

No. 611,666.

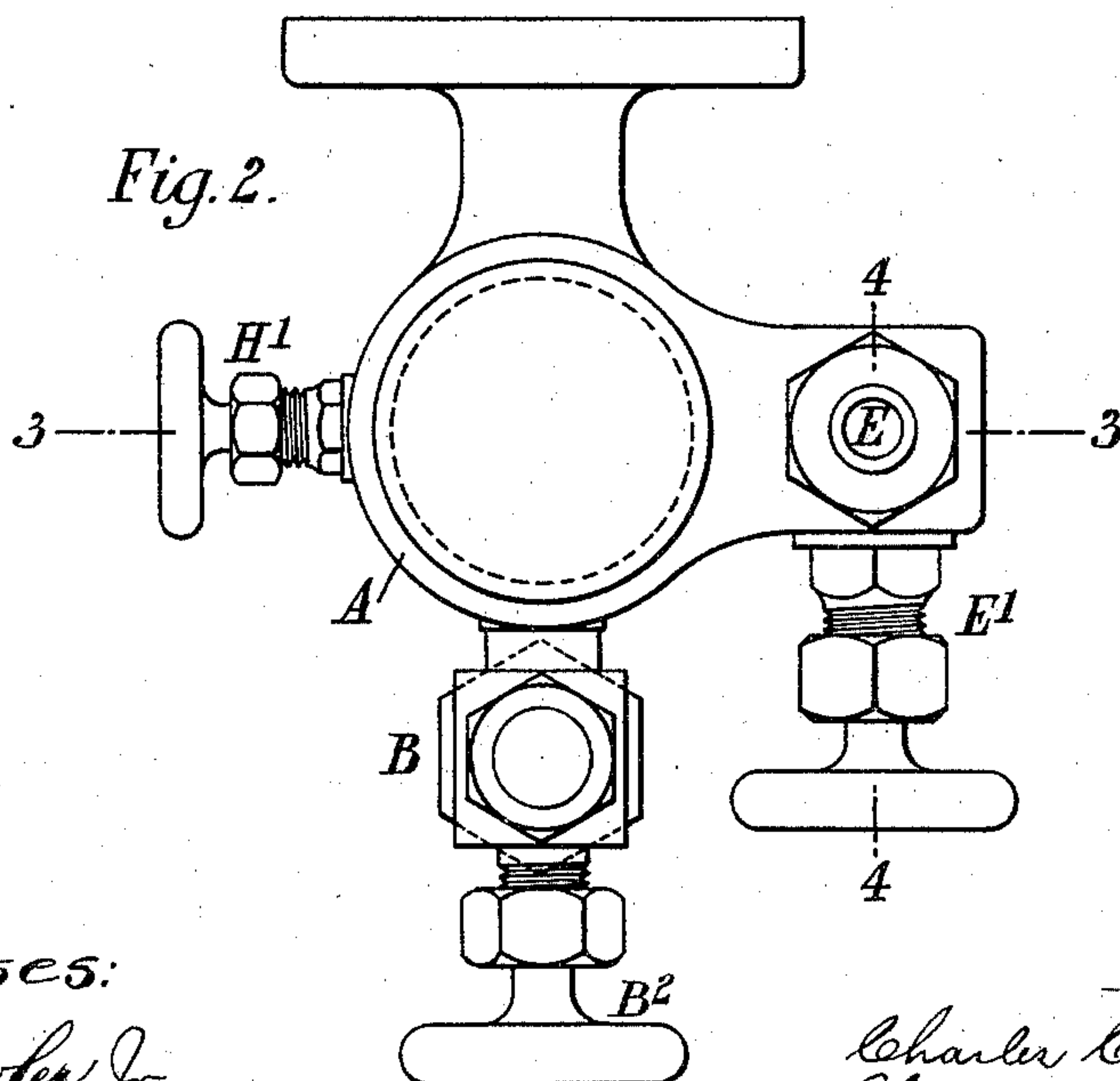
