

(No Model.)

J. E. BOTT.

STOP AND CHECK VALVE.

No. 335,886.

Patented Feb. 9, 1886.

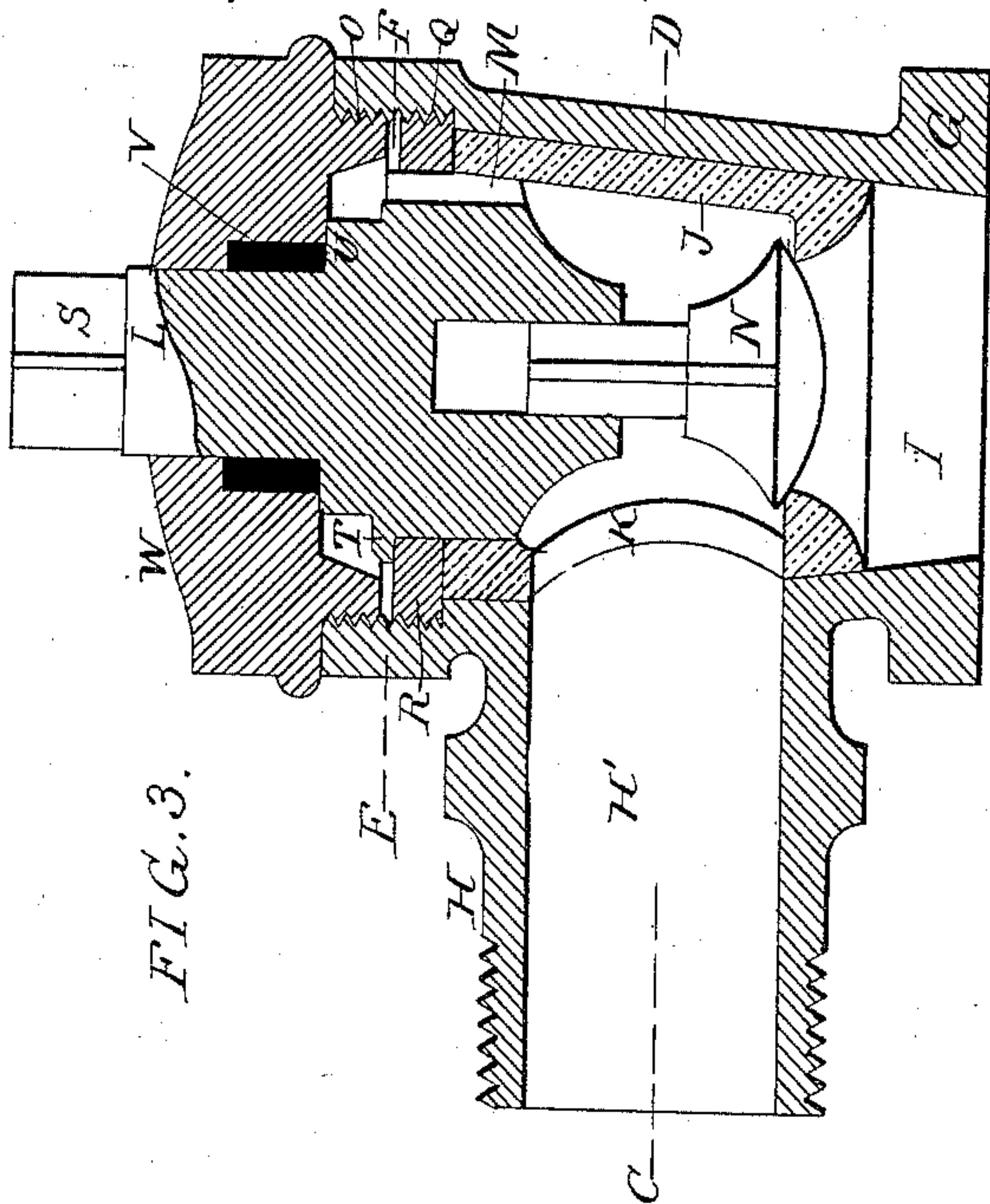


FIG. 3.

