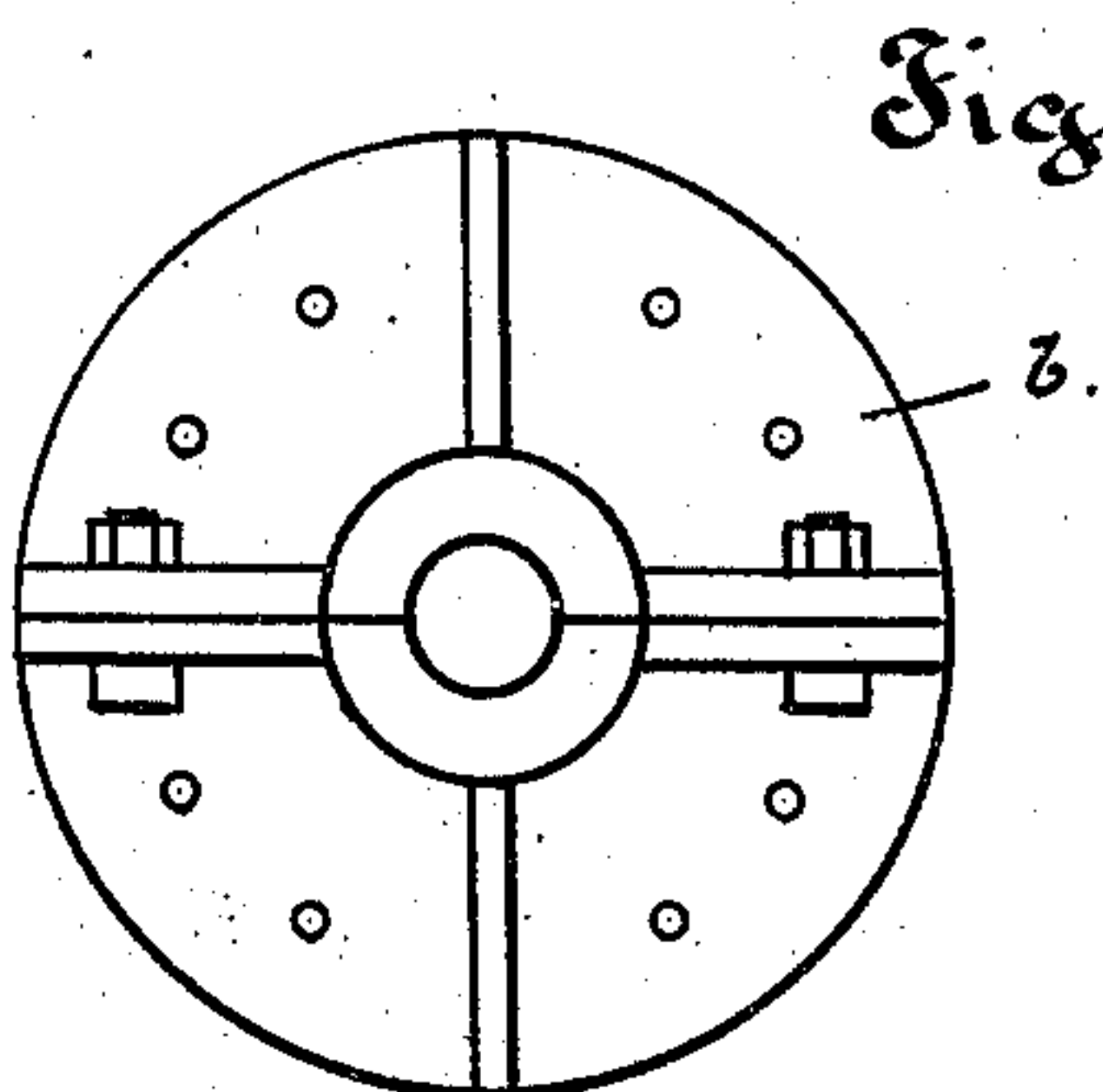