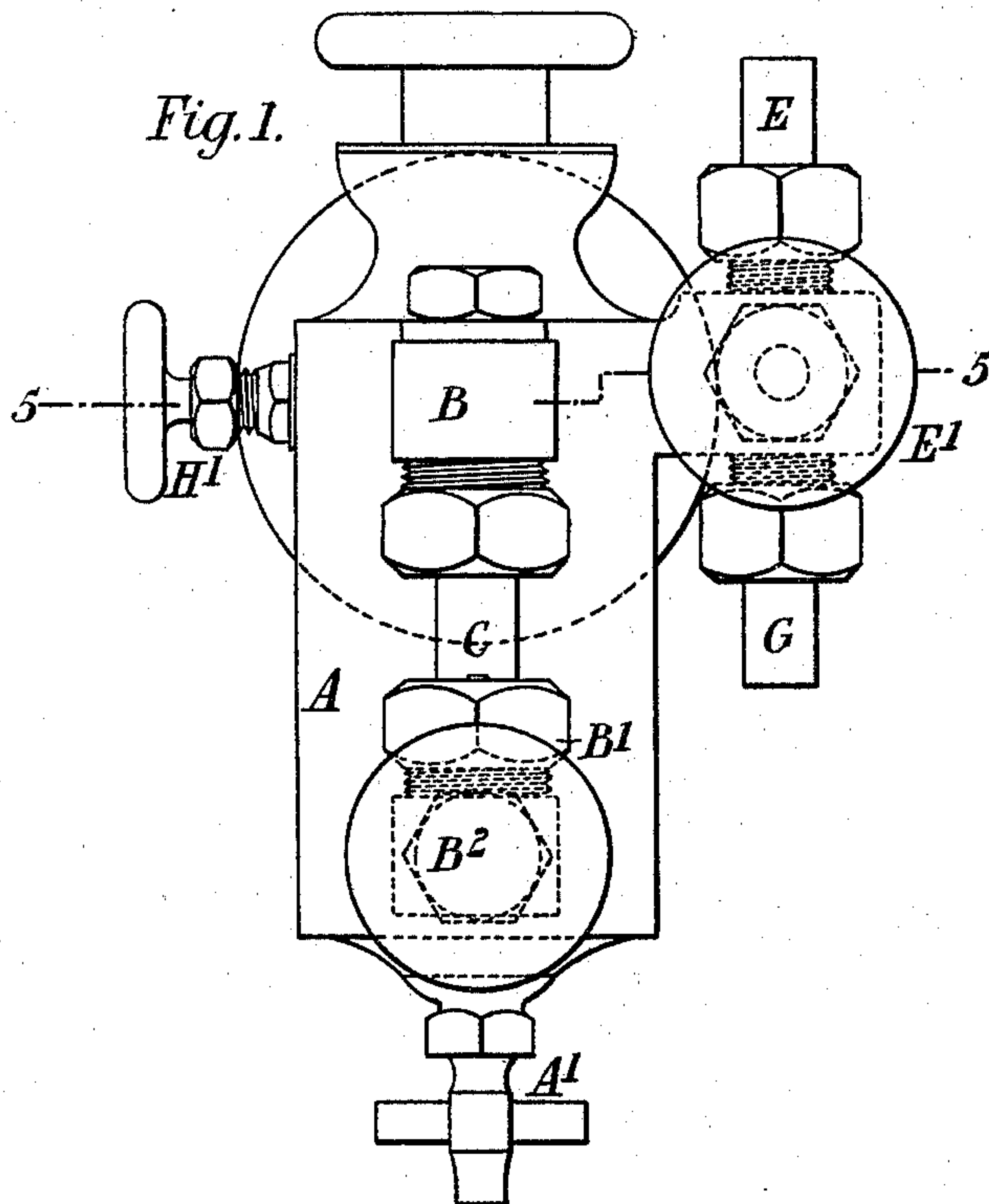
Patented Oct. 4, 1898.

