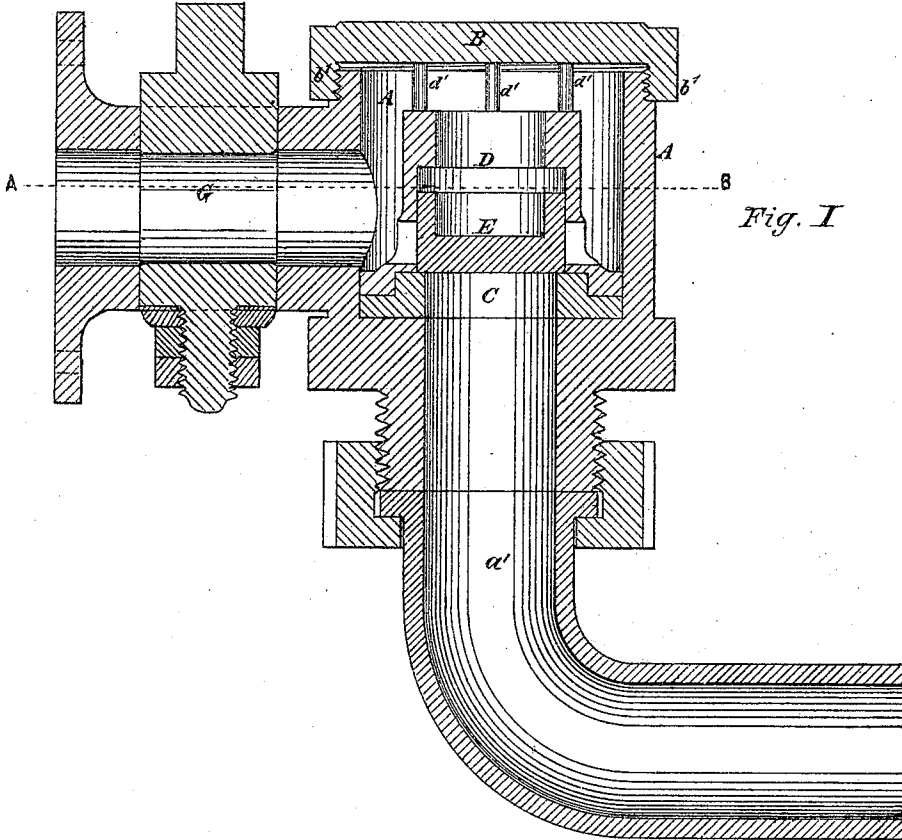


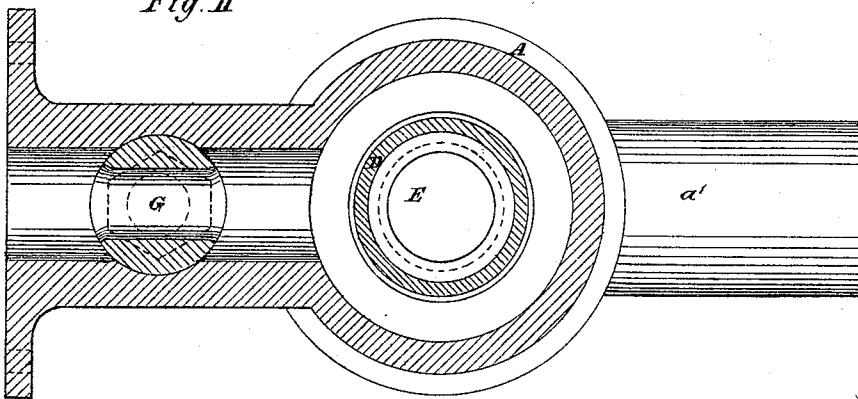
## Check-Valves.

No. 141,454.

Patented August 5, 1873.



*Fig. II*



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WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN CHECK-VALVES.

Specification forming part of Letters Patent No. **141,454**, dated August 5, 1873; application filed March 28, 1873.

*To all whom it may concern:*

Be it known that I, JOHN H. NAYLOR, of the city of Buffalo, in the county of Erie and State of New York, have invented certain Improvements in Check-Valves for Locomotives, of which the following is a specification:

The first part of my invention consists in the combination and arrangement of a valve cylinder or case, open at the top, a cover screwed onto the outside of the same, and a removable valve-chamber, seat, and valve within, in such manner that by screwing the cover down the valve-chamber and seat will be held firmly in place. The second part of my invention consists in the combination of the above with a stop-cock, which is located between the check-valve and the boiler, to which it is connected.

In the accompanying drawing, Figure I is a vertical section of my improved check-valve. Fig. II is a horizontal section of the same taken on line A B.

A represents a cylindrical case, which is open at the top and connected to a pipe, *a'*, at the bottom in any suitable manner. B represents a cover which has a flange, *b'*, provided with a screw-thread upon its inner circumference. This female screw is fitted to a screw-thread upon the outer circumference of the top of the case or cylinder A. The object of this mode of adjusting and constructing the cover is to prevent the screw-thread from being clogged up by deposit of the water or steam passing in and out of the check. The valve-seat is formed upon a ring, C, which lies flat upon the bottom of the cylinder A, the bore of the pipe *a'* and the valve-seat being made of equal diameter. Upon this valve-seat rests the valve-chamber or cage D, which is of tubular shape, its central opening extending to the top. The upper edge is provided with projecting pins *d'*, or their equivalents, which are of such length as to closely fit to the inner face of the cover B. The valve proper is shown at E, and belongs to the kind known as cup-valves.

It will be seen that the three parts just described, the valve-seat C, chamber D, and valve E, may be removed when the cover B is unscrewed; but the seat and chamber are held firmly in place by the cover when the cylinder is closed.

Upon one side of the cylinder an opening is made, communicating with the pipe which connects the check-valve cylinder with the boiler of the locomotive. Within this pipe is placed the stop-cock G.

Great inconvenience is usually experienced in cleaning a check-valve, a frequent deposit of dirt being left within it by the water passing through. In every case it has heretofore been necessary to let off the steam and draw the water from the boiler before the cleansing of the valve can be undertaken.

By the use of my improvement the cleaning of the valve can be done more expeditiously and more thoroughly, and while the boiler is full of steam.

The operation is as follows: Turn the stop-cock G so as to shut off communication with the boiler; then unscrew the cover B, take out the valve, valve-seat, and cage, and wipe them. Replace, first, the valve-seat, then the valve, then the valve-chamber, into their proper positions within the cylinder, screw on the cover, and turn the stop-cock so as to open communication with the boiler.

I claim as my invention—

1. The combination and arrangement of the cylinder A, screw-cover B, removable valve-seat C, cage D, and valve E, for the purpose and substantially as herein set forth.

2. The combination and arrangement of the cylinder A, screw-cover B, removable valve-seat C, cage D, and valve E with the stop-cock G, for the purpose and substantially as herein described.

JOHN H. NAYLOR.

Witnesses:

PETER C. DOYLE,  
B. H. MUEHLE.