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341,290

PROVISIONAL SPECIFICATION.

Improvements in or relating to Blow-lamps.

We, JOHN SHAW AND SONS WOLVERHAMPTON LIMITED, a British Company, of Fryer Street, Wolverhampton, Staffordshire, and ALBERT ALFRED MARTIN, British Subject, of the Company's address, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in blow-lamps such as are commonly used for plumbing, soldering, brazing, paint-removing and like operations.

Such lamps usually consist of a brazed sheet metal fuel container provided with a handle, a jet leading into a fixed burner tube, a filling orifice with a plug, and in some cases an air pump, all the fittings being brazed to the container or screwed into lugs or bosses brazed to the container.

One object of our invention is to provide an improved blow-lamp in which all brazing is eliminated so that the metal of the container is not softened or weakened in any way and is capable of withstanding very high pressures without risk of explosion.

Another object is to provide a blow-lamp in which the burner tube is angularly adjustable with respect to the container so that the flame can be directed at widely differing angles and the handling and use of the lamp are greatly facilitated. Other objects are to eliminate all perishable washers or packing from the construction of the lamp and to provide a readily adjustable handle which is simple to manufacture and fit.

According to our invention the container of a blow-lamp is a cylindrical or other shell drawn, pressed, or spun from sheet metal and provided with a flanged closure which is screwed and sweated on to the shell. In the upper end of the container are coned openings screw-threaded at their inner ends, and one of these receives a screwed filling plug provided with a coned copper or like washer to engage the coned face of the opening. The other receives a similarly washered screwed tubular fitting in the upper end of which is a coned socket with a horizontal axis which receives a coned plug on a head carrying the jet and burner

[Price 1/-]

or flame tube. The head is thus free to swivel about the plug as an axis so that it may be directed vertically upwards, downwardly towards the bench or other surface on which the lamp stands, or at any intermediate angle. The plug is retained in the socket by a nighting washer and milled nut, and an internal annular groove in the socket communicates with the bore in the tubular fitting so that continuity of the passage to the jet is maintained in any position of the head. This groove also forms a vaporising chamber in which the fuel is heated by conduction from the burner tube. The supply of fuel is controlled in the ordinary way by a needle valve entering the fuel passage.

When the burner tube is cold it can be moved easily to any position but when it becomes hot in use the joint locks itself and there is no risk of leakage even if the plug-retaining nut is only finger-tight initially. Immediately the lamp cools the joint again becomes free.

A handle for the lamp is conveniently formed by a substantial tube engaged at its ends in openings in a sheet metal bracket which is held against one side of the container by a strip metal band passing round the container. One end of the band is anchored to the bracket and the other has a nut in which engages a screw anchored to the bracket so that by tightening the screw the band is contracted around the container. By slackening the screw the handle can readily be moved round the container into any desired position. If desired an annular groove may be formed around the container to receive the band.

From the above description it will be obvious that a large number of the operations required in the construction of an ordinary blow-lamp are eliminated and as the container is never heated and has no projecting brazed-on parts it can be very easily cleaned up for packing and sale.

Dated this 30th day of January, 1930.  
For the Applicants,  
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Chartered Patent Agents,  
75 & 77, Colmore Row, Birmingham.

## COMPLETE SPECIFICATION.

## Improvements in or relating to Blow-lamps.

We, JOHN SHAW AND SONS WOLVERHAMPTON LIMITED, a British Company, of Fryer Street, Wolverhampton, Staffordshire, and ALBERT ALFRED MARTIN, British Subject, of the Company's address, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in blow-lamps such as are commonly used for plumbing, soldering, brazing, paint-removing and like operations.

Such lamps usually consist of a brazed sheet metal fuel container provided with a handle, a jet leading into a fixed burner tube, a filling orifice with a plug, and in some cases an air pump, all the fittings being brazed to the container or screwed into lugs or bosses brazed to the container.

One object of our invention is to provide an improved blow-lamp in which all brazing is eliminated so that the metal of the container is not softened or weakened in any way and is capable of withstanding very high pressures without risk of explosion.

