

(No Model.)

G. A. DAWSON.
GRAIN SCOURER.

No. 313,712.

Patented Mar. 10, 1885.

Fig. 1.

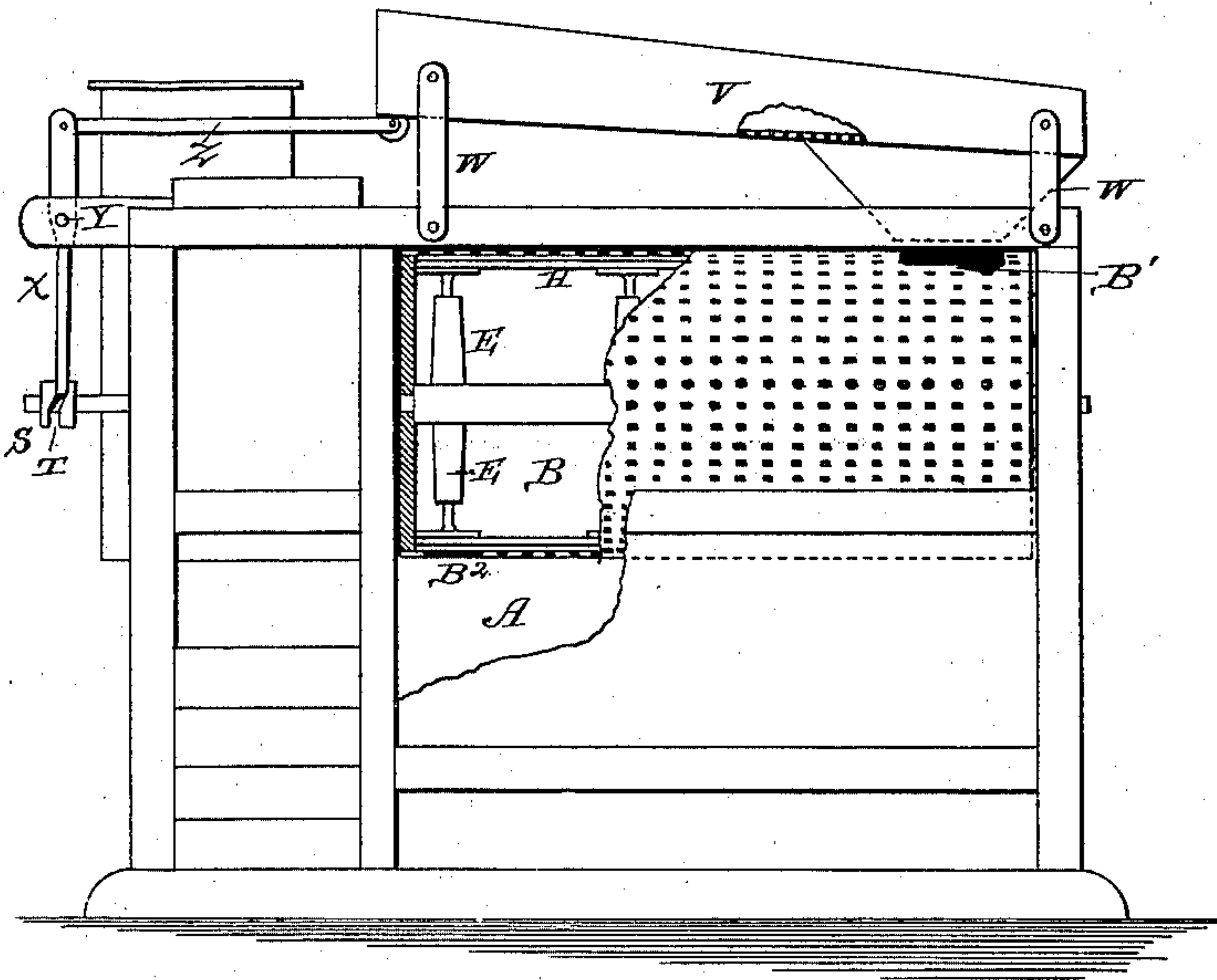
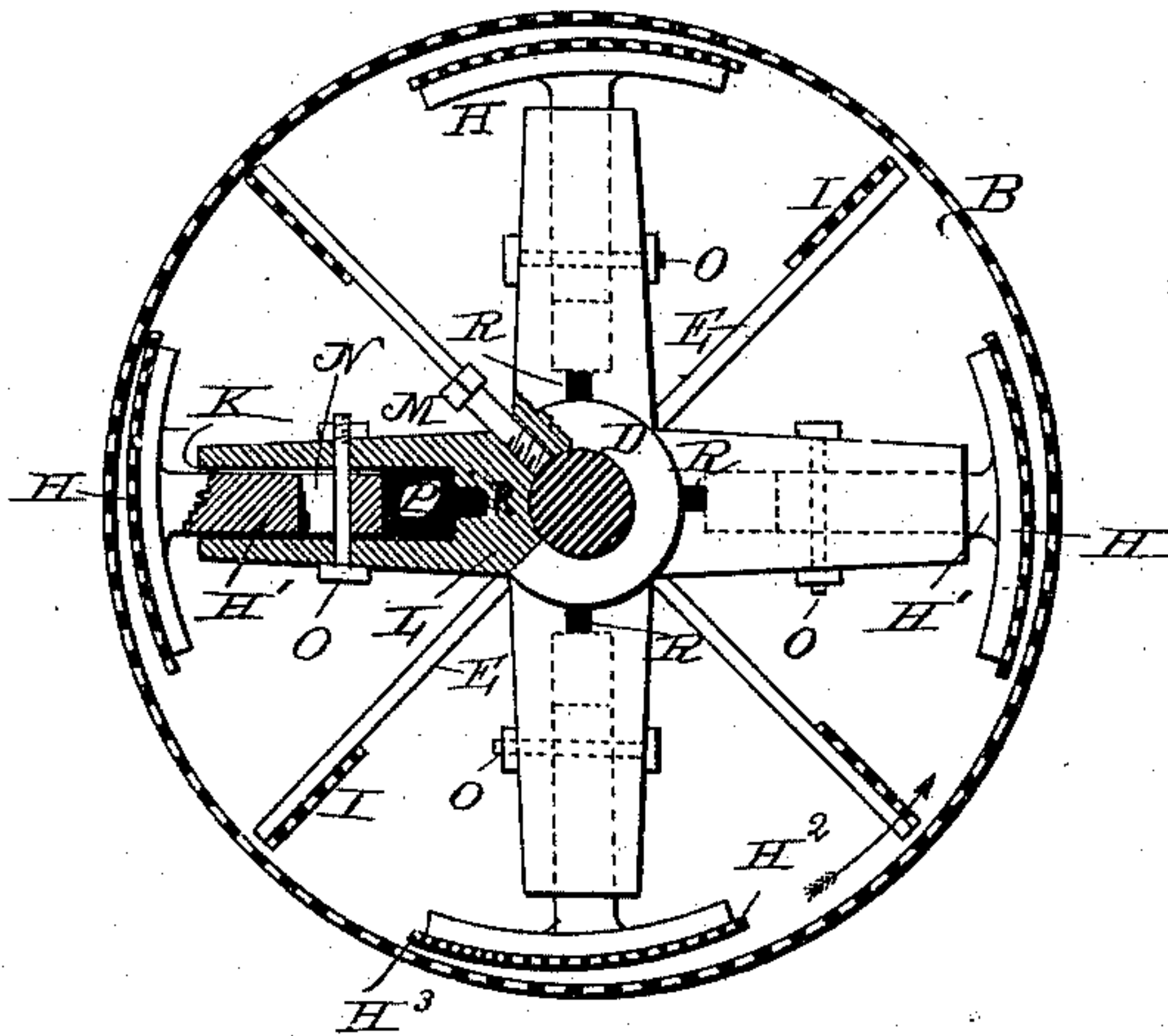


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE A. DAWSON, OF CARDINGTON, OHIO, ASSIGNOR TO THE HERCULES MANUFACTURING COMPANY, OF SAME PLACE.

