

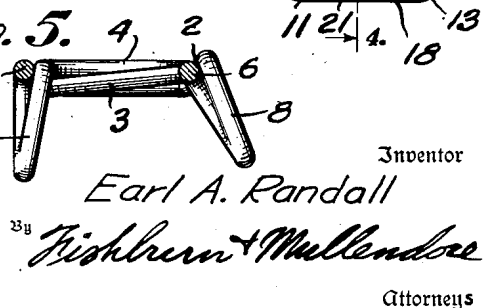
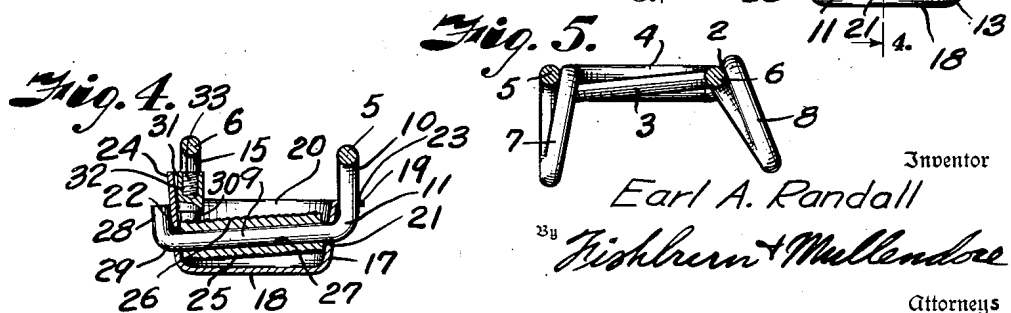
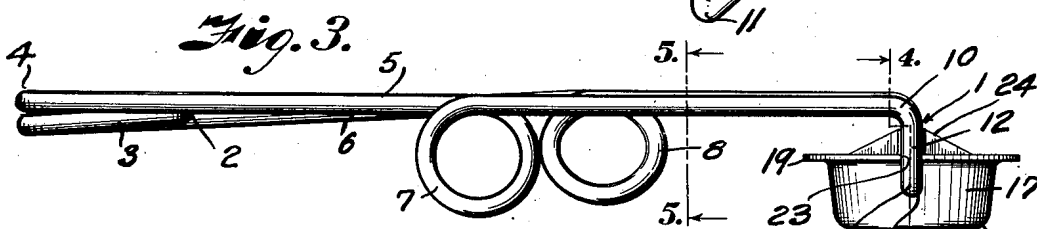
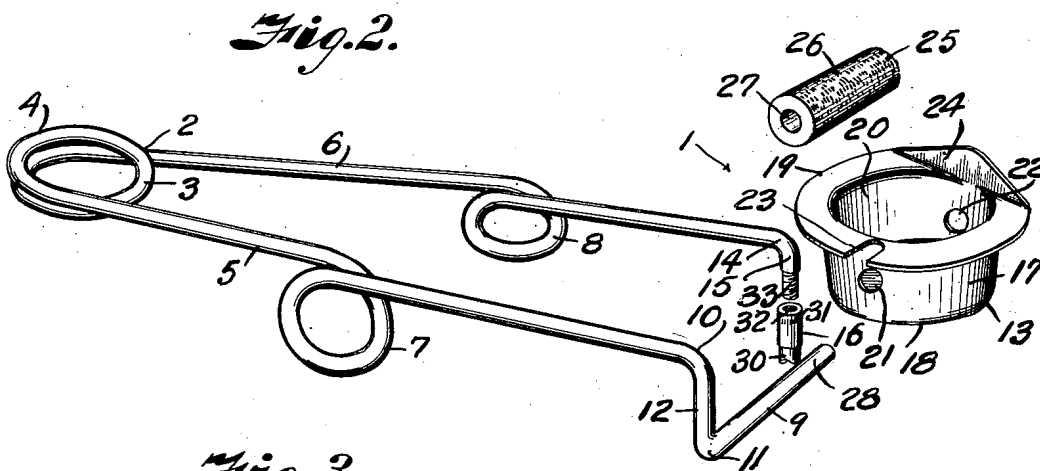
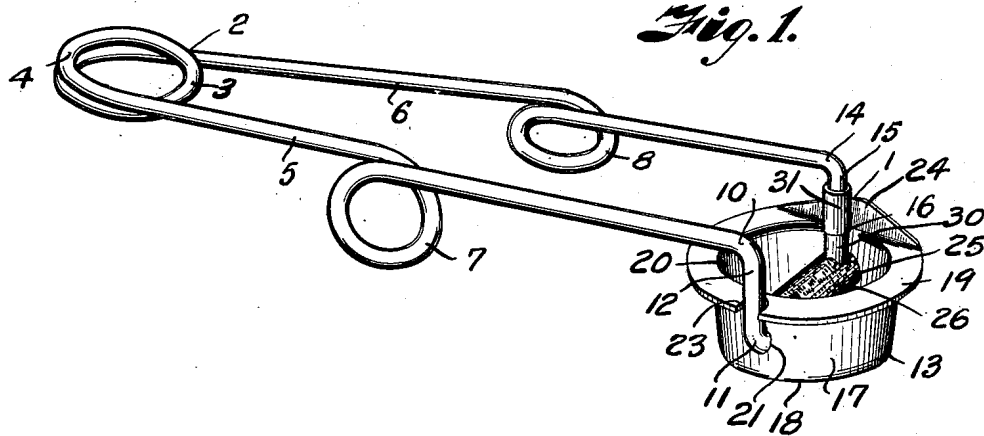
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IGNITING DEVICE