Another object is to provide a blow-lamp in which the burner tube is angularly adjustable with respect to the container so that the flame can be directed at widely differing angles and the handling and use of the lamp are greatly facilitated. Other objects are to eliminate all perishable washers or packing from the construction of the lamp and to provide a readily adjustable handle which is simple to manufacture and fit.

According to our invention the container of a blow-lamp is a cylindrical or other shell drawn, pressed, or spun from sheet metal and provided with a flanged closure which is screwed and sweated on to the shell. In the upper end of the container are coned openings screw-threaded at their inner ends, and one of these receives a screwed filling plug provided with a coned copper or like washer to engage the coned face of the opening. Another receives a similarly washered screwed tubular fitting in the upper end of which is a coned socket with a horizontal axis which receives a coned plug on a head carrying the jet and burner or flame tube. The head is thus free to swivel about the plug as an axis so that

it may be directed vertically upwards, downwardly towards the bench or other surface on which the lamp stands, or at any intermediate angle.

A handle for the lamp is conveniently formed by a substantial tube engaged at its ends in openings in a sheet metal bracket which is held against one side of the container by a strip metal band passing round the container. One end of the band is anchored to the bracket and the other has a nut in which engages a screw anchored to the bracket so that by tightening the screw the band is contracted around the container. By slackening the screw the handle can readily be moved round the container into any desired position. If desired an annular groove may be formed around the container to receive the band.

From the above description it will be obvious that a large number of the operations required in the construction of an ordinary blow-lamp are eliminated and as the container is never heated and has no projecting brazed-on parts it can be very easily cleaned up for packing and sale.

One practical form of blowlamp made in accordance with our invention for use with petrol or other volatile fuel is illustrated in the accompanying drawings in which:—

Figure 1 is a side elevation of the complete blowlamp.

Figure 2 is a plan.

Figure 3 is a plan in part section of the burner and its mounting with the parts separated.

Figure 4 is a side elevation of the fitting which carries the burner.

Figure 5 is a diagrammatic view showing the filling plug and the opening into which it is screwed the latter being shown in section.

Figure 6 is a fragmentary section through the upper part of the container wall.

Figure 7 is a fragmentary elevation of the inner side of the handle detached from the container.

In the blowlamp illustrated the body *a* is a cylindrical shell drawn, pressed, or spun from sheet metal with an integral domed bottom which merges into the side wall through a rounded bead or corner *b*. The upper end of the shell is closed by a flanged cover *c* of which the flange is internally screw-threaded to engage with

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an external screw-thread on the upper end of the shell, as shown in Figure 6. The thread on the flange is machined off adjacent to its free edge to form a very narrow peripheral gap *d* between this edge and the shell into which solder is sweated. This forms an extremely strong joint which will not leak under pressure even at temperatures much higher than the melting point of solder.

Pressed in the centre of the cover *c* is a coned opening screw-threaded at its inner end to receive a screwed tubular fitting *e* provided with a copper or other soft metal washer adapted to engage the coned face of the opening. At the upper end of the fitting *e* is a coned socket *f* with a horizontal axis which receives a coned plug *g* on a head *h* carrying the jet and the burner or flame tube *j*. The head is thus free to swivel about the plug as an axis so that it may be directed horizontally as shown in full lines in Figure 1, downwardly at an angle towards the bench or other surface on which the blowlamp stands, or upwardly at an angle as shown in dotted lines, or even vertically upwards. The plug is retained in the socket by a washer *k* and milled nut *l* with lock-nut *l'*, and an internal annular groove *m* in the socket communicates with the bore in the fitting *e* so that continuity of the passage to the jet is maintained in any position of the head. This groove also forms a vaporising chamber in which the fuel is heated by conduction from the burner tube through the head. The supply of fuel is controlled in the ordinary way by a needle valve *n* passing through an extension of the fitting *e* and entering the fuel passage.

Normally the nut *l* is screwed up to such an extent that the burner tube can just be moved easily into any desired position. It will tighten up slightly when the burner becomes hot so that there is no risk of leakage even if the nut *l* is only finger-tight initially. For the cheaper types of blowlamp a swivelling burner tube may not be required, in which case an ordinary fixed burner fitting would be screwed into the coned opening in the centre of the cover in the same manner as described above for the fitting *e*.