C. C. WAKEFIELD.
SIGHT FEED LUBRICATOR.

(Application filed June 1, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:

J. M. Fowler Jr.
Thomas Durant

Inventor

Charles C. Wakefield
by *Chas. & Chas.*
his Attorneys.

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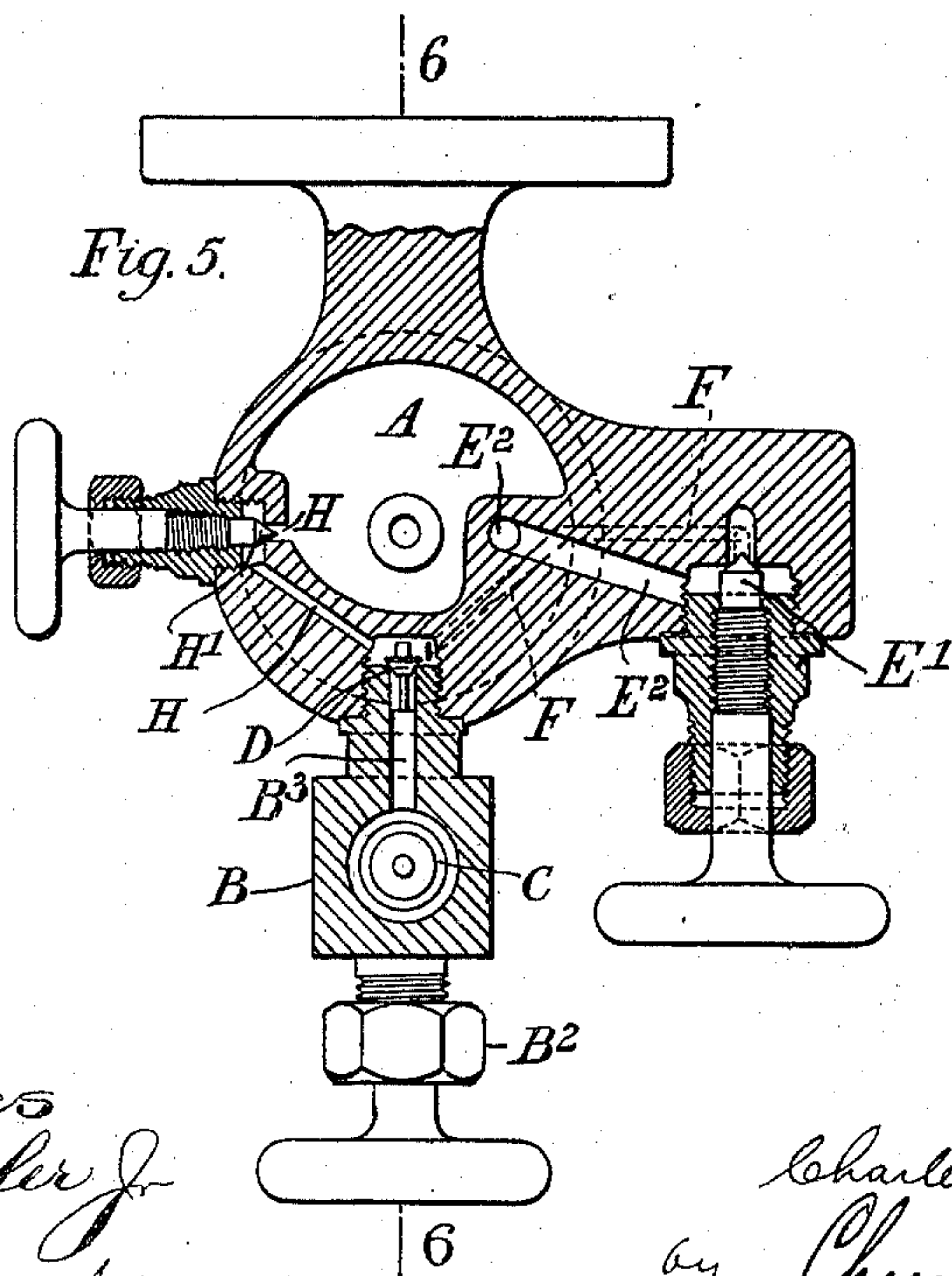
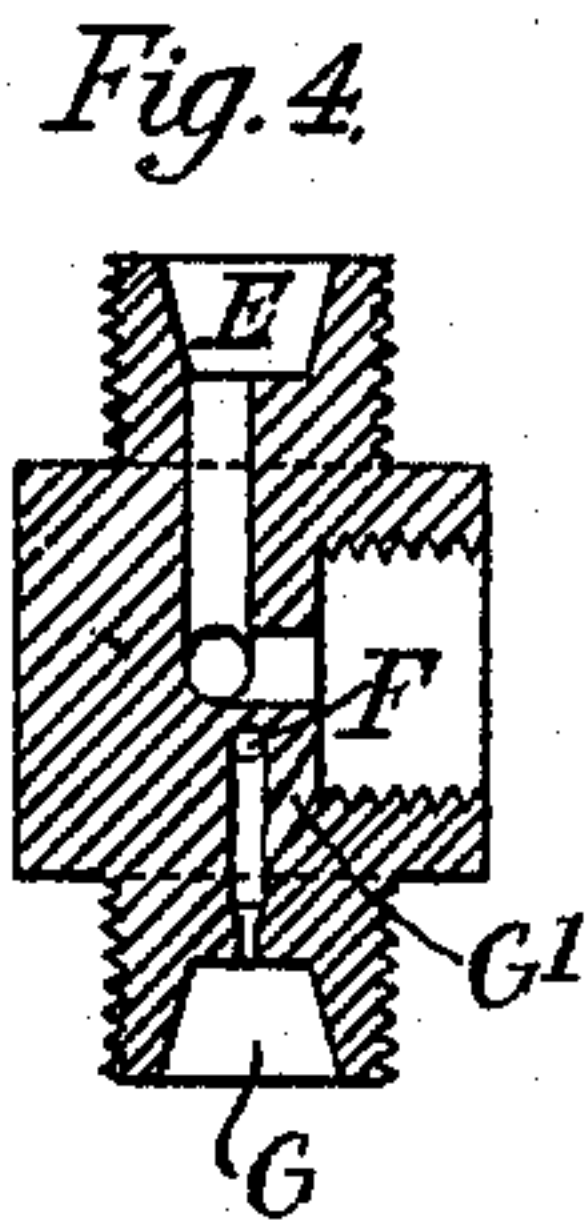
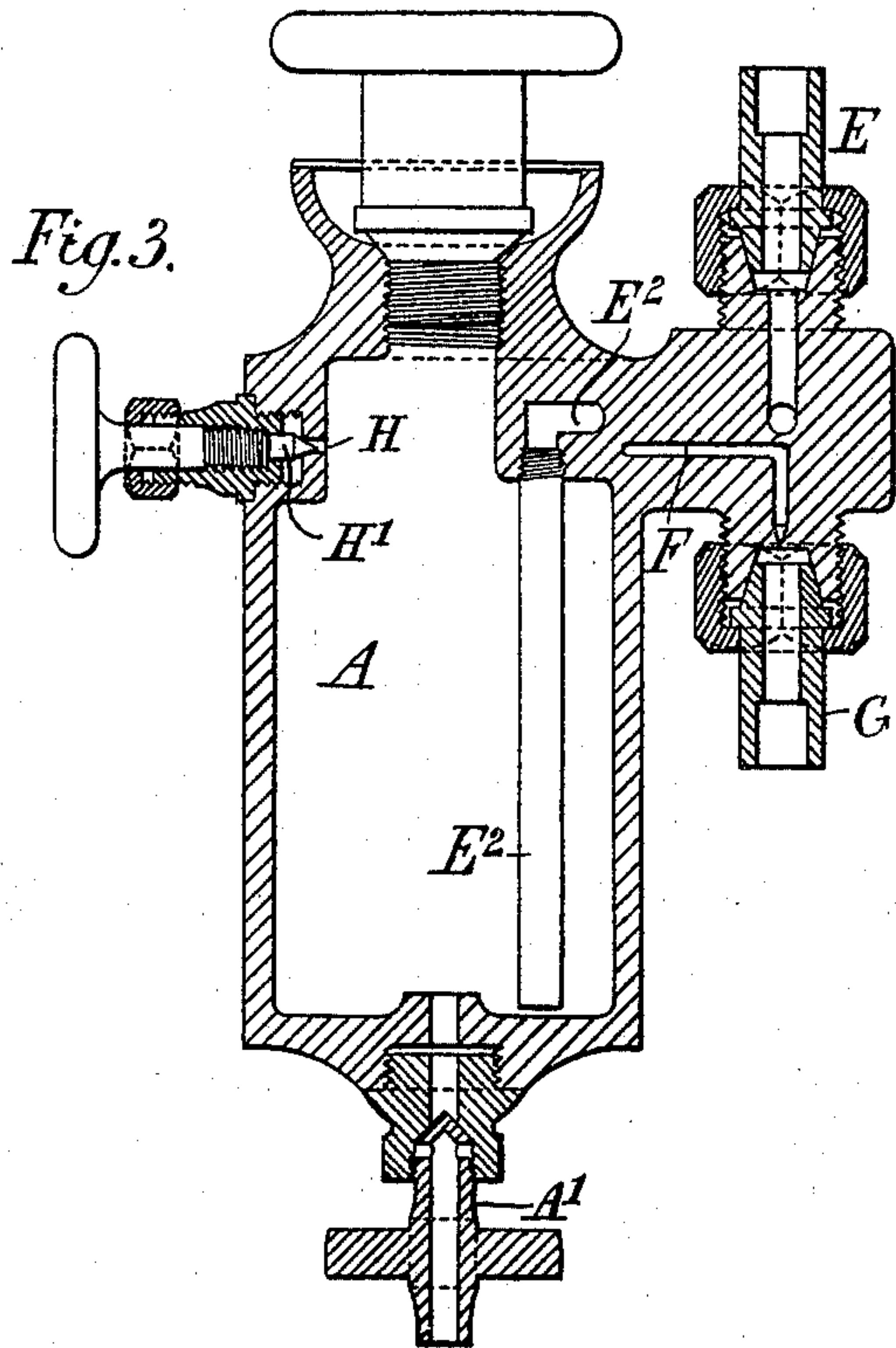
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J. M. Fowler Jr.
Thomas Durant

