

(No Model.)

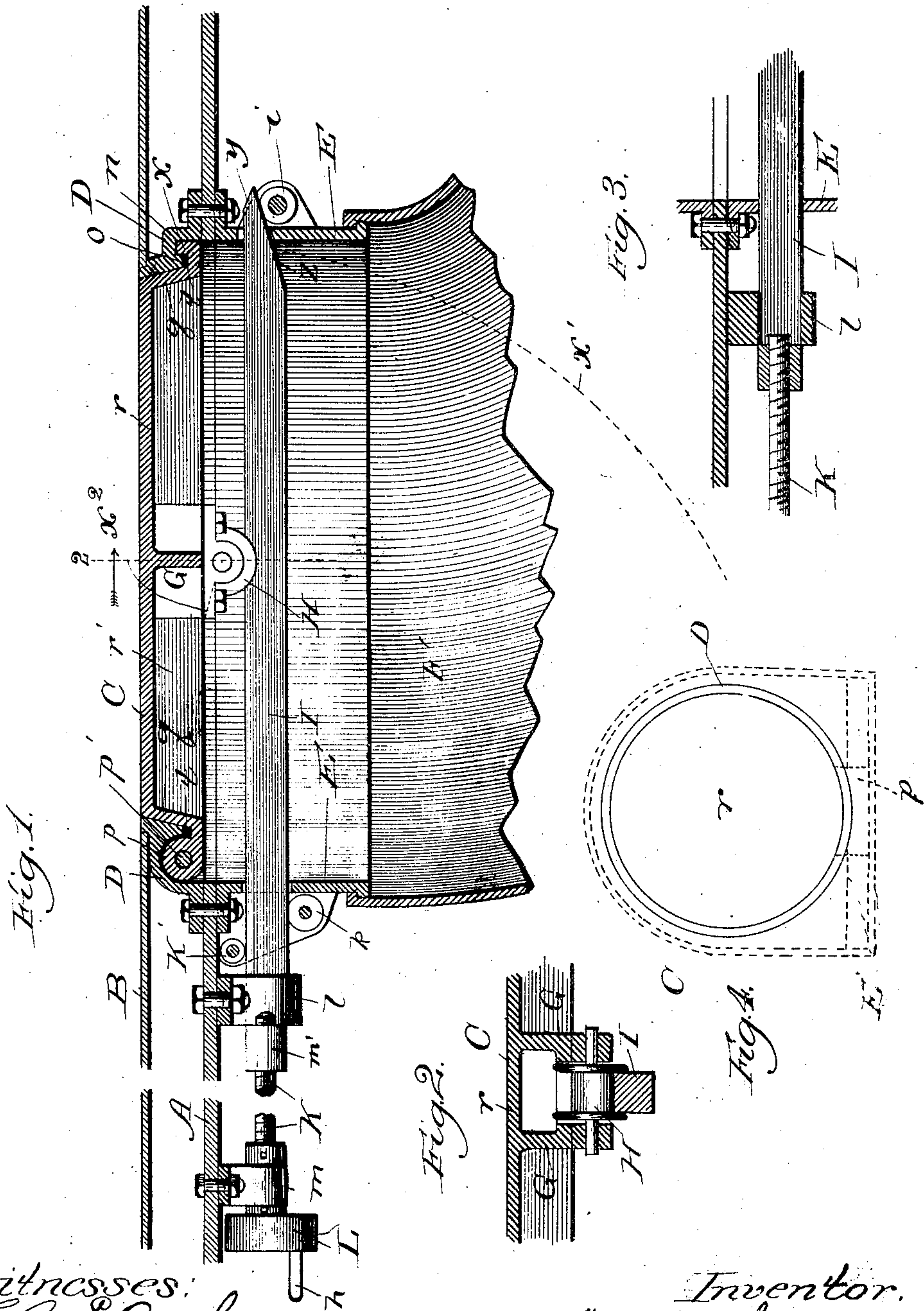
2 Sheets—Sheet 1.

W. GREISSER.

MASH TUB.

No. 368,887.

Patented Aug. 23, 1887.



Witnesses:
Chas. E. Garland.
J. H. Dyrenforth.