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IGNITING DEVICE

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2 Claims. (Cl. 67—6.1)

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This invention relates to igniting devices such as used for lighting welding torches or the like and which embodies an abrader and a pyrophoric element for producing sparks necessary in effecting an ignition. The principal objects of the present invention are to provide a device of this character composed of simple and inexpensive parts capable of easy assembly to form a positive acting and reliable igniter.

Other objects of the invention are to provide an igniting device of this character having a seamless shield for enclosing the sparking element and provided with a plurality of openings which in cooperation with a notched flange provide for attachment of the handle and ignition elements and retention thereof by application of a single fastening nut; to provide the flange of the shield with an integral stop to prevent displacement of the pyrophoric element from the striking element; and to provide a mounting of the striking element which assures constant contact and increased pressure of the pyrophoric element therewith.

In accomplishing these and other objects of the invention, I have provided improved structure, the preferred form of which is illustrated in the accompanying drawing wherein:

Fig. 1 is a perspective view of an igniting device constructed in accordance with the present invention.

Fig. 2 is a perspective view of the parts of the igniting device shown in disassembled relation to better illustrate the construction.

Fig. 3 is a side view of the assembled device.

Fig. 4 is a cross section on the line 4—4 of Fig. 3.

Fig. 5 is a cross section on the line 5—5 of Fig. 3.

Referring more in detail to the drawing:

1 designates an igniting device constructed in accordance with the present invention and which includes a handle member 2 that is preferably formed of a strip of wire having substantial resiliency and which is bent intermediate its ends in a coil as indicated at 3 to provide a flexing connection 4 and spaced arms 5 and 6. Loops 7 and 8 are formed in the arms 5 and 6 to provide thumb and forefinger rests whereby the arms are adapted to be moved to and from each other in manipulating the device as later described.

The arm 5 terminates at the end thereof in a lateral terminal 9 extending toward the other arm 6, the terminal being offset from the plane of the arms by bends 10 and 11 which form an

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offsetting leg portion 12 therebetween. The terminal 9 mounts a shield-like head 13 later described. The other arm 6 has a bend 14 near the end thereof to provide a leg portion 15 of less length than the leg portion 12 for attaching a pyrophoric element 16 later described.

The head 13 is preferably a metal stamping shaped to provide an annular side wall 17, a bottom 18 and an outwardly extending annular flange 19. The head forms a substantially cup-shaped housing having an open front 20 that is encircled by the flange 19. The wall portion 17 has diametrically opposed openings 21 and 22, the opening 21 at one side being located about midway between the bottom 18 and the flange 19 while the opening 22 is located closer to the bottom as shown in Fig. 4. The flange 19 has a notch 23 in registry with the openings 21 and 22 are of suitable size to pass the leg portion 12 and the terminal portion 9 of the arm 5. The side of the flange opposite the notch is turned upwardly to provide a wing-like stop 24 for the leg portion of the arm 6.

25 designates a striker or abrading element that is mounted within the shield when the parts are assembled. The abrading element is of cylindrical or roller shape and provided on the exterior surface thereof with a plurality of annular teeth 26 to be contacted by the pyrophoric element in striking sparks as later described. The abrading roller 25 is of a length to rotate snugly between the opposite sides of the wall 17 and has an axial bore 27 extending therethrough to pass the terminal 9 by which it is retained within the shield. The terminal 9 is of sufficient length to project through the shield and the projecting end 28 (Fig. 2) is turned at right angles as indicated at 29 (Fig. 4) for retaining the leg portion 12 in the notch 23.