Inventor:
Charles C. Wakefield,
by *Chas. C. Wakefield*
his Attorneys.

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Fig. 6

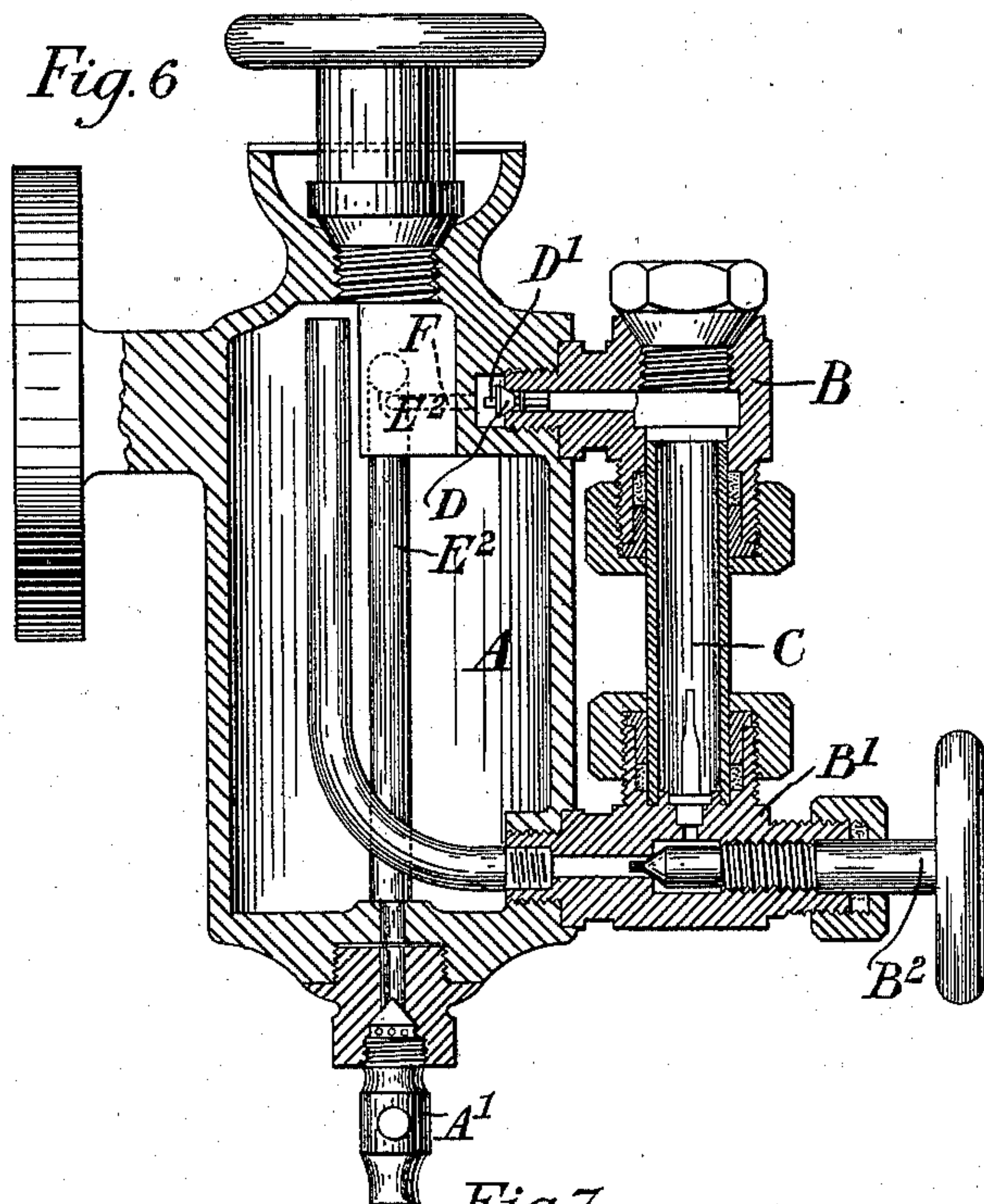
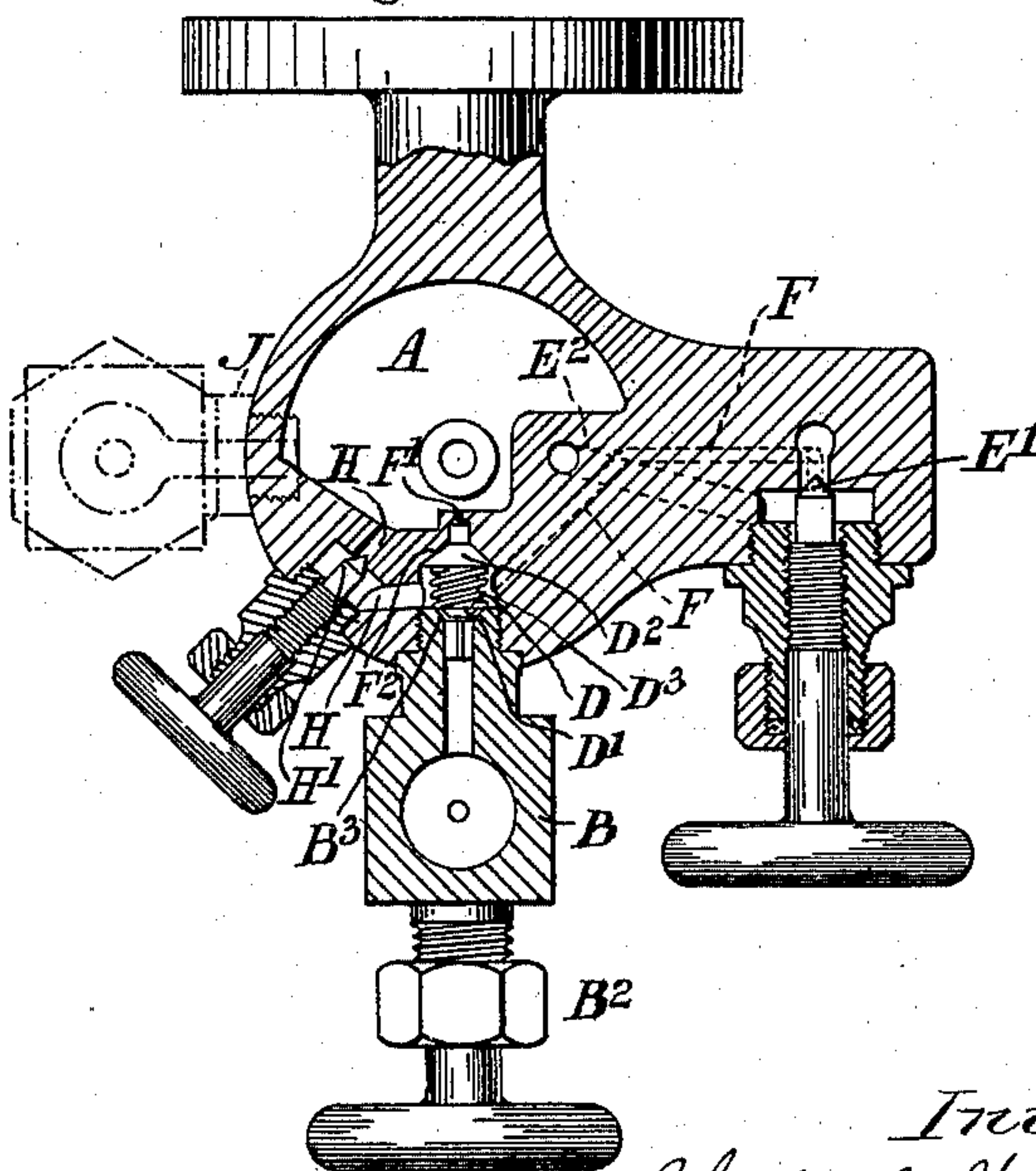