Inventor.
William Greisser
By Dyrenforth & Dyrenforth
Attys

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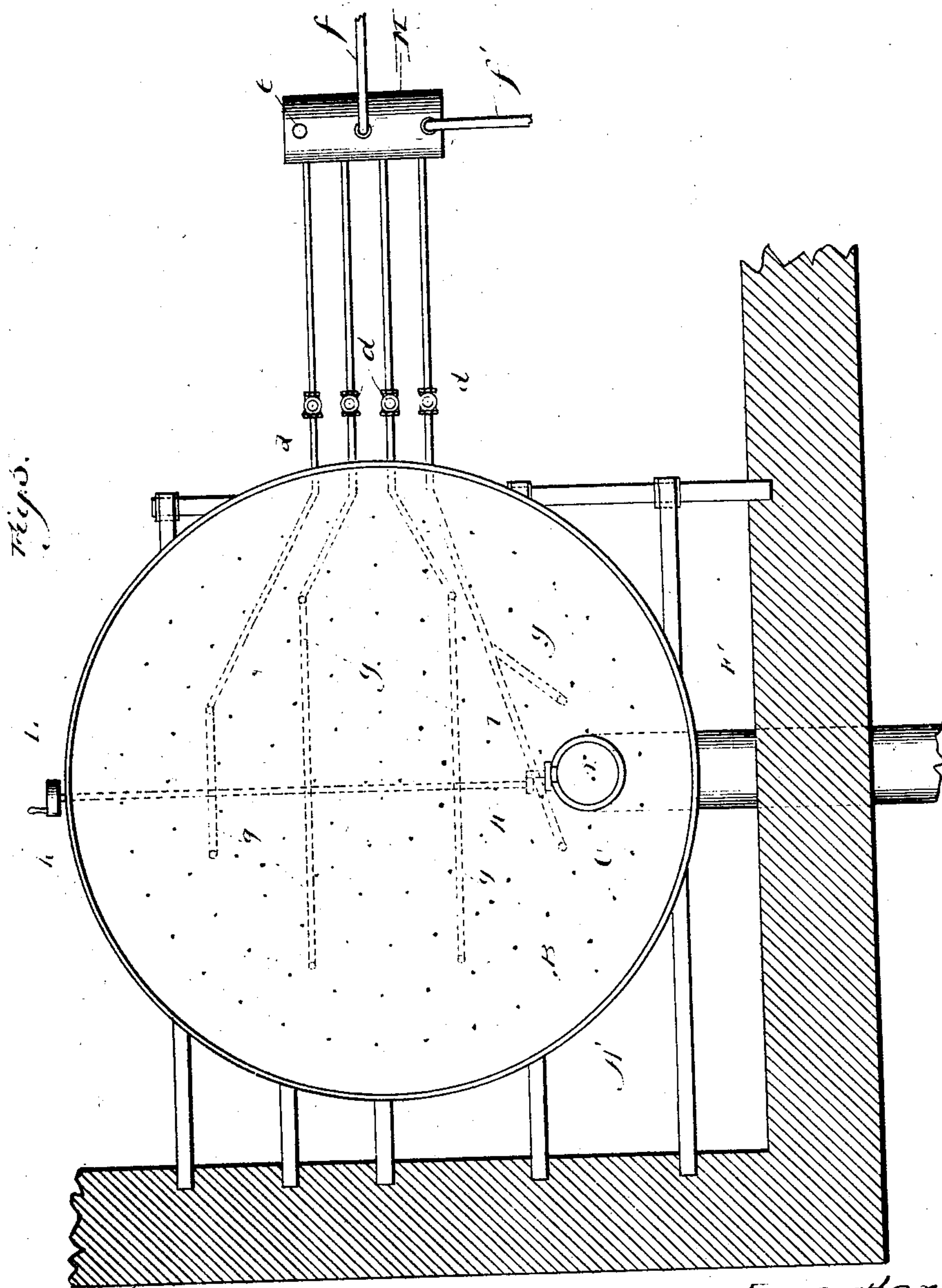
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Inventor:
William Greisser,
By Dyrenforth and Dyrenforth,
Att'ys.

UNITED STATES PATENT OFFICE.

WILLIAM GREISSER, OF CHICAGO, ILLINOIS.

MASH-TUB.

SPECIFICATION forming part of Letters Patent No. 368,887, dated August 23, 1887.

Application filed September 20, 1886. Serial No. 214,062. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GREISSER, a subject of the Emperor of Germany, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Mash-Tubs; and I hereby declare the following to be a full, clear, and exact description of the same.

