

12 EUROPEAN PATENT APPLICATION

21 Application number: 83830284.2

51 Int. Cl.³: B 08 B 15/04

22 Date of filing: 29.12.83

30 Priority: 20.01.83 IT 2053683 U

43 Date of publication of application:
01.08.84 Bulletin 84/31

84 Designated Contracting States:
AT BE CH DE FR GB LI LU NL SE

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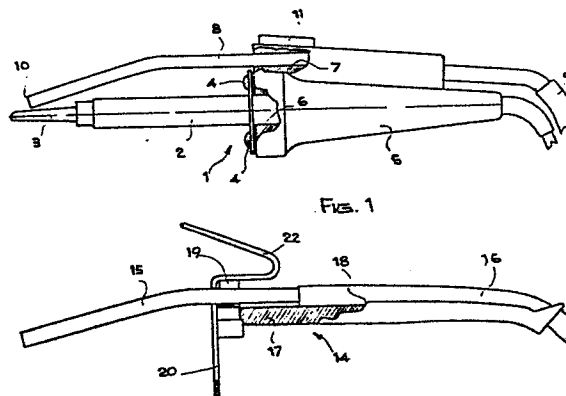
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54 Welding device with incorporated smoke exhauster.

57 A welding device (1) of the resistance type has a handle (5) secured to its body (2). The handle (5) has two co-axial holes (6,7) adapted to receive the body (2) of the welder (1) and a metal conduit (8) forming the welding smoke exhaust device, respectively.

The metal conduit (8) is connected by means of a hose (9) to a suction unit and is slidable in the hole (7) to adjust the position of its mouth (10) with respect to the welding tip (3).

The welding smoke exhaust device can be also applied to conventional welders with a conventional handle by means of a supporting element (17) and a stirrup (20).



- 1 -

Welding device with incorporated smoke exhauster

The present invention relates to a welding device of the resistance type provided with a device adapted to suck the smokes produced during welding operations.

5 More particularly it is an object of the invention to provide a welding device of the resistance type provided with a welding smoke exhaust device having a new and improved conformation and mutual arrangement of parts capable of giving the device a new utility and practicality as well as
10 particularly an increased operation efficiency with respect to the prior art exhaust devices.

There are namely frequent cases in which the conventional stationary welding smoke exhaust devices prove to be inadequate especially when the work, because of its conformation
15 and/or dimensions permits scarce or no access to the suction mouths of said devices.

It is therefore the main object of the present invention to
20 propose a welding device provided with a device adapted to suck the welding smokes wherever they are emitted independently of the shape, dimensions and position of the work.

It is another object of the invention to propose a smoke exhaust device which is extremely simple and inexpensive and shows a substantial progress with respect to the conventional exhaust devices which are generally cumbersome
5 and expensive.

These objects are achieved by means of a welding device of the resistance type characterized in that it is provided with an exhaust device having a suction mouth dis-
10 posed at the welding tip.

In particular, said exhaust device consists of a metal conduit secured to the welder housing having the suction mouth adjustable in position with respect to the welding tip.
15

The main advantage of the exhaust device according to the invention is that it sucks the welding smokes at the point they are emitted and can be easily applied to the conventional resistance welding devices either by suitable stir-
20 rup fastening means or by providing a handle for the welder provided with two coaxial holes for receiving the welder body and the exhaust conduit, respectively. In addition, the proposed exhaust device is not influenced by the electrical characteristics of the welding devices such as
25 the supply voltage and the power, and the temperature changes at the tip of the welders due to the suction effect are held within amply acceptable limits.

Another advantage of the exhaust device according to the in-
30 vention is that it is readily connectable to an exhaust unit capable of being associated to a plurality of welding devices, for example arranged in series in a welding line.

Further features and advantages of the exhaust device according to the invention will become apparent from the following description of examples of application of the device to a standard size Weller type welder, given merely as an example and therefore in no limiting sense, illustrated in the accompanying drawings in which:

Fig. 1 is a diagrammatic and partially sectional side view of a welder provided with a handle adapted to receive the exhaust device;

Fig. 2 is a diagrammatic partially sectional side view of the exhaust device and a conventional welder before their fastening together;

Fig. 3 is a diagrammatic side view of the exhaust device and the welder of Fig. 2 after they have been fastened together.

Referring first to Fig. 1, a resistance welding device 1 having a standard Weller type size, comprises a body 2 provided with a welding tip 3. Secured to the welder body 2 by means of screws 4 is a handle 5 provided with two coaxial holes 6,7 adjusted to receive the welder body 2 and a metal conduit 8 forming the smoke exhaust device, respectively. The metal conduit 8 which is connected by a hose 9 in communication with a suction means (not illustrated) is inserted in the hole 7 of the handle 5 with a light interference so as to be connected to the handle but, at the same time, axially slidable in the hole 7. In this way the position of the suction mouth 10 of the metal conduit 8 is adjustable with respect to the welding tip 3.

