

E. P. HANN & M. B. ATKINSON.
Grain-Scouring Machine.

No. 214,653.

Patented April 22, 1879.

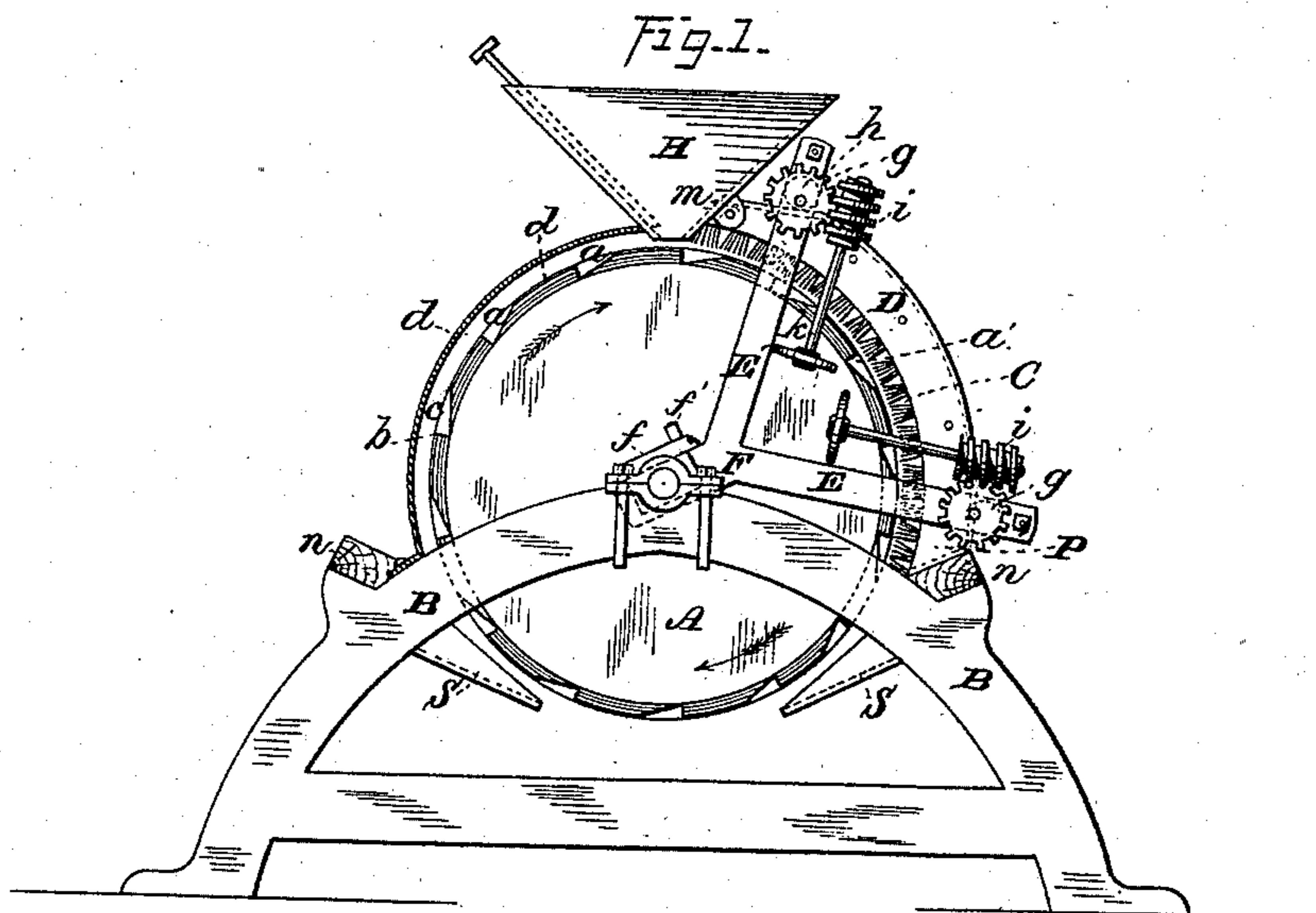


Fig. 3.