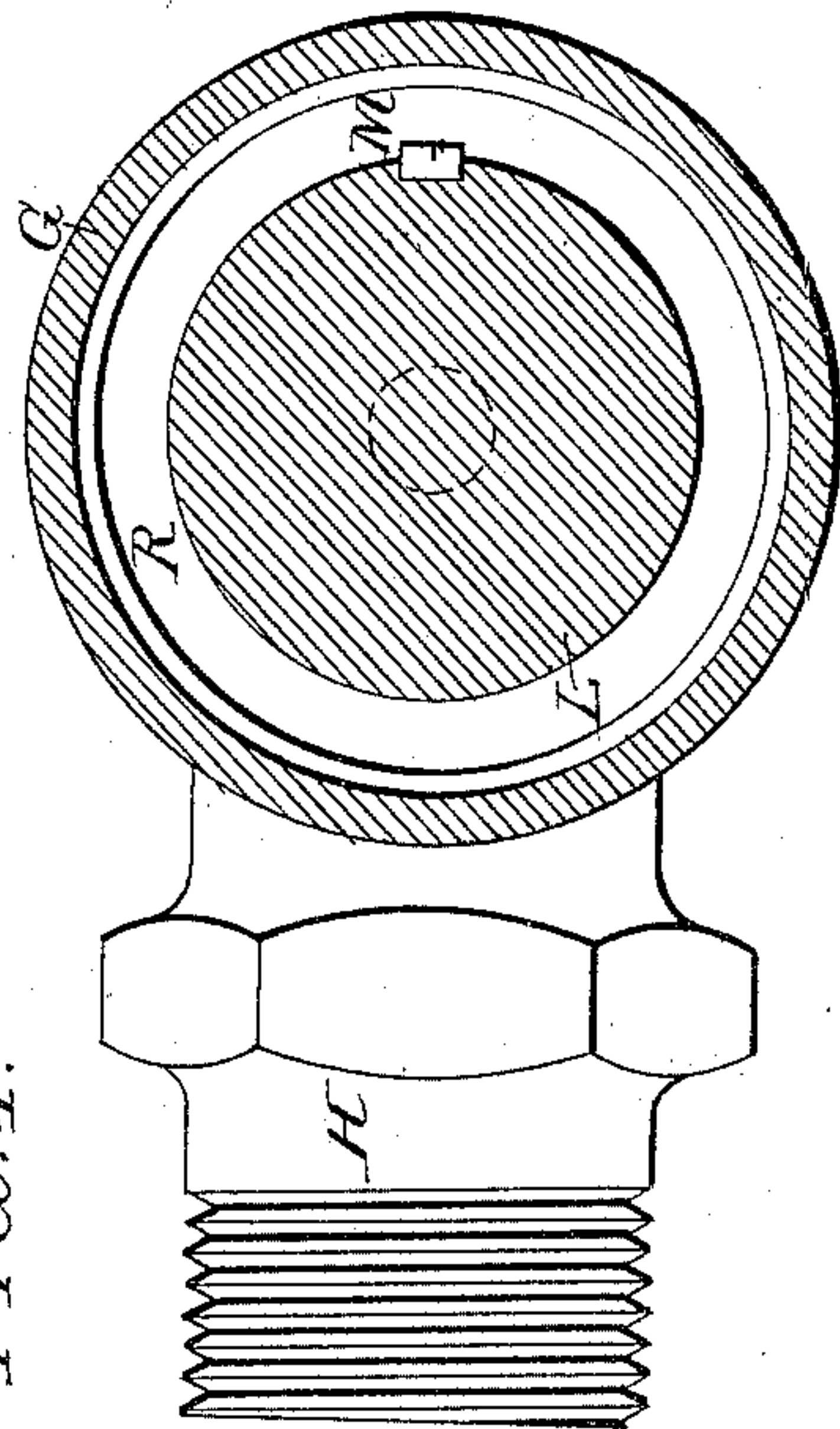


FIG. 4.