My improvement relates particularly to the valve portion of mash-tubs.

Sometimes mash-tubs are provided with an opening for the discharge at the proper time of the mash, which opening is covered by a hinged lid raised within the tub, to permit the discharge of the contents, by means of a bar or any form of suitable lever sufficiently handy for the purpose. These means are not only crude, but it sometimes requires the expenditure of considerable time and patience to find the hinged lid when covered by the contents of the tub, and, when found, to effect its rise by means of the implement used for the purpose. Another construction known to me of the discharge-valve portion of a mash-tub involves an outwardly-opening hinged valve, (in this respect resembling my improved construction, as will hereinafter appear,) which, however, is operated from underneath the tub, requiring the operator to take a position underneath it, where he is in the way of the discharging contents; and this construction also provides the valve below the upper surface of the false bottom of the tub, whereby a recess is formed which receives and retains a part of the wort, instead of permitting it all to be drawn off in the usual manner before discharging the residue or grain, thereby necessitating the discharge with the grain, on opening the valve for the purpose, of the wort retained in the recess and entailing waste. Besides, the form of valve last referred to does not, owing to the obstruction afforded by the mechanism for operating it, permit the provision of a closed spout or flange around the discharge-opening. I provide for the purpose an outwardly-opening valve, which is flushed when closed with the upper surface of the bottom, and means for controlling it beyond and out of the way of the valve-opening.

My invention consists in the general construction of my improvement; and it further consists in certain details of construction and

combinations of parts, all as hereinafter more fully set forth.

In the drawings, Figure 1 represents a broken portion, in section, of the base of a mash-tub provided with my improvement. Fig. 2 is a sectional view taken on the line 2 of Fig. 1, to one side of the bearing shown in the last-named figure, viewed in the direction of the arrow, the roller, however, being shown in elevation; Fig. 3, a broken sectional view showing a detail of construction; Fig. 4, a reduced plan view of the valve, showing parts below it in dotted lines; and Fig. 5, a broken plan view, with the cover removed, of a mash-tub with some of its connections, all of well-known construction and provided with my improved valve device.

A is the bottom (usually iron) of the mash-tub A', and B is the false bottom above the bottom A, the parts A and B forming the bottom of the tub. To one side of the bottom A B is a suitable circular opening covered by a valve, C, comprising a circular plate, *r*, having a lateral flaring flange, *q*, provided on the one side with a hinge-knuckle or cylindrical bearing, *p*, to receive the supporting-pin *p'* of the plate *r*, the pin *p'* being sustained by the frame D, in contour like the plate *r*. The flange *q* around the plate *r* is bent upward, as shown at *x*, Fig. 1, to receive a shoulder, *o*, provided around the frame D on its inner side, and enters a coincident recess, *n*, in such frame, which, at the hinged side of the valve, forms a housing or shield, as shown, for the knuckle *p*, the frame D being bolted upon the upper side of the bottom A, near the edge of the discharge-opening, and forming in the discharge-opening a wall between the false bottom B and bottom A.

E is a frame bolted to the under side of the bottom A, preferably, as shown, by the same bolts which sustain the frame D, of which it forms practically a continuation, being of the same general contour, except at its rear side, which is straight, as shown by the dotted lines in Fig. 4, and affords, among other purposes, hereinafter described, a flange surrounding the discharge-opening and means upon which to adjust the spout F.

G G are bearings, extending from the center of the under side of the plate *r*, for the roller H, serving a purpose hereinafter described.

I is a preferably quadrilateral bar, beveled on its upper and lower side toward one extremity, as shown at y and z , and extending through openings provided in opposite sides of the frame E to receive it and across the valve C, which it supports in its closed position, as shown in Fig. 1, by contact of its upper surface with the friction-roller H, which forces the flange x into the recess n and the shoulder o into the space between the flanges x and q , thereby effectually sealing the opening around the circular portion of the valve, though packing t may also be provided, if desired. The form of the flange q on the hinged side of the valve C and of the adjacent part of the frame D, together with the knuckle p , effectually seal the discharge-opening at that part of the valve, though packing t may also there be provided.