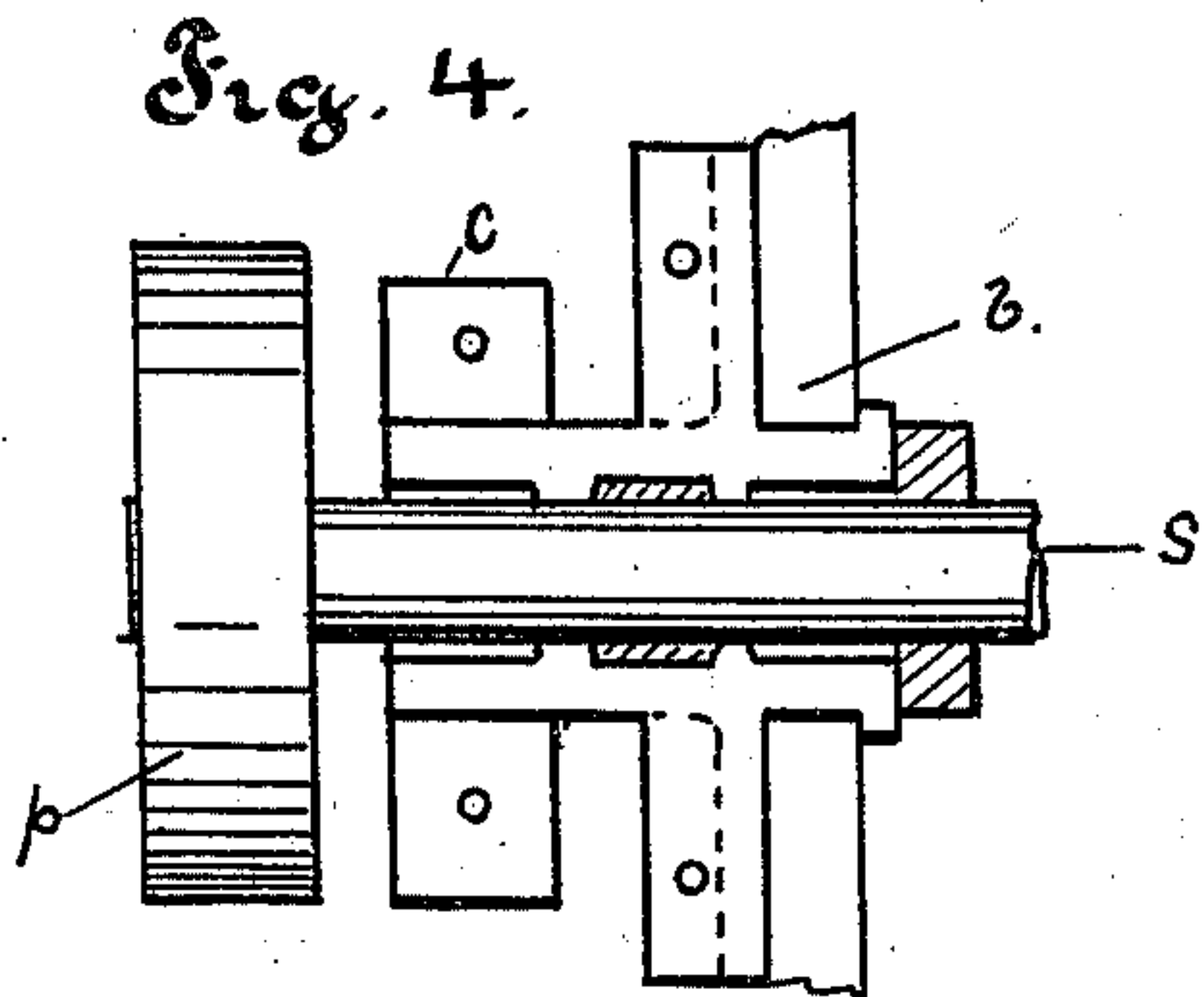
