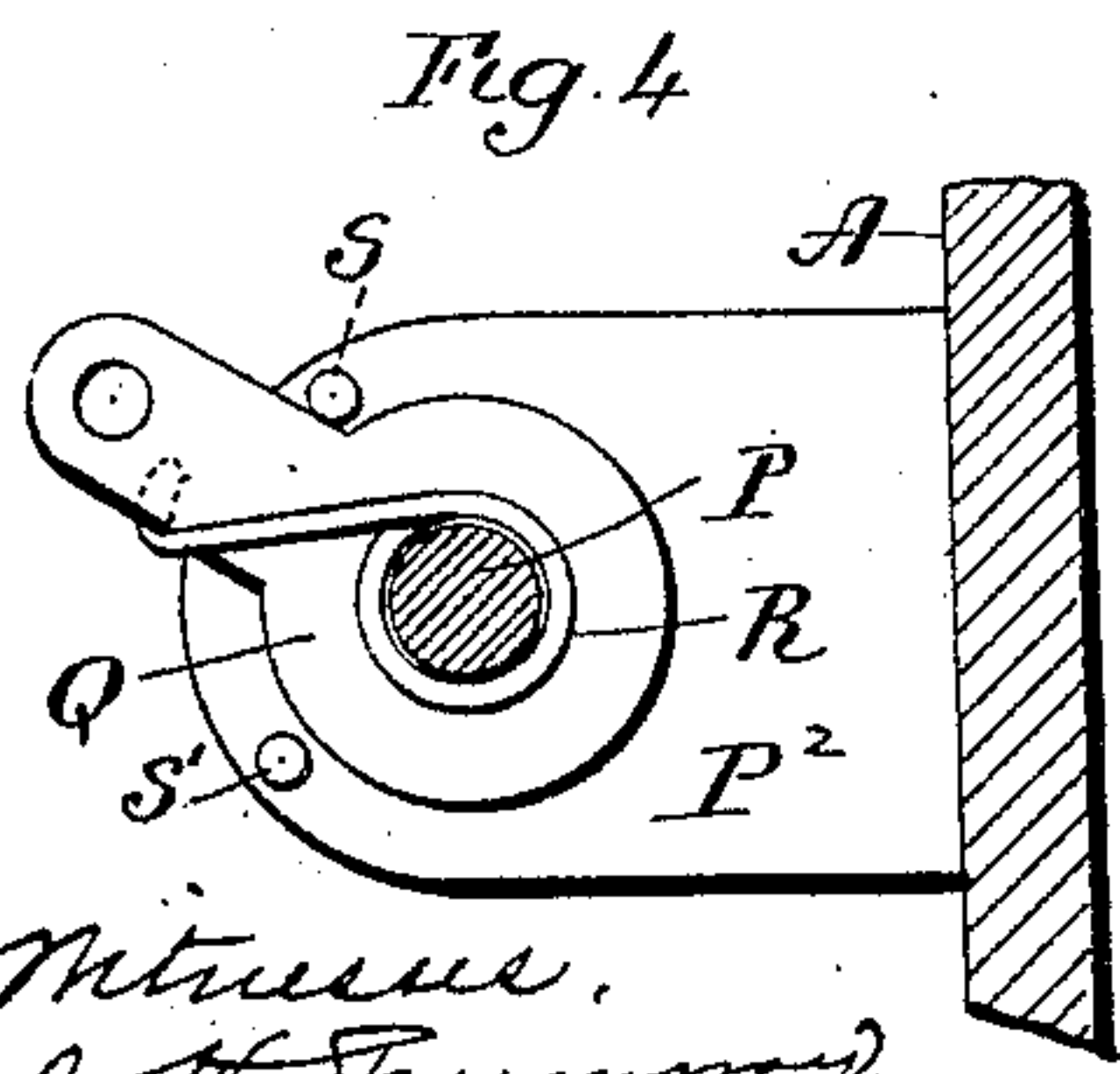
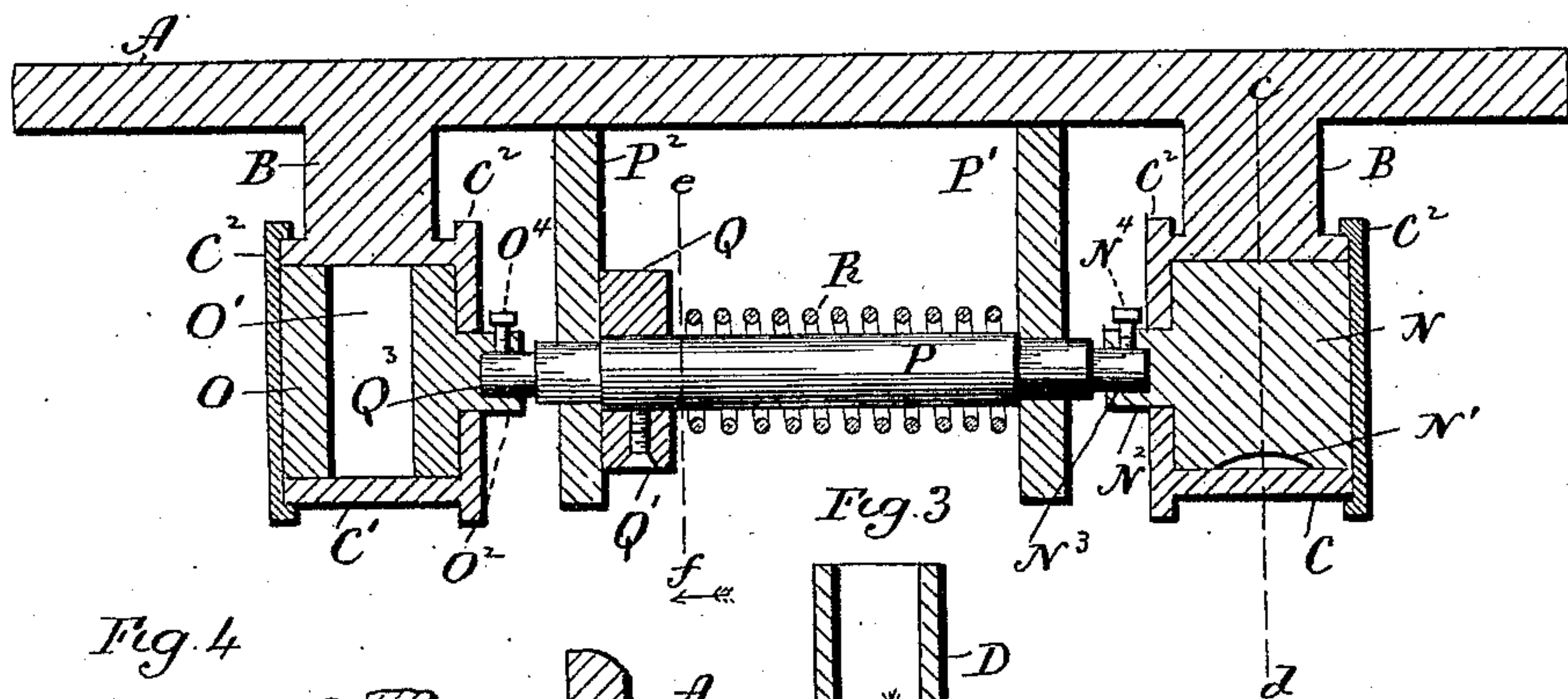
