

No. 724,605.

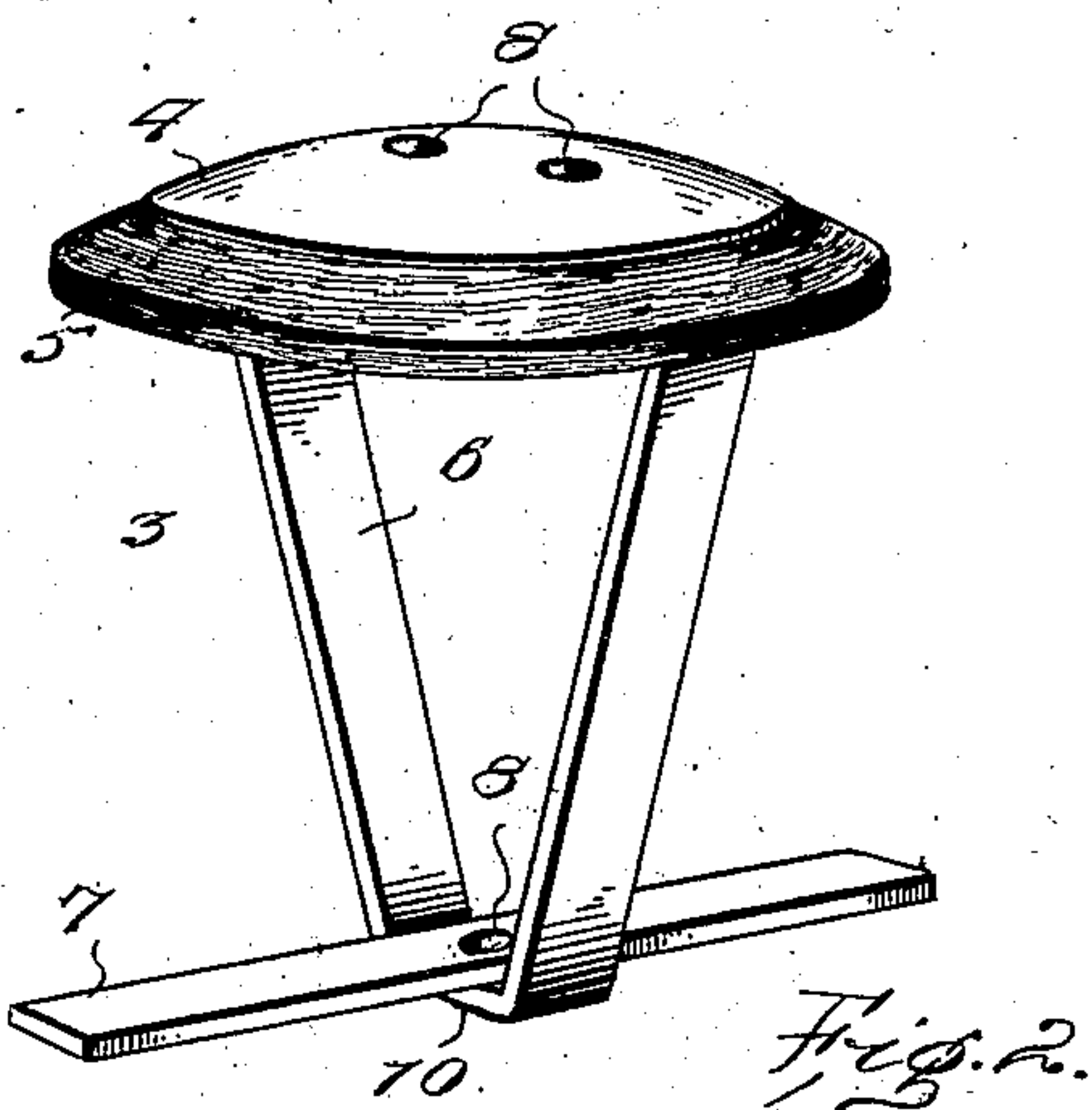
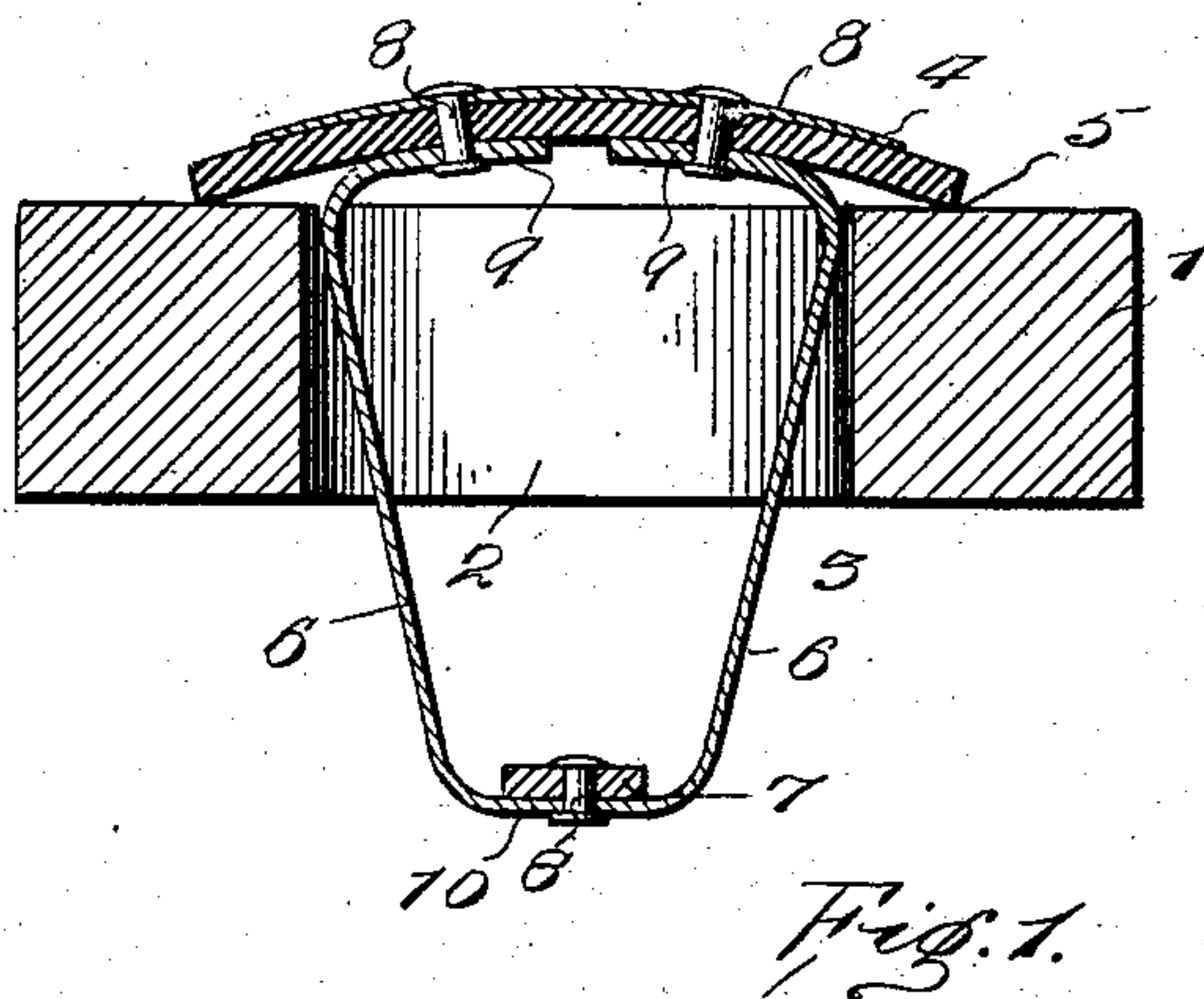
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W. F. NORMAN & J. H. BERGHAUSER.

