(No Model.)

B. REIN.

TORCH FOR BURNING PAINT.

No. 549,078. Patented Oct. 29, 1895.

Fig. 1.

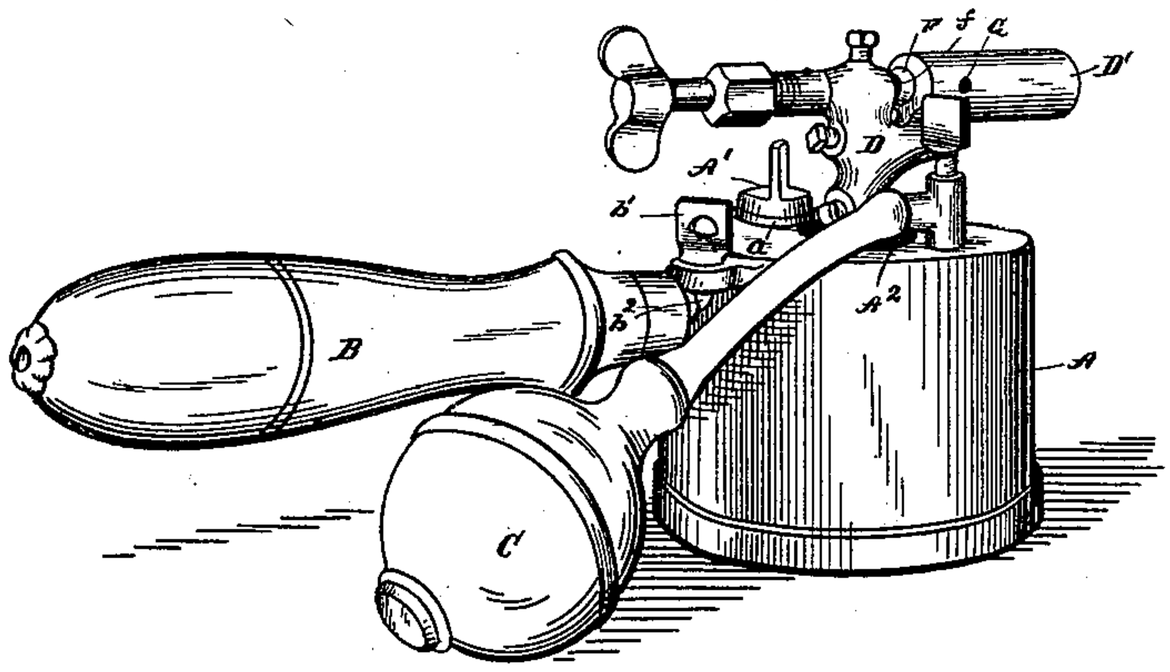


Fig 3

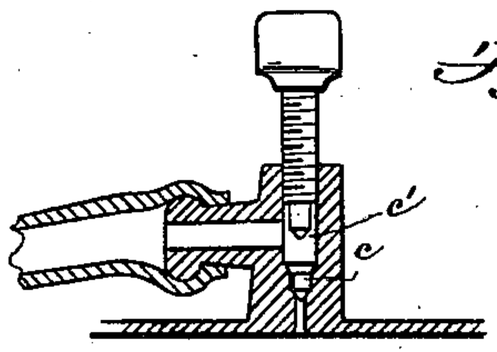


Fig. 2.