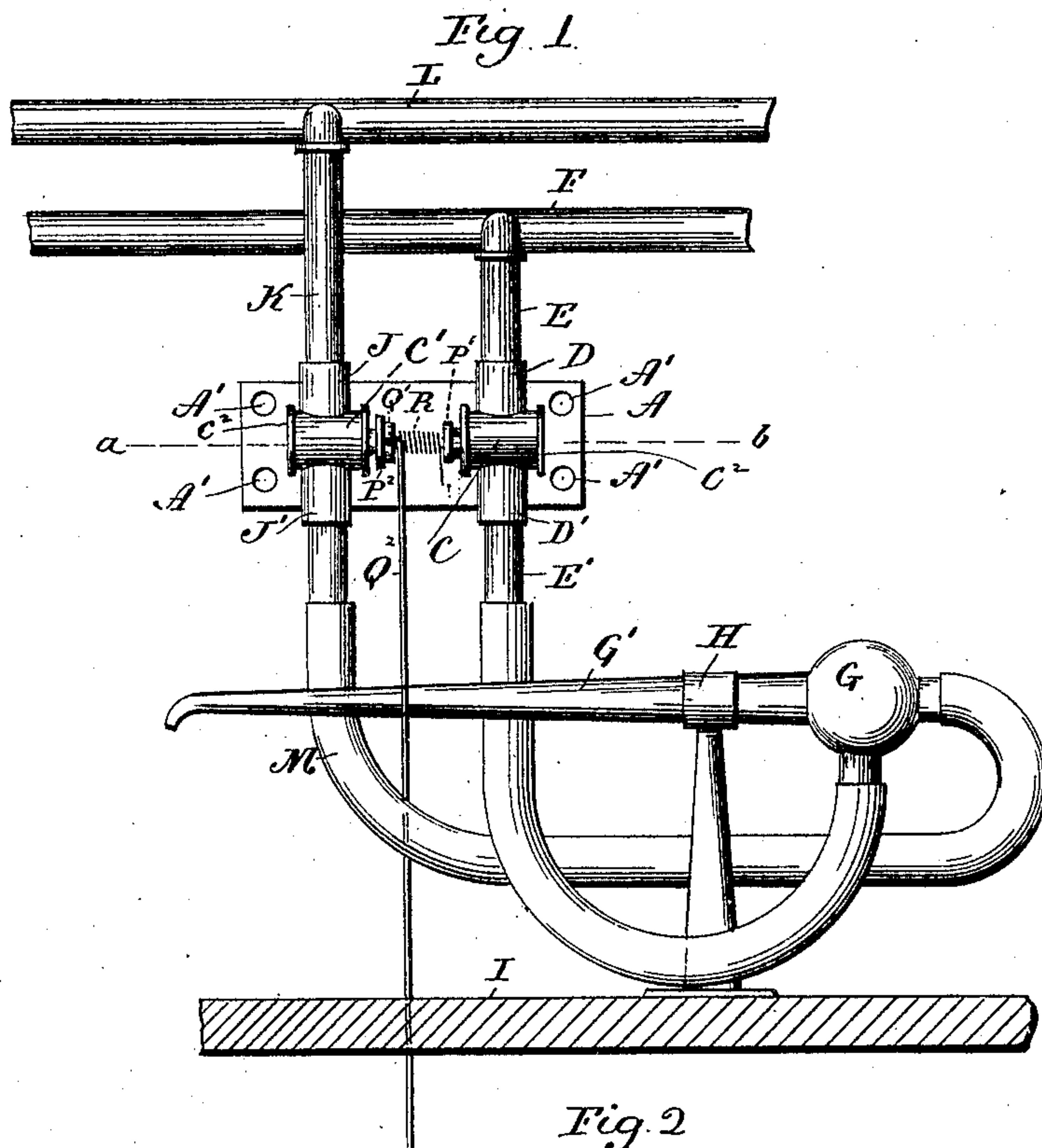