Fig. 7



witnesses:
J. M. Fowler Jr.
Thomas Durant

Inventor:
Charles C. Wakefield,
by *Chas. C. Wakefield*
his Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES CHEERS WAKEFIELD, OF LONDON, ENGLAND.

SIGHT-FEED LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 611,666, dated October 4, 1898.

Application filed June 1, 1897. Serial No. 638,965. (No model.)

To all whom it may concern:

Be it known that I, CHARLES CHEERS WAKEFIELD, a subject of the Queen of England, residing at Streatham, in Surrey, England, have invented certain new and useful Improvements in or Relating to Sight-Feed Lubricators, of which the following is a specification.

This invention relates to sight-feed lubricators, its object being to render such lubricators capable of operation even though the sight-glass be broken, whereas in sight-feed lubricators as hitherto usually constructed breakages of the glass necessitated putting the lubricator out of action.

The invention will be best understood by reference to the accompanying drawings, in which—

Figures 1 and 2 are respectively a front elevation and a plan of one of my improved sight-feed lubricators. Fig. 3 is a vertical section on the line 3 3 of Fig. 2. Fig. 4 is a vertical section of part of a lubricator on the line 4 4 of Fig. 2. Fig. 5 is a horizontal section on the line 5 5 of Fig. 1. Fig. 6 is a vertical section on the line 6 6 of Fig. 5; and Fig. 7 is a section similar to Fig. 5, showing an alternative construction of the valve D and upper part of the improved lubricator.

Like letters indicate like parts throughout the drawings.

With reference first to Figs. 1 to 6 of the drawings the lubricator chamber or body A is provided with upper and lower fittings B B' for placing the sight-glass C in communication, respectively, with the interior of the chamber and outlet of the lubricator, as shown in Figs. 5 and 6. The fitting B' is provided with the usual valve B² for controlling the outflow of lubricant from the chamber A, and the latter is provided with a plug or valve A' to enable it to be emptied when necessary. The fitting B, as distinguished from those ordinarily employed, is provided with a valve D, so arranged that in the event of the sight-glass C breaking it will be automatically closed by the pressure of any fluid endeavoring to pass toward the adjacent end of the glass, and thus will prevent steam, lubricant, or water from being blown out of the apparatus through the fitting B.

The usual steam-inlet is at E. It is controlled by a valve E'.

E² is the channel or pipe leading from the inlet E and valve E' to the bottom of the chamber A.

F represents the usual channel leading from the upper sight-glass fitting B to the oil and steam outlet G, at which part an inclined steam way or passage G' (see particularly Fig. 4) connects with it in such manner that when steam is allowed to pass through this jet—for example, when the valve E' is opened—it tends to form a vacuum in the channel F after the manner of an injector, and thus carries forward through the outlet G the oil delivered into the channel F through the sight-glass C, as in other lubricators of the same class. The outlet G is connected in any convenient manner with the apparatus to which the lubricant is to be supplied.

A by-pass passage H leads from the upper part of the chamber A and connects with the channel F at the back of the upper valve D, and H' represents a valve which controls the flow of oil through the by-pass passage H.

During the ordinary working of the before-described lubricator the valve H' is closed, and the lubricant passes from the chamber A through the lower fitting B', sight-glass C, upper fitting B, and channel F, (all in the order in which they are named,) and thence through the outlet G to the desired point of delivery, the valve D remaining open to the sight-glass during this operation. If the sight-glass C should break, the relief of pressure on the outer or sight-glass side of the valve D allows it instantly to be forced to its seat by back pressure from steam-supply by way of the passages G' F, so that the steam, oil, or water cannot be blown out of the apparatus through the fitting B and broken glass, as would be the case if valve D were not provided. Under these circumstances the lubricator may still be retained in operation by closing the valve B² to stop the passage of lubricant to the lower end of the sight-glass and opening the valve H', so as to allow the lubricant to be forced from the upper part of the chamber A through the channel H to the space behind the valve D, and thence, as in the ordinary working of the apparatus, through the channel F and outlet G to the point of delivery.