A second coned orifice is pressed in the cover at one side to receive the filling plug *o*. The inner end of this orifice is screw-threaded and into it is screwed a sleeve *p* of which the outer end is spun over into the orifice and the inner end is fitted with a lock-nut *q* as shown in Figure 5. The sleeve is screw-threaded internally to receive the plug which is provided with a copper or other soft

metal coned washer *r* adapted to seat against the outer end of the orifice.

A similar sleeve may be provided in the opening which receives the fitting *e* but this is not essential as this fitting only has to be removed at very long intervals to renew the fuel wick while the filling plug is removed and replaced frequently.

A safety valve may be incorporated in the filling plug or it may be separately fitted into another opening in the cover in the same manner as the fitting *e*.

The handle for the blow-lamp is formed by a length of tube *s* of oval cross-section engaged at its ends in openings in lugs *t* integral with or secured to a sheet metal bracket *u* which is held against the container by a strip metal band *v* passing round the container. One end of the band is notched at *w* and fits into a slot in one side of the bracket while the other end which passes through the opposite side of the bracket is slotted and bent round to form an anchorage for a pin *x* which is transversely drilled and tapped. A screw *y* passing through the bracket is screwed into the pin so that by tightening the screw the band is contracted around the container to hold the handle securely in position. By slackening off the screw the handle can be adjusted into any desired position on the container. A key for operating the filler plug and a pricker for cleaning the jet may if desired be housed in the hollow tubular part *s* of the handle.

It will be obvious that as the construction of the container itself and the attachment of all the parts thereto are effected without brazing the metal of the container is never heated to soften or weaken it and in tests we have found that a blow-lamp made in this way will withstand a pressure several times as high as that which will cause a failure of the ordinary brazed blowlamp.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A new or improved blowlamp in which the container is a shell drawn, pressed, or spun from sheet metal and provided with a flanged closure which is screwed and sweated thereto, and the burner, filling plug socket, handle, and any other parts are secured to the container by screwing or like means without brazing.

2. A new or improved blowlamp as claimed in Claim 1 in which the closure is a flanged pressing, stamping, or

spinning of which the flange is internally screw-threaded to co-operate with an external screw-thread on the container and the thread is omitted adjacent to the free edge of the flange to leave an annular space into which solder is sweated.

3. A new or improved blowlamp as claimed in Claim 1 in which the burner or flame tube and jet are carried by a head which has a coned plug fitting rotatably into a coned socket on a tubular fitting screwed into the container so that the head with the burner tube is free to swivel about the plug as an axis.

4. A new or improved blowlamp as claimed in Claim 1 in which a filling plug is adapted to be screwed into a sleeve which is screwed into a coned opening in the container and is retained therein by spinning or swaging over its outer end

and fitting a lock-nut on its inner end, the plug having a copper or other soft metal washer adapted to seat against a coned surface at the outer end of the sleeve or opening.

5. A new or improved blowlamp as claimed in Claim 1 in which a handle is carried by a bracket adjustably secured upon the container by a metal band encircling the container and capable of being contracted thereon.

6. The improved blowlamp substantially as described and as illustrated in the accompanying drawings.

Dated this 8th day of September, 1930.

For the Applicants,  
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75 & 77, Colmore Row, Birmingham.

