

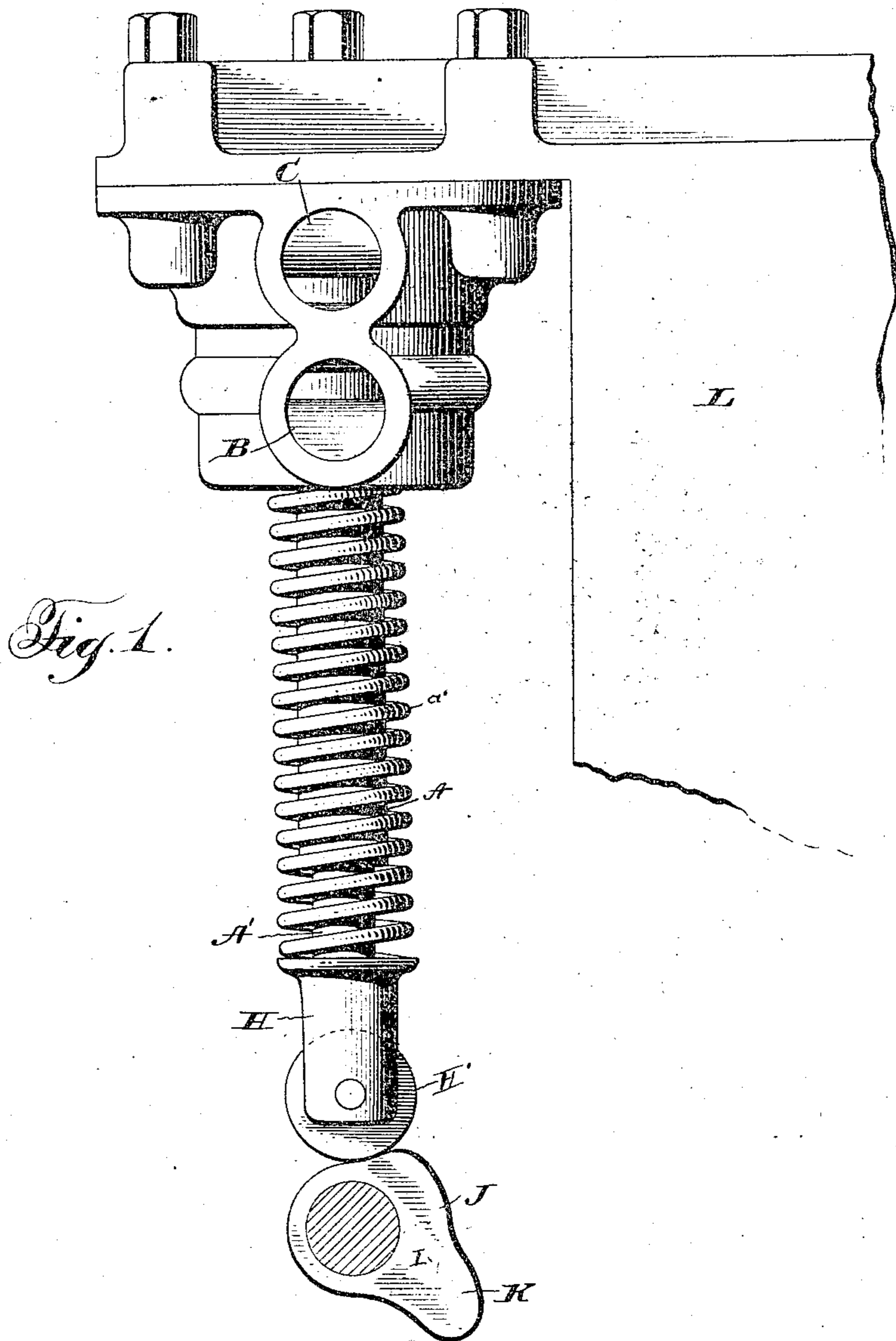
No. 896,254.

PATENTED AUG. 18, 1908.