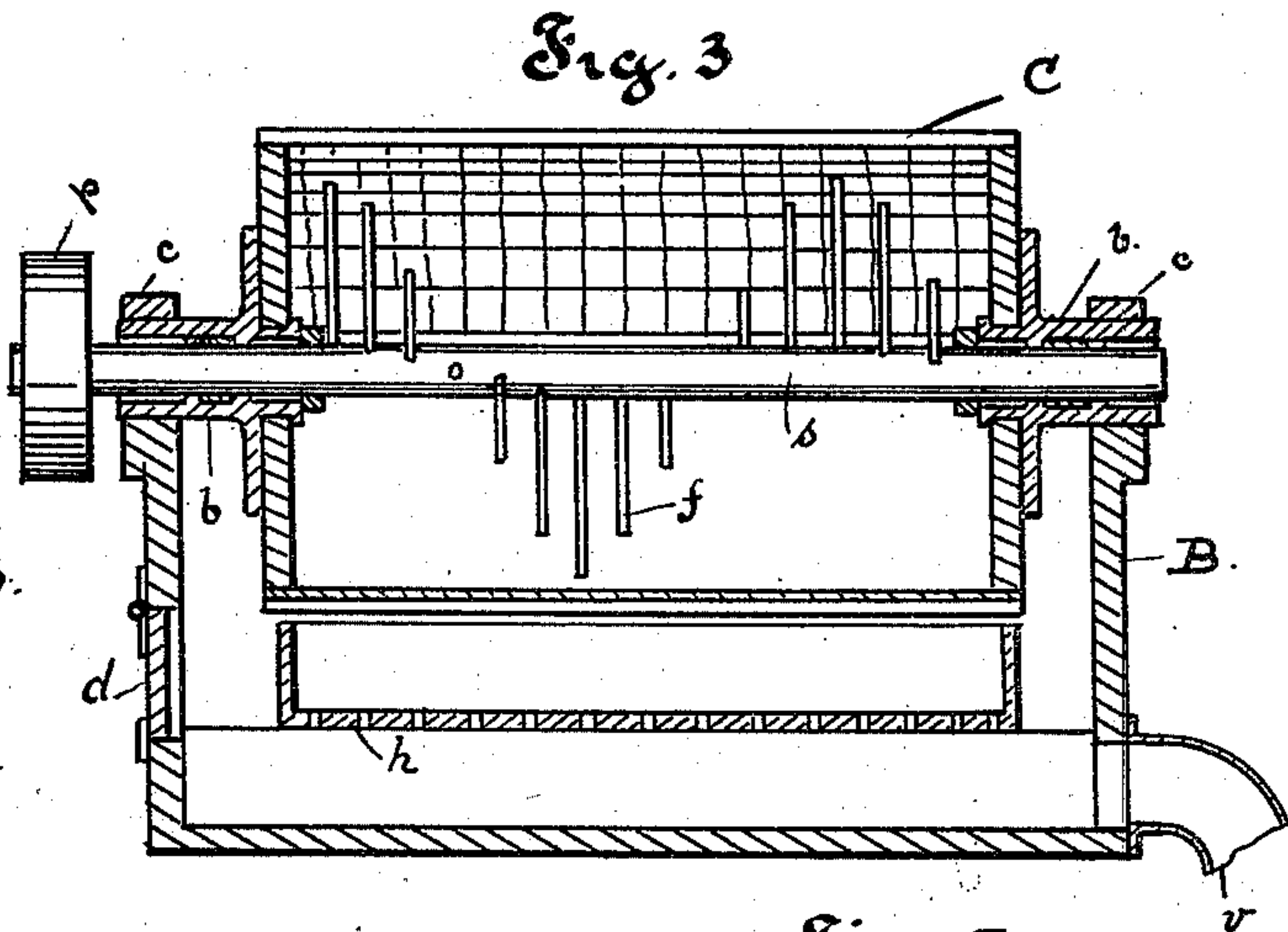