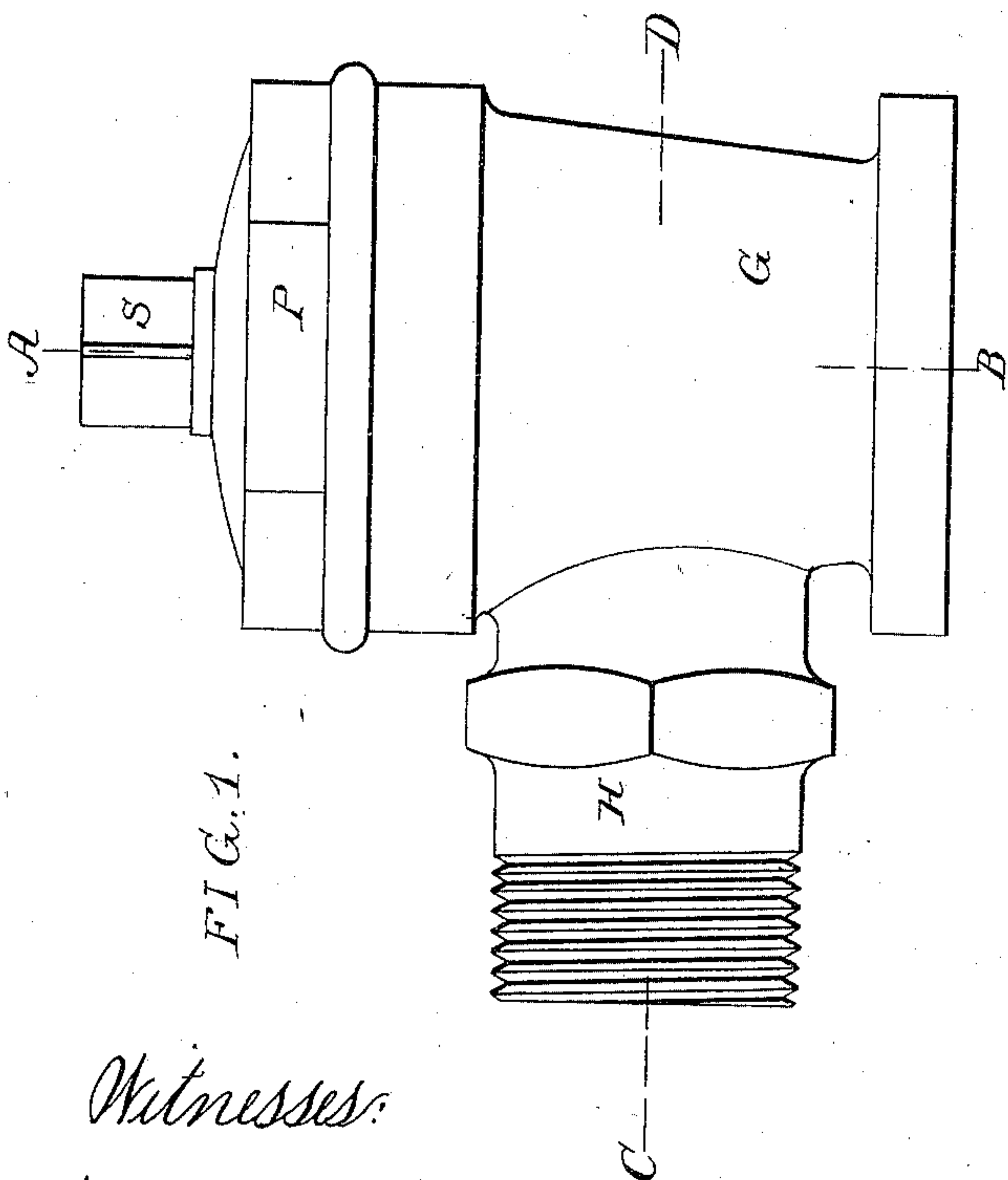


FIG. 1.

