

No. 640,686.

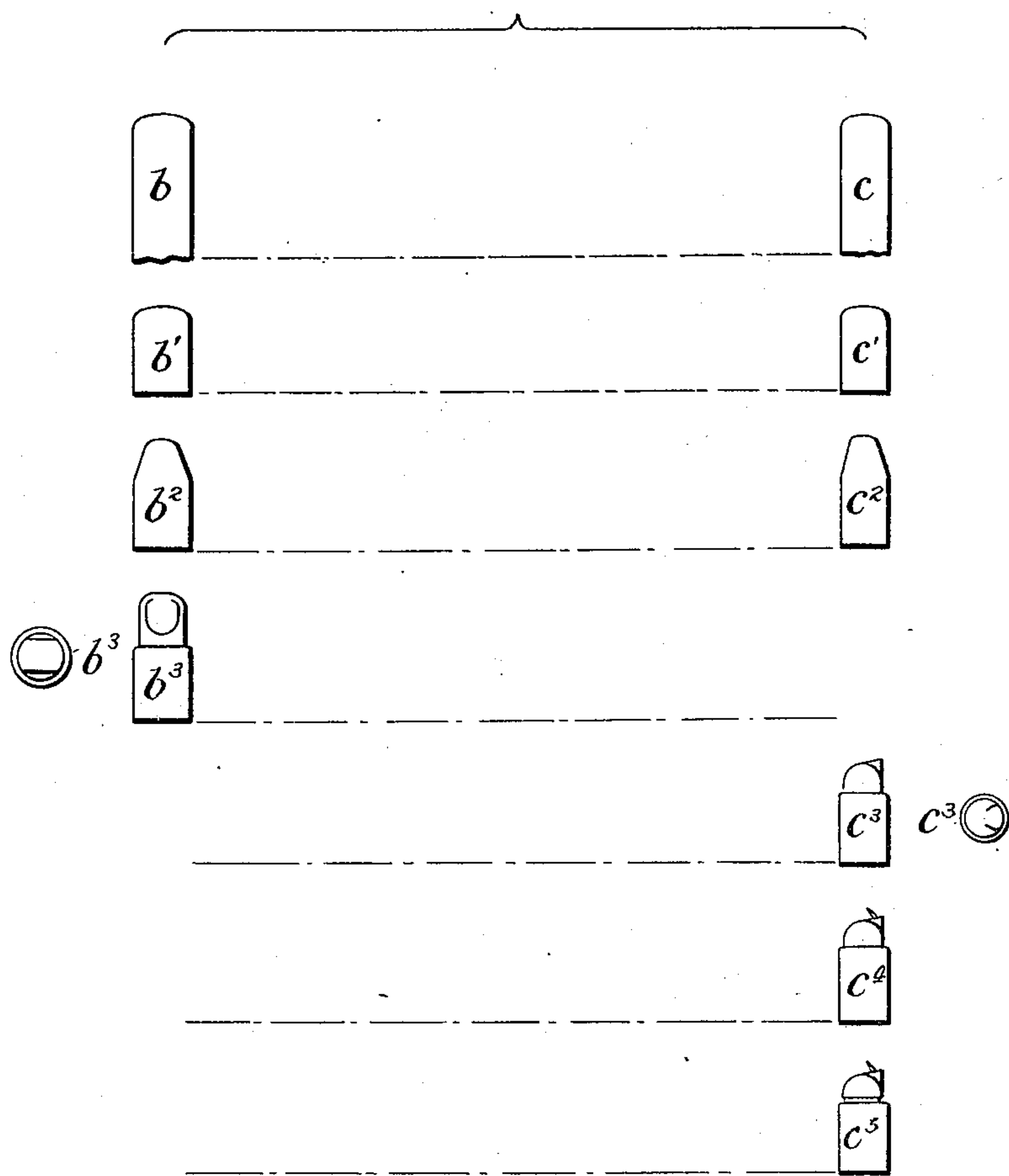
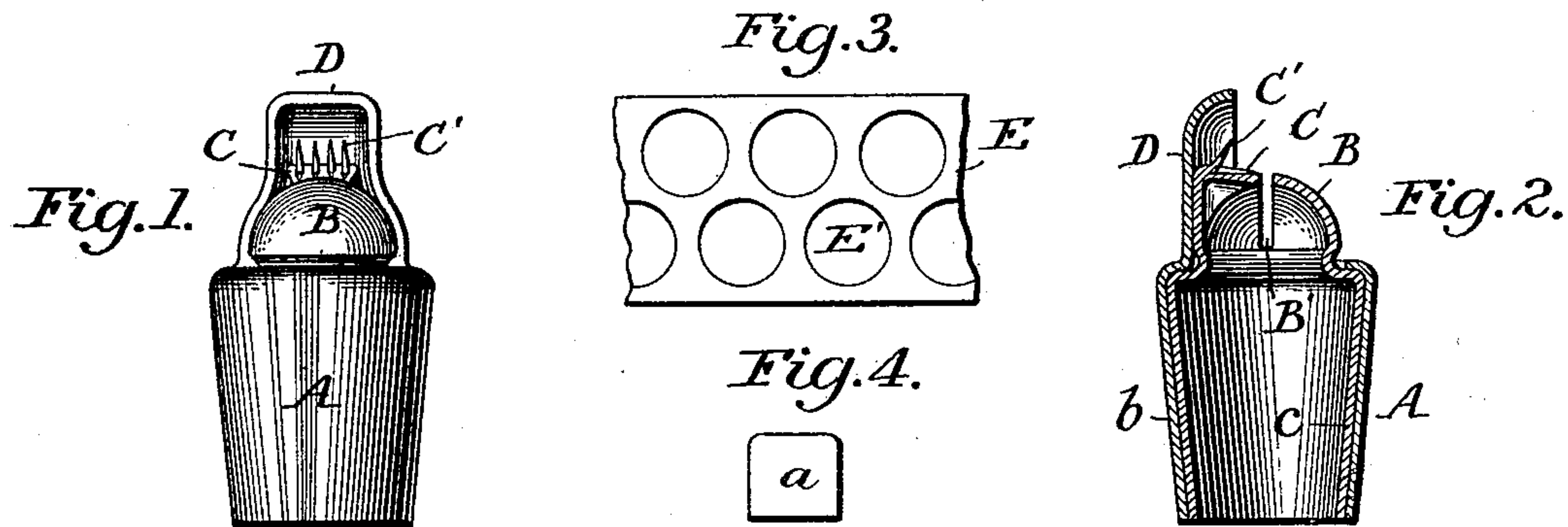
Patented Jan. 2, 1900.

