June 5, 1945. E. E. BURLO 2,377,671

WELDER'S PERISCOPE

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Fig. 1.

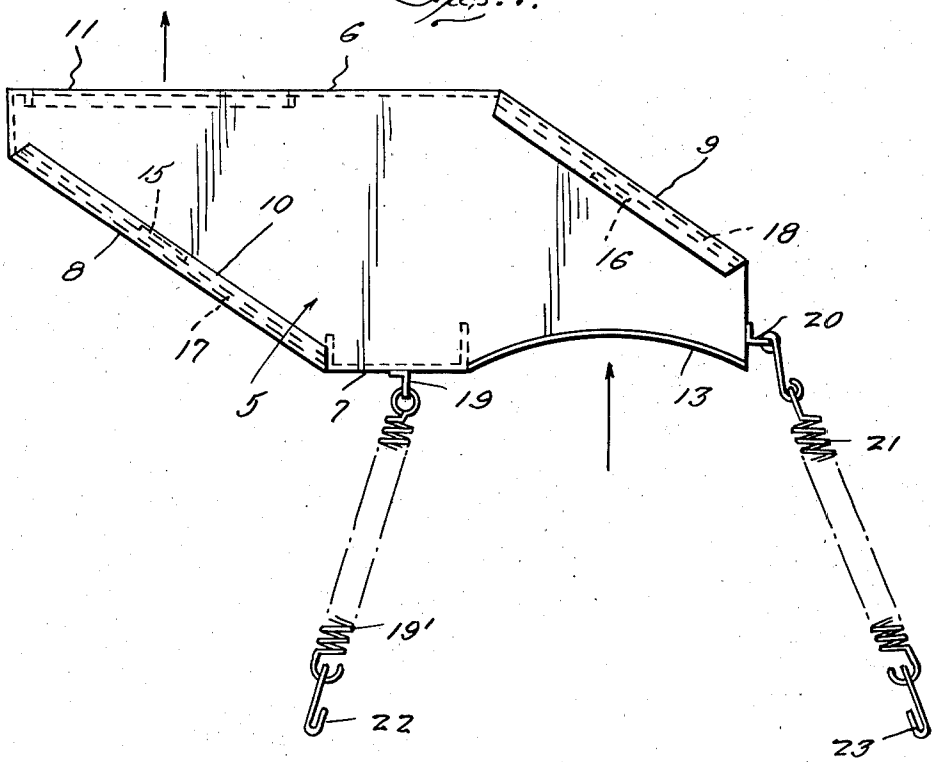
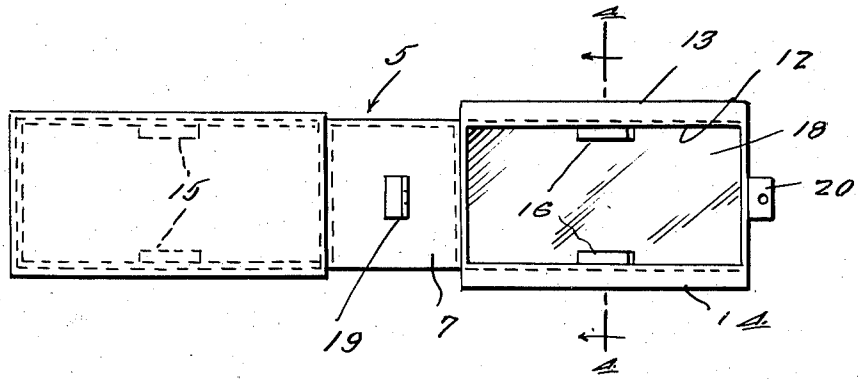


Fig. 2.



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Fig. 3.