GRAIN-SCOURER.

SPECIFICATION forming part of Letters Patent No. 313,712, dated March 10, 1885.

Application filed September 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. DAWSON, of Cardington, in the county of Morrow and State of Ohio, have invented certain new and useful Improvements in Grain-Scourers; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in grain-scourers which are adapted, especially, to remove the impurities from the ends of the wheat-berry; and it consists, first, in the combination of the perforated cylinder, a shaft passing through it, the two sets of perforated scouring devices which are arranged at right angles to each other, and means for permitting the curved scouring devices to automatically adjust themselves toward or from the inner side of the cylinder; second, in the combination of the perforated cylinder, the shaft which passes through it, the spiders which are secured to said shaft, and which are provided with hollow arms, the scouring devices which are provided with arms for entering the arms of the spiders, said scouring devices being arranged obliquely upon their arms, so as to have one of their ends farther from the cylinder than the opposite end, and means for permitting an endwise adjustment of said scouring devices in the arms of the spiders; third, in the combination of the perforated cylinder, the shaft which passes through it, the spiders which are secured to the said shaft, and which are provided with hollow arms having suitable slots, the scouring devices provided with arms for entering the arms of the spiders, the bolts for securing the arms in place, and springs which are adapted to keep the arms pressed normally outward; fourth, in the combination of the perforated cylinder, the shaft which passes through it, the spiders which are secured to said shaft, and which are provided with hollow radial arms, scouring devices having arms which enter the arms of the spiders, means for retaining them therein, and springs for keeping them normally pressed outward,

said arms also having openings near the hub, all of which will be more fully described hereinafter.

My invention is an improvement upon Letters Patent of the United States No. 297,353, which were granted to me April 22, 1884.

The object of my invention is to provide a machine which is especially adapted for removing impurities from the ends of the wheat-berry, so that the flour produced from the wheat will be free from all dirt and gritty substances.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a machine embodying my invention. Fig. 2 is a section through the scouring-cylinder, taken at right angles to Fig. 1.

A represents the frame-work, which may be of any suitable construction, and B a horizontal cylinder which is secured rigidly therein near its upper side. This cylinder may either be arranged horizontally, as here shown, or vertically, as may be preferred. This cylinder consists of solid heads and the perforated metallic body, the perforations through the body being circular, and just large enough to allow the ends of the wheat-berries to enter them, without permitting the berries themselves to pass through. A suitable opening, B', is made at one end of the cylinder for the wheat to be fed into it, and the wheat, after passing along the interior of the cylinder, is discharged through the opening B² in the bottom at the opposite end. Passing horizontally through this cylinder is the shaft, to which are secured a set of radial scourers, I, by means of the collars D and set-screws, which clamp the collars to the shaft, and arms E. These scourers are arranged radially and slightly inclined, or at an angle with relation to the interior surface of the cylinder, are perforated, and assist in scouring the grain and moving it from the delivery end of the cylinder toward the discharge end. As the scourers I are made to revolve, their friction against the wheat serves to scour, and then lift it upward along the sides of the cylinder, so that the ends will catch in the perforations in the cylinder, to be acted upon by

the scouring devices H, and by them rubbed or shorn off and forced through the perforations of the cylinder into the dust-box below. These scouring devices H, instead of
 5 being arranged radially in relation to the shaft, are curved and placed at right angles to the scouring devices I, and sweep around close to the inner surface of the cylinder B. From the inner side of each of these devices
 10 H projects an arm, H', which enters a recess, K, that is formed in each of the projecting arms of the spiders L, which are secured to the shaft by means of the set-screws M. These arms H' are provided with elongated openings or slots N near their inner
 15 ends, and through these slots and through openings formed in the arms K pass bolts O, which serve to secure the arms of the scouring devices therein, while allowing them
 20 an endwise movement, so as to cause the scouring devices H to approach or recede from the inner surface of the cylinder.