(No Model.)

M. D. BROWN & D. J. GRIFFIN.  
BLOWPIPE APPARATUS.

No. 574,237.

Patented Dec. 29, 1896.



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# UNITED STATES PATENT OFFICE.

MAURICE D. BROWN AND DENNIS J. GRIFFIN, OF WATERBURY,  
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## BLOWPIPE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 574,237, dated December 29, 1896.

Application filed May 18, 1896. Serial No. 591,892. (No model.)

*To all whom it may concern:*

Be it known that we, MAURICE D. BROWN and DENNIS J. GRIFFIN, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in Blowpipe Apparatus; and we do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in front elevation of a blowpipe apparatus containing our invention; Fig. 2, a view in horizontal longitudinal section on the line *a b* of Fig. 1; Fig. 3, a view in vertical section, on the line *c d* of Fig. 2, through the gas-valve and gas inlet and outlet pipes; Fig. 4, a view in transverse section on the line *e f* of Fig. 2 and looking toward the operating-arm connected with the rock-shaft.

Our invention relates to an improved blowpipe apparatus, the object being to provide simple, compact, durable, effective, and convenient means for automatically controlling and regulating the supply of air and gas to blowpipes.

With these ends in view our invention consists in an apparatus having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out our invention, as herein shown, we employ an oblong rectangular frame-plate A, having screw-holes A' formed in its ends to adapt it to be secured in a vertical plane to a wall, partition, or other vertical support. The said plate is provided with two horizontally-arranged forwardly-projecting corresponding supporting-arms B B, which terminate at their outer ends in horizontally-arranged cylindrical valve-boxes C and C', which, as shown, are constructed with flanged disk-like caps C<sup>2</sup> C<sup>2</sup>. The longitudinal axes of these boxes are located in the same horizontal line. The valve-box C is furnished with a short upwardly-extending gas-inlet pipe D, which is connected by means of a short gas-pipe E with the gas-supply pipe F. The said valve-box C is also furnished

with a short downwardly-projecting gas-outlet pipe D', which is connected by means of a long gas-pipe E' with the mixing-chamber G of the blowpipe G', which may be of any approved construction and which is mounted in a horizontal position in a standard H, secured to the work-bench I. The valve-box C is constructed with an upwardly-extending air-inlet pipe J, which is connected by means of an air-pipe K with the air-supply pipe L, arranged parallel with the gas-supply pipe F and located above the same. The valve-chamber C' is also furnished with a downwardly-projecting air-outlet pipe J', which is connected by means of a long air-pipe M with the mixing-chamber G before mentioned.