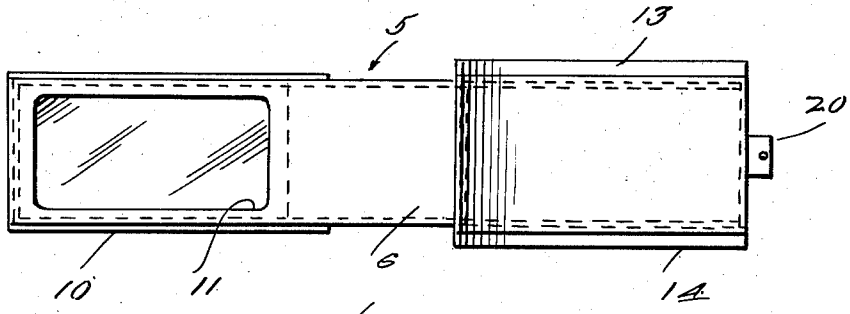


Fig. 4.

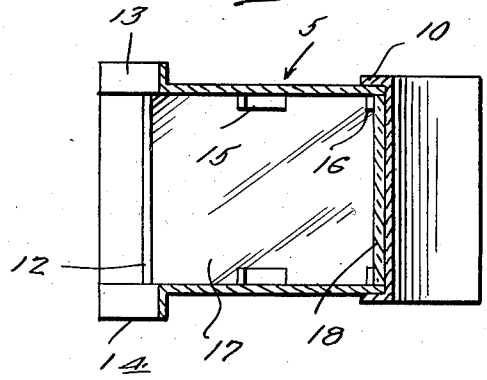
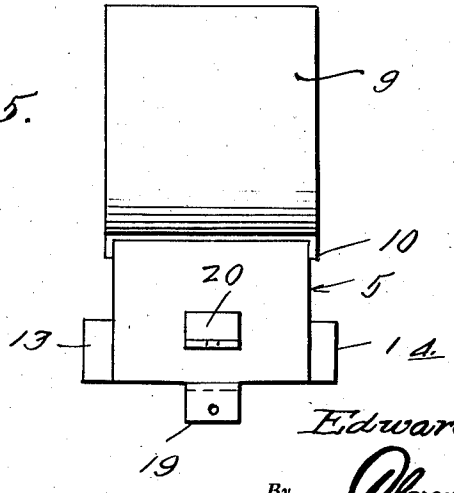


Fig. 5.



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Fig. 7.

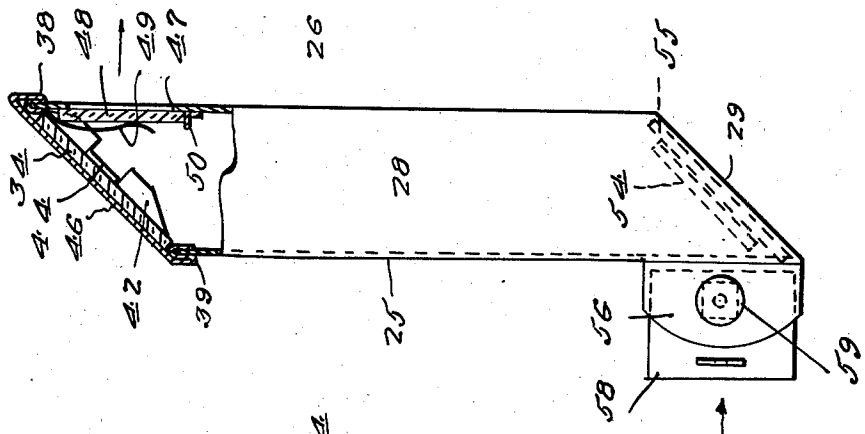


Fig. 6.

