

(No Model.)

A. M. HOBBS.

Bran Cleaner and Middlings Separator.

No. 232,272.

Patented Sept. 14, 1880.

Fig. 3.

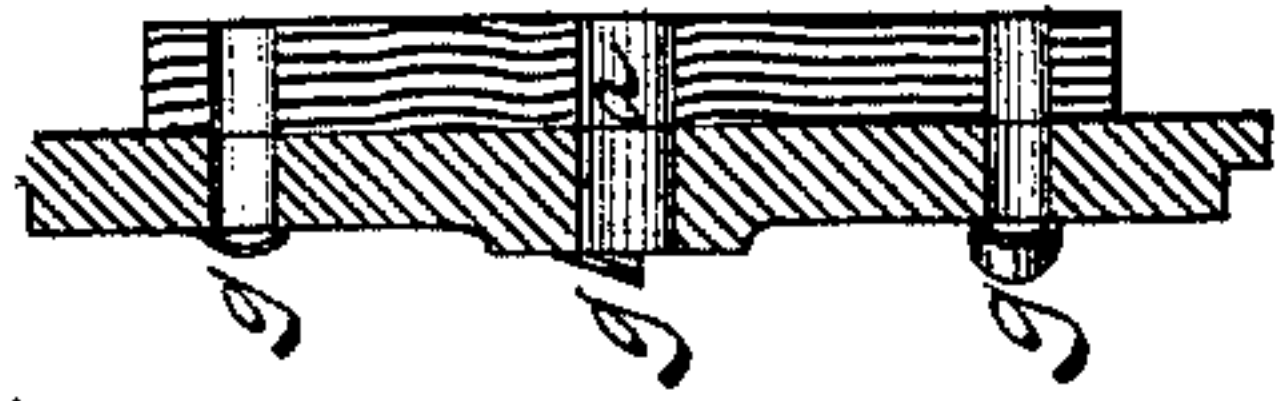


Fig. 2.