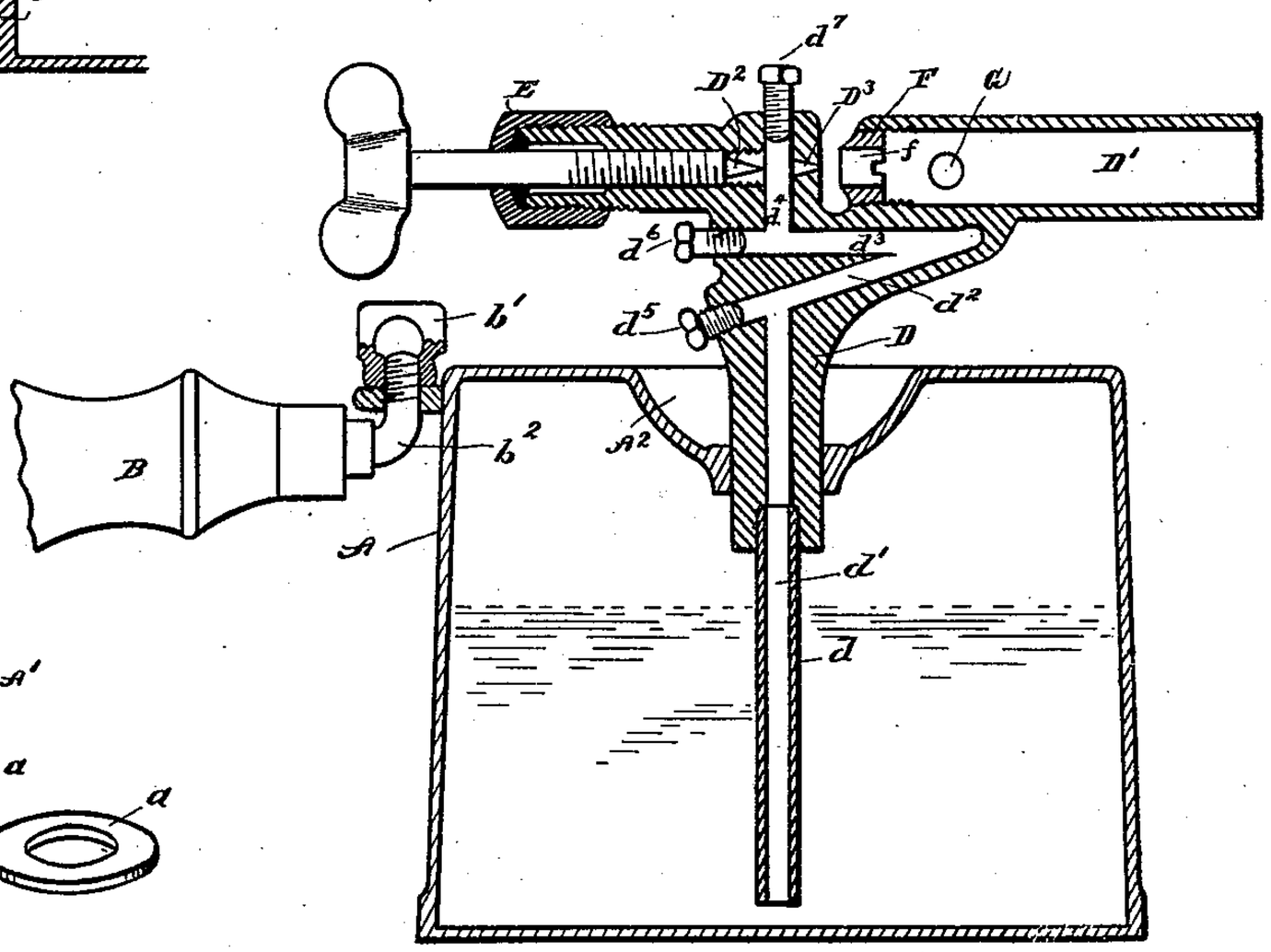
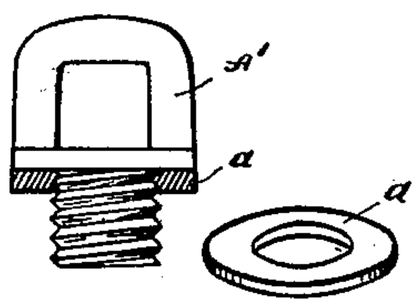


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

BERNARD REIN, OF DETROIT, MICHIGAN, ASSIGNOR TO THE UNION HEATER SUPPLY COMPANY, OF SAME PLACE.

TORCH FOR BURNING PAINT.

SPECIFICATION forming part of Letters Patent No. 549,078, dated October 29, 1895.

Application filed August 13, 1894. Serial No. 520,129. (No model.)

To all whom it may concern:

Be it known that I, BERNARD REIN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Torches for Burning Paint; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to torches adapted more particularly for painters' use in burning off old paint from painted surfaces; and it consists in certain arrangements and combinations hereinafter pointed out and claimed.

In the drawings, Figure 1 is a perspective view of my improved torch. Fig. 2 is a sectional view thereof. Figs. 3 and 4 show details of construction.

In the drawings similar letters refer to similar parts.

A represents the walls of a can or receptacle, preferably for gasoline, although alcohol or other volatile combustible material may be used therein.

B represents a handle, which is pivotally attached to a lug b' formed on the wall of the can A. A thumb-screw b' engages a bent portion b^2 of the handle, and enables the handle when adjusted at any angle to be firmly fastened or held. Merely loosening the thumb-screw will permit it to be swiveled to any convenient position through an arc of about two hundred degrees. This is of considerable importance in implements of this character, as it readily permits the flame to be directed into angles and crevices.

C is a rubber air-pump, which is connected to the can A by an inlet *c*. This inlet is shown in section in Fig. 3, and is controlled by a thumb-screw, operating a needle-valve c'. The can is filled by an orifice upon one side, controlled by a screw-valve A'. This is packed by a lead washer *a*. The details of this are shown in Fig. 4. Lead packing is the only thing that will make this attachment gas-tight, a condition which is essential and at the same time will stand the heating which is necessary to operate a device of this character, and I believe this to be new with me.

