E. L. CLAUS.

TORCH DISTRIBUTER HEAD.

APPLICATION FILED JULY 26, 1919.

1,348,390. Patented Aug. 3, 1920.

Fig. 1.

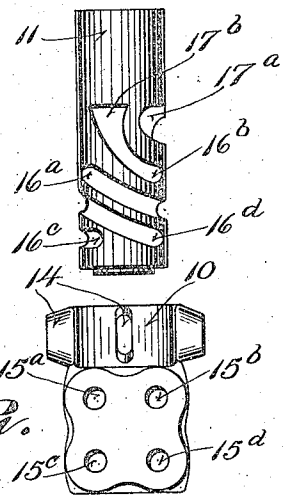



Fig. 2.

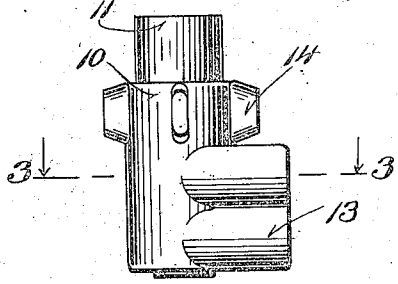



Fig. 3.

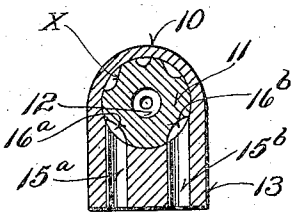



Fig. 4.

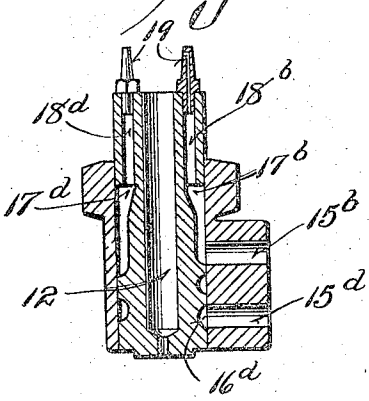
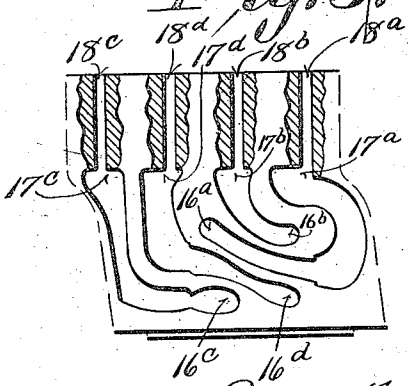



Fig. 5.




Witness:

J. T. Britt

Inventor:

E. L. Claus

By Young & Young

Attorneys.

# UNITED STATES PATENT OFFICE.

EMIL L. CLAUS, OF MILWAUKEE, WISCONSIN.

## TORCH DISTRIBUTER-HEAD.

1,348,390. Specification of Letters Patent. Patented Aug. 3, 1920.

Application filed July 26, 1919. Serial No. 313,461.

*To all whom it may concern:*

Be it known that I, EMIL L. CLAUS, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Torch Distributer-Heads; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention is directed to the provision of means of providing communication between angularly disposed groups of passageways in a distributer head or other member, and my invention finds particular application in connection with the distributer torch head of an ignition device of the type shown in my co-pending application for patent filed Mar. 18, 1919, Serial No. 283,325, and adapted for association with a gas stove to light any one of the plurality of burners by directing a single torch flame toward the selected burner, gas being supplied to the distributing head through a plurality of tubes.

It is primarily the object of my invention to provide a method of forming series of communicating angular passageways a member of this character, which reduces to a minimum the number of drilling and other machining operations necessary in forming the member, whereby to procure a decided economy in manufacture and whereby to permit the provision of an exceedingly simple and compact structure.

It is more particularly the object of my invention to provide an arrangement whereby various of the passageways sections of the device may be cast in the device.

With the above and other objects and advantages in view, which will be apparent as the description proceeds, my invention resides in the novel features of construction, combination and arrangement of the parts as hereinafter described and defined by the appended claims.

In the accompanying drawings:

Figure 1 is an elevational view of the disassembled sections of a torch distributer head embodying my invention.

Fig. 2 is a side elevational view of the distributer head with its sections assembled.

Fig. 3 is a transverse sectional view through the head on the line 3—3 of Fig. 2.

Fig. 4 is a longitudinal sectional view through the head.

Fig. 5 is a diagrammatic laid out view of the peripheral surface of the core section of the head showing the relation of the grooves cast therein.