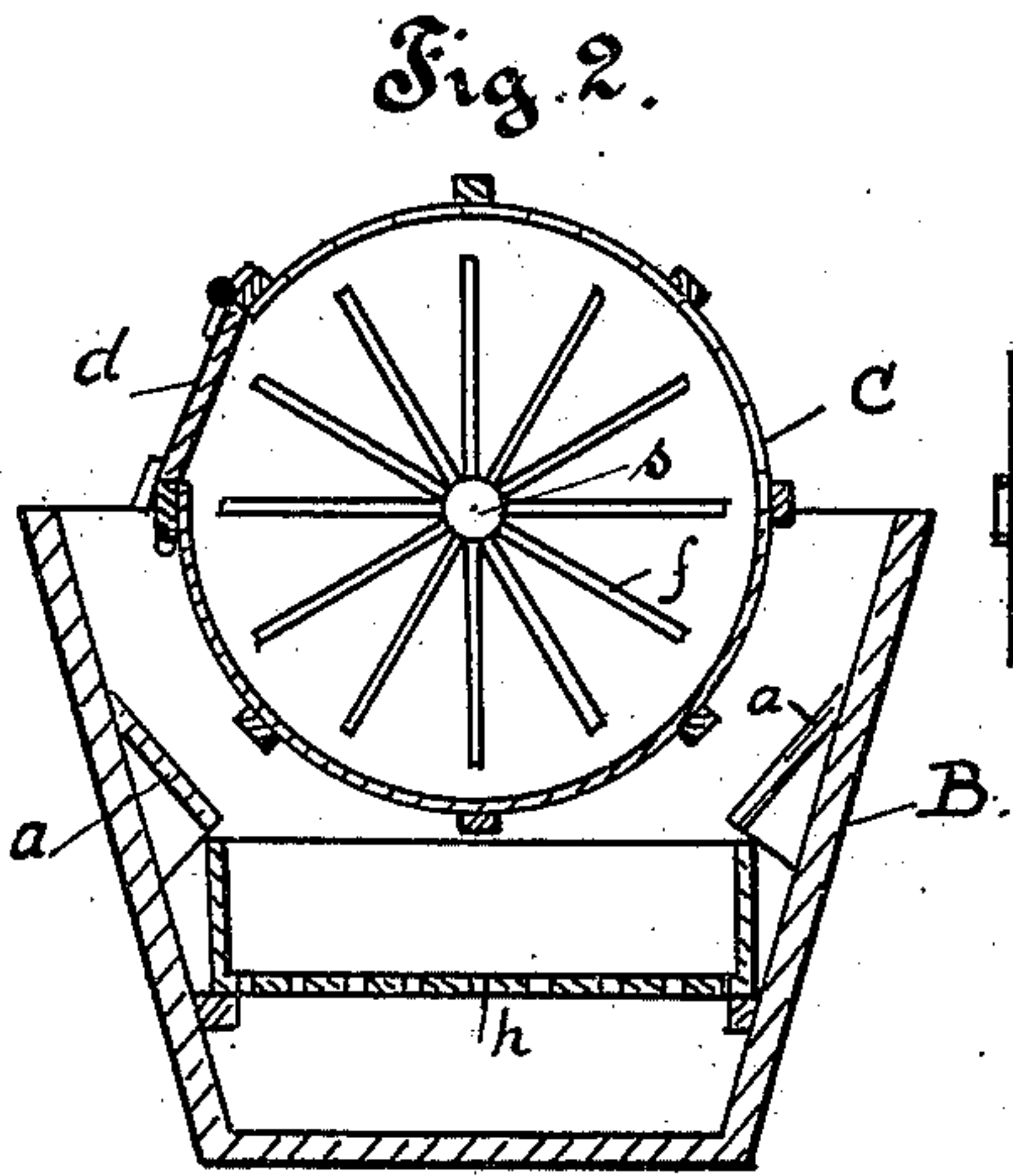
