No. 777,566. PATENTED DEC. 13, 1904.

J. W. TATUM & W. H. PARKER.

AUTOMATIC CUT-OFF FOR GAS BURNERS.

APPLICATION FILED SEPT. 9, 1904.

NO MODEL.

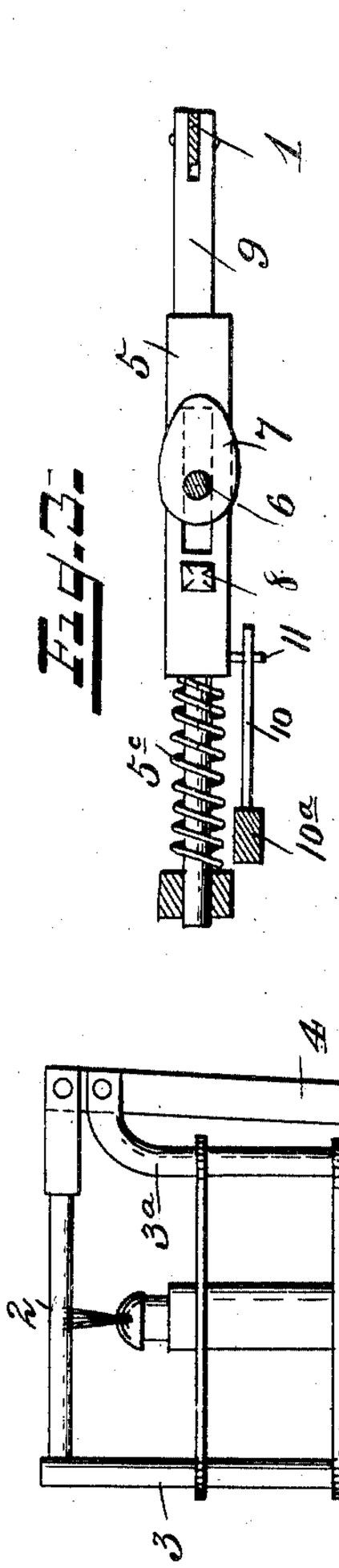

Fig. 3.

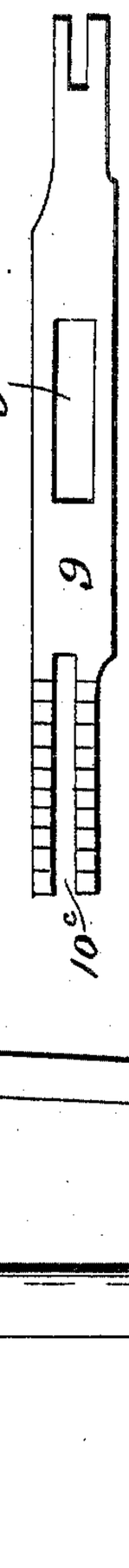

Fig. 4.

