the other end of said member having a longitudinally d sposed rod receiving recess therein, and a spring pressed manually operable rod clamping member having a rod opening therein to receive the end of a weldrod and disposed transversely of said housing and rod mounting, said clamping member being reciprocable to engage or release a rod in the recess of said mounting.

6. A weldrod holder comprising a chambered rod holding member, a power lead connection at one end of said member, a rod mounting detachably secured to said chambered rod holding member and having a rod receiving recess therein, a spring pressed manually operable rod clamping member having a rod opening therein and disposed transversely of said rod holding member, and an ejector in said chambered member in rear of said rod holding member operable on release of said clamping member.

7. A weldrod holder comprising a hollow insulating housing, a chambered current-conducting member of less length than said housing secured therein, a power lead connection secured to one end of said chambered member, a weldrod holder

having a longitudinally disposed rod-receiving recess at the opposite end of said chambered member, insulated manually operable weldrod clamping means disposed transversely of said weldrod holder, and a spring-actuated ejector mounted in said chambered member in alignment with the weldrod receiving recess and operable on weldrod releasing movement of said clamping means to eject a weldrod stub.

8. A weldrod holder comprising a hollow insulating housing, a chambered current-conducting member of less length than said housing secured therein, a power lead connection secured to one end of said chambered member, a removable weldrod holder having a longitudinally disposed rod-receiving recess to receive the end of a weldrod and forming an ejector stop at the opposite end of said chambered member, insulated manually operable weldrod clamping means disposed transversely of the recess in said weldrod holder, and a spring actuated ejector mounted in said chambered member in alignment with the rod-receiving recess and operable on weldrod releasing movement of said clamping means to eject a weldrod stub and engage said ejector stop.

9. A weldrod holder comprising a hollow insulating housing, a current-conducting member of less length than said housing secured therein and having a divided chamber, a power lead connection secured in a chamber at one end of said member, a removable weldrod holder having a longitudinally disposed rod-receiving recess to receive the end of a weldrod and forming an ejector stop in a chamber at the opposite end of said member, insulated manually operable weldrod clamping means disposed transversely of the recess in said weldrod holder, an ejector mounted in rear of the rod-receiving recess, and a spring in said chamber operable on weldrod releasing movement of said clamping means to move said ejector to eject a weldrod stub and engage said ejector stop.

LYMAN C. BASS.