Within the valve-box C we locate a cylindrical gas-valve N, having a transverse port N' and constructed with a centrally-arranged inwardly-projecting hub N<sup>2</sup>, containing a longitudinal socket N<sup>3</sup> and a transversely-arranged set-screw N<sup>4</sup>, while the valve-chamber C' contains a corresponding cylindrical air-valve O, having a transverse port O' and formed with an inwardly-projecting centrally-arranged hub O<sup>2</sup>, having a longitudinal socket O<sup>3</sup>, entered by a transversely-arranged set-screw O<sup>4</sup>. The said hubs N<sup>2</sup> and O<sup>2</sup> of the valves N and O project inwardly through the inner caps C<sup>2</sup> of the valve-chambers. The sockets N<sup>3</sup> and O<sup>3</sup> of the hubs of the valves receive the respective ends of a horizontally-arranged operating rock-shaft P, journaled in two horizontal bearing-arms P' and P<sup>2</sup>, secured to and projecting forwardly from the frame-plate A and located between the arms B B, carrying the valve-chambers C and C'. The said ends of the said shaft are rigidly secured within the said hubs, and hence to the valves, by means of the set-screws N<sup>4</sup> and O<sup>4</sup>. An operating-arm Q, secured to the shaft P by means of a set-screw Q' and bearing against the inner face of the bearing-arm P<sup>2</sup>, is adapted at its outer end for the attachment of a treadle cord or wire Q<sup>2</sup>, which leads downwardly through the work-bench I and is attached to a treadle, which is not shown, but which may be of any ordinary construction. The said treadle is operated for rocking the shaft, and hence the valves, which are normally set so that when the treadle is depressed



the port N' of the gas-valve N will be alined with the gas-inlet and gas-outlet pipes D and D' and so that the port O' of the air-valve O will be alined with the air inlet and outlet pipes J and J'.

For automatically closing the valves we employ a spiral spring R, encircling the rock-shaft P and interposed between the bearing-arm P' and the operating-arm Q and having one end engaged with the forward face of the frame-plate A and the other end engaged with the under face of the operating-arm Q, which it exerts a constant effort to lift, as shown in Fig. 4, and hence close the valves. The oscillation of the shaft P is limited by means of two stop-pins S and S', extending inwardly from the bearing-arm P<sup>2</sup> in position to be engaged by the operating-arm Q, the pin S stopping the rotation of the shaft in right position for the closing of the valves and the pin S' stopping the shaft in the full-open positions thereof. In order, however, that the gas may not be entirely cut off when the apparatus is not in use, we arrange the gas-valve N in such a position that it will not quite close and shut off the gas, which will therefore burn with a small tongue of flame when the apparatus is not in use.

It will be understood, of course, that in using the apparatus the workman will depress the treadle more or less, according to the character of the flame which he desires, the amount of gas and air supplied to the blowpipe being directly dependent upon the extent to which he depresses the treadle.

It will be apparent that an apparatus constructed in accordance with our invention effects a great economy of time and gas in the use of a blowpipe, as gas is not burned except when the blowpipe is in use and as no time is required to manipulate hand-valves in turning the gas off and on and in regulating the amount supplied to the blowpipe.

It is apparent that in carrying out our invention some changes from the construction herein shown and described may be made, and we would therefore have it understood that we do not limit ourselves to such a construction, but hold ourselves at liberty to make such changes as fairly fall within the spirit and scope of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a blowpipe apparatus, the combination with a gas-valve and an air-valve, each having an inwardly-projecting hub, of gas and air inlet and outlet connections for the said valves, a blowpipe, means for connecting the said outlet connections therewith, a rock-shaft interposed between the said valves, and rigidly connected with their inwardly-projecting hubs for the simultaneous operation of the valves, foot-power connection with the said shaft for rocking it in one direction, and a spring arranged to operate the shaft in the other direction.

2. In a blowpipe apparatus, the combination with two supporting-arms having valve-boxes located in their outer ends, and provided with removable caps, gas and air valves located in the said boxes and provided with inwardly-projecting hubs which extend toward each other through the walls of the boxes, air and gas inlet and outlet pipes connected with the said boxes, a blowpipe, connection between the said outlet-pipes and the blowpipe, a rock-shaft interposed between the valves and rigidly connected with their hubs, and means for rocking the said shaft in opposite directions for opening and closing the valves.

3. In a blowpipe apparatus, the combination with a frame-plate, of supporting-arms extending forwardly therefrom, valve-boxes located at the outer ends of the said arms, valves located in the said boxes, air and gas inlet and outlet pipes connected with the said boxes, a blowpipe, connection between the said outlet-pipes and blowpipe, a rock-shaft interposed between the valves and rigidly connected at its ends with the same, and means for rocking the said shaft for opening and closing the valves.

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

MAURICE D. BROWN.  
DENNIS J. GRIFFIN.

Witnesses:

FRANK J. PARUTTI,  
PATRICK GREEN.