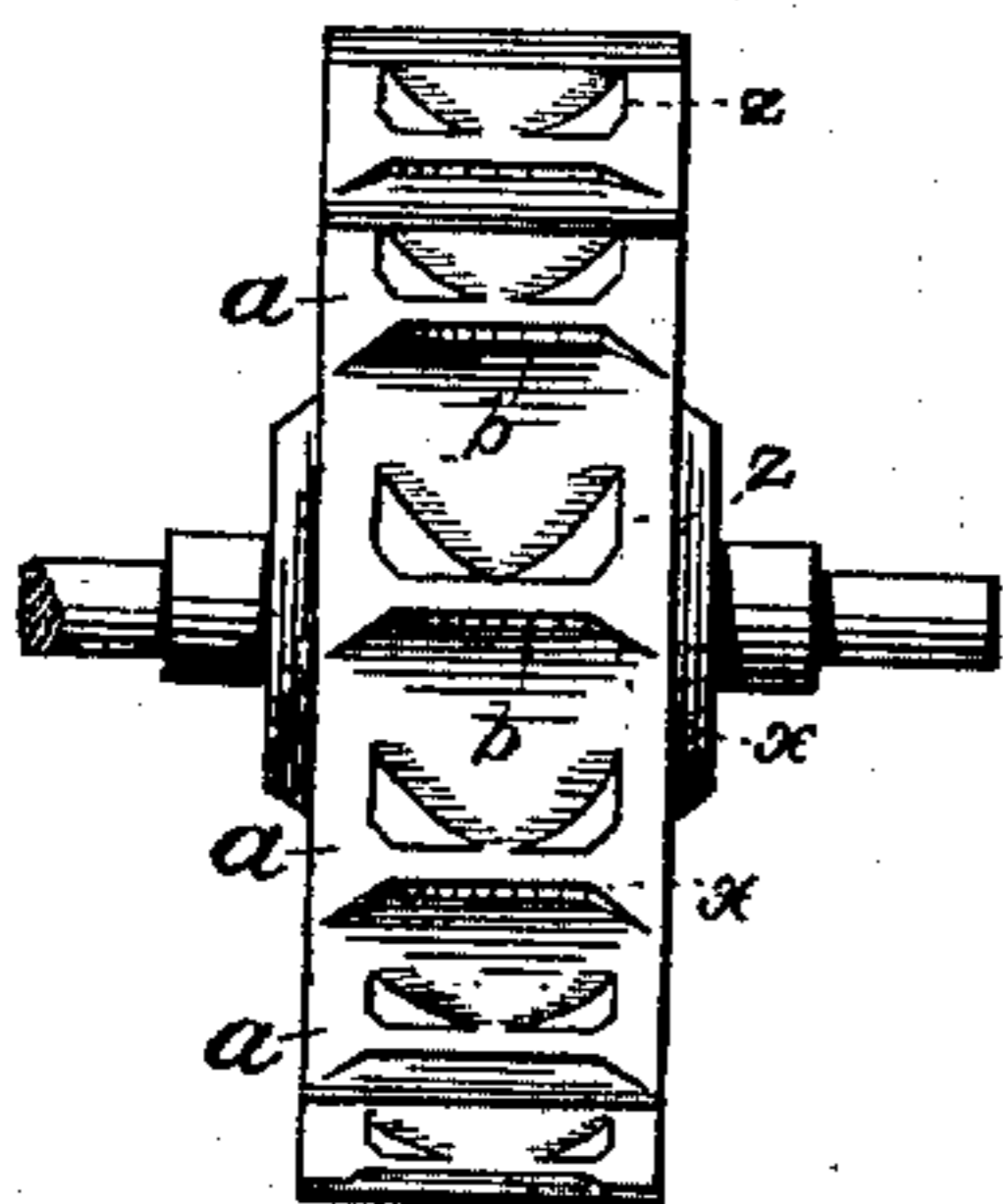


Fig. 2.

