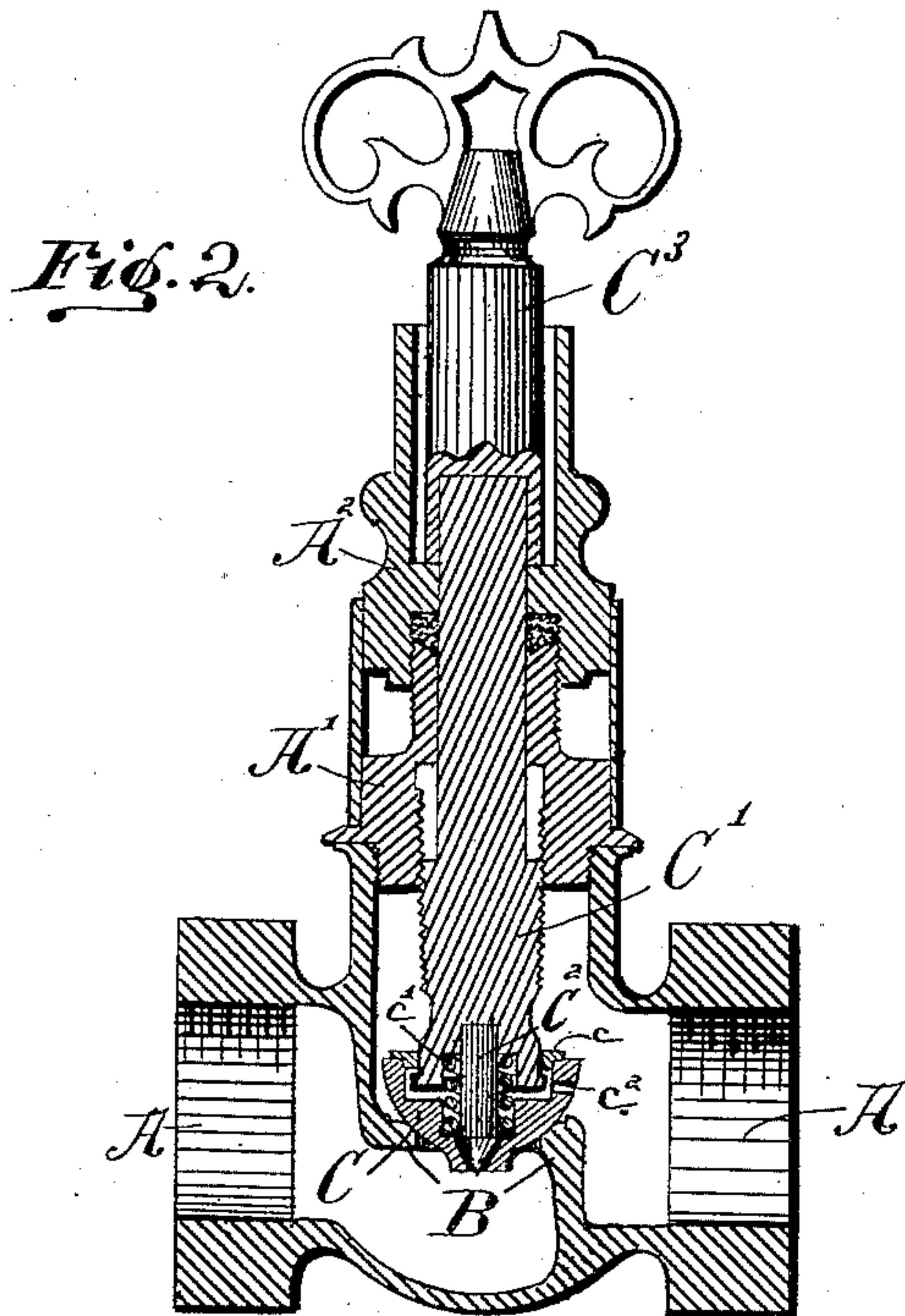
