

996,948.

Fig. 2.

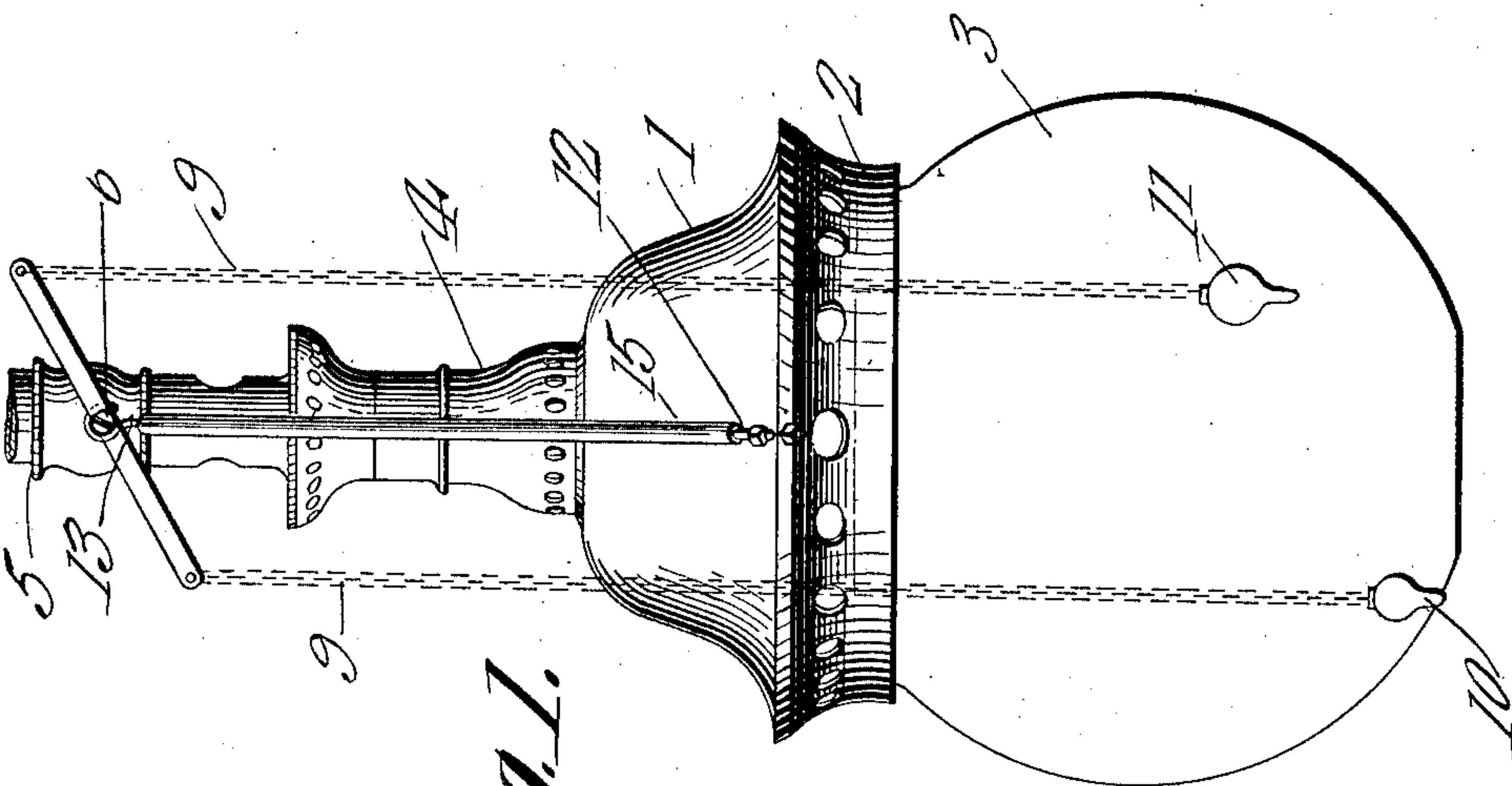


Fig. 1.

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UNITED STATES PATENT OFFICE.

RALPH E. STAPLES, OF CAMBRIDGE, MASSACHUSETTS.

AUTOMATIC GAS CUT-OFF.

996,948.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed February 8, 1911. Serial No. 607,298.

To all whom it may concern:

Be it known that I, RALPH E. STAPLES, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and useful Automatic Gas Cut-Off, of which the following is a specification.