Removal or withdrawal of the bar I from within the frame E permits the valve C to swing open in a downward or outward direction, as indicated by the dotted line x' , on its hinge p p' and allow the mash to discharge through the spout F. The withdrawal of the bar I is effected by turning in the proper direction a stationary screw, K, supported near one end in a bearing, m , bolted to the under side of the bottom A, beyond or away from the valve device. The screw works at its opposite end in an internally-threaded flange or collar, m' , on one side of the bar I, which is supported beyond the frame E in a bearing, l , bolted to the under side of the bottom A, and moves between friction-rollers k and k' and at its beveled extremity upon a friction-roller, i . The screw K may be turned by a handle, h , upon a wheel or pulley, L, fixed to the end of the screw, if the handle is readily accessible, and, if not, through a suitable crank and a belt-connection between the crank and the pulley L.

To close the valve after it shall have been permitted to swing open by withdrawing the supporting-bar I from within the frame E in the manner described, the stationary screw K is turned in the opposite direction to force the beveled end of the bar I against the rear surface of a web, r' , on the under side of the plate r of the valve C, whereby the latter is raised or swung back toward its closed position, wherein it is flush on its upper surface with the corresponding surface of the false bottom B.

The bar I being of necessity, owing to the form of the valve, to the various bearings, and the pulley L, some distance below the bottom A, it naturally will not remain in contact at its extremity with the under surface of the web r' when the valve in its rise assumes an angle which takes the web out of the path of the bar; hence I provide the roller H at or near the center of the valve, with which the bar I in its forward course comes into contact at its beveled end y , and toward which the

web r' tapers, as shown at x^2 , thereby raising the valve to its seat, and the beveled end z permits wedging of the bar by its forward movement upon the roller i to tighten the valve in its seat.

The mash-tub in Fig. 5 is of common construction, and is merely shown to illustrate the application of my improvement. The false bottom B is perforated, as indicated, to permit percolation through it into the chamber between the bottoms A and B of the wort, which passes through pipes g , communicating with such chamber from the under side of the bottom A, along which they extend to a closed cylinder, M, communicating by a pipe, f , with the brew-kettle, (not shown,) and by a pipe, f' , with a pump, (not shown,) and provided with an opening, e , at which to introduce clean water for rinsing purposes. The communication of the pipes g with the cylinder M is controlled by suitable cocks, d . The pump referred to serves to force the wort back into the mash-tub as frequently as is necessary to relieve it of turbidity, and when sufficiently clear it is admitted through the pipe f into the brew-kettle.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a mash-tub, the combination of the bottom provided with a discharge-opening, a frame, E, at the discharge-opening on the under side of the tub-bottom, a downwardly-opening hinged valve, C, for the discharge-opening, a horizontally-reciprocating bar, I, supported in the frame to support and secure the valve when closed and release the same to open it, and means, substantially as described, connected with the reciprocating bar for actuating it from beyond the tub, substantially as and for the purpose set forth.

2. In a mash-tub having a bottom, A, and a false bottom, B, forming the bottom of the tub, provided with a discharge-opening, the combination, with the bottom A B, of a frame, D, forming a wall in the discharge-opening between the bottom A and false bottom B, and having a housing and a shoulder, o , a downwardly-swinging valve, C, for the discharge-opening, hinged to the frame D, and comprising a plate, r , having a web, r' , a flaring flange, q , a hinge-knuckle, p , and a flange, x , a friction-roller supported on the under side of the plate r , a frame, E, below the bottom A, forming a flange around the discharge-opening, a bar, I, supported to extend through and across the frame E and beveled toward one extremity, friction-rollers i , k , and k' , and a stationary screw connected with the bar I and provided with means, substantially as described, for rotating it to reciprocate the said bar, substantially as and for the purpose set forth.

WILLIAM GREISSER.

In presence of—

GEORGE C. COOK,

J. W. DYRENFORTH.

Correction in Letters Patent No. 368,887

Affidavit having been filed showing that the name of the patentee in Letters Patent No. 368,887, granted August 23, 1887, for an improvement in "Mash-Tubs," should have been written and printed *William Griesser* instead of "William Greisser," it is hereby certified that the proper correction has been made in the files and records of the case in the Patent Office, and should be read in the said Letters Patent that the same may conform thereto.

Signed, countersigned, and sealed this 13th day of September, A. D. 1887.

[SEAL.]

D. L. HAWKINS,
Acting Secretary of the Interior

Countersigned:

BENTON J. HALL,
Commissioner of Patents.