

No. 688,941.

Patented Dec. 17, 1901.

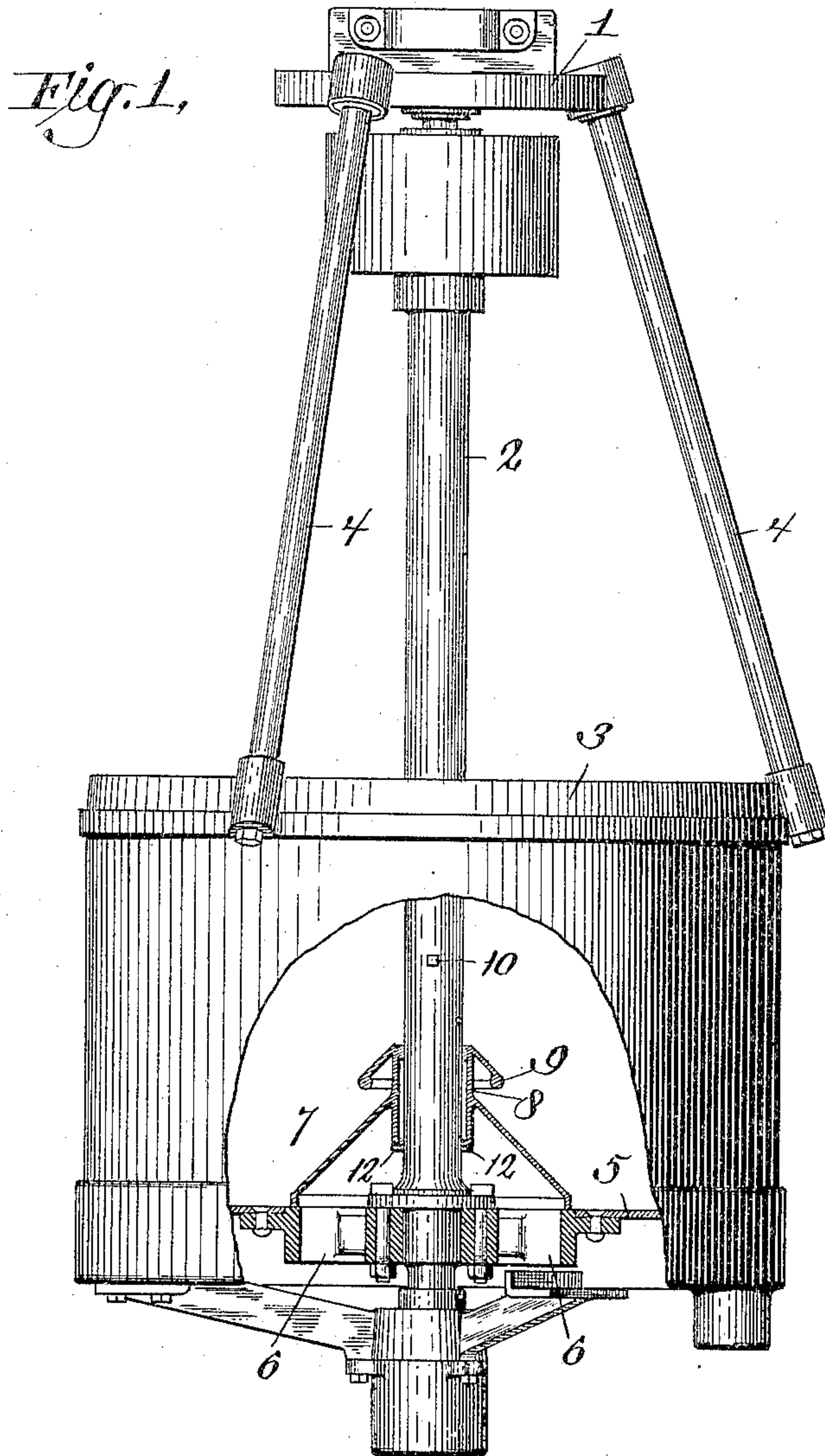
G. ENGEL.