The handle 5 is provided with a magnet 11 which enables to constrain the welder 1 to a supporting means thereof.

With reference to Fig. 2 the welding device 12 is identical to that of the preceding figure with the exception of the handle 13 which is of a conventional type. The welding smoke exhaust device 14 consists essentially of a metal conduit 15 connected to a hose 16 communicating with a suction means (not illustrated) and to a supporting element 17 with a U cross-section comprising a groove 18 extending lengthwise in which the end of the hose 16 is partially received.

The metal conduit 15 is press fitted with the possibility of slidably moving lengthwise the supporting element 17 by means of a resilient bushing 19 disposed in the groove 18. A stirrup 20 is secured to the supporting element 17 by means of screws 21. The supporting element 17 can be constrained to the body 2 of the welder by means of the mutual connection of the stirrup 20 with some of the screws 4 fastening the handle 13 to the welder body 2.

In order to assure a strong connection between the smoke exhaust device 14 and the welding device 12 the lower portion of the supporting element 17 adjacent the stirrup 20 is shaped to mate the profile of the handle 13 of the welder.

The stirrup 20 comprises a shaped portion 22 resting on the resilient bushing 19 and allowing the fastening of the metal conduit 15 on the supporting element 17 which provides in addition a means for constraining the welding device 12 to a suitable support.

While in the illustrated examples the smoke exhaust device is secured to a Weller type welder, it is understood that said device can be readily secured to any other type of resistance welder, for example by suitably modifying the illustrated stirrup and supporting element.

Finally, the smoke exhaust device according to the invention proves to be particularly advantageous where a plurality of welding devices is present inasmuch as it is extremely easy and inexpensive to provide a single service suction unit connected to the individual welders, each provided with its own smoke exhaust device, by means of a distribution line.

Claims

1. Welding device of the resistance type, characterized in that it includes a welding smoke exhaust device provided with a suction mouth at the welding tip.
- 5 2. Welding device as claimed in claim 1, characterized in that the position of said suction mouth is adjustable with respect to the welding tip.
3. Welding device as claimed in claim 1 or 2, characterized
10 in that said suction mouth consists of a metal conduit fastened to the welder body and connected by means of a hose to an exhauster.
4. Welding device as claimed in claim 3, characterized in
15 that it comprises a tubular handle provided with two coaxial holes for receiving the welder body and the metal smoke exhaust conduit, respectively.
5. Welding device as claimed in claim 3, characterized in
20 that it is constrained to an element supporting the metal smoke exhaust conduit by means of a stirrup secured to the welder body.