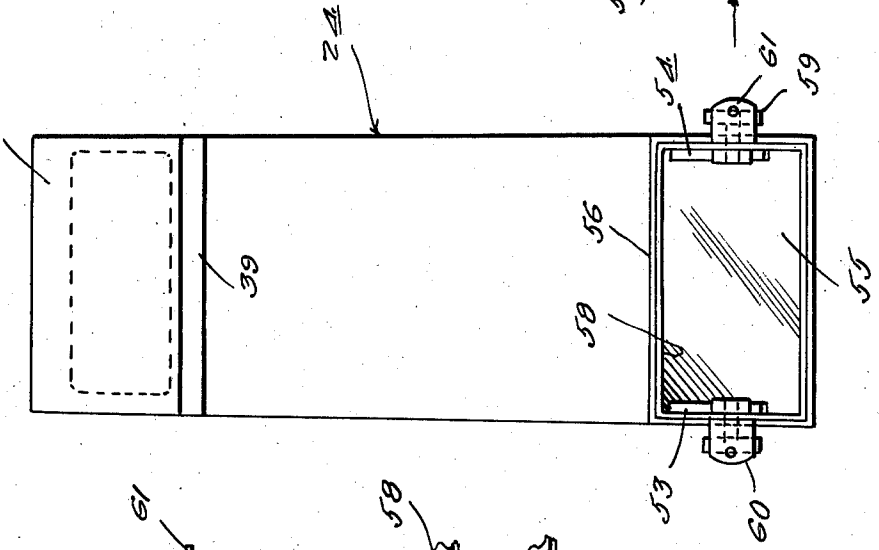


Fig. 8.

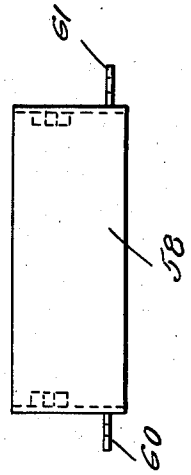
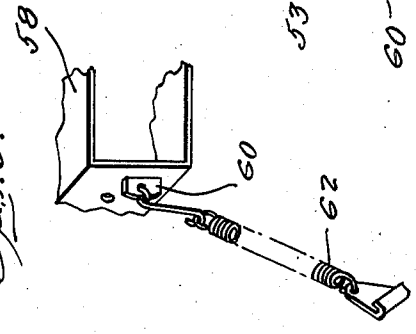


Fig. 9.



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WELDER'S PERISCOPE

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Fig. 10.

