J. W. MOORE.

BLOW TORCH.

APPLICATION FILED MAY 14, 1914.

1,122,147.

Patented Dec. 22, 1914.

FIG. 1

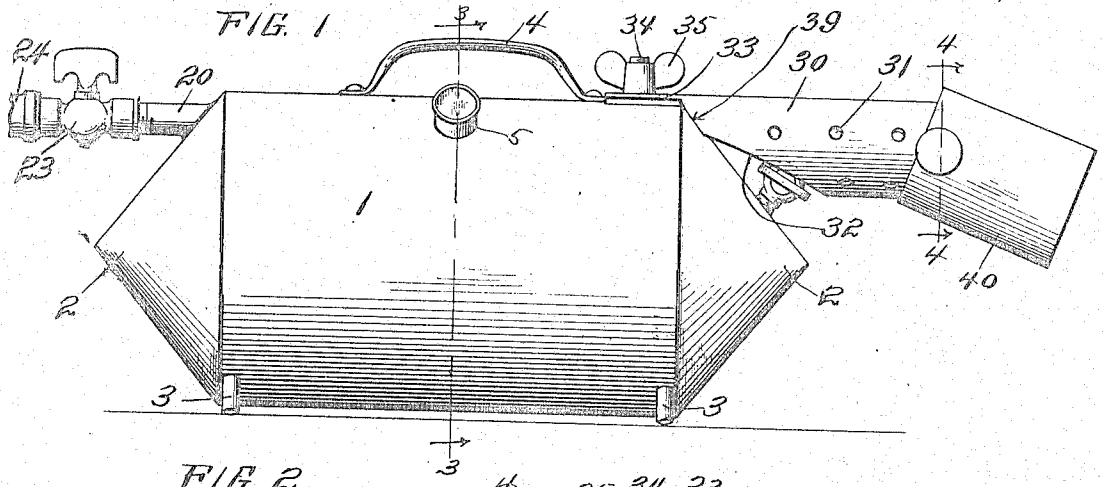


FIG. 2.

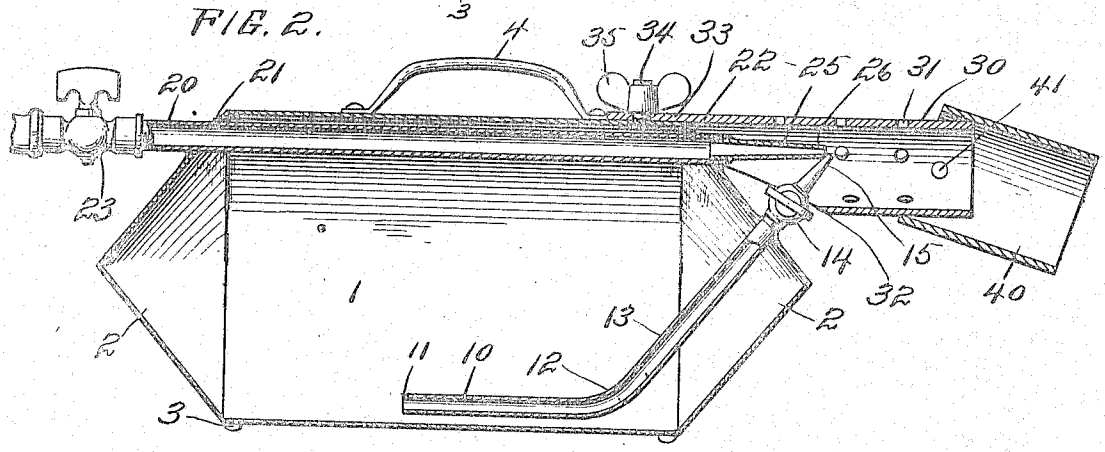


FIG. 3.

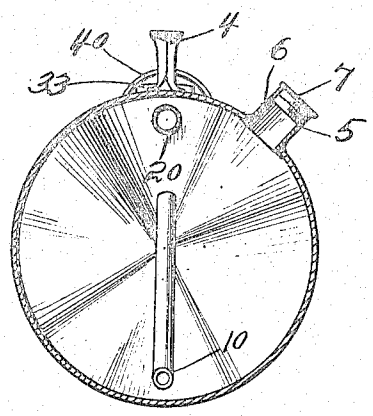
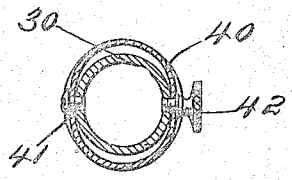


FIG. 4.