## VALVE FOR BUCKET BOTTOMS.

APPLICATION FILED OCT. 7, 1901.

NO MODEL.



Witnesses:

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# UNITED STATES PATENT OFFICE.

WILLIAM F. NORMAN AND JOHN H. BERGHAUSER, OF NEVADA, MISSOURI.

## VALVE FOR BUCKET-BOTTOMS.

SPECIFICATION forming part of Letters Patent No. 724,605, dated April 7, 1903.

Application filed October 7, 1901. Serial No. 77,899. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM F. NORMAN and JOHN H. BERGHAUSER, citizens of the United States, residing at Nevada, in the county of Vernon and State of Missouri, have invented a new and useful Valve for Bucket-Bottoms, of which the following is a specification.

This invention relates to valves for well-bucket bottoms.

The object of the invention is to present a valve that shall be positive and certain in operation to open and close the opening in the bottom of the bucket and one which owing to its simplicity of construction and ease of action will not be liable in use to become disarranged or broken and which when once associated with the bucket-bottom may be relied on for almost indefinite use without requiring any attention.

A further object is to provide a valve all parts of which are disconnected from the bucket-bottom, thereby obviating the necessity of the employment of screws or other fastening means for holding the valve assembled with the bottom which are liable to rust away or become disconnected from the bottom, and thereby render the valve inoperative.