In between the inner ends of the arms H' and the hubs of the spiders L, in the open
 25 ings K, are placed springs P, which bear against the arms H', and serve to keep the scouring devices H normally pressed outward nearly in contact with the inner side of the perforated cylinder. These scouring devices
 30 H are not arranged upon their arms concentrically to the cylinder, but are arranged slightly at an angle thereto, as shown in Fig. 2, the ends H² of the scouring devices which project in the line of rotation being farther
 35 from the sides of the cylinder than the opposite ends, H³.

By thus providing means for keeping the scouring devices automatically or self-adjustingly pressed outward near to the inner
 40 surface of the cylinder the grain is scoured evenly, whether much or little is passing through the cylinder. Openings R are made in the arms of the spiders L near their inner ends, to allow any dust or dirt
 45 which may fall into the openings K of said arms to pass through, and thus prevent binding against the arms H' and prevent the latter from adjusting themselves. As the berries are caught in between the scourers H and
 50 the cylinder, the ends will sink into the perforations of the cylinder B and be acted upon and shorn off by the scourers H while in an endwise position. The friction of the outer ends of the wheat-berries between the inner
 55 roughened side of the cylinder and the scourers H as they are carried around serves to scour and break away the outer ends of the berries, and thus free them from all impurities which may be attached to them. To the outer
 60 end of the shaft is attached a cam-wheel, S, which is provided with an eccentric groove, T. V represents a riddle which is supported

by arms W, which are pivoted to the riddle at their upper ends, and have their lower ends pivoted to the top of the beams of the frame
 65 A. A vibrating lever, X, is pivoted to one end of the frame A, as at Y, and has its lower bifurcated end in the slot T of the cam-wheel S. The upper end of this lever is connected
 70 by a rod, Z, which is pivoted to the riddle V, as shown in Fig. 1. By this construction it will readily be understood that as the shaft revolves the cam-wheel will cause the lever X to vibrate, and by means of the rod Z the vibration of this lever will be communicated
 75 to the riddle V.

Having thus described my invention, I claim—

1. The combination of a perforated cylinder, a shaft passing through it, the two sets
 80 of perforated scouring devices which are arranged at right angles to each other, and means for permitting the curved scouring devices to automatically adjust themselves toward or
 85 from the inner side of the cylinder, substantially as described.

2. The combination of the perforated cylinder, the shaft which passes through it, the spiders L, which are secured to said shaft, and
 90 which are provided with hollow arms K, scouring devices H, which are provided with arms H', for entering the arms of the spiders, said scouring devices being arranged obliquely upon their arms, so as to have one of their ends
 95 farther from the cylinder than the opposite end, and means for permitting an endwise adjustment of said scouring devices in the arms of the spiders, substantially as described.

3. The combination of the perforated cylinder, the shaft which passes through it,
 100 spiders which are secured upon said shaft, and which are provided with hollow arms having slots N, the scouring devices H, provided with arms H', for entering the arms of the spiders, the bolts O, for securing the arms in place, and
 105 springs P, which are adapted to keep the arms pressed normally outward, substantially as described.

4. The combination of the perforated cylinder, the shaft which passes through it,
 110 spiders L, which are secured to said shaft, and which are provided with hollow radial arms, scouring devices H, having arms which enter the arms of the spiders, and means for retaining them therein, and springs for keeping
 115 them normally pressed outward, said arms also having openings R near the hub, for the purpose set forth, substantially as described.

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

GEORGE A. DAWSON.

Witnesses:

M. M. SMITH,
 G. W. VICKOLS.