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UNITED STATES PATENT OFFICE.

JAMES WESLEY MOORE, OF PORTSMOUTH, VIRGINIA.

BLOW-TORCH.

1,122,147. Specification of Letters Patent. Patented Dec. 22, 1914.

Application filed May 14, 1914. Serial No. 838,592.

To all whom it may concern:

Be it known that I, JAMES WESLEY MOORE, a citizen of the United States, residing at Portsmouth, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Blow-Torches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to liquid fuel burners, and more especially to hand torches, and the object of the same is to produce an extremely simple and yet effective blow torch capable of being carried in hand by the operator.

To this end the invention consists in the details of construction of the torch itself, the detachable burner or mixer, and the adjustable deflector thereon, all as hereinafter more fully described and claimed and shown in the drawings wherein;—

Figure 1 is a side elevation of this invention complete; Fig. 2 is a longitudinal sectional view; Figs. 3 and 4 are cross sections on the lines 3—3 and 4—4 respectively of Fig. 1.

In the drawings the numeral 1 designates a reservoir or tank made in substantially cigar-shape, and herein illustrated as having a cylindrical body with conical ends 2, the whole mounted on a suitable base such as the feet 3 illustrated herewith. At the top of the tank is a handle 4. The entire device is of such size that it may be carried in the hand of the operator without inconvenience, and at one side of the tank near its top is a filling orifice in the shape of a nipple 5 perforated in its upper side as at 6 and normally closed by a screw cap 7. When the latter is removed, gasolene or other fluid fuel may be introduced into the interior of the tank. When the cap is in place, the perforation serves as an air inlet to allow the exit of the fuel and when the fuel becomes heated from any cause the perforation allows the fuel to escape from the tank to prevent bursting.

The oil pipe 10 starts at a point 11 within the tank near the bottom thereof and extends along the body to a point 12 near the front end 2, then turns upward as at 13 and leads obliquely out the upper side of said end, and to and through a pet cock 14 whose nozzle or tip 15 is reduced. By preference the pet cock is removable from the front end of the pipe so that if desired, it can be replaced by another having a tip of different size or shape.

The air pipe 20 enters the rear end of the body at a point 21 and extends straight through the same along its upper side, as indicated, passing out the front end at the point 22 and there carrying a tip or nozzle 25 whose extremity is preferably reduced as indicated at 26. This nozzle may also be removable from the front end of the air pipe, so that it can be replaced by another of different size and shape, if desired. At its rear or inlet end the air pipe carries an air cock 23, and air under pressure is admitted to the latter through a flexible pipe 24 from a suitable source not necessary to illustrate.

A burner or mixer is by preference applied in conjunction with the parts described, and the same consists of a tubular body 30 perforated as indicated at 31 and having its lower side cut away as shown at 32, its upper side being continued to the rear into a rather long tongue 33 which is itself perforated to pass over a lag screw 34 rising rigidly from the top of the tank near its front end, a thumb nut 35 engaging this screw to hold the tongue and therefore the burner in place. In its correct position the cut away lower side of the tubular burner overlies the pet cock 14 and permits the handle of the latter to project so that it can be grasped by the thumb and finger of the operator.

By preference I employ a deflector 40 composed of a short section of tube slightly flattened as seen in Fig. 4 so that it is of greater vertical diameter than otherwise, and this tube embraces the front end of the burner 30 and is pivoted thereto at one side as at 41 as by means of a screw, and at diametrically the opposite side by means of a thumb screw 42. When the latter is loosened, the deflector can be adjusted so as to deflect the direction of the blaze passing through the burner, either slightly upward or downward; after which the thumb screw 42 is set up tight to hold it in this position. When it is not desired to use this deflector, it can be bodily removed. So also by unscrewing the thumb nut 35, the entire burner can be taken off, and possibly replaced by another of different size or shape. I prefer that the cut away portion 32 of this burner shall have shoulders 39 resting against the

front end of the body, whereby the burner—with or without the deflector—will be firmly supported by the body.