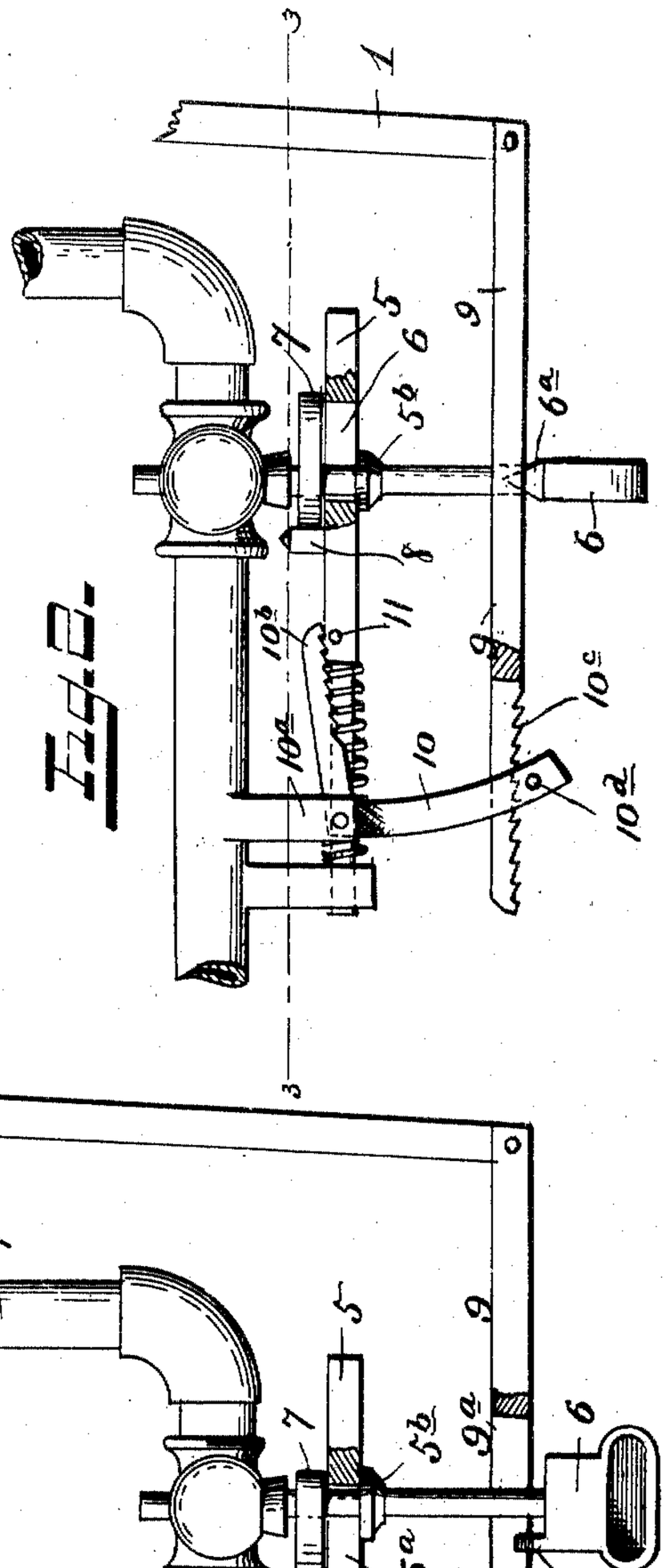

Fig. 2.

Fig. 1.

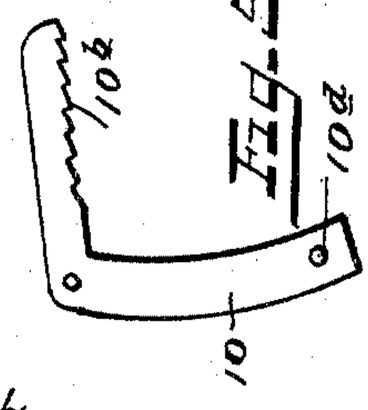

Fig. 5.

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No. 777,566. Patented December 13, 1904.

UNITED STATES PATENT OFFICE.

JAMES W. TATUM, OF DURHAM, NORTH CAROLINA, AND WILLIAM H. PARKER, OF MABEN, MISSISSIPPI, ASSIGNORS TO ROBERT B. BOONE, JOHN W. SMITH, AND JAMES W. TATUM, OF DURHAM, NORTH CAROLINA.

AUTOMATIC CUT-OFF FOR GAS-BURNERS.

SPECIFICATION forming part of Letters Patent No. 777,566, dated December 13, 1904.

Application filed September 9, 1904. Serial No. 223,892. (No model.)

To all whom it may concern:

Be it known that we, JAMES W. TATUM, residing at Durham, in the county of Durham and State of North Carolina, and WILLIAM H. PARKER, residing at Maben, in the county of Oktibbeha and State of Mississippi, citizens of the United States, have invented new and useful Improvements in Automatic Cut-Offs for Gas-Burners, of which the following is a specification.

Our invention relates to improvements in attachments for gas-cocks to provide for automatically cutting off the flow of gas at the burner in an emergency, as in the event of the burner-flame becoming accidentally or inadvertently extinguished.

It has for its object to do this in an expeditious and effective manner and to simplify the construction and arrangement of the parts; and to these ends the invention consists of certain structural features, substantially as hereinafter fully disclosed, and particularly pointed out by the claims.

In the accompanying drawings, illustrating the preferred embodiment of our invention, Figure 1 is a side elevation thereof, the gas-cock being shown open and the effective parts of the cut-off or attachment in their initial position, as when the gas is ignited. Fig. 2 is a like view generally with the effective parts in their final position, as when the gas-flame has been extinguished and the gas-cock closed. Fig. 3 is a horizontal section produced on a line intermediary of the gas-pipe and a bar or slide arranged in connection with the gas-cock for a purpose later disclosed. Fig. 4 is an inverted detached view showing more especially the tripping-bar for said slide or bar. Fig. 5 is a detached view disclosing more fully the dog or detent effecting connection between said slide and tripping-bar.

In the carrying out of our invention we suitably arrange above the burner-tube 1, so as to be exposed to the action of the burner-flame, a dilatable metal bar 2 with one end connected to an arm 3, secured to said burner-tube, and its other end pivoted to the upper end of a thin plate-like bar or lever 4, suitably fulcrumed upon a second arm 3^a, also secured to the burner-tube. The relation of the fulcrum of said lever and its point of connection with the dilatable bar is such that said lever shall be readily responsive to the dilation and contraction of said bar under the action of the burner-flame, as will be appreciated.