VALVE FOR CENTRIFUGAL MACHINES.

(Application filed May 1, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

A. H. Rees
D. H. Raymond

INVENTOR

Godfrey Engel
By *E. M. Marbleson*
Attorneys.

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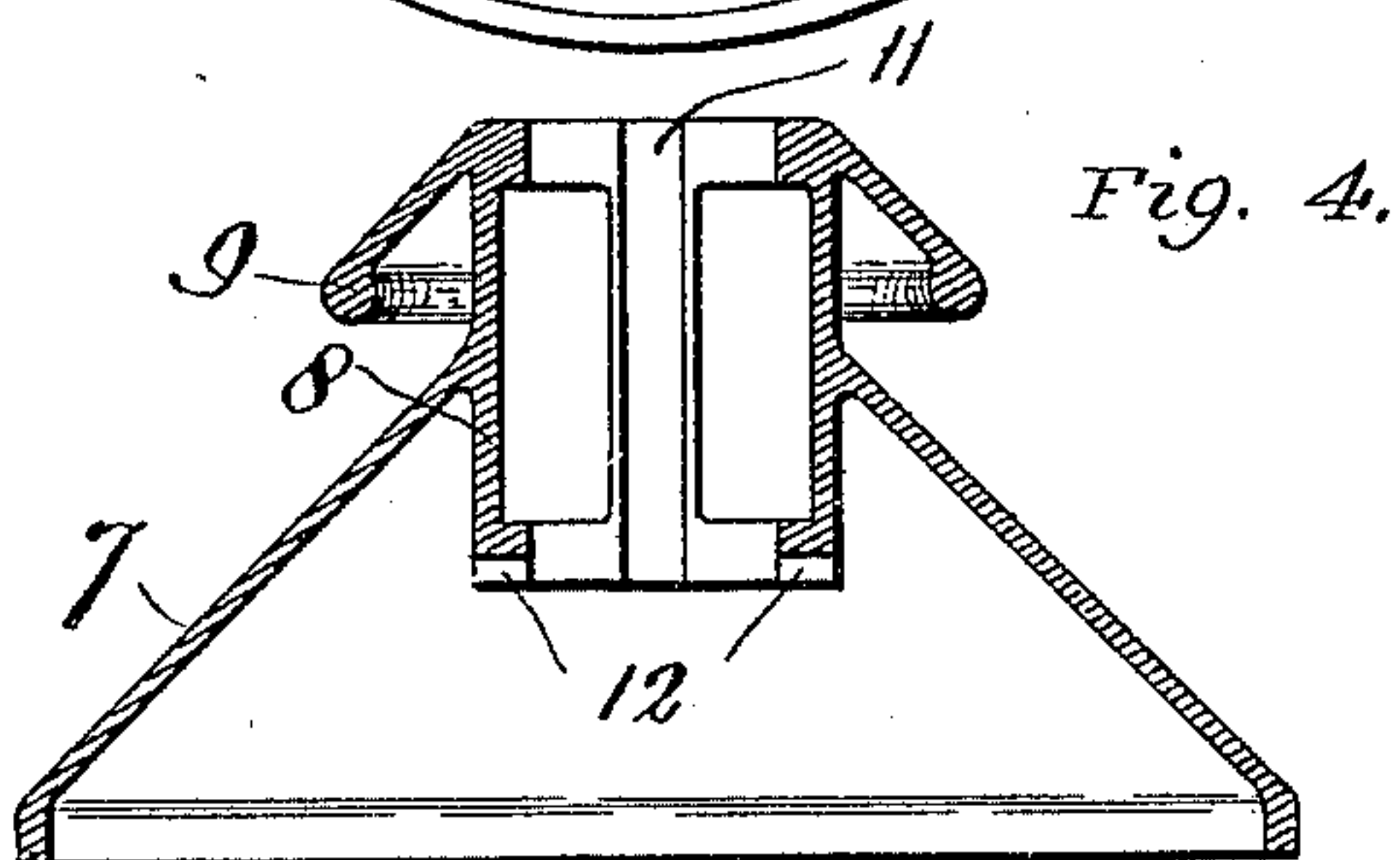