*[This Drawing is a reproduction of the Original on a reduced scale.]*

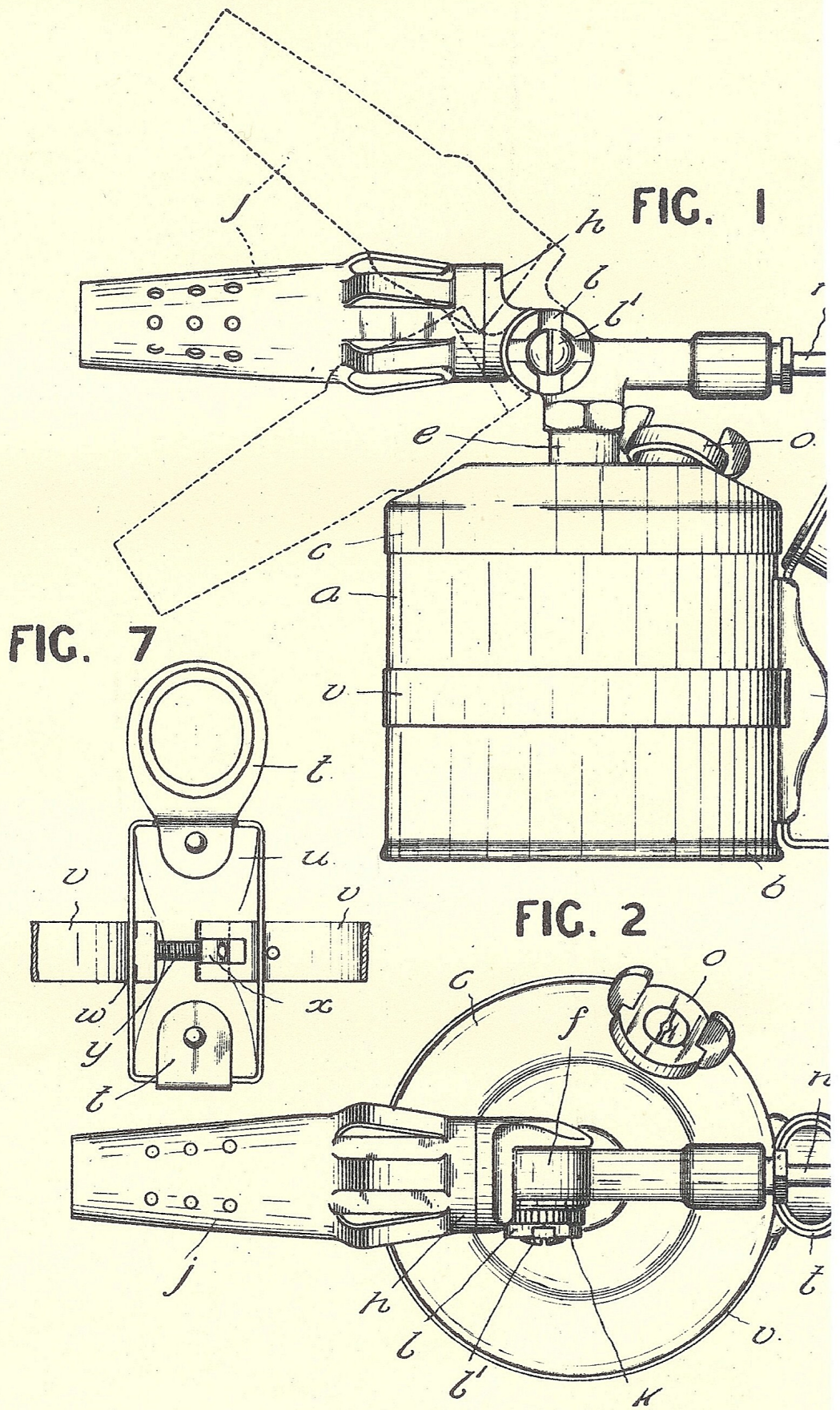


FIG. 1

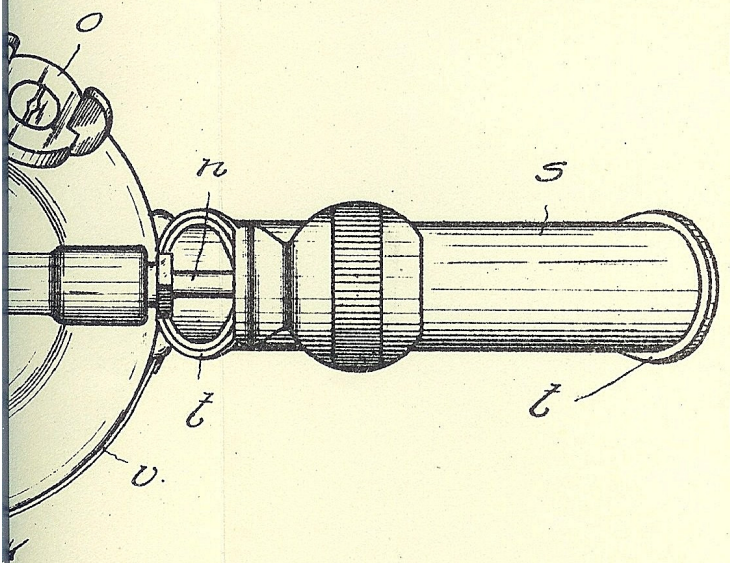
