

F. B. CARLETON.
HYDROCARBON TORCH.
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901,307.

Patented Oct. 13, 1908.

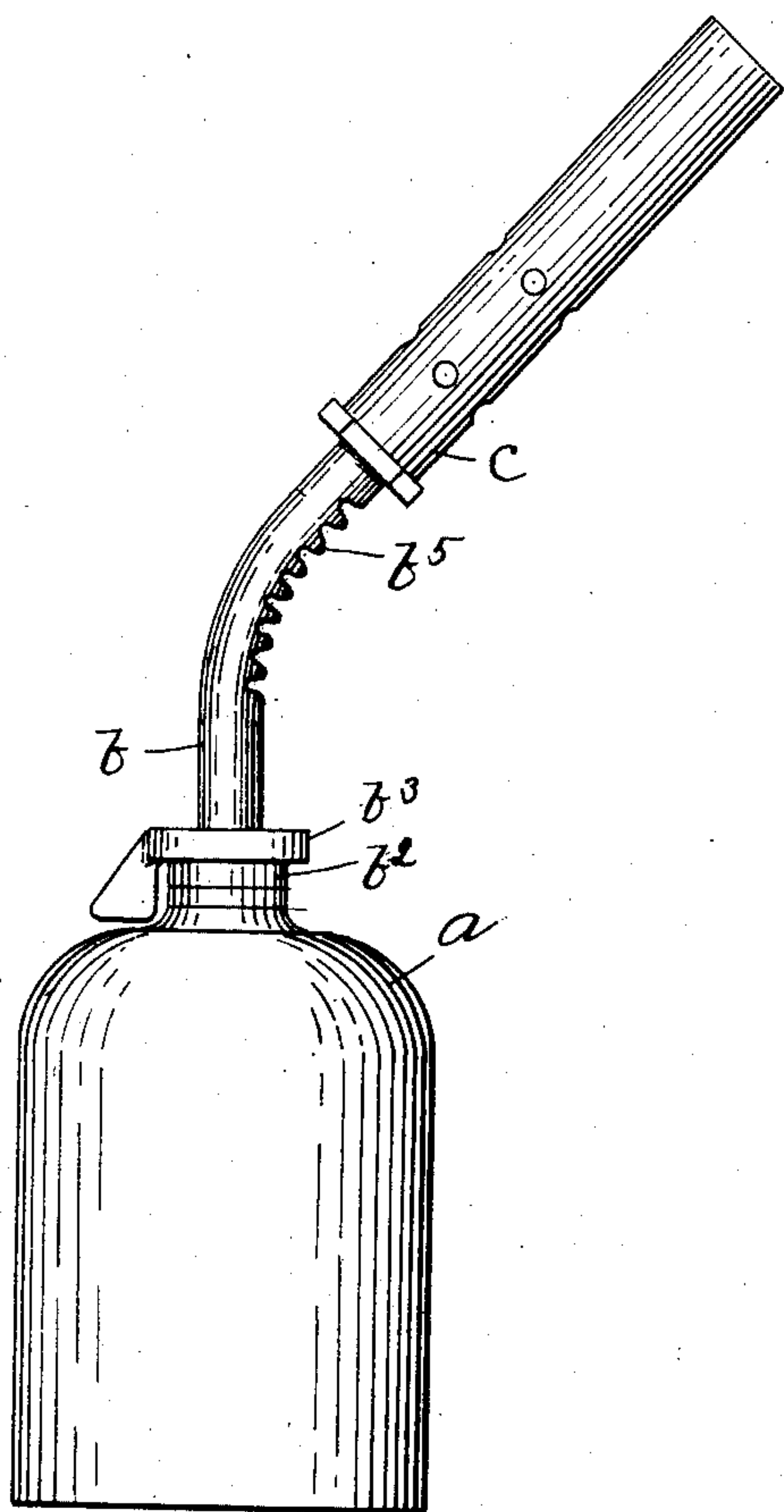


Fig. 1.