P. SCHRAMM & I. E. WISE.
VALVE FOR EXPLOSIVE ENGINES.

APPLICATION FILED OCT. 12, 1905.

2 SHEETS—SHEET 1.



Witnesses:

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S. P. Babcock

Inventors

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By

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2 SHEETS—SHEET 2.

Fig. 2.

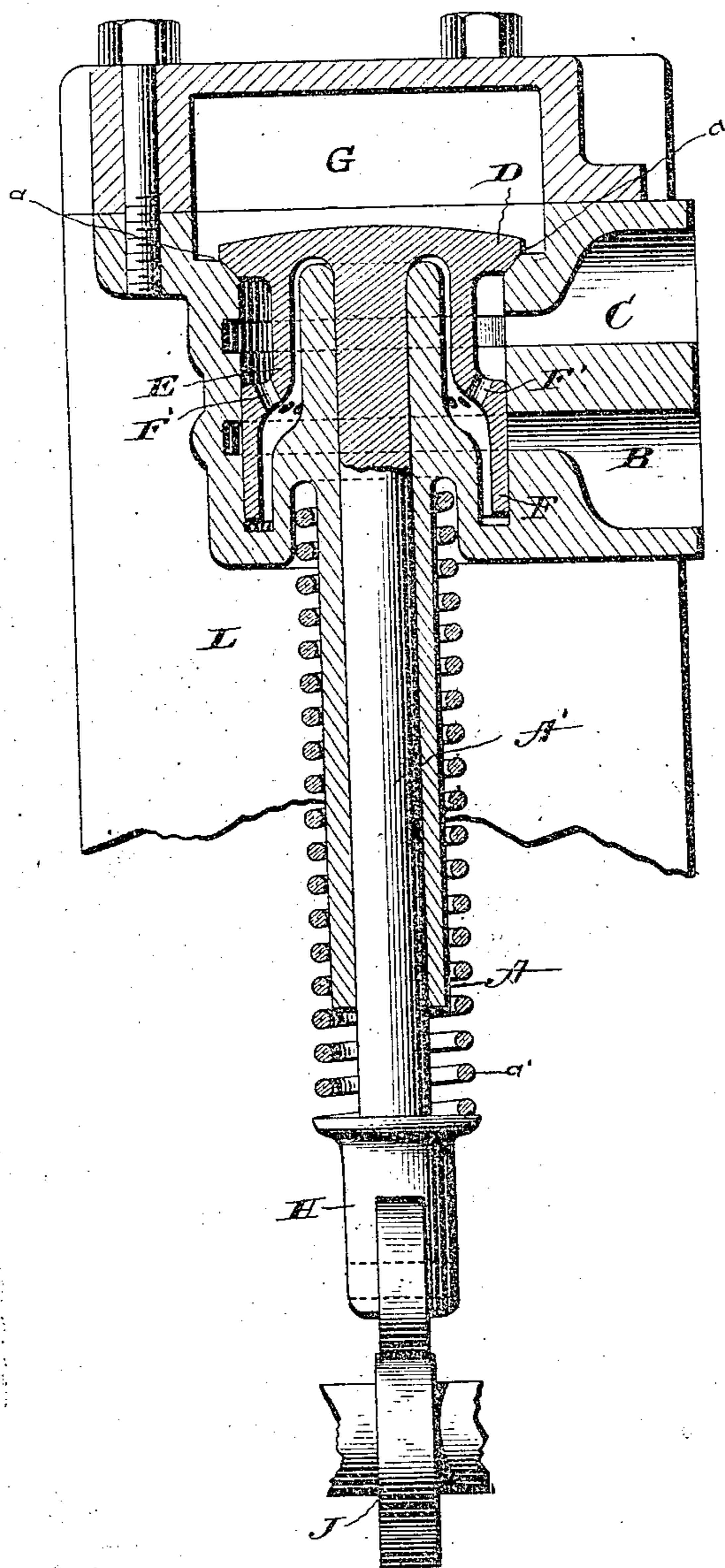


Fig. 3.

