

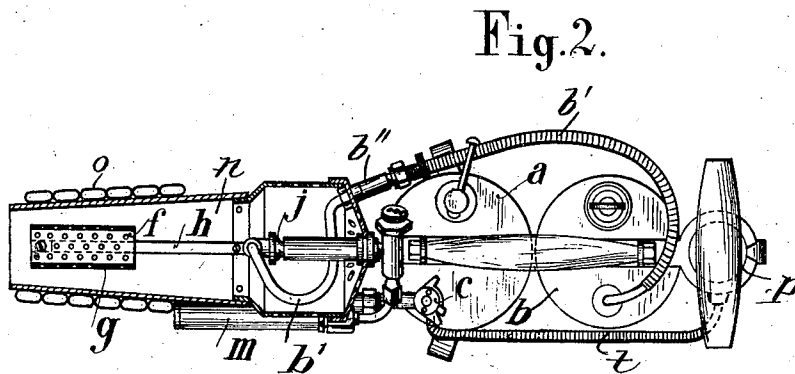
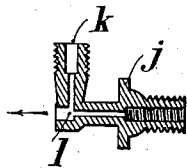
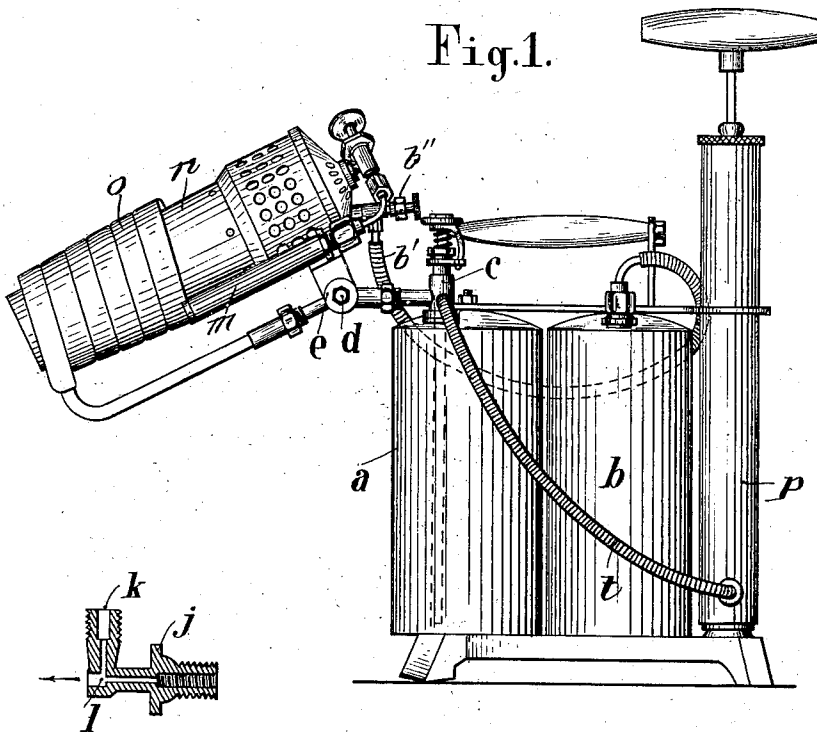
G. A. P. BELLON.

TORONTO.

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1,041,579.

Patented Oct. 15, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGES ALEXANDRE PHILIPPE BELLON, OF VINCENNES, FRANCE.

TORCH.

1,041,579.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Application filed September 25, 1911. Serial No. 651,274.

To all whom it may concern:

Be it known that I, GEORGES ALEXANDRE PHILIPPE BELLON, a citizen of the Republic of France, residing at 3 Rue du Moulin, Vincennes, Seine, France, have invented certain new and useful Improvements in Torches, of which the following is a specification.

My present invention relates to torches, such as are used in connection with soldering and for various purposes where it is desired to concentrate and emit a flame in a predetermined direction.

The principal objects of my invention are to provide a device simple in construction, and inexpensive to manufacture, and one efficient in action, so that the flame may be directed as desired without bodily moving the containers for the fluid, etc.

A further object of my invention is to provide means whereby, after the torch has been lighted for a certain period, reignition of the fuel accidentally extinguished, takes place, so long as the fuel is conducted to the jet of the torch.

In the drawings, forming a part of this specification: Figure 1 is a side elevation of a torch embodying my invention. Fig. 2 is a top plan view of the same, parts being shown in central horizontal section to disclose details of construction. Fig. 3 is a detailed view in central vertical section of the atomizer used in connection with the device.

