No. 818,670. PATENTED APR. 24, 1906.

P. DUMBOLTON.

UNION CHECK VALVE.

APPLICATION FILED JAN. 15, 1904.

Fig. 1.

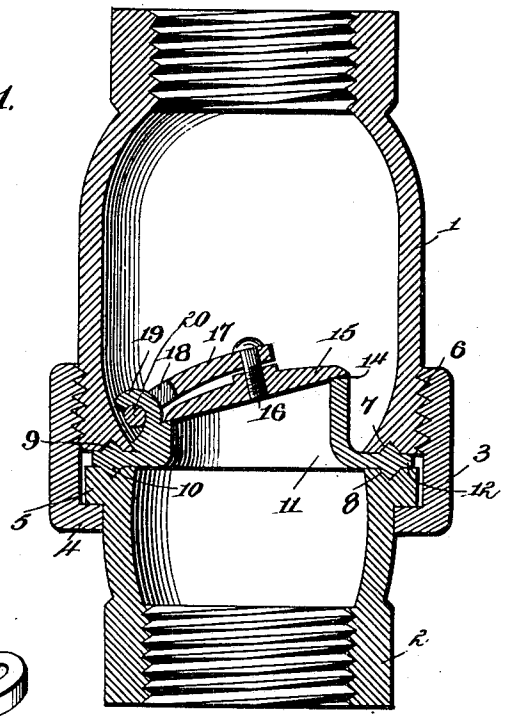



Fig. 4.

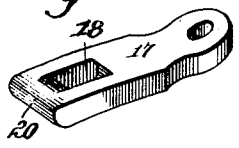



Fig. 2.

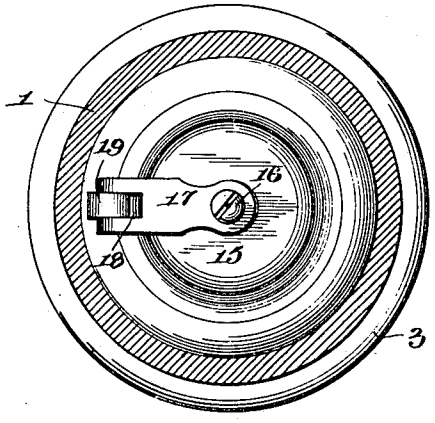
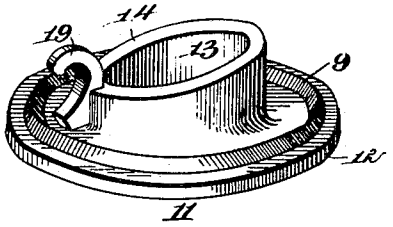



Fig. 3.




Witnesses

Louis C. Starke

H. J. Riley

Perry Dumbolton, Inventor

By E. G. Siggers

Attorney

# UNITED STATES PATENT OFFICE.

PERRY DUMBOLTON, OF TRAVERSE CITY, MICHIGAN.

## UNION CHECK-VALVE.

No. 818,670. Specification of Letters Patent. Patented April 24, 1906.

Application filed January 15, 1904. Serial No. 189,180.

*To all whom it may concern:*

Be it known that I, PERRY DUMBOLTON, a citizen of the United States, residing at Traverse City, in the county of Grand Traverse and State of Michigan, have invented a new and useful Union Check-Valve, of which the following is a specification.

The invention relates to improvements in union check-valves.

The object of the present invention is to improve the construction of union check-valves and to provide a simple and comparatively inexpensive one in which the valve-seat can be changed without the expense of a complete new valve.

A further object of the invention is to provide a union valve of this character which will dispense with the usual packing and which will enable the parts to be assembled without grinding to seat the same.

Another object of the invention is to enable the check-valve to be more compactly arranged and to permit a direct flow through it the full size of the pipe to which the union is connected.

Furthermore, the invention has for its object to provide a union check-valve which will permit the valve-seat to be quickly removed for grinding or changing in less time than has heretofore been necessary.

