

No. 817,069.

PATENTED APR. 3, 1906.

L. KACZANDER.  
COMBINED STOP AND CHECK VALVE.

APPLICATION FILED SEPT. 21, 1904.

Fig. 1.

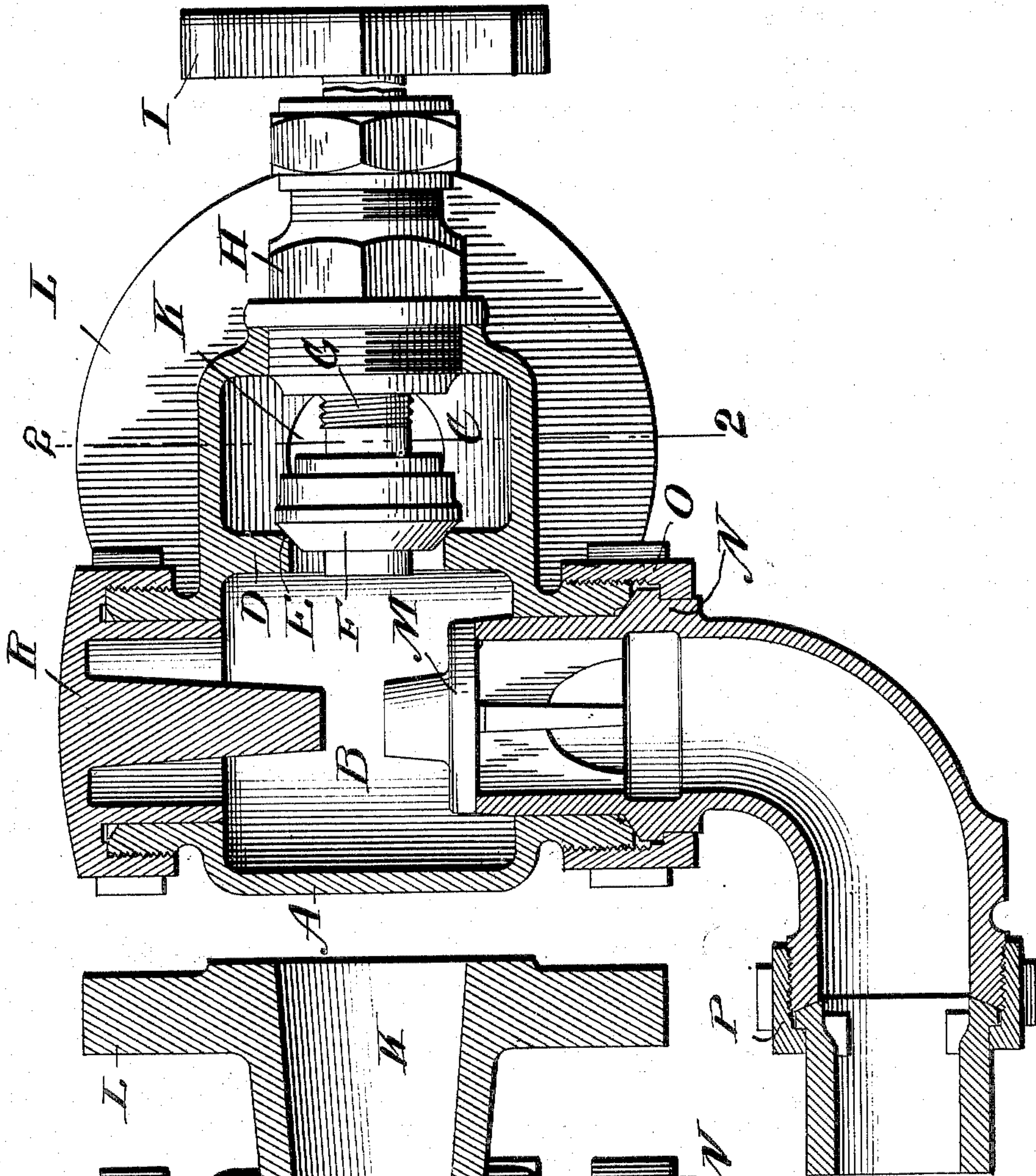
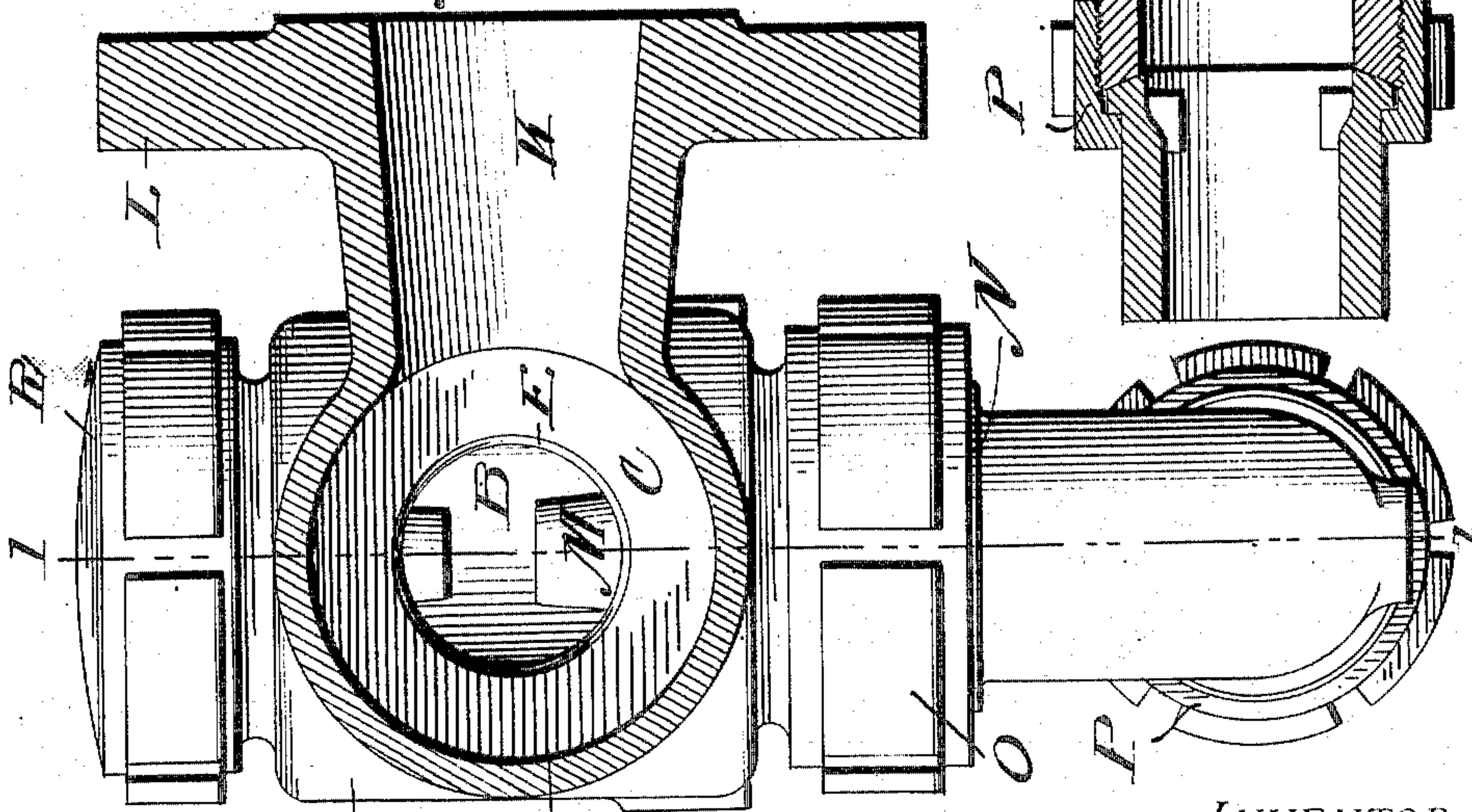