A slide or bar 5 is applied to the stem of the gas-cock 5^a, said bar or slide having an elongated slot, through which passes said stem and by means of which said slide may have longitudinal movement and which slide is suitably supported upon a collar or shoulder 5^b, fixed to said stem. Said slide is normally projected forward or outward by the tension or action of a preferably helical spring 5^c, applied and exerting its pressure thereon and suitably secured in position. Said gas-cock stem 6 has secured thereto a cam 7, adapted to be engaged by but not to pass or escape from an upstanding pin or stud 8 on the slide or bar 5 when the gas-cock is turned to open position to provide for compressing or putting the spring 5^c under normal tension for subsequent application, as in automatically turning the gas-cock to closed position to cut off the flow of gas, as will be more fully disclosed presently.

A rack or tripping bar 9 has one end connected to the lower end of the lever 4 and an elongated slot 9^a therein, through which passes the gas-cock stem 6, said bar or rack resting upon a lower end enlargement or cam 6^a of said gas-cock stem, the purpose of which will be presently apparent.

Suitably suspended or fulcrumed at its angle from a bracket or pendant 10^a on the gas-pipe or other convenient point is an angular dog or detent 10, with one arm provided with a ratchet or notched surface 10^b, adapted to engage a lateral projection or pin 11 of the slide or bar 5 when the gas-cock is in open position. The other arm of said dog or de-

tent 10 depends or extends down through the slot 10^c of a bifurcated portion of the tripping-bar 9, the underneath surface of the prongs of which bifurcated portion being provided with parallel series of notches or racks with which is adapted to engage the laterally-extending portion of a cross-pin 10^d, carried by said dog or detent near its lower end.

It is noted that when the gas-cock is turned to open position, as in turning on the gas, the cam 7 thereon will engage the stud or pin 8 upon the slide or bar 5, and thus provide for moving the latter, so as to put its spring 5^c under normal tension. When the gas-cock has reached its maximum point of opening, the dog or detent 10 will by gravity effect engagement with the lateral projection or pin 11 of the slide 5, and thus hold the latter and its spring compressed. In event of an emergency, as should the gas-flame become extinguished by accident or inadvertence, the dilatable bar 2 would, of course, in the absence of the heating action of the gas-flame, contract. The effect of this would be to move the lever 4 so as to pull outward the bar 9, accordingly acting upon and disengaging the dog or detent 10 from the projection or pin 11, which would instantly permit the expansion of the spring 5^c and the application of its normal tension to effect the corresponding movement of said slide 5, thus rendering the stud or pin 8 thereof effective, in connection with the cam 7, to close the gas-cock, thereby automatically cutting off the flow of gas. It will have been noticed that with the turning of the gas-cock to its open position the cam enlargement at the lower end of the gas-cock stem will effect the lifting of the rack or tripping bar 9, thus taking it thereby out of engagement with the lateral pin or projection of the dog or detent 10 to permit said dog to drop by gravity into engagement with the corresponding pin or projection 8 of the spring-pressed bar, as in setting or adjusting the same for action, as before noted.

Latitude is allowed as to details herein, as they may be changed as circumstances suggest without departing from the spirit of our invention.

We claim—

1. A device of the character described, employing a dilatable bar arranged to receive the heating action of the gas-flame from the burner, a bar adapted to turn the gas-cock to its closed position, means to effect this action automatically, means adapted to automatically trip the bar interposed therebetween and said dilatable bar, and means for holding in retracted position said gas-cock-turning bar.

2. A device of the character described, employing a dilatable bar arranged to receive the heating action of the gas-flame from the burner, a spring-pressed bar carrying a stud adapted to engage a cam upon the gas-cock stem, means adapted to trip said spring-pressed bar, interposed therebetween and said dilatable bar, and means for holding in retracted position said spring-pressed bar.

3. A device of the character described, employing a dilatable bar arranged to receive the heating action of the gas-flame from the burner, a spring-pressed bar arranged upon the gas-cock stem and having a stud or pin adapted to act upon a cam carried by said gas-cock stem, an angular dog or detent adapted to have engagement with said spring-pressed bar, and a rack or tripping bar adapted to act upon said dog, and means effecting connection between said tripping-bar and dilatable bar.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES W. TATUM.
WILLIAM H. PARKER.

Witnesses:
BENNETT S. JONES,
AUGUST PETERSON.