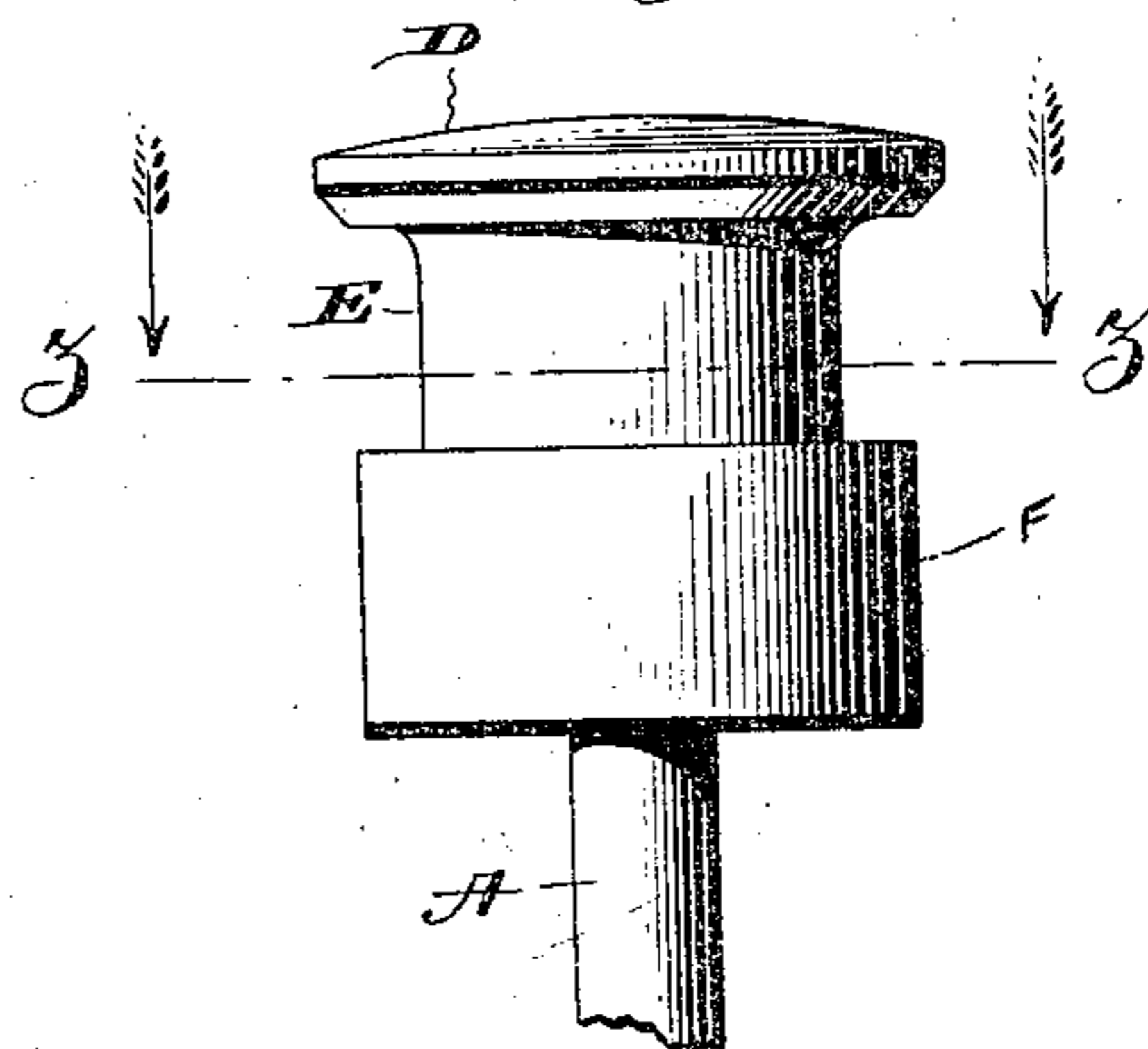