In the alternative construction illustrated

in Fig. 7 a passage F' is shown connecting the chamber A with the channel F, into which it opens immediately opposite the passage B³ from the fitting B. The valve D is in this instance double—that is to say, provided with two faces D' D², the former seating on the opening B³ and the latter on a seating F² at the adjacent end of the passage F'. It is normally held on its seat F² and off the seat at B³ by the spring D³. In this case if the sight-feed glass should break the relief of pressure on the outside (sight-glass side) of the valve-face D' causes the pressure maintained within the lubricator-body A to overcome the resistance of the spring D³ and forces the face D' on to its seat B³, thus lifting the face D² from its seat F² and automatically ejecting a small supply of lubricant from the upper part of the chamber A through the passage F', and thence by the usual channels to the point of delivery. The valve B² should then be shut to prevent the escape of lubricant through the lower fitting B', and, if desired, an additional feed of lubricant may be supplied by means of the valve H' and by-pass passage H. As is often done with this class of lubricator, a gage-glass fitting may be provided on the body of the chamber A, so as to show the amount of lubricant in the chamber. A convenient position for the upper fitting of such a glass is indicated by chain-lines at J in Fig. 7. The lower fitting would come directly under it. The by-pass H can be shortened, as shown, and the position of the valve H' altered to permit of this arrangement of glass.

Several sets of the channels F and passages H may be provided under the control of one or more valves where more than one feed is required.

I claim—

1. In a sight-feed lubricator, the combination with the lubricator-chamber, of the steam-passages communicating with the lubricator-chamber and discharge, the sight-feed communicating with the lubricator and discharge, the valve located below the sight-feed for controlling communication with the lubricator-chamber, and an auxiliary oil-passage leading from the lubricator to the discharge and a valve for closing communication between the sight-feed and discharge and opening communication between the auxiliary oil passage and discharge; substantially as and for the purpose set forth.

2. In a sight-feed lubricator, the combination with the lubricator-chamber, of the steam-passages leading to the lubricator-chamber and discharge, the sight-feed communicating with the lubricator-chamber and

discharge, the valve for controlling communication between the sight-feed and lubricator-chamber, the auxiliary oil-passage leading from the lubricator-chamber and the discharge and a valve for automatically closing communication between the sight-feed and discharge and opening communication between the auxiliary oil passage and discharge on the reduction of pressure on the outside of said valve as by breaking of the sight-feed glass; substantially as described.

3. In a sight-feed lubricator, the combination with the lubricator-chamber, of the steam-passages leading to the lubricator-chamber, and discharge, the sight-feed communicating with the lubricator and discharge, the valve for controlling communication between the sight-feed and lubricator-chamber the auxiliary oil-passage leading from the lubricator-chamber to the discharge, the adjustable valve for controlling communication between the auxiliary passage and lubricator-chamber, and the valve for automatically opening communication between the lubricator-chamber and discharge and closing communication between the sight-feed and discharge; substantially as described.

4. In a sight-feed lubricator, the combination with the lubricator-chamber, of the steam-passage leading to the lubricator-chamber and discharge, the sight-feed communicating with the lubricator-chamber and discharge, the valve for controlling communication between the sight-feed and lubricator-chamber, the auxiliary oil-passage leading from the lubricator-chamber to the discharge and the spring-operated double-faced valve, normally closing communication between the lubricator-chamber and discharge, but adapted to automatically open communication between the lubricator-chamber and discharge, and close communication between the sight-feed and discharge; substantially as described.

5. In a sight-feed lubricator, the combination with the lubricator-chamber, the upper sight-glass fitting, the passage leading direct from the fitting to the chamber, the double-acting valve located in this passage, and a passage leading to the discharge; substantially as described.

In witness whereof I have hereto set my hand in the presence of the two subscribing witnesses.

CHARLES CHEERS WAKEFIELD.

Witnesses:

W. R. GRAHAM,
HAROLD WADE.