A further object is to present a valve the packing of which shall be so associated with its support as to be caused to retain its initial shape, thus to effect the requisite closing of the opening in the bucket-bottom even after the packing has become saturated with water or the like, and thus extremely soft and pliable.

With these and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a valve for well-bucket bottoms, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like numerals of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage

without departing from the scope of the invention, and in these drawings—

Figure 1 is a view in sectional elevation of a valve characterizing this invention, showing the same in operative relation with a well-bucket bottom. Fig. 2 is a detached detail view in perspective of the valve.

Referring to the drawings, 1 designates a bucket-bottom such as is employed in connection with that class of buckets used in elevating water from bored or other wells, the center of which is provided with an opening 2 for the admission and escape of water.

The valve, (designated generally 3,) which constitutes the gist of the present invention, comprises a valve proper, composed of a cap 4 and a packing 5, a yoke 6, constituting a stem, and a stop or cross-bar 7, these parts being all rigidly assembled, as by rivets 8. The packing 5 is composed of a suitable absorbent material, preferably of leather, and is concavo-convex in cross-section, the under side of its rim only being designed to bear upon the bottom 1, thereby to effect perfect closure of the opening 2. In order to retain the packing in the shape initially given to it, it is reinforced on its upper side by the concavo-convex cap 4, which latter is of sufficiently less diameter than the packing to permit the latter to have requisite yield to effect perfect closing of the opening 2 when the valve is seated. In order that the life of the valve may be insured, all of the metallic parts thereof are of galvanized iron, with the exception of rivets 8, which may be of copper. The yoke 6, to which the valve proper is secured, is approximately V-shaped in side elevation, the upper portions of the arms thereof being turned at an angle to their length, as at 9, to present attaching means for the valve proper, the arms being spaced at such distance apart as to permit the yoke freely to move in the opening 2 without any danger of binding. To the bottom bend 10 of the yoke is secured the stop or cross-bar 7, which latter is to be of a width to span the opening 2 at all times, thereby to insure positive operation of the valve without danger of disassociation from the bucket-bottom. By securing the stop to the yoke, and thus presenting in a single structure all of the operative parts of the valve, the employment of screws or other holding



means for holding the stop associated with the bucket-bottom, as is usually employed, is rendered unnecessary. This latter arrangement will be appreciated by users, as  
 5 in the event of the cross-bar becoming detached from the bucket-bottom, especially when the bucket is submerged in the well, great inconvenience might ensue, as a new cross-bar might not be obtainable. Under  
 10 the structure shown in this device this defect is obviated in a thoroughly practical and feasible manner.

In addition to the function already described the cross-bar operates as a counter-  
 15 weight to effect seating of the valve in a positive manner, it being seen that by having it located by the crest of the yoke it will operate to effect quick seating of the valve as soon as upward movement of the bucket begins.

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

1. A valve for well-bucket bottoms comprising a yoke carrying at one end a transversely-disposed stop constituting a counter-  
 25 weight, and at the other end a concavo-convex exteriorly-reinforced packing.

2. A valve for well-bucket bottoms comprising a yoke carrying at one end a trans-  
 30 versely-disposed stop constituting a counterweight, and at the other end a concavo-convex packing and a similarly-shaped exteriorly-arranged reinforcing-cap of less diameter than the packing.

3. A valve for well-bucket bottoms, comprising a yoke carrying at its lower portion a rigid stop or cross-bar constituting valve-seating means, and at its upper portion a concavo-convex packing and a reinforcing-cap therefor, all of the parts being riveted to-  
 10 gether, substantially as and for the purpose specified.

4. The combination with a well-bucket bottom provided with a central orifice, of a yoke adapted for movement within the orifice, and  
 45 carrying at its lower portion a stop of greater length than the diameter of the orifice, and at its upper portion a concavo-convex exteriorly-reinforced packing the stop operating as a counterweight to effect positive seating of  
 50 the valve.

5. A valve for well-buckets, comprising a yoke having its upper terminals bent to form inturned arms, a transversely-disposed stop secured at the bend of the yoke, a concavo-  
 55 convex flexible packing, a concavo-convex cap of less diameter than and disposed upon the packing, and rivets passing through the cap and secured to the said arms.

In testimony that we claim the foregoing as  
 60 our own we have hereto affixed our signatures in the presence of two witnesses.

WILLIAM F. NORMAN.  
 JOHN H. BERGHAUSER.

Witnesses:

J. BURNIE HARRIS,  
 JOHN T. BIRDSEY.