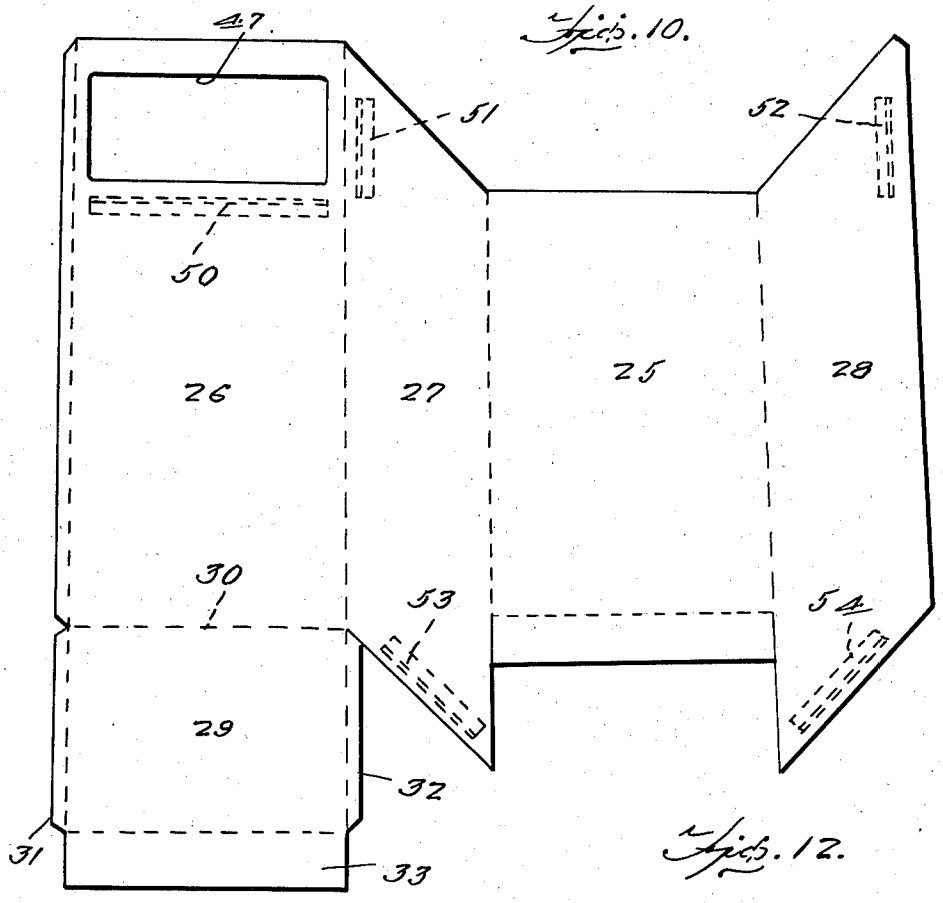


Fig. 12.

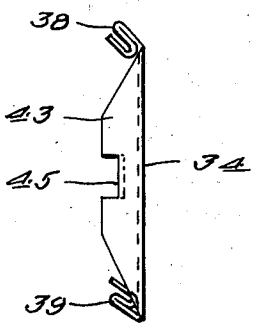
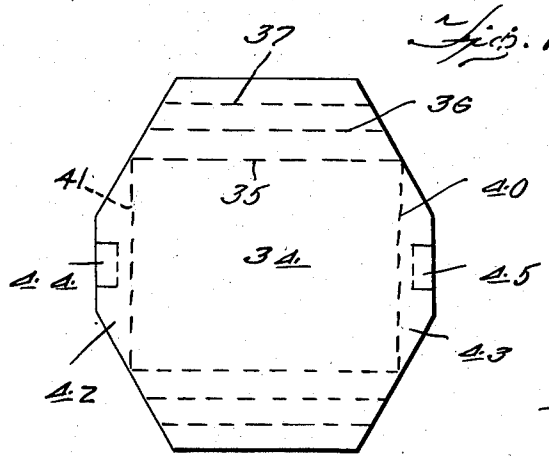


Fig. 11.



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Patented June 5, 1945

2,377,671

UNITED STATES PATENT OFFICE

2,377,671

WELDER'S PERISCOPE

Edward E. Burlo, Green Bay, Wis.

Application June 28, 1943, Serial No. 492,621

1 Claim. (Cl. 88—68)

The present invention relates to new and useful improvements in periscopes designed particularly for use by welders when working in places difficult of access and the invention has for an important object to provide a device of this character of simple and practical construction, which is efficient and reliable in use, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like reference numerals refer to like parts throughout, and in which—

Figure 1 is a plan view of a side vision periscope.

Figure 2 is a rear elevational view thereof.

Figure 3 is a front elevational view.

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

Figure 5 is a side elevational view.

Figure 6 is a rear elevational view of a modified form of the invention for use in overhead work.

Figure 7 is a side elevational view thereof and with parts broken away and shown in section.

Figure 8 is a plan view of the eye-piece adaptor.

Figure 9 is a fragmentary perspective view of the adaptor.

Figure 10 is a plan view of the blank sheet of metal from which the overhead periscope is formed.

Figure 11 is a similar view of the blank for the cap of the top of the overhead periscope, and

Figure 12 is a side elevational view of the cap.

Referring now to the drawings and with particular reference to the form of the invention illustrated in Figures 1 to 5, inclusive, the numeral 5 designates a metallic box of generally trapezoidal form and including a front wall 6, rear wall 7 arranged substantially parallel to each other, and side walls 8 and 9 inclined in substantially parallel planes. The edges of the side walls are formed with angular flanges 10 which overlap the top and bottom of the box.