This invention relates to automatic gas cut-offs and its object is to provide an ordinary form of valve with weighted means whereby the valve will automatically close when released, means being utilized whereby the expansion of the hood or dome supporting the globe, will result in the maintenance of the valve in open position, said valve being released automatically when the dome or globe support becomes cool, as when the light is extinguished, thus permitting the valve to close automatically.

Another object is to provide a device of this character which is very simple in construction, can be readily adjusted, and is positive in operation.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings, the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a front elevation of a structure embodying the present improvements, the parts being shown in the positions occupied thereby when the valve is open. Fig. 2 is a side elevation of the parts shown in Fig. 1.

Referring to the figures by characters of reference 1 designates a dome having a depending annular flange 2 for engaging and supporting a globe 3. This dome is connected, as ordinarily, to the feed pipe 4 of the burner and a valve of the usual form is mounted for rotation within a casing 5, this valve having stems 6 extending in opposite directions from the casing and each formed with an annular channel 7. A lever 8 is secured at its center to one of the stems and chains 9 or the like are connected to the free ends of the lever, one of said chains having a weight 10 secured thereto while the other

chain has another heavier weight 11 attached to it. This heavier weight is designed to hold the lever 8 normally in a predetermined position and with the valve closed.

Rods 12 are arranged above the dome 1, each rod having a hook 13 or the like at its upper end and which engages the grooved portion of one of the stems 6. These rods diverge downwardly and their lower ends pass through openings in the dome 1 at diametrically opposed points, the lower ends of the rods being screw threaded and engaged by adjusting nuts 14. Each rod has a protecting sleeve or covering 15 of material which will not readily conduct heat, and, therefore the said rods are thus efficiently protected from the heat and will not expand or contract to an objectionable extent when the gas is lighted or when the light is extinguished.

When it is desired to use the cut-off, the nuts 14 are adjusted so as to cause the hooks 13 to bear lightly upon the stems 6 within the grooved portions thereof. By then pulling downwardly on the lightest weight 10, the lever 8 will be moved so as to open the valve and the weight 11 will be elevated. While the parts are thus held, the escaping gas can be ignited. This will result in the heating and consequently the expansion of the dome 1 and as the rods 12 are fastened to this dome at diametrically opposed points, it will be apparent that they will be pulled longitudinally and bind with increased pressure upon the stems 6, thus holding the valve against rotation. The valve will therefore be maintained open as long as combustion is taking place. Should the gas be blown out or the flame extinguished from any other cause aside from the turning of the valve, the dome 1, upon cooling, will return the rods 12 to their initial positions, thus relieving the stems 6 of excessive pressure and permitting the weight 11 to automatically swing lever 8 back to its initial position, thus closing the valve.

What is claimed is:—

1. Apparatus of the class described including an expansible globe supporting structure, a gas controlling valve, a connection between the valve stem and the structure, said stem being revoluble independently of the connection, and said connection constituting means for binding upon the stem to hold the valve open during the ex-

pansion of the support, and means for automatically closing the valve upon the contraction of the support.

2. Apparatus of the class described including an expansible structure, a valve having annularly grooved stems, connections between said stems and diametrically opposed portions of said structure, said connections being normally seated within the grooves, means for holding the valve normally closed, said connection being shiftable by the structure, when expanded, to bind upon the stems and hold the valve against movement.

3. Apparatus of the class described including an expansible supporting structure, a valve having annularly grooved stems, means for holding the valve normally shut, means for opening the valve, and connections between the supporting structure and the grooved portions of the stems for binding upon the stems when the structure is expanded, to hold the valve against movement to normal position.

4. Apparatus of the class described including a supporting structure, a valve having annularly grooved stems, said supporting structure being expansible when sub-

jected to heat, and oppositely disposed connections between said supporting structure and the grooved portions of the stems, said connections constituting means for frictionally engaging the stems to hold the valve against rotation when the structure is expanded, and means for automatically returning the valve to closed position when released.

5. Apparatus of the class described including an expansible globe supporting structure, a gas controlling valve having oppositely extending stems, connections between said stems and opposite portions of said structure, said connections constituting means for binding upon the stems to hold the valve open during the expansion of the support, and means for automatically closing the valve upon the contraction of the support.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

RALPH E. STAPLES.

Witnesses:

EVA H. CLARKE,
WM. A. McLEAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."