

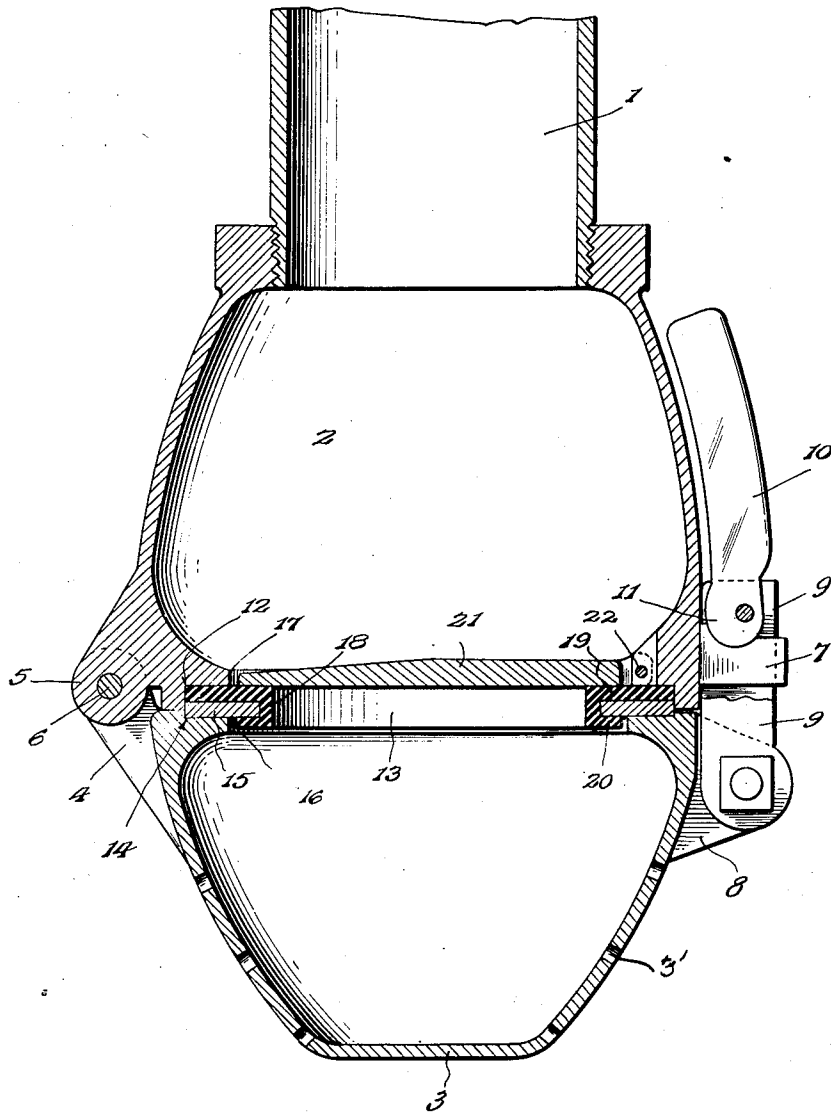
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VALVE

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UNITED STATES PATENT OFFICE.

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VALVE.

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This invention has reference to the foot valves or inlet valves of pumps and has for its object the provision of means whereby the valve body or casing may be very quickly opened when necessary to reach the interior in order to clear the same of some obstruction or to renew the packing. Another object of the invention is to provide a novel packing which will be held in place by the construction of the valve body and may be easily renewed when necessary. The invention is illustrated in the accompanying drawing and will be hereinafter fully set forth.

The figure of the drawing is a vertical sectional view of a valve embodying my improvements.

In the drawing, the reference numeral 1 indicates the lower end of a pump stock or barrel and 2 designates the upper part of a valve casing or body which is threaded onto the lower end of the pump stock. The valve body or casing includes a strainer 3 which is shown as a casting having perforations 3' therethrough, but may be of any preferred form, and is provided at its upper end with hinge lugs 4 mating with hinge lugs 5 on the upper member of the valve casing 2 to receive a hinge pin or pintle 6 whereby the strainer and the main body of the valve casing will be pivotally connected. At the opposite side of the valve casing, the upper body is provided with a projecting locking lug 7, while the strainer is provided with a projection 8, as shown. Straps or links 9 are pivoted at their lower ends to the lug 8 and are adapted to extend upwardly therefrom at opposite sides of the locking lug 7 and to lie against the side of the valve body 2, as shown. Pivoted between the upper ends of the links or straps 9 is a lever 10 having a cam head 11 at its pivotal end adapted to bear upon the locking lug 7. When the strainer is swung up against the lower end of the body 2, the links 9 will be brought into the position illustrated at opposite sides of the locking lug 7 and projecting above the same, the lever 10 being so disposed that the low part of this cam head or eccentric will be presented to the locking lug. The lever is then swung upwardly so that the high part of the cam or eccentric will be caused to bear upon the locking lug and thereby draw the strainer upwardly so that it will be brought into close engagement

with the valve body or the gasket interposed between the body and the strainer.