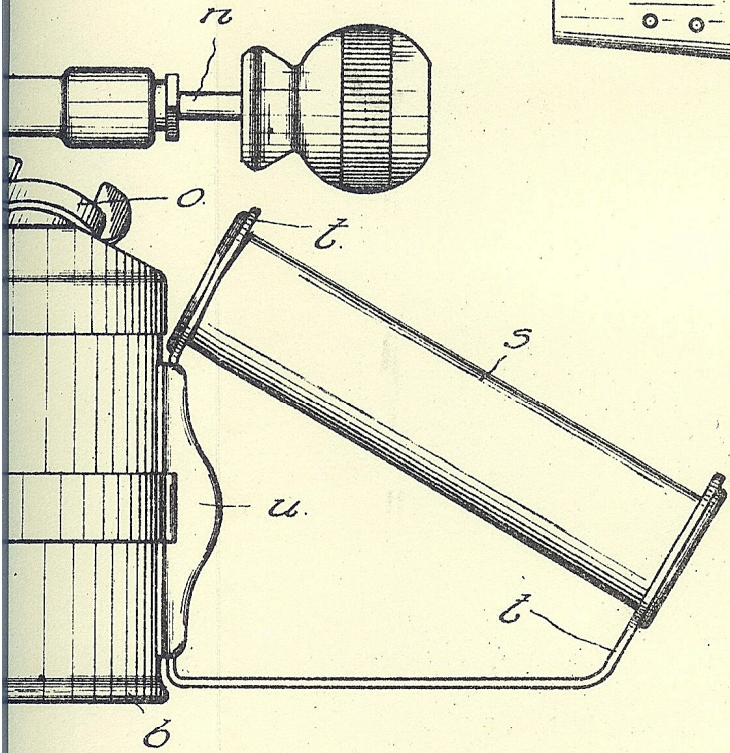


FIG. 3

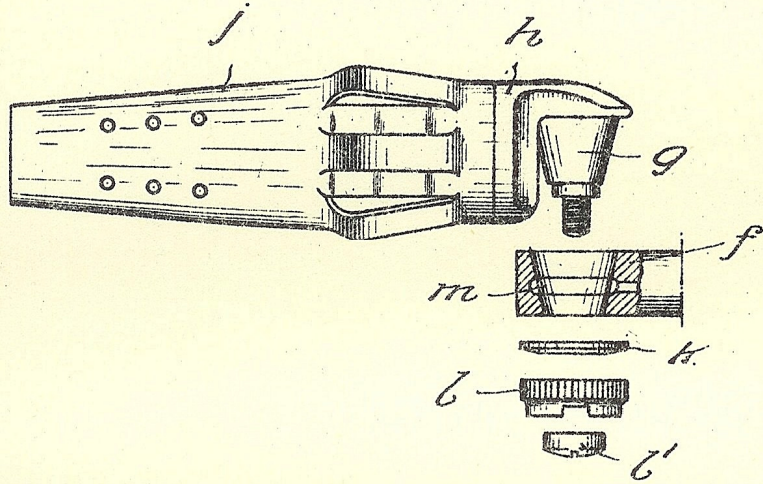


FIG. 4

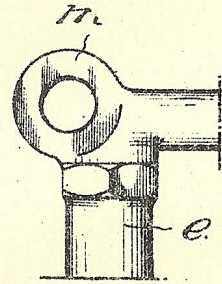


FIG. 5

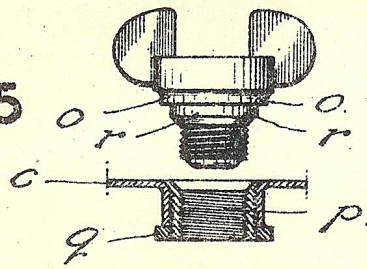


FIG. 6