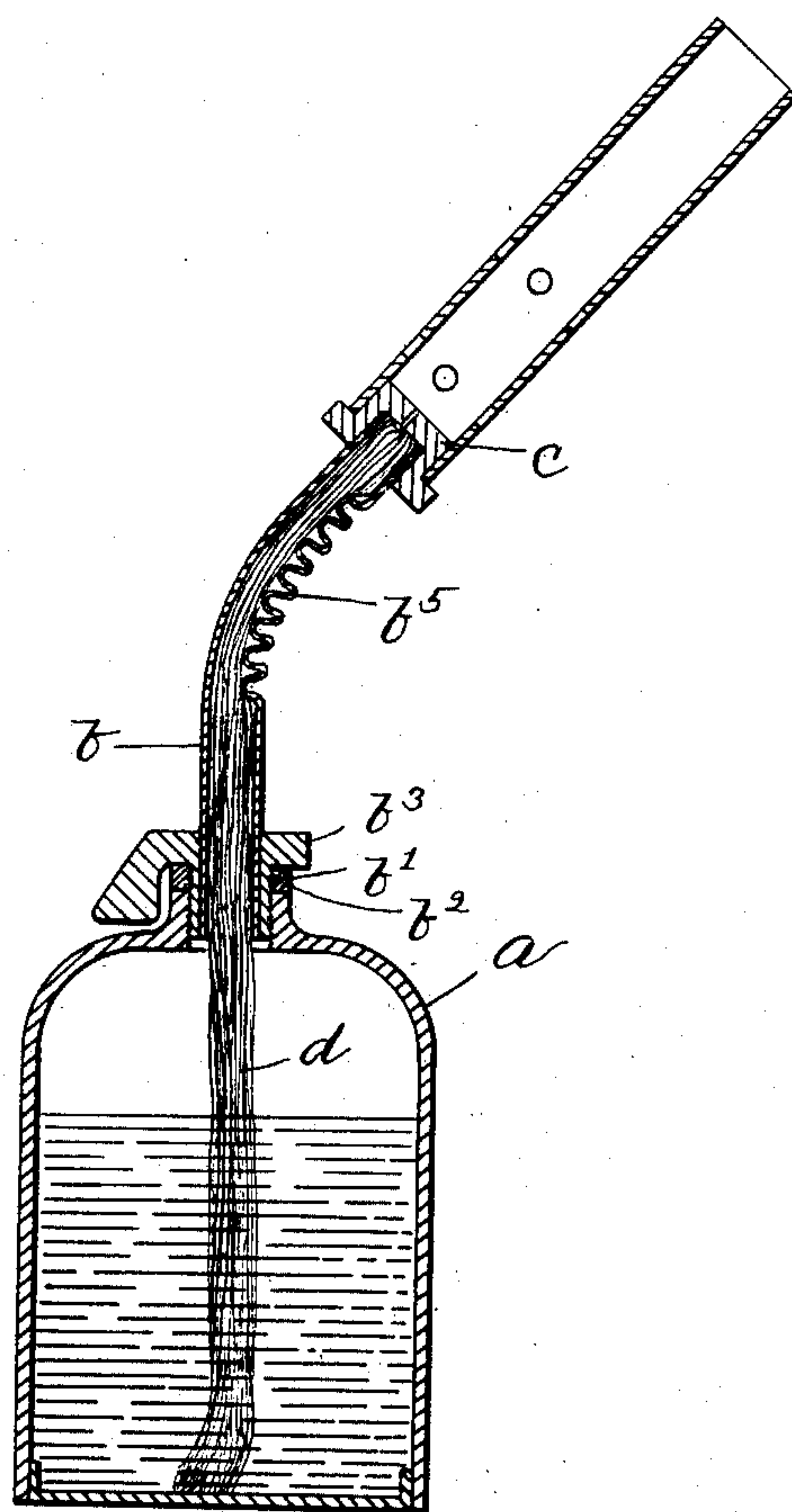


Fig. 2.

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UNITED STATES PATENT OFFICE.

FRANCIS B. CARLETON, OF SALEM, MASSACHUSETTS.

HYDROCARBON-TORCH.

No. 901,307.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed November 16, 1907. Serial No. 402,404.

To all whom it may concern:

Be it known that I, FRANCIS B. CARLETON, of Salem, county of Essex, State of Massachusetts, have invented an Improvement in Hydrocarbon-Torches, of which the following is a specification.