The lower end of the valve body is formed with an annular rabbet or recess, indicated at 12, which receives the gasket 13 and the strainer is likewise formed with a recess or rabbet 14 which receives the lower side of the gasket. The gasket comprises a metal flat-sided ring 15 of a proper external diameter to seat in the rabbet or recess 14 and rest upon the lower wall of the same, the inner diameter of this ring being less than the diameter of the axially aligned bores or openings 16 and 17 in the strainer and the valve body respectively. Fitted upon the metallic ring 15 is an elastic covering ring 18 which is molded into the form shown so that it may be sprung over the inner edge of the gasket and be retained thereon by its own resiliency. This flexible ring or gasket member is constructed with an upper branch of such diameter that its outer edge will be flush with the outer edge of the metal ring 15, while an annular web depends from the inner edge of such upper member 19 to pass through the bore of the ring 15 and terminate in an annular lip or flange 20 bearing against the under side of the said ring. This gasket will be held in place by the pressure exerted thereon through the opposed surfaces of the strainer and the valve body whereby the gasket will be clamped between said surfaces, as clearly shown in the drawing. The valve proper consists of a disk or plate 21 hinged, as at 22, to one side of the body above the recess or rabbet 12 therein and having its edge portions free so that in the normal position of the parts the valve disk or plate will rest upon the gasket and cut off the flow into and through the valve body. On the up stroke or working stroke of the pump piston, the suction will lift the valve so that the inflow of water or other liquid will be permitted but when the suction stops upon the ensuing stroke of the pump piston the valve at once drops by gravity so that water drawn into the valve body and pump stock will be retained therein, eventually reaching the discharge port of the pump and flowing therefrom.

From the foregoing description, taken in connection with the accompanying drawing, it will be seen that I have provided a very simple and efficient means for closing the valve body while permitting ready access

thereto whenever repairs or renewal of parts may be necessary. The peculiar form of gasket devised by me permits the flexible portion of the gasket to be readily renewed
5 as occasion may demand while at the same time the metallic ring which constitutes the core, so to speak, of the gasket imparts durability thereto so that the valve may be used through a long period without requiring any
10 special attention. The particular means devised by me for locking the valve casing in its closed position is advantageous when an accumulation of sand or other foreign matter chokes or fouls the valve so that the valve
15 disk does not seat properly upon the gasket and, consequently, causes the pump to work inefficiently. When it is necessary to clear the valve casing of such accumulations, the lever 10 is simply swung downwardly so
20 that the locking pressure of the cam head upon the locking lug is released and a slight outward pull upon the lever will swing the straps or links 9 clear of the locking lug so
25 that the strainer will then assume a pendent position below the body 2 and permit access to the interior of the body.

Having thus described the invention, I claim:

30 1. The combination of a valve body having an opening through its lower end and having an annular rabbet in the wall of said opening, a member hinged to the lower end of the valve body and having an opening to align axially with the opening in the valve

body, and an annular rabbet in the wall of 35 said opening, a gasket comprising a flat-sided ring resting in the rabbet in the hinged member and a cushioning member covering the upper side of the said ring and fitting 40 in the rabbet in the valve body and extending across the inner edge of the ring and under the lower side thereof, the gasket being held solely by pressure exerted through the hinged member, interengaging means on 45 the hinged member and the valve body for locking the hinged member to the valve body with a clamping pressure upon the gasket, and a valve disk mounted at the opening through the lower end of the valve body and seating upon the gasket within the 50 opening in the valve body.

2. The combination of a valve body, a member hinged thereto at one side and provided with a projection at its opposite side, a locking lug on the valve body, straps pivoted to the projection on the hinged member and adapted to extend therefrom at opposite sides of the locking lug and terminate 55 above the locking lug, a lever pivoted between the upper ends of said straps and having a cam head to bear upon the locking lug, a gasket held by and between the hinged member and the valve body, and a valve disk mounted within the body to seat upon the 60 gasket. 65

In testimony whereof I affix my signature.

FREDERICK A. PERRENOT. [L. S.]