O. MUSSINAN.

GAS TIP.

(Application filed Jan. 20, 1896.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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GAS-TIP.

SPECIFICATION forming part of Letters Patent No. 640,686, dated January 2, 1900.

Application filed January 20, 1896. Serial No. 576,184. (No model.)

To all whom it may concern:

Be it known that I, OSCAR MUSSINAN, a citizen of the United States, residing at Arverne-by-the-Sea, in the county of Queens and State of New York, have invented certain new and useful Improvements in Gas-Tips and Methods of Making the Same, of which the following is a specification.

My invention relates to gas-tips, and has for its object to provide a metallic gas-tip which is adapted to receive, support, and protect a stable catalytic material capable of igniting gases at ordinary temperatures; and to these ends my invention consists in the various features of construction and arrangement of parts, substantially as more particularly hereinafter pointed out.

In order that the general principles of my invention may be clearly understood by those skilled in the art sufficiently to enable them to carry out the same, I have illustrated in the accompanying drawings one preferred form of gas-tip made in accordance with my invention and have indicated the preferred manner of constructing and arranging the same, and it will be understood that this is typical only of the construction and arrangement of parts, as my invention is not limited to the details shown and described, but covers any equivalents in form, construction, or arrangement which embody any one or more of the general features or principles of my invention.

In the drawings, Figure 1 is a side view, enlarged, of a gas-tip. Fig. 2 is a vertical central transverse section through the same. Fig. 3 indicates a piece of material from which the tip is made; and Fig. 4 is a sort of diagrammatic or detail drawing showing the various steps through which the material passes in producing a tip such as shown in Fig. 1, it being understood, of course, that other forms or shapes or embodiments of my invention may involve other steps to complete them.

This invention is intended for use in connection with a gas-tip adapted to support and protect a stable catalytic material capable of igniting gases at ordinary temperatures, and for this purpose it embodies some special features of construction and arrangement of parts, and I will therefore proceed to de-

scribe my invention in connection with such a tip—that is, one which embodies a platform or support for the catalytic material and preferably also embodies a hood or protector for the material, thus presenting a practical and commercial gas-tip for this purpose.

One object of my invention is to provide a tip consisting, practically, of an inner and an outer integral shell joined together and shaped into a tip of approved and satisfactory form, the integral shells being telescoped or otherwise united during the manufacture.

Other objects and results will appear from the following description and need not be specifically recited.

The tip shown in the drawings comprises a body portion A, consisting of an outer integral shell *b* and an inner integral shell *c*, a head portion B, which is herein shown as of a dome or semispherical form, a platform or receiver or support C, preferably arranged at one side of the dome or head portion, and a protector or hood D, which elements may vary in details of construction and arrangement.

In the present instance the body portion A is shown with the integral inner and outer shells of substantially the same contour and length, and this is the preferred way, although it is evident that one shell need not be of the same length or contour as the other; but one shell may be more in the form of a sleeve with relation to the other shell, either internal or external, as the case may be. The head portion is also shown as consisting of a single thickness of metal formed out of the inner shell, and that is the preferred form, although the head may embody more or less of the outer shell.

The platform C is shown as extending on one side only of the dome or head, although, of course, it may be on both sides. It is also shown as provided with certain prongs or extensions C', formed integral with the platform, for the purpose of more readily retaining the catalytic material in place, and while this is the preferred form other means for accomplishing this object may be provided.