Referring now more particularly to the drawings, I form the distributer head in two cast sections, a sleeve 10 and a relatively longer core cylinder 11 which may be provided with a longitudinal central passageway 12 to lighten the structure. A laterally extending boss 13 is formed on the lower portion of the sleeve, and the upper portion of the sleeve is formed with radially outstanding lugs 14 for supporting a shield for the torch head. A series of passageways $15^a$, $15^b$, $15^c$ and $15^d$, are drilled through the boss 13 and are open at the inner periphery of the sleeve, these passageways being arranged in quadrangular relation and being adapted at their outer ends for communication with supply tubes for the distributer head.

The cylindrical section is cast with a diameter slightly greater than the internal diameter of the sleeve 10, and a series of spirally extending grooves are cast in the peripheries of these sections, these grooves corresponding in number to the number of drilled passageways which may be varied to meet differing conditions of use for which the device is intended. One of the peripheral grooves has one end $16^b$ adapted for communication with the sleeve passageway $15^b$ when the core cylinder is inserted in the sleeve and this groove extends spirally upward and terminates in an inset portion $17^b$ which, when the core is inserted in the sleeve, is disposed slightly below the upper end of the sleeve. A second groove has one end portion $16^a$ adapted for communication with the sleeve passageway $15^a$, said groove extending spirally downward and around the groove end $16^b$ and then spirally upward in a reverse direction, terminating in an inset portion $16^a$ adjacent the portion $16^b$. A third groove has one end portion $16^d$ adapted for communication with the sleeve passageway $15^d$ and extends spirally upward below the second named groove and terminates in an inset portion $17^d$. The fourth groove has one end $16^c$ adapted for

communication with the sleeve passageway $15^e$ and extends circumferentially in a counter clockwise direction and then upwardly, terminating in an inset portion $17^e$. These inset portions $17^a$, $17^b$, etc., are thus disposed in a circumferential series about the upper peripheral portion of the core, and when the core is disposed within the sleeve these inset portions form the upper end of a series of inclosed passageways which are in communication with the laterally extending passageways $15^a$, $15^b$, etc., of the sleeve boss 13. Certain portions of the grooves are widened to provide draw faces $x$, facilitating the formation of the mold sections of the core. The core is provided with a series of bores $18^a$, $18^b$, $18^c$ and $18^d$ drilled from its top to the inset groove portions $17^a$, $17^b$, etc., thus providing vertically extending ports at the top of the distributer head in which may be set jet tips 19, as shown in Fig. 4 to direct torch flames selectively in any one of a plurality of directions.

In carrying out my improved method of forming the distributer head the sleeve 10 and core cylinder 11 are cast in the shape described. The bores $15^a$, $15^b$, etc., and $18^a$, $18^b$, etc., are then drilled in said sections and the inner periphery of the sleeves and the periphery of the core are finished to such relative diameters that the core will fit in the sleeve when the sleeve has been expanded by heating. The sleeve is then heated, and the core inserted therein with its grooves in proper coincidence with the inner ends of the sleeve bore and the sleeve is permitted to cool whereby it shrinks on the core, thus connecting the sections in a practical integral block and closing the cast-in grooves of the core so that a series of closed angular passageways are formed in the distributer head having their terminal portions disposed in right angular groups. By my improved method, the only machining operations necessary in the formation of the passageways consist in finishing the meeting peripheral faces of the sections and in drilling the bores $15^a$, $15^b$, etc., and $18^a$, $18^b$, etc. and an exceedingly simple and compact structure is procured.

While I have shown and described a preferred embodiment of my invention it will be appreciated that various changes and modifications of structure and of operative steps may be employed to meet differing conditions of use without departing in any manner from the spirit of my invention.

What is claimed is:

1. A distributer member comprising a sleeve provided with a series of apertures open at the inner periphery of the sleeve and a core cylinder secured in the sleeve and provided with grooves extending spirally in its peripheral surface, each of said grooves being closed by the sleeve and having one end portion in communication with a corresponding aperture of the sleeve.

2. A distributer member comprising a sleeve provided with a series of apertures open at the inner periphery of the sleeve and a core cylinder secured in the sleeve and provided with grooves extending spirally in its peripheral surface, each of said grooves being closed by the sleeve and having one end portion in communication with a corresponding aperture of the sleeve, said core cylinder being provided with longitudinally extending apertures in communication with the other end portions of the grooves.

3. A distributer member comprising a sleeve provided with a group of apertures open at its inner periphery, a core cylinder secured in the sleeve and provided with a peripheral groove communicating at one end with one of the sleeve apertures and extending spirally therefrom, said cylinder being also provided with a second groove communicating with a second sleeve aperture and extending spirally toward the said end of the first named groove and then around said end of the groove and extended spirally in a reverse direction.

4. A distributer member comprising a sleeve provided with a series of apertures opening at the inner periphery of the sleeve, and a core cylinder secured in the sleeve and provided with grooves extending in its peripheral surface, each of said grooves being closed by the sleeve and having one end portion in communication with a corresponding aperture of the sleeve.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

EMIL L. CLAUS.