With these and other objects in view the invention consists in the construction and novel combination and arrangements of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a longitudinal sectional view of a union check-valve constructed in accordance with this invention. Fig. 2 is a transverse sectional view. Fig. 3 is a detail view of the combined valve-seat and metallic gasket. Fig. 4 is a detail view of the link or hanger.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 and 2 designate sections or members of a union, and 3 is the connecting-ring or lock-nut, which is provided at one end with an inwardly-extending flange 4 to engage a corresponding outwardly-extending flange 5 of the section or member 2 of the union. The other end of the coupling-ring or lock-nut 3 is interiorly threaded at 6 to engage corresponding threads on the inner adjacent end of the other section or member 1 of the union. The outer ends of the sections or members of the union are interiorly threaded to receive the pipe-sections and are of the usual exterior polygonal configuration to enable them to be engaged by a wrench.

The sections or members of the union are provided at their inner adjacent ends with corresponding annular grooves 7 and 8, V-shaped or triangular in cross-section, for the reception of oppositely-beveled ribs 9 and 10 of a member 11, which constitutes a combined valve-seat and metallic gasket. The ribs 9 and 10, which are annular, are tapered or wedge-shaped to fit snugly in the corresponding grooves 7 and 8, whereby a tight joint is effected and packing rendered unnecessary. The member 11, which is designed to be constructed of brass, but which may be made of any suitable material, consists of a transversely-disposed flange 12 and a longitudinal tubular portion 13. The flange 12 extends between the inner ends of the sections or members of the union and carries the projecting wedge-shaped ribs 7 and 8. The tubular portion 13, which is of substantially the same diameter as the pipe with which the union is connected, has an angularly-disposed outer edge forming a seat 14 for the check-valve 15, which is disposed at an angle. By employing the tubular portion 11 of the form and construction shown a direct flow through the valve of the full size of the pipe is permitted.

The valve 15, which is set at an angle, is centrally connected by a screw 16 or other suitable fastening device with a link or hanger 17, having a perforation at one end to receive the screw 16 and provided at its other end with an opening 18 for the reception of a hook 19. The opening 18 forms an eye, and it is retained in engagement with the hook by the contiguous portion of the member 1 of the union. The hook 19 is curved outward from the valve-seat toward the adjacent side of the section or member 1 of the union, and the link or hanger is securely confined and hinged to the valve-seat by the hook. The hook forms an eye or bearing for the link or hanger, which has a rounded pintle portion 20 to fit the con-

cave or bearing face of the hook. The link or hanger 17 is adapted to swing to permit the valve to open and close.

It will be seen that the union check-valve is exceedingly simple and inexpensive in construction, that it is adapted to permit a direct flow through it the full size of a pipe, and that it dispenses with the packing ordinarily required. Also it will be clear that the valve-seat may be readily taken out for grinding or changing and that the same may be renewed without discarding the entire valve. Furthermore, it will be apparent that a metallic gasket is provided and that owing to the tapered interlocking ribs and the grooves it is unnecessary to grind the gasket to seat the same. The valve also dispenses with an extra nipple and takes up less space than the ordinary valve.

The union portion of the device will outlast a number of valves; and another advantage of the invention is that in changing valves it is only necessary to break or take down one joint, thereby effecting a great saving in time and labor and also in the expense attandant on shutting down the feed-water of a large plant for a considerable length of time.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a union, the members of which are provided at their anjacent ends with oppositely-disposed annular grooves, of a detachable valve-seat having a flange and provided at opposite faces with annular ribs fitting in the grooves and interlocked with the said members, said valve-seat being also provided with a hook arranged interiorly of the union in position to be closed by one of the members thereof when the parts are assembled, and a valve provided with means for engaging the hook, whereby it is detachably hinged to the valve-seat and may be removed only when the members of the union are separated, substantially as described.

2. The combination of a union, the members of which are provided with oppositely-disposed tapering grooves, a detachable valve-seat provided on its opposite faces with tapered annular ribs fitting in the grooves and forming a gasket and interlocking the valve-seat to and between the members, and a valve coöperating with the valve-seat, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

PERRY DUMBOLTON.

Witnesses:
GEO. H. CROSS,
CHARLES WILHELM.