The pyrophoric element 16 may comprise a flint 30 of suitable alloy or material capable of striking sparks when moved over the teeth of the abrader. The pyrophoric element is anchored in a sleeve 31 having a threaded socket 32 opening from the opposite end for attachment to a threaded end 33 of the leg 15.

In assembling the parts, the abrading element or roller 25 is dropped into the head 15 through the open side 20 and the bore 27 thereof is registered with the openings 21 and 22. The terminal 9 is then passed through the opening 21, bore 27 and opening 22 so that the leg portion 12 enters the notch 23 to prevent tilting of the head on the terminal 9. The end 28 is then bent

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at substantially right angles as indicated at 29 to retain the shield and reinforce the stop 24. The pyrophoric element or flint 30 is secured to the threaded end of the leg 15 and the arm 16 is sprung so that the leg is caused to enter the open face 20 of the shield to rest upon the lower end of the abrading element or roller 25 with the sleeve 31 held against the stop 24 by tension in the arm 6.

In using the device, the handle is engaged by the palm of the hand with the fingers passing under the arm 5 and the forefinger bearing against the loop 7 and thumb upon the loop 8 so that by pressing with the thumb the arm 6 of the handle is moved in the direction of the arm 5. Movement of the arm 6 carries the pyrophoric element 30 across the toothed surface 26 of the abrading member 18.

The arm 6 is actuated with substantially little resistance. A quick start being given so that the pyrophoric element rides rapidly along the abrading member to produce a relatively hot shower of sparks. Upon release of pressure the arm 6 returns to its original position with the sleeve 31 in engagement with the stop 24 incidental to the spring action in the handle.

From the foregoing it is obvious that I have provided an igniter that is of simple and inexpensive construction which is easy and quickly assembled. It is also obvious that the stop retains the arm 6 in operative position and prevents the leg end from flying out of the shield or housing under sudden release of the actuating pressure. It is also obvious that the abrading member is tilted so that the pressure of the flint is increased to produce a hotter sparking action.

What I claim and desire to secure by Letters Patent is:

1. An igniting device including a pair of coextensive arms having resilient connection at one of their ends for retaining opposite ends in normally spaced apart relation but adapted to be moved toward each other, one of the arms having an offsetting portion extending at substantially right angles from the plane of said arms and a lateral terminal carried by said offsetting portion and extending in the direction of the other arm, a shield having a side wall surrounding a closed bottom and forming an open side opposite the closed bottom, said wall having opposed openings for passing said terminal there-through and having an integral outwardly extending flange surrounding the open side of the shield with the flange having a notch engaging the offsetting portion to prevent rocking of the shield on said terminal, an abrading roller rotatable within the shield upon said terminal, a stop on the terminal engaging an outer side of the wall opposite the notch to cooperate with the notch in retaining the shield in fixed position on the terminal, and a pyrophoric element carried

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on a lateral terminal of the other arm for bearing support on the brading roller through the open side of said shield, said flange having a portion thereof turned laterally outwardly from said open side in tangential relation with the side wall opposite the notch to provide an elongated stop for the arm carrying the pyrophoric element.

2. An igniting device including a pair of coextensive arms having resilient connection at one of their ends for retaining opposite ends in normally spaced apart relation but adapted to be moved yieldably under action of said resilient connection toward each other, one of the arms having an offsetting portion extending at substantially right angles from the plane of said arms and a lateral terminal carried by said offsetting portion and extending in the direction of the other arm, a shield having a side wall surrounding a closed bottom and forming an open side opposite the closed bottom, said side wall having opposed openings with one located nearer the bottom than the other for passing said terminal first through the opening further from the bottom and then through the other, the side wall also having an integral outwardly extending flange surrounding the open side of the shield with the flange having a notch near the higher of said openings and engaging the offsetting portion to prevent rocking of the shield on said terminal, an abrading roller rotatable within the shield upon said terminal, a stop on the terminal engaging an outer side of the wall opposite the notch to cooperate with the notch in retaining the shield in fixed position on the terminal, and a pyrophoric element carried on a lateral terminal of the other arm for bearing support on the abrading roller through the open side of said shield, said flange having a portion thereof turned laterally outwardly from said open side in tangential relation with the side wall above the opening that is the nearer to said bottom for cooperating with said wall in forming an elongated stop for the arm carrying the pyrophoric element.

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