The containers for water under pressure and inflammable fluid, are designated by *a* and *b*, respectively. Egress of water from container *a* is controlled by a two way valve *c* which supports a ball and socket joint *e*, having a pivotal center as indicated at *d*. This joint *e* supports a nozzle *n* of the torch. The joint *e* is constructed, in any suitable manner, to form a conducting means between the conduit *o*, which is coiled about the nozzle *n*, and the valve *c*. Conduit *o* leads to a filter *m*, which in turn is conductively connected with the atomizer *j* carried by the nozzle *n* and disposed with its egress end *l* directed to emit the fluid intermixed therein, through said nozzle.

A pump *p* or other suitable device is provided by which to attain the desired pressure in container *a*, a tube *t* leading from the pump *p* to the valve *c* which latter controls inlet of air to the container as well as egress of the liquid therefrom.

The container *b*, through conduit *b'*, is adapted to deliver inflammable fluid to the atomizer *j*, by entering the latter at port *k*, shown in Fig. 3 of the drawing, a valve *b''* being interposed in said conduit for the control of the fluid.

Inasmuch as the conduit *b'* is flexible, it will be perceived that a universal joint, supporting the nozzle permits the latter to be moved to direct the concentrated flame in the desired direction.

Preferably within nozzle *n* and centrally disposed to lie in or about the path of the flame emitted by the atomizer *j*, or in other words, in the path of concentration of nozzle *n*, I provide a cylindrical tubular member *f*, preferably of pure nickel, or other metal fusible only at a very high temperature, which temperature the torch is not adapted to provide. This cylindrical tubular member is provided with perforations *g* to facilitate contraction and expansion of the tube, and so as not to exclude oxygen desirable to facilitate ignition, and the member is preferably supported by a stem *h* secure to the nozzle *n*, and disposed wholly below the path of the flame.

The operation of the device is as follows:—

In starting the device, assuming that there is the desired pressure in container *a*, the valve *c* is operated so that air is permitted to flow through coil *o* and in passing port *k* in atomizer *j*, the inflammable fluid is drawn from container *b* and intermixed with the air. The carbureted fluid is then ignited and as soon as the nozzle *n* has attained the desired temperature, the valve *c* is operated to permit water to flow through coil *o*, which water is transformed into steam, by the heat and acts as previously described in connection with the air, to carry with it inflammable fluid at the egress opening *l* of the atomizer *j*. As soon as the inflammable fluid is emitted from the atomizer *j* and has been ignited for a period sufficient to heat the cylindrical tubular member *f* to a high temperature, should the ignition of the fluid cease, due to a current of air, or otherwise, the fluid emitted from atomizer will be reignited owing to the high temperature which the member *f* has attained, because of its disposition in the flame concentrated by the nozzle *n*.

It is to be noted that the stem *h* is so disposed that it is little effected by the heat,

inasmuch as the intense heat tends to rise toward the top of the nozzle.

I claim:—

1. In a torch of the character described, 5 the combination of a nozzle, a device adapted to emit inflammable fluid through said nozzle to be concentrated thereby, and an annular member, fusible at a very high temperature, disposed in the path of con- 10 centration, with its annular section at substantially right angles to the axis of the path of concentration.

2. In a torch of the character described, the combination of a nozzle, a device 15 adapted to deliver inflammable fluid through said nozzle to be concentrated thereby, and a cylindrical tubular member, fusible at a very high temperature, disposed in the path of concentration, with its cross section at 20 substantially right angles to the axis of the path of concentration.

3. In a torch of the character described, the combination of a nozzle, a device 25 adapted to deliver inflammable fluid through said nozzle to be concentrated thereby, and

a perforated cylindrical tubular member, fusible at a very high temperature, disposed in the path of concentration, with its cross section at substantially right angles to the axis of the path of concentration. 30

4. In a torch, of the character described, the combination of a nozzle, a device adapted to emit inflammable fluid through said nozzle to be concentrated thereby, an annular member fusible at a very high tem- 35 perature, disposed in the path of concentration with its annular section at substantially right angles to the axis of the path of concentration, and a stem secured to said annular member and nozzle for supporting 40 the former, said stem being disposed below the path of concentration, substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GEORGES ALEXANDRE PHILIPPE BELLON.

Witnesses:

VICTOR PRÉVOST,
H. C. COXE.