Fig. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## COMBINED STOP AND CHECK VALVE.

No. 817,069.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed September 21, 1904. Serial No. 225,336.

*To all whom it may concern:*

Be it known that I, LEOPOLD KACZANDER, a citizen of the United States, residing in the city, county, and State of New York, have  
5 invented certain new and useful Improvements in a Combined Stop and Check Valve, of which the following is a full and clear description.

Check-valves of the type here in consideration are employed in connection with steam-boilers and are placed between the boiler and the injector or water-feeding apparatus, the function of the check-valve being to open under pressure from the feeding apparatus and  
15 admit the feed-water into the boiler and to close down automatically, and thereby prevent a backflow of water from the boiler when the feeding apparatus is not in operation. The check requires occasional inspection, cleaning, and grinding, and the seat of the valve requires reseating when worn, and for these purposes a cap is usually provided in line with the center of the valve and valve-body, the removal of which opens access from  
25 above to the valve and its seat. Frequent reseating of the valve-seat in the body finally makes the body part unsuitable for use, and to avoid the wearing out of the body in this manner check-valves have been constructed  
30 with removable seats held in the body in some suitable manner. In all these constructions repairs to the valve or its seat cannot be accomplished with pressure in the boiler, inasmuch as the removal of the usual  
35 cap or the removal of the seat would cause the steam to issue in large volume through the exposed openings. To prevent this, check-valves have been made with stop-valves placed between the valve and the final  
40 outlet into the boiler, so that when the stop-valve is closed communication between the boiler and the valve-chamber is shut off.