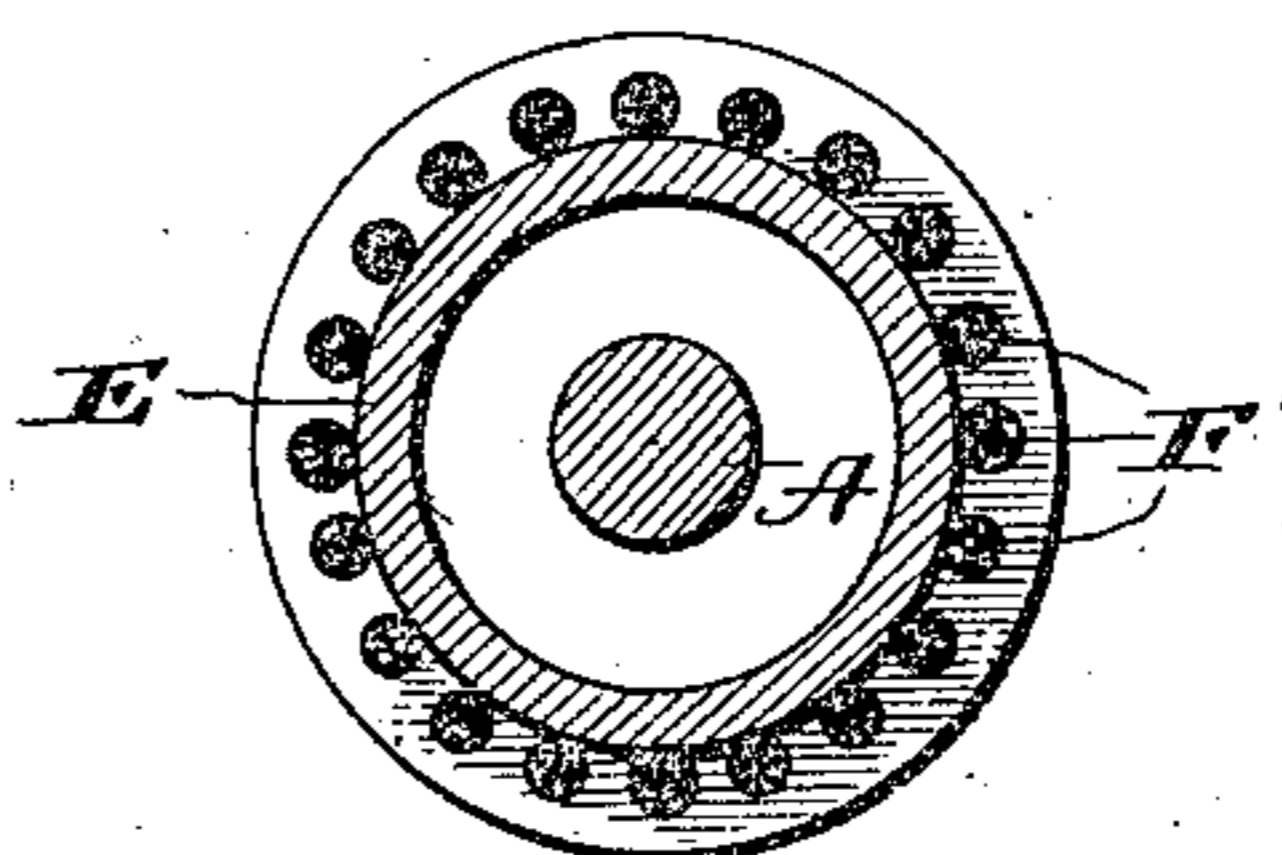