This invention relates to hydrocarbon torches of the type wherein a burner is connected to the extremity of a retort, which is made as a pipe and which is connected with a reservoir containing liquid-hydrocarbon and a wick is arranged in said retort which extends down into the reservoir and conducts the liquid-hydrocarbon up into the retort, so that by heating the retort the liquid-hydrocarbon is converted into a gas which issues from an orifice in the burner. With this type of torch it has been customary to first heat the pipe by means of a match, to thereby generate sufficient gas to light the torch, the flame of the match being applied externally to the retort at a point approximately midway its length, and subsequently to gradually heat the retort to a high temperature by means of the heat generated at the burner, so that gas is generated and caused to issue from the burner under considerable pressure. Ordinarily a single match will not suffice to heat the retort sufficiently to produce the gas so that the torch can be lighted and consequently other means are resorted to, to heat the retort and start the torch, which is not as convenient and hence is objectionable.

The object of this invention is to improve the construction of the retort connecting the burner with the reservoir to the end that the area of its exposed heating surface is largely increased and its cubic capacity is reduced, whereby the gas may be more quickly formed, so that but a single match need be employed, and the gas may be formed under greater pressure than heretofore which increases the efficiency of the torch.

Figure 1 shows in side elevation a torch embodying this invention. Fig. 2 is a vertical section of the torch shown in Fig. 1.

The reservoir *a* which contains the liquid-hydrocarbon may be of any usual or suitable shape and size and may be constructed in any usual or suitable manner. The retort *b* is made as a pipe, and is connected to said reservoir by any suitable means, as for instance by a bushing *b'* which embraces the retort and is soldered thereto and which is screwed into

the neck of the reservoir, the joint being made tight by means of a washer *b²* which is interposed between a flange *b³* on the bushing and the neck. The flange *b³* is formed hexagonally to receive a wrench by which it may be turned to form a tight connection with the reservoir, or it may be otherwise constructed. The retort *b* is made of any desired length and is bent at an angle.

The burner *c*, of any suitable construction is secured to the extremity of the retort, it having a mixing tube provided with holes for the admission of air.

A wick *d* extends lengthwise the retort *b*, preferably from end to end of it, and down into the reservoir, and operates to draw up the liquid-hydrocarbon by capillary attraction.

The retort *b* has a series of transversely disposed indentations *b⁵* arranged along its under side at the bend, which extend from side to side of the retort. The bottoms of the indentations are straight from end to end and are of a length nearly equal to the full diameter of the retort, and as a result they provide a flattened heating surface, and also materially contract the retort along its bent portion, thereby reducing the size of the passage through it along such portion. These indentations also materially increase the area of the heating surface at the bend, both exteriorly and interiorly. The flame of a match or other flame may be applied to the indented portion of the retort for the purpose of heating it, and by reason of the largely increased area of the heating surface at the bent portion of the retort with which the flame comes in contact, and by reason of the reduced volume of liquid hydrocarbon contained in the contracted portion of the retort, said liquid hydrocarbon will be heated to a greater degree, and in a shorter period of time than as if such indentations were omitted and but a single match need be used. Furthermore, by arranging the indentations transversely with respect to the retort, outwardly extended portions or ribs are formed which obstruct upward movement of the flame and tend to hold it confined to the indented portion of the retort which materially assists in localizing the heat of the flame at the bent portion of the retort. After the torch is lighted and the retort is being heated by the heat of the burner the heating surface of the retort being largely increased, owing to its indented portion, enables the

gas to be formed under greater pressure than if said indentations were omitted. Furthermore, the spaces which are formed in the retort by indenting it afford recesses for the gas, which are not obstructed nor occupied by the wick. I am aware that prior to my invention retorts have been corrugated from end to end, to increase their heating surfaces, hence I do not herein broadly claim a corrugated retort.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

A torch consisting of a reservoir, a tubular bent retort extending upwardly therefrom having a series of transversely disposed indentations on its under side at the bend, which extends from side to side of the retort,

and which contracts the passage through the retort at the bend and increases the heating area along the under side of the contracted passage, and also provides external ribs which obstruct the upward tendency of a flame, a wick contained in said retort which extends along its contracted portion and down into the reservoir, and a burner arranged at the extremity of said retort, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

FRANCIS B. CARLETON.

Witnesses:

B. J. NOYES,
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