J. C. AINSWORTH & R. K. ROBERTS.

Regulating Gas-Tap.

No. 223,573. Patented Jan. 13, 1880.

FIG. 1

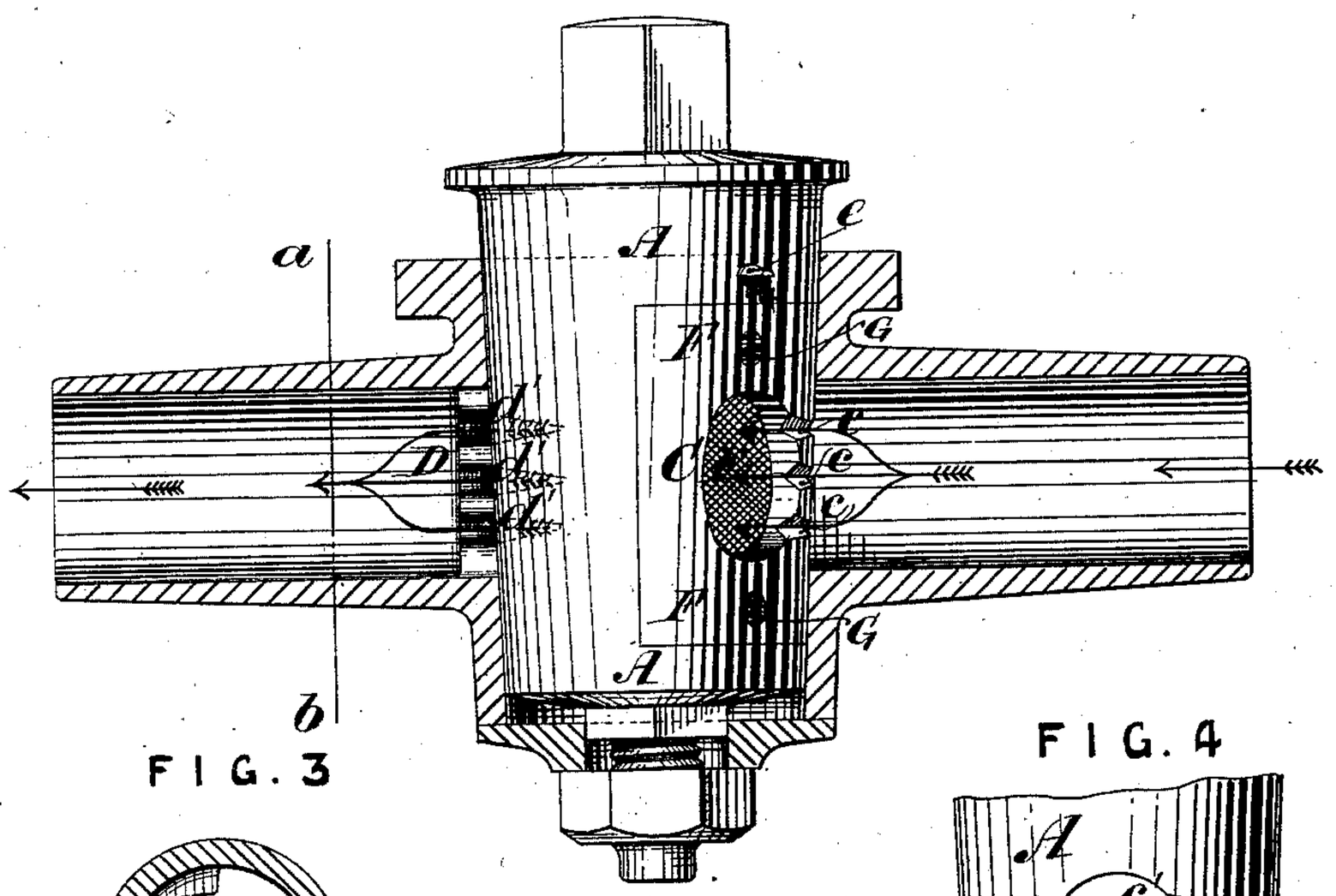


FIG. 3

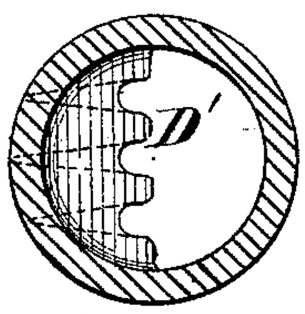
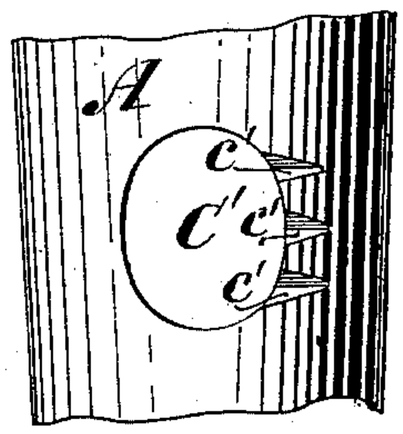
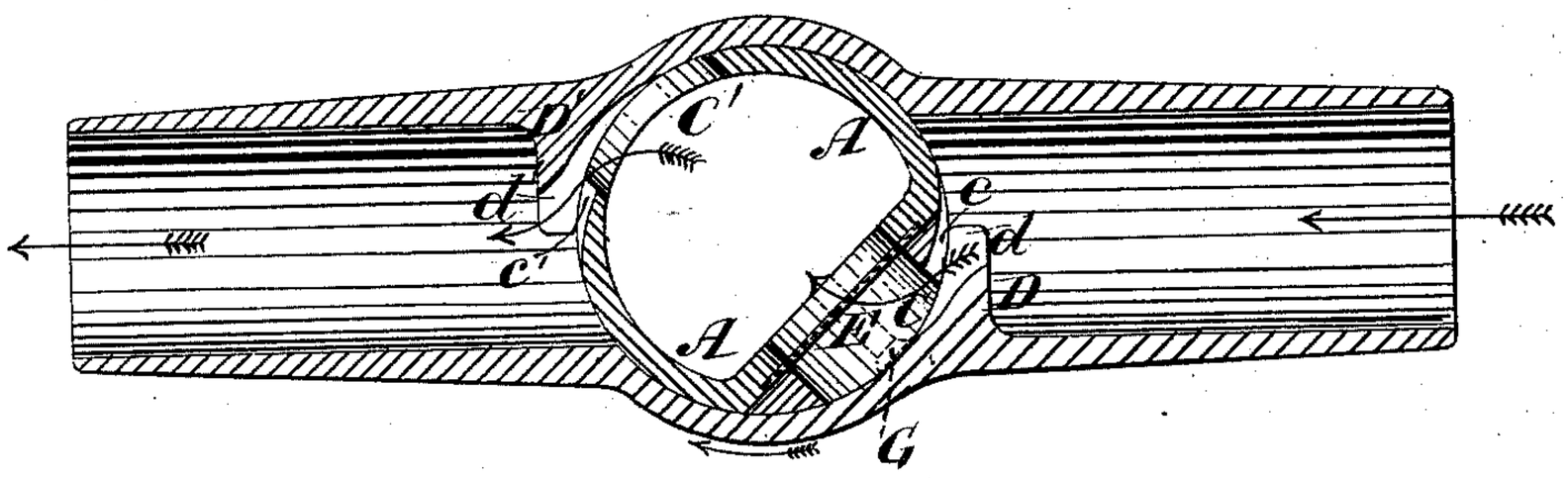


FIG. 2.

FIG. 4





Witnesses.

Henry Howson Jr.

Harry Smith

Inventors

John Carter Ainsworth

Robert Knowles Roberts

Per Howson & Son

Attorneys

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN C. AINSWORTH, OF BURY, AND ROBERT K. ROBERTS, OF TOTTINGTON, COUNTY OF LANCASTER, GREAT BRITAIN.

REGULATING GAS-TAP.

SPECIFICATION forming part of Letters Patent No. 223,573, dated January 13, 1880.

Application filed November 24, 1879.

To all whom it may concern:

Be it known that we, JOHN CARTER AINSWORTH, of Bury, in the county of Lancaster, in the Kingdom of Great Britain and Ireland, and ROBERT KNOWLES ROBERTS, of Tottington, in the same county, have invented a new and useful Improvement in Regulating Gas-Taps or Gas-Stop Taps, of which the following is a specification.

The object of our invention is to control and regulate the flow of illuminating-gas through service-pipes, with the object of a more regular and economical consumption of such gas. To promote this result we employ and place in connection with such service-pipes a tap of the construction illustrated by the accompanying drawings, of which—

Figure 1 is a longitudinal section; Fig. 2, a sectional plan; Fig. 3, a cross-section of the tap-passage at the line *a b*, Fig. 1, while Fig. 4 is a view of a portion of the tap-plug.

The tap is in its main features of the ordinary construction, being fitted with a tapered plug, A, which in taps fitted with our improvements we prefer to make somewhat larger, in proportion to the diameter of the gas-passage, than is usual. At one side both of the influx and efflux orifices of the plug A tapered grooves or channels *c c'* are cut, as shown more particularly at Fig. 4, which is a view of the efflux-orifice C' of the plug. These channels come exactly opposite similar channels *d d'*, cut in the plug-seating, the said channels *d d'* starting from projections D D' in the tap-passage. The efflux-orifice C' and channels *c'* and *d'* in the plug and seating we prefer to make a little larger than those at the influx side. When the tap is turned full on the gas passes through the plug without being to any great degree deflected or interfered with by the said channels; but when turned partly off in the direction of the arrow, Fig. 2, until it assumes a position similar to that shown in the drawings, the gas finds its way through the plug by means of the channels in the tortuous manner indicated by the arrows at Fig. 3, whereby the head of pressure is reduced. By turning the plug still farther round the area of the channels becomes still more restricted, owing to their tapering form, until, when the plug has performed a full quarter of a turn, the flow of gas becomes completely interrupted. A stop-peg, *e*, projects from the plug A, so as to limit its rotation.

As further means for reducing the pressure and for filtering the gas, we fix a partition of wire-gauze, E, preferably in the influx-orifice C, as shown, and in order more easily to remove and replace the same we form the plug A so that a portion, F, may be removed from its side to permit the introduction of the wire-gauze partition E. The removable portion F is or may be held in position by means of screws G, the heads of which are flush with the body of the plug.

A similar wire-gauze partition may also, if desired, be placed in the efflux-orifice, and any number of such partitions, of any requisite degree of fineness, may be employed. It will also be evident that any suitable number of the hereinbefore-described tapered channels or grooves may be used.

We claim as our invention—

A gas-tap having a plug and seating provided with corresponding channels *c c' d d'* on both inlet and outlet sides, as and for the purpose set forth.

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

JOHN CARTER AINSWORTH.
ROBERT KNOWLES ROBERTS.

Witnesses:
DAVID FULTON,
ARTHUR LEDGER.