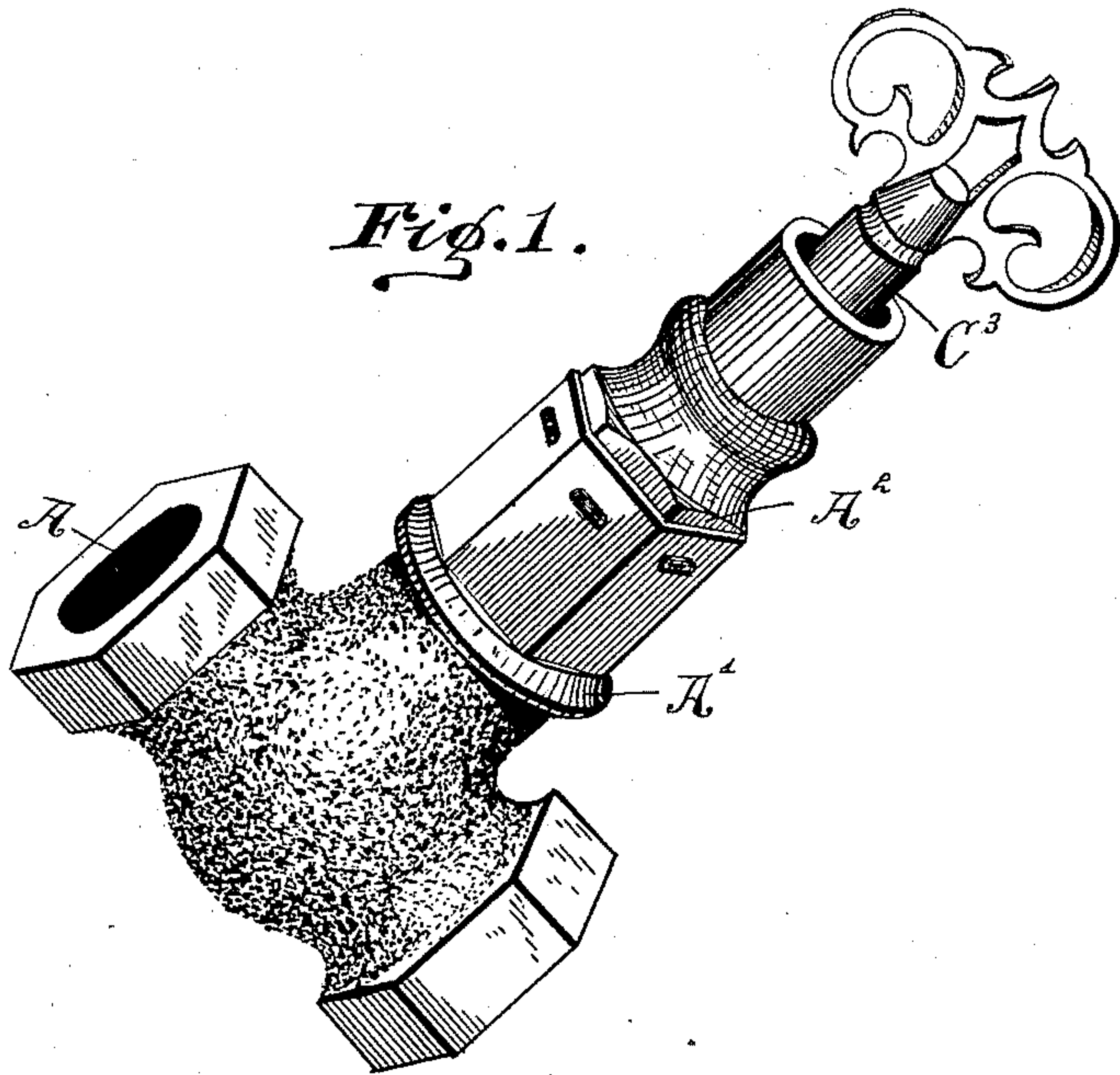