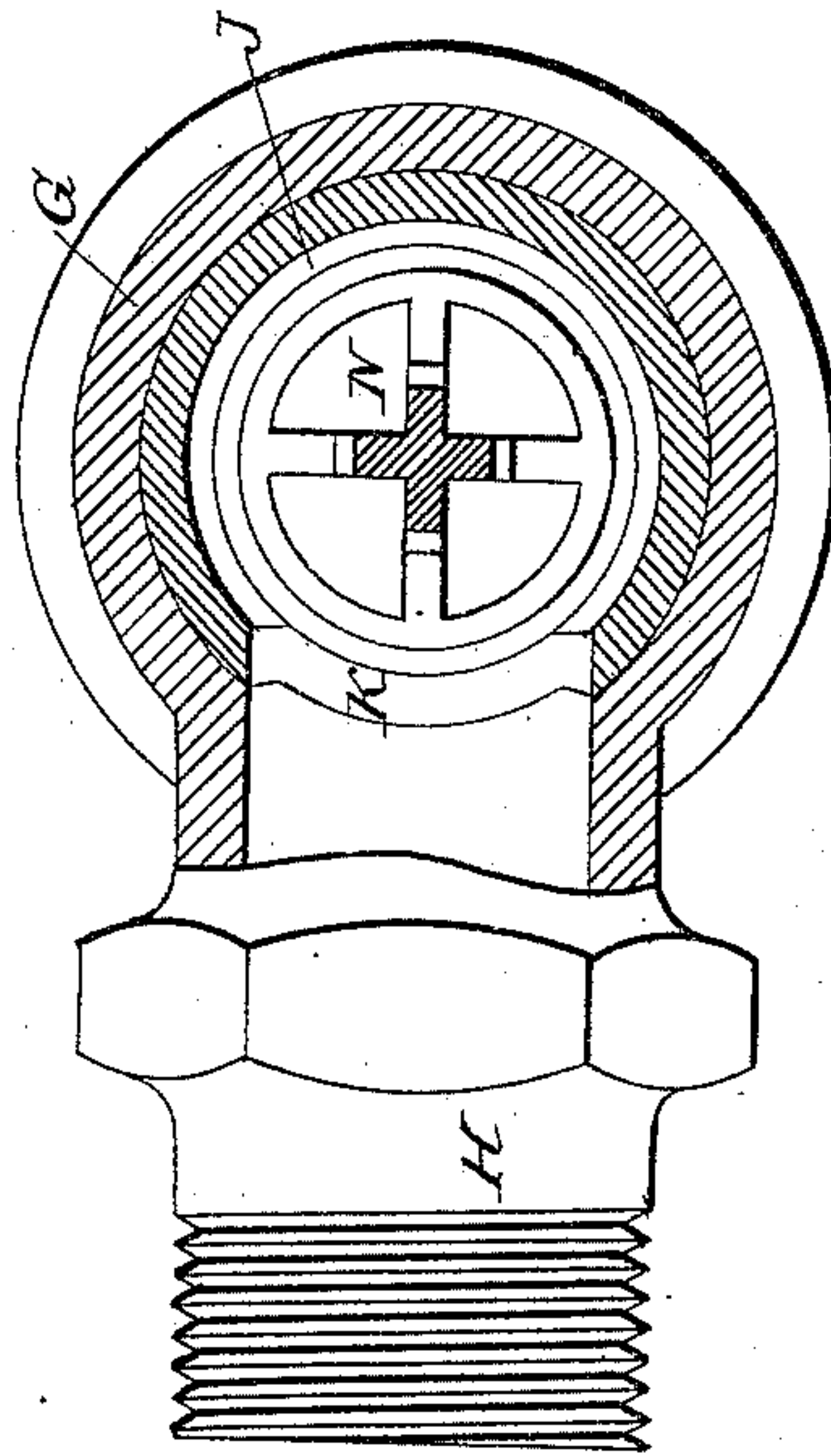


FIG. 2.

Witnesses:

William F. Davis

Henry Bossert

Inventor:
Joseph Elton Bott
by his Attorneys
Howson & Son

UNITED STATES PATENT OFFICE.

JOSEPH ELTON BOTT, OF MANCHESTER, COUNTY OF LANCASTER, ENGLAND,
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STOP AND CHECK VALVE.

SPECIFICATION forming part of Letters Patent No. 335,886, dated February 9, 1886.

Application filed March 23, 1885. Serial No. 159,753. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ELTON BOTT, a subject of the Queen of Great Britain and Ireland, and at present residing at Manchester, county of Lancaster, England, have invented certain Improvements in Stop and Check Valves, of which the following is a specification.

My present invention consists of a combined stop and check valve (for use on steam-boilers or other receptacles or pipes under pressure) so constructed that the valve may be readily and safely examined, cleaned, or repaired while under pressure, and is especially adapted for locomotives, which are often subject to delays incident to faulty check-valves.

I attain the foregoing objects by means of the construction and mechanism shown in the accompanying drawings, in which—

Figure 1 is an elevation of my improved valve. Fig. 2 is a plan in section of same on line C D. Fig. 3 is a vertical section of valve under pressure, and Fig. 4 is a plan in section on line E F.

Similar letters refer to similar parts throughout the several views.

Referring by letter to the drawings, G represents the shell of the valve, having communication with a steam-boiler or other pipe or vessel under pressure by means of the outlet H, and from a pump or other form of boiler-feeder by the inlet I.

J is a taper plug constructed with an outlet, K, parallel to the outlet H of the shell G. The upper part of the said taper plug J is bored to receive the cylindrical turning-plug L, and receives rotative motion from the same by means of the key M. The lower part of the taper plug J forms a seat for an ordinary (or ball) check-valve, N, the outlet to same being through the passage I.