A combined stop and check valve to fully meet working requirements should contain a  
45 stop-valve, a removable check-valve seat, and a cap, so placed relatively to each other that with the stop-valve closed the check-valve seat and valve for considerable repairs can be removed from the body together,  
50 while, on the other hand, for inspection or slight repairs the valve alone may be removed without disturbing the seat and the pipe connection between the valve-body and the feeding apparatus. Furthermore, the

parts should be so combined and put together 55 as to allow of their rearrangement and readjustment in order that the valve may be applied in either right or left hand position, according to the requirements of the case, thus enabling one valve to occupy either position 60 instead of requiring separate valves for the right and left sides of boilers, particularly locomotive-boilers, as has hitherto been the case, and in this way permitting a railroad to keep on hand a much smaller stock of 65 boiler check-valves than otherwise would be practicable. I am not aware that combined stop and check valves have been in use heretofore containing all these desirable features and elements so combined and placed 70 relatively to each other, so as to form a compact, simple, and efficient construction with the parts readily accessible by ordinary means which are at the disposal of any man who may be in charge of a steam-boiler. I 75 have more particularly in view the use of such check-valves in connection with boilers of locomotive-engines, and the details are arranged and shown with particular reference to such use, although the check-valve, as 80 shown, is applicable to any kind of boiler.

A construction combining these desirable features is illustrated in the accompanying drawings, to which I shall now refer for a better understanding of my invention. 85

In the drawings, Figure 1 is a longitudinal vertical section of the device on line 1 1, Fig. 2. Fig. 2 is a transverse vertical section on line 2 2, Fig. 1.

A is the valve case or body, divided into 90 two chambers B and C by means of a partition-wall D, which at E contains the seat for the shut-off or stop valve, consisting of the usual disk F, screw-spindle G, bonnet H, and operating-handle I. Chamber B, which is 95 vertical and has a clear opening all the way through, communicates with the boiler only as permitted by valve F, whereas chamber C, which is exterior to and at right angles with chamber B, is in continuous communication with the boiler through the side chamber 100 K, which terminates in a flange L, by means of which the check-valve is attached to the boiler in the usual and well-known manner.

M is the check, seated on and guided in the 105 seat-piece N, which seat-piece by means of the nut O is attached to the inlet end of the valve-body and for convenience sake is el-



bow-shaped, being provided at P with a union-coupling, to which is attached the pipe which leads from the check-valve to the feeding apparatus.

5 R is a cap controlling an opening through which the check M may be inserted or removed as required.

The top and bottom ends of chamber B are formed as symmetrical threaded necks, so  
10 that the cap R and the seat-piece N, with its nut O, will interchange—that is, one may take the place of the other—whereby the check-valve is made reversible and suitable for use on either side of a boiler.

15 In the position shown in the drawings valve F is closed and pressure is removed from chamber B. By loosening the two nuts O and P the seat-piece N and the check-valve M may be dropped out of the body together  
20 for the purposes of reseating or grinding in the valve, or if only slight repairs—inspection of the check and seat, cleaning of the same, &c.—are required the nuts O and P and the attached pipe may remain undisturbed and the check may be taken out and  
25 its seat exposed for inspection by removing the cap R.

It will be seen that the construction is very simple, all parts are thoroughly accessible,  
30 and the removal and replacement and rearrangement of parts may be accomplished by the use of the most ordinary tools—such as a spanner-wrench, for example—which is always at the disposal of any man having to  
35 attend to such check-valves.

I consider myself to be the first to have constructed a combined stop and check valve

in which opposite symmetrical ends of the check-valve chamber are closed by a check-valve seat and a cap, removable and interchangeable the one with the other, in order  
40 to impart to the valve the reversibility required in order to permit it to be applied in right or left position to the boiler to which it is connected.

45 What, therefore, I claim, and desire to secure by Letters Patent, is as follows:

1. In a combined stop and check valve and in combination, a check-valve chamber having symmetrical threaded open ends, a check-valve seat applied to one of the ends, and a cap applied to the opposite end, the seat and the cap being removable and interchangeable, the one with the other, substantially as  
50 and for the purposes hereinbefore set forth. 55

2. In a combined stop and check valve, and in combination, a valve-body comprising a vertical check-valve chamber with clear opening all the way through and symmetrical threaded ends, and a stop-valve chamber  
60 exterior to, and at about right angles with, the check-valve chamber, a check-valve seat and a cap removably applied to the ends of the check-valve chamber and interchangeable, the one with the other, for the purposes  
65 stated, and a stop-valve and seat therefor in the stop-valve chamber, substantially as hereinbefore set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LEOPOLD KACZANDER.

Witnesses:

ADOLPH BARGEBUHR,  
JAMES E. MURPHY.