The front wall 6 is formed with a window opening 11 at its left hand side and the rear wall 7 is formed with a window opening 12 at its right hand side. The rear window opening 12 is curved to conform to the forehead of a person and the upper and lower edges are formed with flanges 13 and 14 to provide relatively broad edges.

Lugs 15 and 16 are welded to the inner surfaces of the top and bottom of the box adjacent the side walls 8 and 9 and spaced slightly from the latter and behind which mirrors 17 and 18 are inserted to retain the mirrors against the inner surface of each of the inclined side walls to reflect images received in the front window and at the left of the box to the eyes of the person at the rear window.

A lug 19 is welded to the rear wall at the left of the rear window and to which a coil spring 19' is attached and a lug 20 is welded to the right side wall 9 and to which a similar coil spring 21 is attached. Hooks 22 and 23 are attached to each spring for engaging a helmet (not shown) of a type usually worn by welders, the periscope thus being suitably secured in position to the front of the helmet over the eyes of the welder and projecting toward either the right or left by inverting the position of the periscope.

In the form of the invention illustrated in Figures 6–12, inclusive, a periscope for use in overhead work is provided and comprises a box 24 formed from a blank sheet of metal as shown in Figure 10 and which includes a rear wall 25, front wall 26 and trapezoidal side walls 27 and 28 having ends which project above and below the top and bottom edges of the front wall. To the lower end of the rear wall is formed a bottom 29 adapted to be bent along the fold line 30 into an inclined position as shown in Figure 7 and secured in position by the flanges 31, 32 and 33 which also serve to seal the edges of the bottom wall from the admission of light into the box.

The top of the box is closed by a cap 34 formed from a blank as shown in Figure 11 and having two of its opposite edges bent along the fold lines 35, 36 and 37 to form clips 38 and 39 adapted for engaging the front and rear walls of the box. The side edges of the cap are bent angularly along the fold lines 40 and 41 to form flanges 42 and 43 for engaging the inner side walls of the box and tongues 44 and 45 are bent inwardly from the flanges to retain a mirror 46 against the underside of the cap.

The upper edge of the front wall is cut away to provide a window opening 47 in the upper portion of the box behind which is secured a clear glass 48 by a leaf spring 49 supported on a lug 50 welded to the inner surface of the front wall and lugs 51 and 52 are also welded to the side walls of the box to engage the side edges of the glass.

Lugs 53 and 54 are also welded on the inner surface of the side walls adjacent their lower edges for retaining a mirror 55 on the bottom 29.

A rectangular sleeve 56 is welded to the lower edges of the side walls which projects rearwardly and in which is inserted a box-like adaptor 58 having open inner and outer walls to provide a

sight opening at the lower edge of the rear wall for observing images appearing on the mirrors 46 and 55. Set screws 59 secure the adaptor to the sleeve.

Lugs 60 and 61 are welded to the sides of the adaptor for attaching coil springs 62 thereto for securing the periscope in an upstanding position on a welder's helmet.

It will be understood that in place of welding the several parts referred to throughout the specification, the same may be secured by means of rivets or any other suitable means employed for this purpose so that the periscope may be constructed of metal or non-metallic material.

The several mirrors may be made of chrome plated metal or other suitable material.

It is believed the details of construction, operation and manner of use of the device will be readily understood from the foregoing without further detailed explanation.

Having described the invention, what is claimed as new is:

A periscope adapted for attaching to a welder's helmet and comprising a box-like structure including a front wall and a rear wall having offset openings therein, reflectors in the structure arranged to receive images from the opening in the front wall and project the same from the opening in the rear wall, a tunnel-like member projecting from the edges of the opening in the rear wall, an extension telescopically fitted in said member and forming a sight opening for both eyes of a person, and means carried by the extension and adapted for extending along opposite sides of the head of a wearer for detachably securing the structure to a helmet with the extension over the eyes of the wearer.

EDWARD E. BURLO.