The hood or protector is shown as constituting an integral portion of the outer shell and embracing more or less of the head and

extending partially over and around the platform, and this is also the preferred form, although the shape or configuration may vary to best accomplish the results in any particular tip. The hood or protector should be provided on both sides of the outer shell whenever two platforms are used.

I will now proceed to describe more in detail the manner in which I preferably produce the particular form of tip illustrated, and Fig. 3 represents a piece of material E of any convenient thickness or size, from which the shells or cups a, Fig. 4, are punched and drawn, leaving the openings E' in the material. It will be seen that the shells or cups a are all of a uniform size, and from these I form, by drawing, two shells of varying size, the shell b eventually forming the outer and the shell c the inner portion of the tip. These two integral shells are of such a relative diameter that the inner shell c will fit tightly within the outer shell b, forming an absolutely-tight joint when they are assembled as hereinafter specified. These shells are then trimmed or cut so that they are of the proper or desired length, and after this operation they are represented at b' c', respectively, and in the present instance they are shown as of practically the same length. These shells are pointed substantially as indicated at b² c², the object being to change the heads of each in such a manner that the metal will readily and without break or excessive strain shape itself into the succeeding and ultimate forms.

So far it will be seen that the inner and outer shells have been submitted to substantially the same operations and only differ from each other in size; but in order to form the tip illustrated the outer shell b is next subjected to rectangular and cylindrical reduction, providing a shoulder, as seen in the side and end view b³; but of course these particular forms will be varied to meet the requirements of the ultimate shape of the hood or protector. The inner shell is also formed into the dome and platform shape, as indicated in the side and end view c³, or such other shape as these particular parts are to assume, depending upon the shape and size of the frame as well as upon the size and height of the platform and the character of the catalytic material and other features too numerous to particularly specify. In order that the platform may more readily retain the catalytic material, the prongs may now be raised upon the platform, as seen at c⁴, and the head is then shaped so as to form a neck or depressed ring at the lower portion of the head, as seen at c⁵. Meanwhile the outer shell b is shaped by milling, cutting, or in other way so as to produce the desired form of hood, as indicated at b⁴.

So far the inner and outer integral shells have been separately manipulated, and it now remains to bring these shells into proper rela-

tive position with relation to each other, and this is done by telescoping them or sliding one within the other under the required pressure, so that the platform of the inner shell will rest and fit within the confines of the hood of the outer shell, its shoulder bearing tightly against the inner shoulder of the outer shell and the entire outer cylindrical surface of the inner shell bearing closely and snugly against the inner cylindrical surface of the outer shell, forming an absolutely tight joint between them, and this condition of affairs is best represented in the side and end views b⁶ c⁶. The two integral shells now practically form a single tip, so joined that they are inseparable without destroying the entire structure and to all intents and purposes and to all appearances they are practically a single solid shell having the desired interior and exterior form of head, platform, and protector. In order, however, that the so-telescoped shells shall be perfectly uniform in length, they may be subjected to sizing and squaring operations in any well-known manner.

So far the body portion of the tip is cylindrical; but in order to give the body portion the adjustability desirable for gas-tips, so that they will fit the ordinary burners or pillars on which they may be placed, this body portion is slightly tapered, as seen at b⁷ c⁷, and this may be accomplished by ordinary and well-known means, under pressure in a die or otherwise. The tip is then put through the final operation, which is the slotting, producing the opening B', which is properly located and of the desired width and depth to meet the shape and size of the flame and other requirements, depending upon the particular use to which it is to be put, and the tip is brought to the condition shown at b⁸ c⁸. It is evident that in place of the slot any of the usual and well-known outlets for gas in gas tips or burners may be provided.

It will thus be seen that while there are a number of somewhat minute and delicate operations necessary to the carrying out and perfecting of the particular tip shown in the drawings, all these may be readily accomplished by proper tools and machinery, so that all of the tips will be uniform and alike in all respects in all their essential features, making them interchangeable, and it is evident that the details of construction can be readily varied as desired, the tools and operations thus generally indicated being varied in accordance therewith so that the ultimate result can be attained.

This tip is made of malleable metal, being drawn, reduced, and otherwise manipulated to form the tip having the desired configuration and characteristics from sheet metal, and while, as above indicated, various metals may be used, I preferably use aluminium or aluminium alloy. Furthermore, the tip illustrated and described embraces two integral

shells united by telescoping or sliding them one within the other, and, further, it has certain specific features of configuration and construction adapting it for the particular purposes intended. From this it will be seen that my invention is not limited to the particular matters specifically disclosed; but

What I claim is—

1. A gas-tip consisting of two shells, the body portions thereof being closely united at the neck of the tip, substantially as described.

2. A gas-tip consisting of two shells fitted closely together, one within the other, one of said shells being formed with a perforated

dome and the other with a hood adjacent the dome, substantially as described. 15

3. A gas-tip consisting of two tapered shells fitted closely together one within the other, one of said shells being formed with a perforated dome and the other with a hood adjacent the dome, substantially as described. 20

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

OSCAR MUSSINAN.

Witnesses:

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