Fig. 4.



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UNITED STATES PATENT OFFICE.

PAUL SCHRAMM, OF ALAMEDA, AND IRA E. WISE, OF WALLACE, CALIFORNIA.

VALVE FOR EXPLOSIVE-ENGINES.

No. 896,254.

Specification of Letters Patent.

Patented Aug. 18, 1908.

Application filed October 12, 1905. Serial No. 282,440.

To all whom it may concern:

Be it known that we, PAUL SCHRAMM and IRA E. WISE, citizens of the United States, residents, the said SCHRAMM, of Alameda, Alameda county, State of California, and the said WISE, of Wallace, Calaveras county, State of California, have invented a certain new and useful Valve for Explosive-Engines; and we do hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to an improved valve for explosive engines, whether vertical, horizontal or otherwise.

The objects of the invention are to prevent clogging, obviate warping, and to reduce the number of parts.

Our invention consists, in combination with an explosive engine, of a chamber having but a single opening for the admission of the explosive mixture, and for the escape of the products of the explosion, and of a single valve alternately opening and closing said opening.

Referring to the accompanying drawings—Figure 1 is a perspective view of our valve, disclosing the inlet and exhaust ports; spring by which the valve is held to its seat, and a two-lift cam. Fig. 2 is a sectional view of Fig. 1. Fig. 3 is an enlarged detail view of the valve-disk, neck, shoulder and stem. Fig. 4 is an end view in elevation of Fig. 3 taken through 3—3; and disclosing the perforations through which the explosive mixture is admitted to the valve-chamber.

A designates the valve-casing, within which is slidably secured the valve-stem A'. Upon the inner end of the valve-stem A', and made, preferably, integral therewith, is the valve-disk D, the neck E, and the body F. The body F of the valve having the perforations or channels F', which perforations or channels may be of any number or character which will allow the explosive mixture to pass therethrough.

B is the inlet port, and C is the exhaust port, which are alternately opened and closed by the operation of the body of the valve.

G is the valve-chamber, which is opened and closed by the operation of the valve.

a designates the single opening through which, when the valve is raised, the explosive mixture enters and escapes from the chamber G. Around the casing A, is suitably secured the spring a', which may be of a

character best adapted to hold the valve to its seat.

H represents any suitable mounting for the stem A', which will hold the spring a' in position. Within this mounting H, is secured the roller H', which is adapted to come in contact with the two-lift cam I.

L designates a part broken view of a cylinder.

The operation of our improved valve, is as follows—The two-lift cam is rotated in any suitable manner, not necessary herein to show. The cam I bears upon the roller H', imparting movement to the stem A'. As the cam, point J, comes in contact with the roller H', the valve is lifted, opening the chamber G, and allowing the previously used charge to escape therefrom into the exhaust outlet C. During this movement of the valve, the inlet port B is positively closed by the valve-body F. As the point K, of the cam I, bears upon the roller H', the valve is lifted a second time, the body F thereof positively closing the exhaust port C, and opening the inlet port B, thereby allowing the fresh explosive charge to enter the chamber G, through the perforations or channels F', and the same opening a, as that through which the exploded charge has just escaped. This operation is continuous and in rapid succession.

By the use of our invention, but a single valve is necessary to successfully operate the inlet and exhaust ports of an explosive engine. Clogging is prevented by the action of the cool fresh explosive charge entering the valve-chamber through the same opening, (and in rapid succession) as that through which the used up charge escapes. The cooling action of the fresh explosive mixture upon the parts, also keeps the same free from warping.

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

In an explosive engine, a valve chamber having a single opening communicating with the cylinder for the entrance of the explosive mixture and for the exhaust of the products of combustion, and provided with a single passage for the admission of the gaseous mixture and an exhaust passage communicating with said opening, and a single valve controlling said opening and passages, said valve comprising a head adapted to seat in the chamber opening, and a hollow cylindrical

body portion depending from said head and connected therewith by a reduced portion arranged in one position of the valve to form a direct communication exteriorly of the valve between the cylinder and exhaust passage, said reduced portion having ports therein adapted when the valve is moved to another position to establish a communication between the passage for the gaseous mixture

and the cylinder through the body of the valve, and means for actuating said valve. 10

In witness whereof we have hereunto set our hands.

PAUL SCHRAMM.
IRA E. WISE.

Witnesses:

T. F. HINCHMAN,
HUBERT BRYANT.