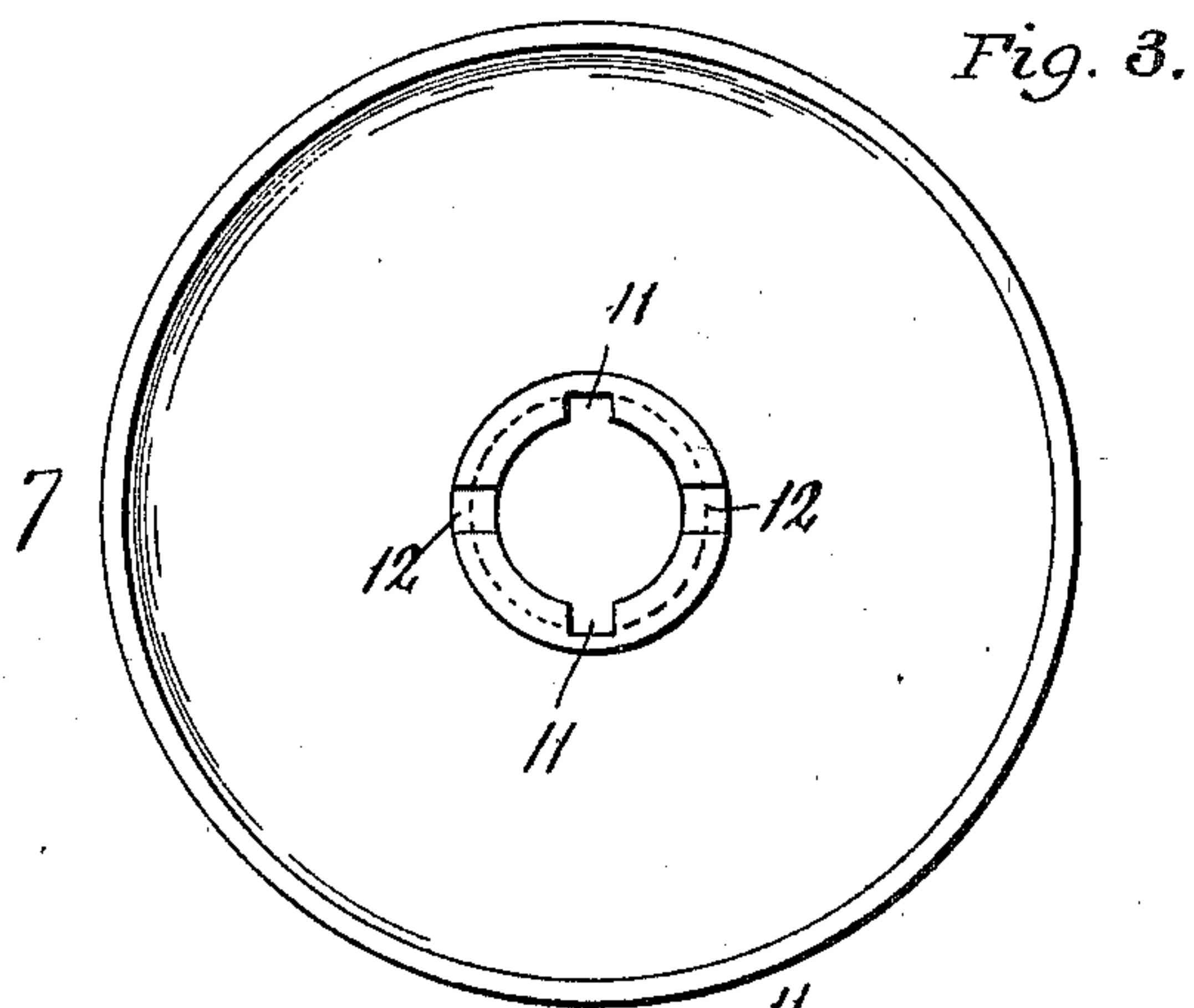
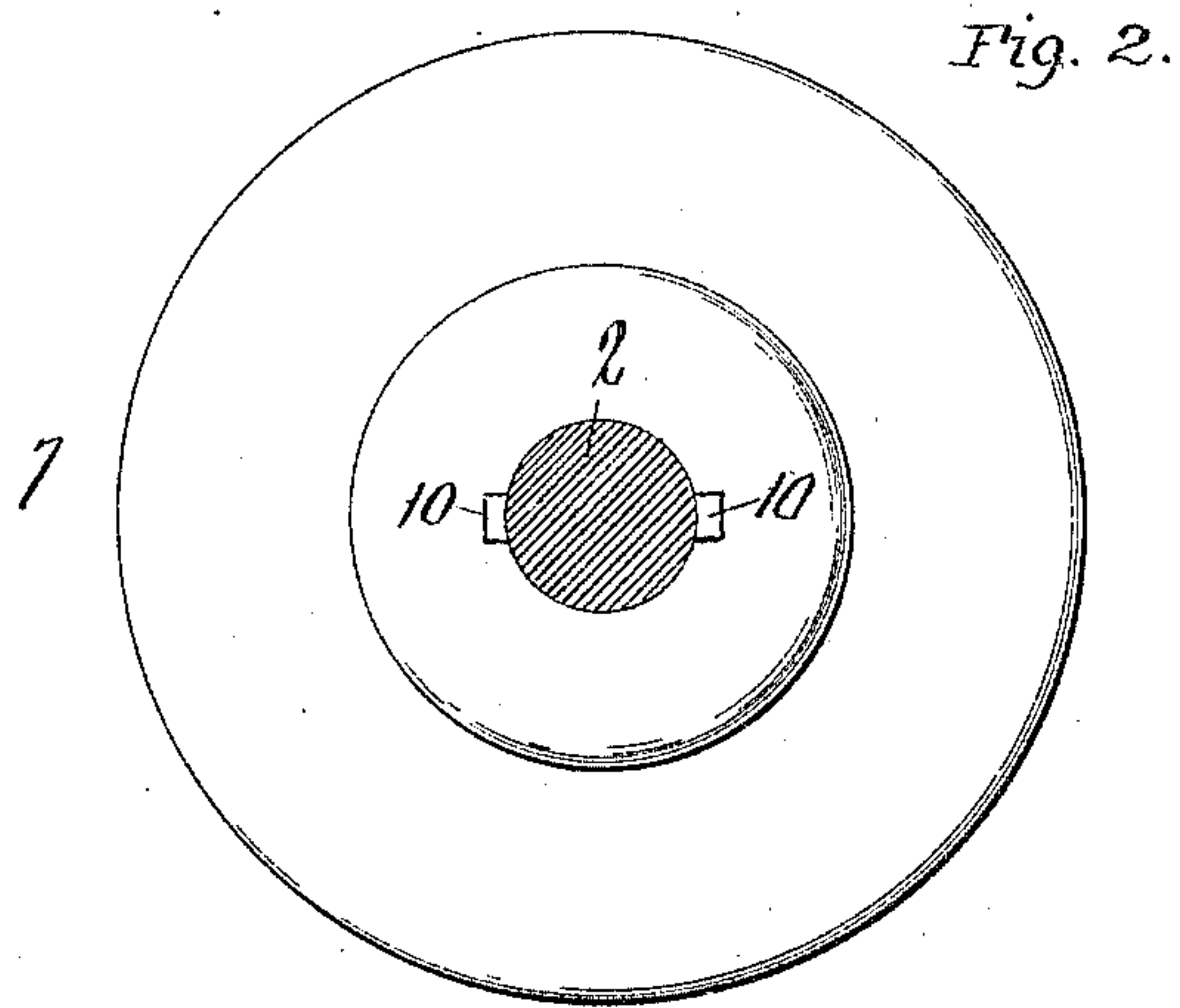
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WITNESSES.