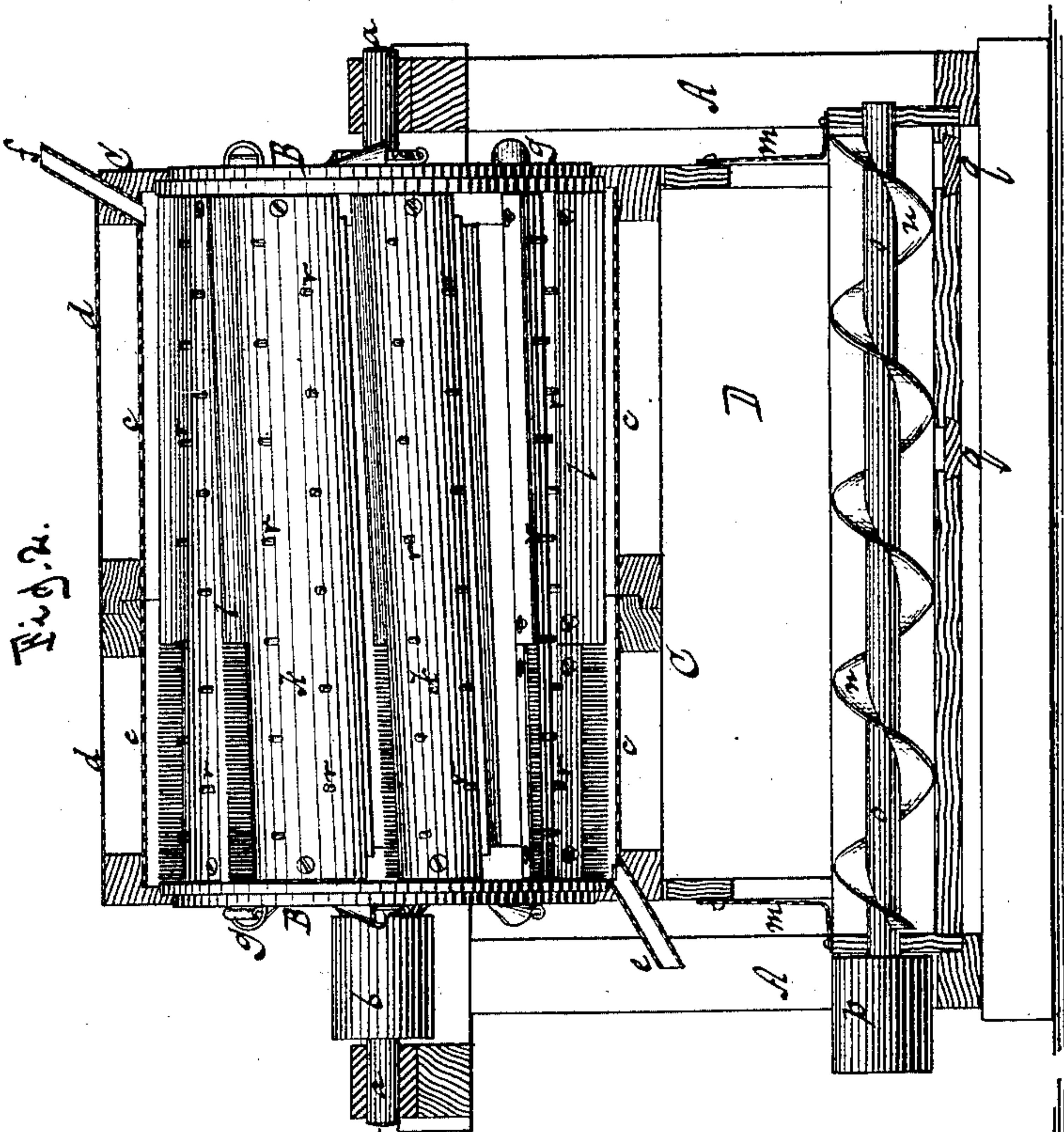
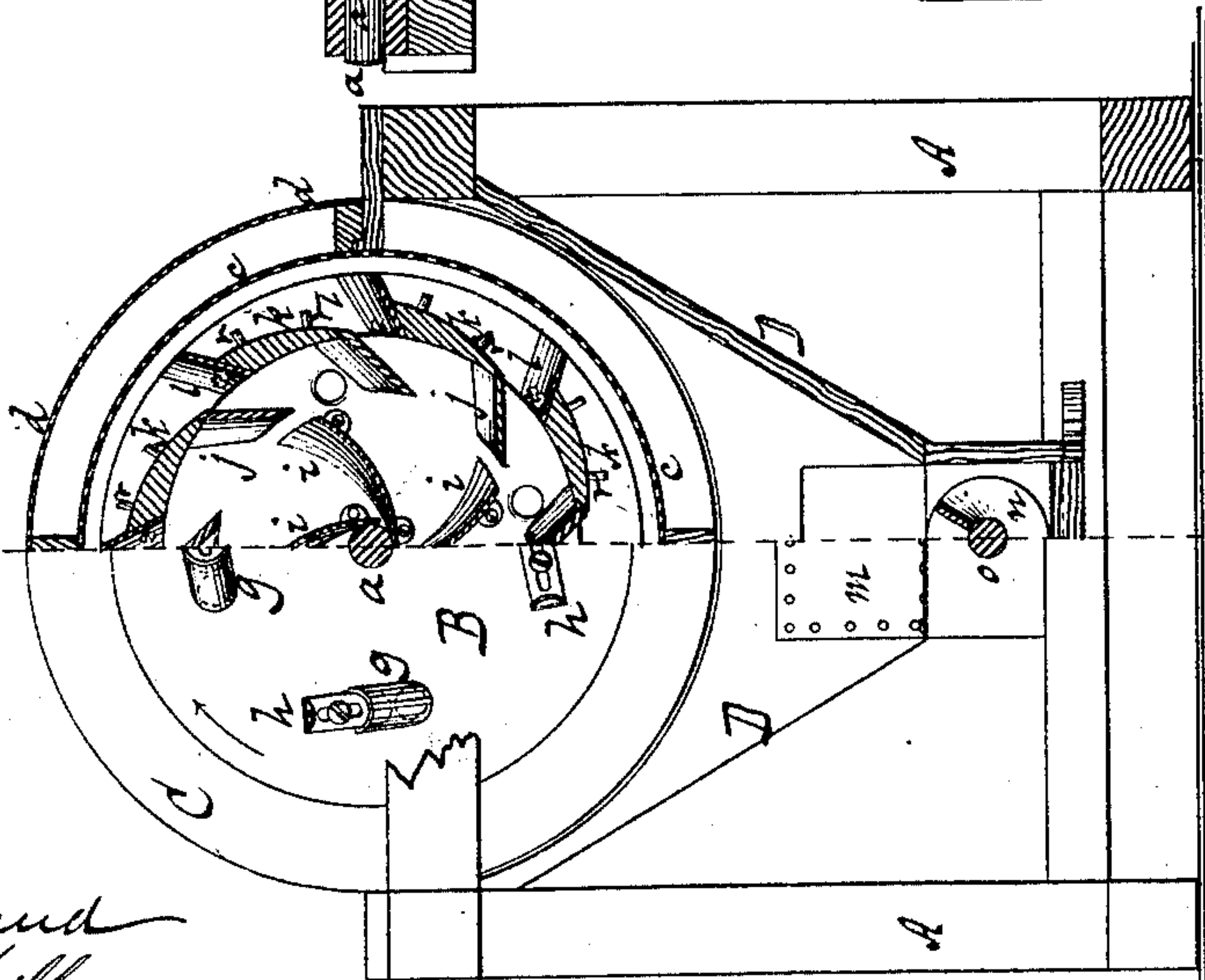