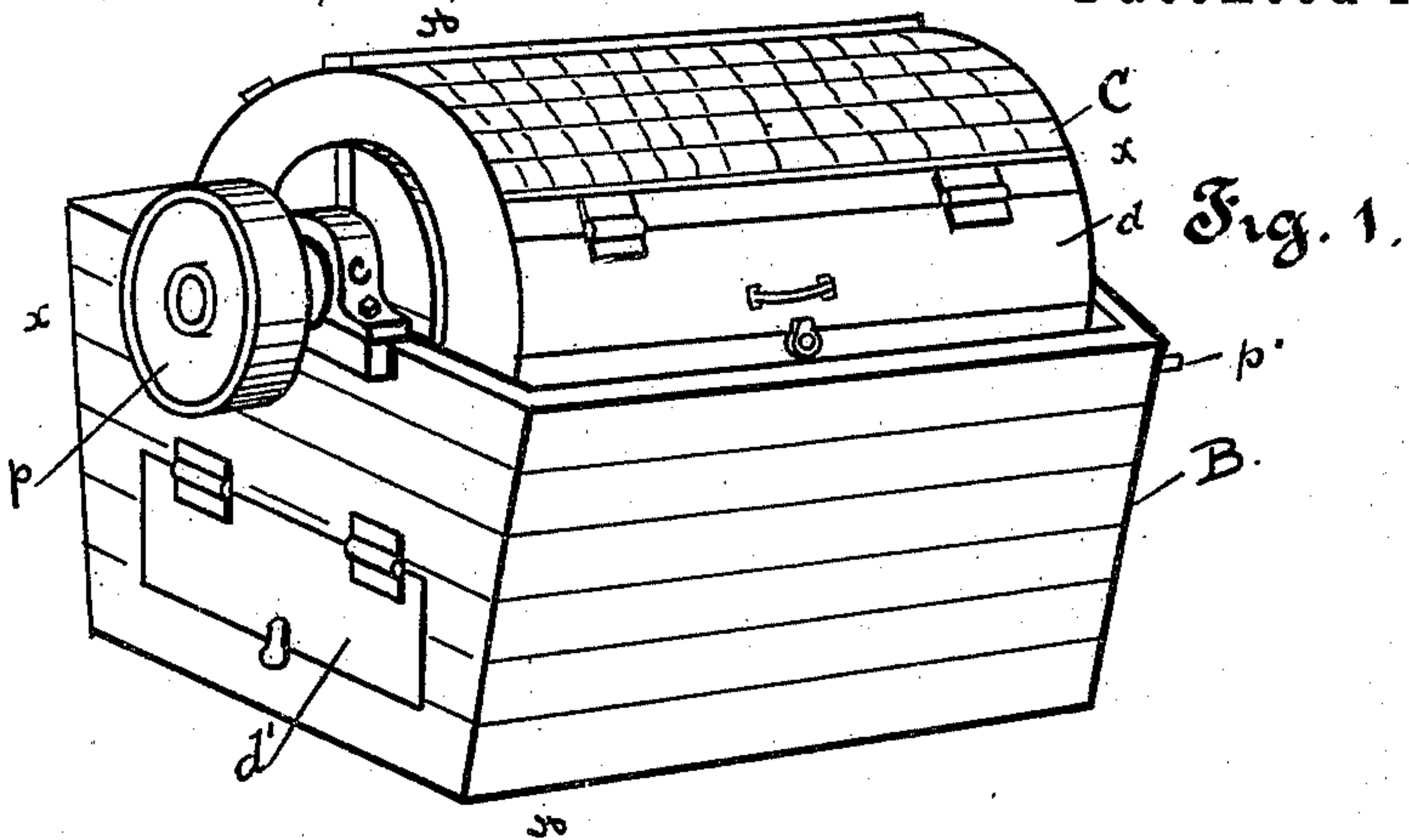