The use of this device will be clearly understood by those familiar with blow torches. The body is filled to a greater or less degree with gasolene or an equivalent fluid, and the pipe 24 connected with the air cock 23 which latter is adjusted to permit a blast of air to flow through the pipe 20 and at the flattened end 26 of the nozzle 25. The pet cock 14 is then opened slightly, and it will be found that the stream of air blown with force obliquely across the tip of the pet cock sets up suction through the latter and through the oil pipe 10, so that the fluid fuel is drawn upward out the tip 15 of the pet cock and is broken up or sprayed by the blast of air as it is driven along the axis of the burner 30. This spray being ignited, air enters the perforations 31 and mixes therewith, with the result that the blast issuing from the outlet end of the burner is extremely hot and powerful when compared with the volume of oil being consumed. As it is desirable that the body 1 be held in a nearly horizontal position, if the operator wishes to direct the flame upward or downward he has but to set the deflector 40, as will be clear. If this feature is not useful in the work he is doing, it can be bodily removed. The oil is not under pressure within the tank, but the inlet of air through the perforation 6 in the nipple 5 permits the escape through the oil pipe 10 of enough fluid fuel to form the flame. Of course the air coming through the pipe 20 mixes with the broken up oil, and with some fuels and under some conditions, it may be desirable to omit or reduce the size of the perforations in the burner, whereas in other cases it may be desirable to remove the burner entirely. Hence the advisability of attaching this element to the body in a removable manner.

I do not wish to be limited to the precise details of construction, nor to the materials and proportions of parts.

What I claim as new is:

1. In a blow torch, the combination with a body having conical ends, an inlet nipple in the upper portion of said body and having a perforation, a plug removably closing said nipple, an oil pipe leading from the bottom of the body through its front end, and a pet cock on the outer end of said pipe with its tip projecting obliquely upward; of an air pipe extending throughout the length of the body near its top, a nozzle removably mounted on the front end of this pipe and having its tip reduced and directed horizontally across the tip of said pet cock, and means for supplying compressed air to the rear end of the air pipe.

2. In a blow torch, the combination with a body having conical ends, an inlet nipple in the upper portion of said body and having a perforation, a plug removably closing said nipple, an oil pipe leading from the bottom of the body through its front end, and a pet cock on the outer end of said pipe with its tip projecting obliquely upward; of an air pipe extending throughout the length of the body near its top, a nozzle mounted on the front end of this pipe and having its tip directed horizontally across the tip of said pet cock, an air cock on the rear end of the air pipe, and a tube for supplying air to said cock.

3. In a blow torch, the combination with a tank having a base at its bottom and a handle at its top, an oil pipe leading from within the tank through its front end, and a pet cock on the exposed end of this pipe with its tip directed obliquely upward; of an air pipe extending longitudinally of the tank and having a nozzle at its front end whose tip stands at an acute angle to the tip of the pet cock, means for supplying compressed air to the rear end of this pipe, a lag screw rising from the tank, a burner having a perforated body cut away on its under side and provided with shoulders to rest against the ends of the tank, its upper side having a tongue adapted to overlie the tank and perforated to pass over the lag screw, and a thumb nut on the latter.

4. In a blow torch, the combination with a tank having a base at its bottom and a handle at its top, an oil pipe leading from within the tank through its front end, and a pet cock on the exposed end of this pipe with its tip directed obliquely upward; of an air pipe extending longitudinally of the tank and having a nozzle at its front end whose tip stands at an acute angle to the tip of the pet cock, means for supplying compressed air to the rear end of this pipe, a perforated burner surrounding the tips of the pet cock and nozzle and having a rearwardly projecting tongue, means for connecting the latter with the tank, a tubular deflector whose rear end is slightly oval and mounted loosely around the front end of said burner, a pivot between these parts at one side, and a set screw between these parts directly opposite the pivot.

In testimony whereof I affix my signature in presence of two witneses.

JAMES WESLEY MOORE.

Witnesses:
T. J. O'Rourke,
W. S. King.