Fig. 1.



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UNITED STATES PATENT OFFICE.

AUGUSTIN M. HOBBS, OF WAUPACA, WISCONSIN.

BRAN-CLEANER AND MIDLINGS-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 232,272, dated September 14, 1880.

Application filed May 13, 1880. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTIN M. HOBBS, a citizen of the United States, residing at Waupaca, in the county of Waupaca and State of Wisconsin, have invented new and useful Improvements in Bran-Cleaners and Middlings-Separators, of which the following is a specification.

This invention relates to that class of machines commonly called "bran-cleaners" and "middling-separators;" and it consists of the arrangement in such machines of a beater-cylinder the circumference of which is provided with openings, and the ends of which are perforated and are provided with deflectors for forcing the air through said perforations into the interior of the cylinder, from which it escapes at the circumference, whereby the requisite currents of air and ventilation are produced. Slides or valves are provided for partly or wholly closing said perforations. The cylinder is further provided with central beaters, radial deflectors, and radial beaters, and is surrounded by a perforated scouring-shell.

This invention is illustrated in the accompanying drawings, in which—

Figure 1 is an end view, partly in section. Fig. 2 is a front view, partly in section. Fig. 3 is a detached view, in section, of one of the ends of the beater-cylinder.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the frame of the machine, of wood or other suitable material, and which forms the bearings for the shaft *a*, on which the beater-cylinder B is firmly mounted, and which is caused to revolve by a belt acting on the pulley *b* or by any other suitable means. This cylinder B is surrounded by a perforated scouring-shell, C, which is secured firmly on the frame A. This scouring-shell is preferably made of wire-gauze *c*, which allows the passage of the separated middlings, while the bran and coarse materials are retained therein and pass out at the spout *e*. The material is fed into the shell C through the hopper or chute *f*.

The ends of the cylinder B are perforated, as shown, and said perforations are covered by deflectors *g*, which when the cylinder revolves in the direction of the arrow, Fig. 1, throw or force the air through said perforations

into the interior of the cylinder B. The currents of air can be regulated by slides or valves *h*, which can be made to partly or wholly close the holes.