(No Model.)

J. B. CLARK.
GRAIN SCOURING MACHINE.

No. 555,927.

Patented Mar. 10, 1896.



Witnesses:
Chas. P. Hall
Horace D. Smith

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UNITED STATES PATENT OFFICE.

JOSIAH B. CLARK, OF YOUNGSTOWN, OHIO.

GRAIN-SCOURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 555,927, dated March 10, 1896.

Application filed December 20, 1895. Serial No. 572,774. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH B. CLARK, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Grain-Scouring Machines; and I do hereby declare the following to be a full, clear, and exact description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

The object of my invention is certain improvements in grain-scouring machines, simplifying the same, and whereby the work required is more speedily done, less hand-labor is necessary, and an absolute uniformity of perfect product results, thus presenting a substantially new mechanism of value in the industries to which it appertains. I accomplish this object by the mechanism hereinafter described and illustrated in the drawings, in which—

Figure 1 is a view in perspective of my machine complete. Fig. 2 is a vertical cross-section view of the same in the line *y y* of Fig. 1. Fig. 3 is a vertical longitudinal section view of the same on the central line of Fig. 1. Fig. 4 is a top view of the pulley *p*, a section of the shaft *s* of the subjournal-bearing box *c* and of the lower one-half of the disk-journal-bearing box *b*; and Fig. 5 is a front elevation view of the disk-journal-bearing box *b*.

The several parts are indicated by letters, and similar letters refer to similar parts in all views.

The box *B* is a suitably-sized, water-tight, open-topped rectangular box, having preferably slightly inwardly and downwardly inclined sides. In the lower portion of one end appears the (preferably) upwardly-swinging door *d'* for the entrance and exit of the receiving-box *h*, which is a suitable open-top rectangular box as long as the cylinder *C*, and not quite so wide as the lower portion of the box *B*. The receiving-box *h*, provided with proper handles at its ends, has a perforated bottom so as to drain the water from the grain, and in place is held elevated above the bottom of the box *B* by means of longi-

tudinal cleats nailed to the inner sides of the latter. The inward and downward inclined aprons *a a* attached to the inner sides of the box *B* cover the spaces between the outer sides of the box *h* and the inner side of the box *B* longitudinally, and are to secure the grain from falling outside the former when the contents of the latter is dumped into it.

In the end of the box *B*, as near its floor as possible, I place a pipe *v* to drain the box of water, such waste-pipe having proper connections.

The cylinder *C* is a closed cylinder, a little less in length than the interior of the box *B* in which it has place, the heads being of wood, between which, for strength, and on one portion for the hinging and locking of the door *d* there extends at intervals strips of lumber. About one-third of the periphery of the cylinder *C* is formed of galvanized wire-netting, so that water may be introduced and expelled at will, the remainder, except the part occupied by the door *d*, being of sheet metal, galvanized iron being preferred.

The door *d*, which gives access to the interior of the cylinder *C*, is hinged to a cross-strip to swing upward and is fastened in both its open and closed positions by a hasp and staple. It is when closed as nearly water-tight as practicable and occupies the whole length of the cylinder, so that the contents of the latter may be dumped at once. All parts of the cylinder *C* are made of strong material for reasons that are apparent. As when the grain is being scoured the cylinder *C* is without movement and when that operation is completed it is half rotated to dump its contents, as half rotated occasionally to dump water, I provide a double journal-bearing device soon to be described. Centrally through the cylinder *C*, having bearings in the disk-journal-bearing box *b* at both ends, appears the shaft *s*, having at one end the pulley *p* outside the box *B*, and from which shaft *s* extend outward the rigidly-attached fingers *f*, the same being equidistant from each other, preferably about two and one-half inches sun-dered, and presenting a spiral-form series, one turn of the spiral around the shaft being preferable unless in case of a very long cylinder.

For the fingers *f* I prefer suitable-sized gas-

pipe—say half-inch—for combined bulk, strength, and lightness, the openings being plugged at the ends. The fingers *f* are similar and of such length that the ends approach
 5 the inner walls of cylinder to within about one-quarter inch.