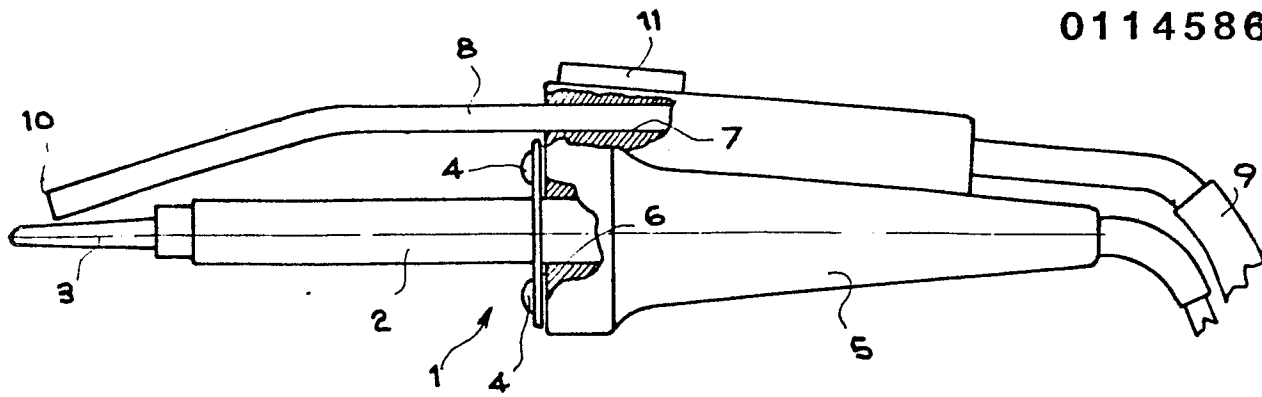


FIG. 1

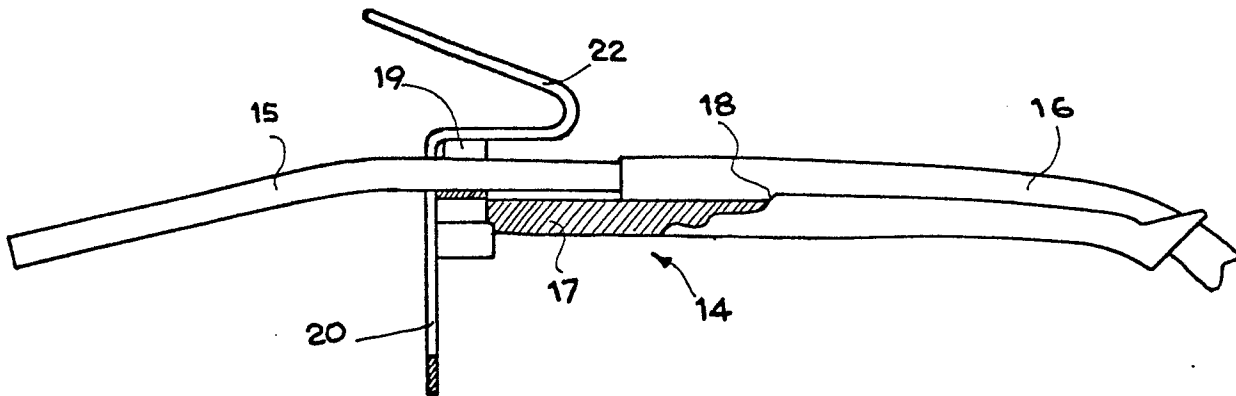


FIG. 2

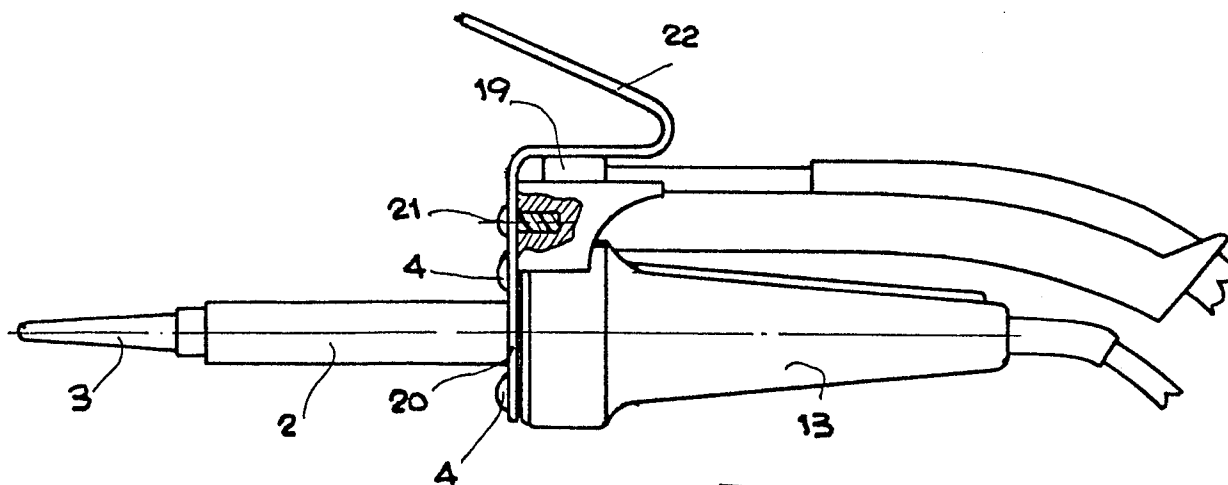
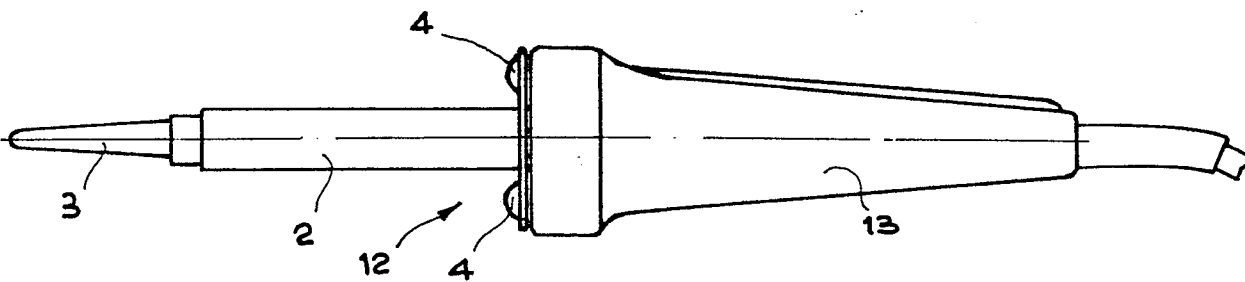


FIG. 3