The upper part of the shell G is screwed, as at O, to receive the cap or cover P, and an internal thread is also cut at Q, in which is operated the circular lock-nut R. The said lock-nut R also receives motion from the key M and turning-plug L, which causes its rotation to be parallel with that of the taper plug J, as hereinafter more particularly described.

The turning-plug L is constructed with a square head, S, or other mechanical device, for

operating the same, and is prevented from slipping down into the taper plug J by the collar T, and the said turning-plug L communicates rotative motion to the lock-nut R and taper plug J by means of the key M, while leakage through the cover P is prevented by the compressing-surface U of the turning-plug L, automatically tightening the packing V in the recess W of the cap or cover P.

The operation of my combined stop and check valve is as follows: When the check-valve N is raised by pressure from a pump or other apparatus, the water or other fluid passes through the outlets H and K into the boiler, pipe, or other vessel under pressure, and should the valve N break, strain, or become inoperative, by reason of obstructions or other causes, all that is necessary is to turn the turning-plug L by means of the square head S or any suitable method, when the taper plug J will be rotated one-quarter of a turn, thereby closing the connection between the outlets H and K, and at the same time the circular lock-nut R is screwed down on top of the taper plug J by means of the key M, having contact with both by a suitable slot, as shown in Figs. 3 and 4, thus locking the taper plug J, so as to prevent any leakage round its circumference. When this is done the cap or cover P may with perfect safety be removed, there being no back-pressure or spurting whatever, owing to the expanded fluid being released during the unscrewing of the said cap or cover P. The turning-plug L and valve N may then be taken out, cleaned, or straightened, or, in case of a broken valve, it can be replaced by a spare one, or the seat can be reground, if required, by a grinding-plug of suitable material. In the case of a locomotive this can be done while running, and with perfect safety to the engineer. After cleaning, repairing, and replacing the valve N the turning-plug L can be quickly replaced, its key M fitting into the slots of the lock-nut R, and taper plug J securing same in correct position for operating, and on the cover P being replaced the square head S may be turned back and the valve once more placed in communication with the steam-boiler, pipe, or other vessel under pressure, the whole operation having occupied but a few minutes.

I am aware that prior to my present inven-

tion a combined stop and check valve has been made with a central plug and shell having an inlet and outlet at right angles and not in the same horizontal plane, the said valve being used in combination with an improvement in automatic feed-water regulators, for which Letters Patent of the United States No. 233,199, dated October 12, 1880, were granted to myself and John P. Flinn, the assignee of one-half my interest in and to the same; but the said combined valve referred to in the Letters Patent aforesaid is opened by first unscrewing by hand a lock-nut, then loosening the plug by striking same, then turning same carefully until the openings in the taper plug are opposite to those in the shell, then screwing the lock-nut tight again to prevent the plug from blowing up and scalding the operator when he takes off the cover, and to place the valve in operation requires the reverse procedure, and by careless turning and forgetfulness an occasional accident may occur, while my present improvement, owing to its peculiar construction, causes the locking and packing to be automatically performed, and only two simple motions are required for the whole operation. I therefore do not claim, broadly, the combination of a rotating taper plug, as described in the specification of the Letters Patent hereinbefore referred to; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the valve-casing having an end inlet and lateral discharge, an open-ended plug adapted to a seat in said casing and having a lateral opening of such area that on

turning the plug the discharge is cut off, a nut whereby the plug is retained in position in the casing, a check-valve adapted to a seat around the open end of the plug, and an operating-stem connected to the plug and projecting above the retaining-nut, all substantially as specified.

2. The combination of the casing having an end inlet and a lateral discharge, an open-ended plug adapted to a seat in the casing and having a lateral opening of such area that on turning the plug the discharge is cut off, a check-valve adapted to a seat around the open end of the plug, a nut whereby the plug is retained in its seat in the casing, a cap, W, above said nut, and an operating-stem connected to the plug and projecting through said cap, all substantially as specified.

3. The combination of the casing, the hollow plug J and check-valve, the nut R, the turning-plug L, and the key M, whereby the plug J and the nut are caused to rotate with said turning-plug, all substantially as specified.

4. The combination of the casing, the hollow plug J and check-valve N, the confining nut R for said plug, and the turning-plug L, keyed to the plug J and nut R, and having a lug, T, whereby its descent is prevented, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH ELTON BOTT.

Witnesses:

JOHN G. WILSON,
WALTER GUNN.