On the shaft *a* of the cylinder B are fastened central beaters, *i*, Fig. 1, preferably set in somewhat inclined or screw-thread-like position, and the ends of which are fastened to the ends of the cylinder B, which throw the air from the center of the cylinder B out toward the dead-air chamber or space between the central beaters, *i*, and the radial deflectors *j*, which deflectors throw the air out through the spaces between the radial staves *k* of the cylinder. These staves *k* are firmly attached to the ends of the cylinder B.

The radial beaters *l* throw the air through the meshes of the gauze or sieve *c*. By these various currents of air the crude material entering through the hopper *f* is thoroughly ventilated and separated, and the middlings are driven through the sieve or wire-gauze *c* of the scouring-shell or cylinder C. The top part of the gauze *c* is covered with cotton or linen cloth *d*, which allows the air to pass through, but retains the flour which falls down into the trough D.

The radial beaters *l* may be made either in the form of combs or brushes, and provided with teeth or bristles, or made of thin strips of board or metal, as desired.

On passing through the sieve or wire-gauze *c* the middlings fall into the trough or chute D underneath the same. The trough, as shown in the drawings, is preferably perforated at its ends, and said perforations are covered with linen or cotton cloth *m*, which allows the exit of the air, but retains the fine middlings.

The bottom of the chute or trough D is perforated and closed by slides or valves *q*, which on being opened allow the separated middlings to pass out. A revolving shaft, *o*, provided with a screw-thread, *n*, feeds the middlings toward these openings. Motion is imparted to the shaft *o* by a pulley, *p*, or other suitable means.

In order that the machine may be readily taken apart, the scouring-shell C is made in sections, so that said sections can be slipped off over opposite ends of the beater-cylinder B when the same is lifted out of the frame A.

In order to secure as close a joint as possible the ends of the cylinders B and C where they meet are preferably flanged, as shown.

In order to further secure the loosening and separation of the middlings from the bran, I place a row or several rows of pins, *r r*, at suitable intervals along the outer surface of the staves *k*. The most advantageous and simple arrangement is that shown in the drawings, where there are two rows of pins, the pins of one row standing opposite the spaces between the pins in the other row.

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

1. In a machine for cleaning bran and for other purposes, the arrangement of a beater-cylinder, B, having perforated ends and provided with deflectors *g*, substantially as set forth.

2. In a machine for cleaning bran and for other purposes, the arrangement of a beater-cylinder, B, having perforated ends and provided with deflectors *g* and central beaters, *i*, substantially as and for the purpose set forth.

3. In a machine for cleaning bran and for other purposes, the arrangement of a beater-cylinder, B, having perforated ends and provided with deflectors *g*, central beaters, *i*, and radial beaters *l*, substantially as described.

4. In a machine for cleaning bran and for other purposes, the arrangement of a beater-cylinder,

B, having perforated ends and provided with deflectors *g*, central beaters, *i*, radial deflectors *j*, and radial beaters *l*, substantially as set forth, and for the purpose described.

5. In a machine for cleaning bran and for other purposes, the arrangement of a beater-cylinder, B, having perforated ends and provided with deflectors *g* and slides or valves *h*, substantially as set forth.

6. In a machine for cleaning bran and for other purposes, the arrangement of the beater-cylinder B, having perforated ends and provided with deflectors *g*, the central beaters, *i*, radial deflectors *j*, radial beaters *l*, and the perforated cylinder C, all substantially as herein shown and described, and for the purpose set forth.

7. In a machine for cleaning bran and for other purposes, the arrangement of a beater-cylinder, B, having perforated ends and provided with deflectors *g* and radial pins *r*, substantially as set forth.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

AUGUSTIN M. HOBBS. [L. S.]

Witnesses:

A. H. VAN EPPS,

W. H. BLINN.