In the center of the upper wall of the can A is formed a concavity A^2. This is shown in section in Fig. 2. The center of the concavity is perforated with a screw-thread, and a standard D, which penetrates into the interior of the can, carries a tube *d*, which descends to very near the bottom of the can. The tube *d* is bored through perpendicularly, forming a passage d', which is the continuation of the tube *d*. This passage meets another one d^2, bored in the casting of the standard D. As the standard D is formed in the shape of a bracket and carries at its upper end a large tube or mixer D', the tube d' is bored to reach underneath the mixer D'. Another tube d^3 is horizontally bored into the standard D until it meets and forms an acute angle with the tube d^2. It will be observed that the tube d^3 lies directly under the mixer D' and the needle-valve, hereinafter described. Perpendicularly there is bored from the top of the standard D a tube d^4, which meets the tube d^3 at right angles. It will be observed that the tubes *d*, d', d^2, d^3, and d^4 communicate.

The general form of the standard D is that of a T, one arm of the T being the mixer D'. The opposite arm of the T is bored and threaded to form a socket of a needle-valve D^2. The seat for this valve is formed in the wall of the standard D at D^3, at which point there is a cut perpendicular in the upper portion of the standard D, directly opposite the inner portion of the mixer D'. This opening or seat D^3 for the needle-valve D^2 communicates with the tube d^4. The shank of the valve D^2 is secured by appropriate packing and clamps E. Upon the inner side of the mixer D' there is secured by threading therein a thimble F, the thimble having an interior opening *f*, which is concentric with the extension of the opening through the seat D^3 for the needle-valve. By means of its being threaded in the interior of the mixer D' the thimble F can be adjusted so as to leave a greater or less opening between the wall in which the needle-valve seat D^3 is formed and the interior end of the mixer D'. Holes G G are formed in the walls of the mixer D' to permit the entrance of air.

It will be observed that the tube d', formed in the standard, is accessible through the

tube *d*. The tube d^2 is closed at its outer end by a screw-plug d^5. The tube d^3 is closed at its outer end by a screw-plug d^6, and the tube d^4 is closed at the top by a screw-plug d^7. The removal of any or all of these plugs gives complete access to the tubes as the removal of the needle-valve D^2 gives access to its seat D^3. This secures complete control over the tubes and enables the operator to easily and effectually remove any dirt or accumulations therein due to the generation of gas from the burning fluid, as hereinafter described. This form of generator, thus described as embodied in the standard D with such complete access secured, I believe to be new.

The mode of operation of this device is as follows: Gasoline or other equivalent fluid being furnished to the can A and the opening thereto being closed gas-tight by means of the washer *a* and the screw-plug A′, the needle-valve D^2 being closed, and the screw-valve C′ being opened the air-pump C is attached thereto. Air is forced into the upper portion of can A above the gasoline by means of the air-pump, the valve C′ closed, and the pump detached. The needle-valve D^2 is then opened and gasoline is forced by the air-pressure up through the tubes *d*, *d*′, d^2, d^3, and d^4 and out through the valve-seat D^3, from whence it runs over the upper portion of the standard D and fills the concavity A^2 in the upper portion surrounding the standard of the can A. The needle-valve is then closed, the gasoline is lighted, and flames around the upper portion of the standard D. The gasoline in burning heats the upper portion of the standard D to a high degree. After it has burned off and the standard is heated the needle-valve is then opened, and the gasoline, rising through the tube *d* and the connecting-tubes in the standard, is gasified, and the gas passing out through the valve-seat D^3 by means of the pressure initiated by the air-pump and the gasification of gasoline is forced into the mixer D′, where it meets atmospheric air. It is then lighted, and the flames and gases resulting from the combustion therein issue from the extremity of the mixer D′, and form a flame with an intense heat, which, when applied to painted surfaces, &c., immediately blisters up and burns off the paint thereon. The heat of the generator also heats the upper portion of the can A, and further heats the descending tube *d*, the heat therefrom being conducted downward into the gasoline. It results that only one or two compressions of the air-pump C are necessary in order to start a continued pressure. Afterward the heat of the flame itself in the mixer D′ is sufficient to gasify the gasoline rising from the tube *d* and to generate gas enough in the can to keep up the pressure required for forcing up gasoline into the generator formed in the upper part of the standard D.

What I claim is—

In a painter's torch, the combination of an oil receptacle having the concavity A^2 formed in the top wall thereof, said concavity having an orifice at the bottom, the standard D constructed in the form of a bracket and having the lower end of the vertical stem threaded to engage with said orifice, a central vertical passageway in said vertical stem communicating with the inside of said receptacle, passageways d^2, d^3, d^4, in said standard and directly above said concavity forming an irregular passageway with the vertical passage in said standard, plugs d^5, d^6, d^7, closing the outer ends of said passageways and adapted to be removed whereby said passageways may be cleaned, the needle orifice D^3 communicating with the passageway d^4, the valve D^2 adapted to close the needle orifice, the mixer D′ having its longitudinal axes in a plane above the irregular passageway d^2, d^3, formed integral with the horizontal stem of said bracket and in axial line with said needle orifice, the adjustable nipple F at the inner end of said mixer, and air inlets G located in the sides of said mixer and in front of said adjustable nipple, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

BERNARD REIN.

Witnesses:

MARION A. REEVE,

F. CLOUGH.