A. H. Parker.
D. N. Raymond.

INVENTOR.

Godfrey Engel
By E. M. Marble & Son
Attorneys.

UNITED STATES PATENT OFFICE.

GODFREY ENGEL, OF BALTIMORE, MARYLAND.

VALVE FOR CENTRIFUGAL MACHINES.

SPECIFICATION forming part of Letters Patent No. 688,941, dated December 17, 1901.

Application filed May 1, 1901. Serial No. 58,275. (No model.)

To all whom it may concern:

Be it known that I, GODFREY ENGEL, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Valves for Centrifugal Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in discharge-valves for centrifugal machines; and my invention consists in the novel construction of the valve and in the novel means employed for holding it up while the contents of the machine are being removed.

The objects of my invention are to improve the discharge-valve of centrifugal machines and to provide simple means for holding same out of the way while the machine is being emptied. These objects are attained in the invention herein described, and illustrated in the drawings which accompany and form a part of this specification, in which the same reference-numerals indicate the same or corresponding parts, and in which—

Figure 1 is an elevation and a partial section of a hanging centrifugal machine containing my improved outlet-valve, which valve is shown in section. Fig. 2 is a top view of the valve. Fig. 3 is a view from the bottom of the valve looking upward, and Fig. 4 is a central vertical section of the valve.

In the drawings, 1 is an ordinary supporting-bracket of a hanging centrifugal machine; 2, the revolving shaft thereof; 3, the curb thereof, supported from the head 1 by rods 4, and 5 is the revolving basket of the machine, only the bottom of which is shown in the drawings. 6 6 are outlet-openings in the bottom of this basket.

7 is my improved outlet-valve. The main portion of said valve is conical in shape; but it has a substantially cylindrical hub 8 surrounding the shaft 2 and fitting somewhat closely to said shaft, so as to guide the valve when the same is raised or lowered. The valve

is also provided with a rim 9, forming a handle, by which it may be lifted.

Two studs 10 project slightly from the shaft 2. In the hub 8 of the valve are corresponding grooves 11, adapted to permit the passage of the valve past the studs. The hub 8 is also provided at the bottom with notches 12, likewise adapted to receive the studs 10.

In the operation of the centrifugal machine when it is desired to discharge the contents of the machine the revolution of the shaft is stopped, the valve is lifted by means of the handle 9 and rotated, if necessary, until the studs 10 enter the grooves 11. The valve is then lifted further until it is freed from the studs, after which it is rotated until the notches 12 are above the studs, and then it is released and permitted to rest on studs 10. These studs then fit into the notches 12 and prevent the valve from rotating so as to permit it to fall until it is positively lifted and turned into position to bring the studs 10 in line with grooves 11. The valve is thus held firmly and prevented from falling upon the hands of the operator while he is removing the contents of the basket through the opening 6. By a reverse operation the valve may be dropped.

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

1. In a centrifugal machine, the combination, with a revolving shaft and a basket carried thereby and having openings in its bottom for the discharge of its contents, of a valve for closing said openings, having a hub surrounding said shaft and having grooves in said hub to permit the passage of studs projecting from the shaft, whereby the valve may be lifted past said studs, and having also notches adapted to receive said studs, whereby the valve may be held suspended and prevented from falling accidentally.

2. In a centrifugal machine, the combination, with a revolving shaft and a basket carried thereby, and having openings in its bottom for the discharge of its contents, of a

valve mounted upon said shaft, the main portion of said valve being conical, said valve having a hub surrounding said shaft, and provided upon its inner surface with grooves
5 adapted to permit the passage of studs projecting from said shaft, whereby the valve may be lifted past said studs, and having also notches adapted to receive the studs, whereby the valve may be held suspended and pre-

vented from falling accidentally, said valve 10 being also provided with means whereby it may be lifted and rotated.

In testimony whereof I affix my signature in the presence of two witnesses.

GODFREY ENGEL.

Witnesses:

T. L. McCLELLAND,

CHRISTOPHER LAUTERBACH.