(No Model.)

R. FOSTER.  
VALVE.

No. 401,647.

Patented Apr. 16, 1889.



WITNESSES.

G. W. H. Brown.  
James A. Dixon

INVENTOR.

Robert Foster,  
per E. W. Bradford.  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

ROBERT FOSTER, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO FRANK R. JENNINGS, WALTER B. HARRIS, AND JAMES A. DIXON, ALL OF SAME PLACE.

## VALVE.

SPECIFICATION forming part of Letters Patent No. 401,647, dated April 16, 1889.

Application filed September 22, 1888. Serial No. 286,114. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT FOSTER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Valves, of which the following is a specification.

The object of my said invention is to provide a cheap, convenient, and very efficient construction of valve for use in gas-pipes, (especially those which supply natural gas for fuel purposes,) by which but a small orifice will be opened at first, allowing a small quantity of gas to pass through to be ignited, when, by the continued backing of the valve-stem, the main orifice can be opened without the danger which attends the igniting of said fuel from said main orifice, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a valve embodying my said invention, and Fig. 2 a central vertical section through the same.

In said drawings, the portion marked A represents the shell of the valve, B the valve-seat, and C the main valve.

The shell A and valve-seat B are of a well-known construction, and therefore will not be described herein, except incidentally in the description of the parts which constitute the invention.

The main valve C is mounted on the lower end of the stem C' by a "swivel" connection—i. e., the lower end of said stem is formed with an annular flange, above which is a loosely-mounted ring, c, formed with threads at its edge adapted to engage with suitably-formed threads around the inner edge of the top of said valve. By this construction the valve is allowed to adjust itself to the seat when closed, and a more perfect joint thus secured, as will be readily understood. Said valve is provided in its center with a small conical perforation, and a "needle-point" or supplemental valve, C<sup>2</sup>, is set into the lower end of the valve-stem, as shown, and arranged to have its seat in said perfora-

tion. A coiled spring, c', is preferably interposed between said stem and said valve, which are so adjusted in relation to each other that when forced together two or three backward turns of the stem will be required to bring its flange against the ring c and lift the main valve, said spring c' operating to hold said valve securely in its seat until this has been done.

The valve-stem C' is mounted and operated in a well-known manner in the top A' of the valve-shell and its cap A<sup>2</sup>, between which packing material is preferably interposed, as shown, to secure a tight joint. For the most common use its upper end is preferably formed square, and a key, C<sup>3</sup>, is provided for operating it; but, as will be readily understood, it may be formed with a thumb-piece on its upper end, or any other convenient means may be provided by which it can be operated when desired, or when used for gas-cock, &c., when such a construction would be preferable.

The operation of my said invention is as follows: The valve being closed and it being desired to obtain a supply of the fuel, the valve-stem is backed one or two turns, and the supplemental valve C<sup>2</sup> thus lifted from its seat in the valve C, which permits a small quantity of gas to flow through the small perforation into the valve C and out through the joint between it and the stem, or a perforation, c<sup>2</sup>, formed in its side for the purpose, and pass to the burner, where it may be ignited and the stem then backed sufficiently to lift the valve C from its seat and admit the fuel in the desired quantity.

By the use of this valve, as will be seen, it is impossible for the main valve to be opened before a small quantity of gas has been allowed to pass out through the supplemental valve, and thus the great danger of accident which often results from lighting the gas from the large supply from the main valve is entirely overcome. While the valves are usually adjusted so that about two turns of the stem are required to start the main valve from its seat, it will be seen that they can easily be adjusted so that any number of

turns desired will be necessary and unusual precaution thus provided in case of inexperienced or careless users. By its use also a small blaze can be had continuously, if desired, and the main valve be opened only when needed for use.

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

- 10 1. The combination, with the shell and seat, of a valve connected to its stem by a swivel-joint and formed with a central perforation, and a supplemental valve on the lower end of said stem which has its seat in said per-  
15 foration, an aperture for the passage of the gas being provided leading from the interior of the main valve to the space in said shell

on the discharge side of the seat, substantially as set forth.

2. The combination of the shell, the seat 20 therein, the main valve secured to its stem by a swivel connection and formed with a central perforation, a supplemental valve at the lower end of said stem arranged to have its seat in said perforation, and a spring inter- 25 posed between said valve and stem, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 18th day of September, A. D. 1888.

ROBERT FOSTER. [L. S.]

Witnesses:

E. W. BRADFORD,  
JAMES A. DIXON.