The disk-journal-bearing box *b*, used at both ends of the cylinder *C* and having seats in the subjournal-bearing boxes *c c* on the
 10 upper edges of the ends of the box *B*, is made in two similar and equal parts fastened together by bolts through ears or lugs on each side secured by nuts in the usual manner. The bearing portion or hub is long enough to
 15 equal the thickness of the edge of the box *B*, reinforced by a strip nailed to the outside of the box to give greater solidity and to extend into and through the head of the cylinder *C*, the same being held to the cylinder by the
 20 bolting of its disk portion thereto. Its hollow is larger than the shaft *s*, presenting two suitably-sundered projections, to give space for the Babbitt metal, which I preferably use therein to reduce friction. Inward at a suitable
 25 distance from the inner end of this hub appears integrally a disk of suitable size to be bolted to the head of the cylinder *C*, as stated. The outer end of the hub, which is round, rests in the subbearing-box *c*, which
 30 is formed of the usual two half-circular parts bolted together through their lugs. As there is usually no upward stress upon the cylinder *C*, the upper one-half of the subbearing-box *c* may be omitted with great convenience
 35 on occasion when the cylinder has to be removed from place in the box *B*. It will be seen that by means of this double journal-bearing, one for the shaft *s* and one for the cylinder *C*, that the rotation of the latter is
 40 independent of the movement of the former.

As it might occur when the cylinder *C* is very full of grain that a tendency to rotation may exist in the cylinder *C*, I place the pin *p'* through the one end of the box *B*, its end
 45 striking against the edge of one of the connecting-strips of the cylinder to check such tendency.

The operation of my grain-scouring machine is as follows: The grain prepared for
 50 the operation of washing or scouring is conveyed into the cylinder *C* from the kettles by a suitable conduit or by any means, filling it as nearly full as desired. Water is introduced after closing the door *d* by a hose-pipe
 55 playing on the wire-netting inclosed portion of the cylinder. Power is applied by means of the pulley *p* rotating the shaft *s*, the cylinder *C* motionless, whereby the grain is agitated and rubbed by the fingers *f* equally in
 60 all portions of the cylinder *C*, until the goods are properly prepared, which speedily results, whereupon, with or without stopping the movement of the shaft *s*, the door *d* is opened

and fastened back, and the hand of the operator easily causes the cylinder to make a half-
 65 rotation, dumping the contents into the receiving-box *h*. In like manner, but without opening the door *d* whenever in the process of scouring, the water must be dumped, as is
 70 frequent, from the cylinder *C* to give place to fresh water, the cylinder is turned by the hand of the operator, the water having exit through the wire-netted portion described. The cylinder *C* upon the dumping of the grain is then
 75 returned to its former position, and when sufficient drainage has occurred the receiving-box *h* is withdrawn and the goods taken care of.

While my mechanism is intended for use in the preparation of a food product from any grain that requires scouring in the process of
 80 such preparation, it is particularly adapted to the manufacture of hominy, possessing all the advantages for that purpose stated in the beginning of this specification.

I am aware that a cylinder having place in
 85 an open-topped box, and in which cylinder rotates a shaft provided with fingers to agitate the mass of grain contained, is known, such machines, however, being provided with
 90 cumbersome means for raising and lowering the cylinder to empty it, but I am not aware that a grain-scouring machine, connected as and capable of the functions of the mechanism described in this specification, was ever
 95 known until my invention thereof.

What I claim is—

The grain-scouring machine, consisting of the open-topped rectangular box *B*, having
 100 the door *d'* at one end and the waste-pipe *v* at the other end, and provided with the movable receiving-box *h* held in position therein by cleats, the side spaces between the receiving-box *h* and the sides of the box *B*, being
 105 covered by the downward and inwardly inclining aprons *a a*; the closed cylinder *C* having a portion of its periphery covered by wire-netting and therein provided with the door *d*, hinged upon strips extending between the
 110 heads, said cylinder having place within the box *B*, and having therethrough the central shaft *s*, from which extend outward the rigidly-attached, spirally-placed, and equidistant fingers *f*, said shaft *s* having bearings at
 115 each end in the disk-journal-bearing box *b*, *b*, the disk portions of which are bolted to the heads of the cylinder *C*, the outer part of the hub portions having themselves bearings in the subjournal-bearing boxes *c c* which have
 120 seats in the ends of the box *B*, all substantially as described and for the purpose expressed.

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

JOSIAH B. CLARK.

Witnesses:

S. P. SIBBET,
 J. R. DETCHON.