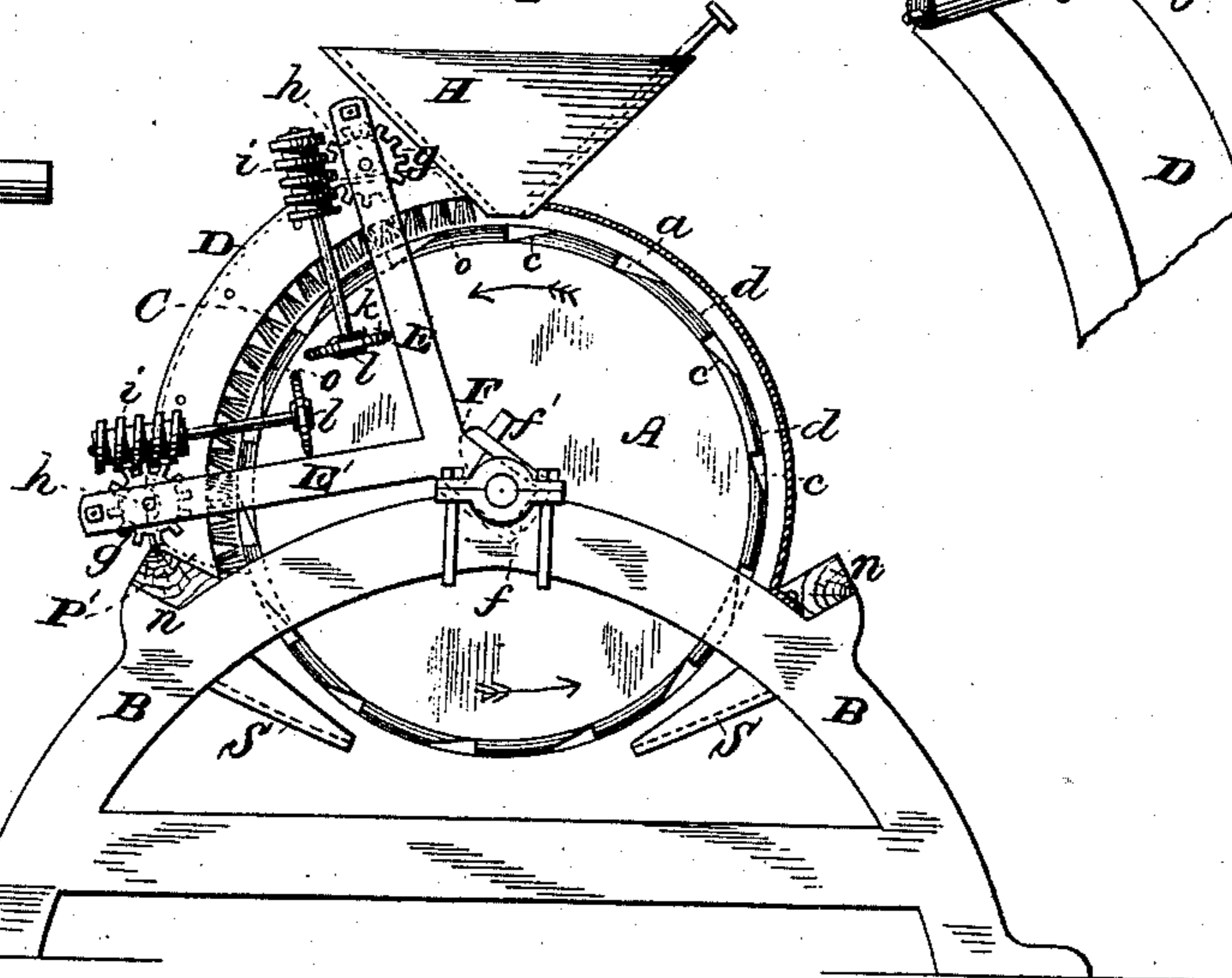
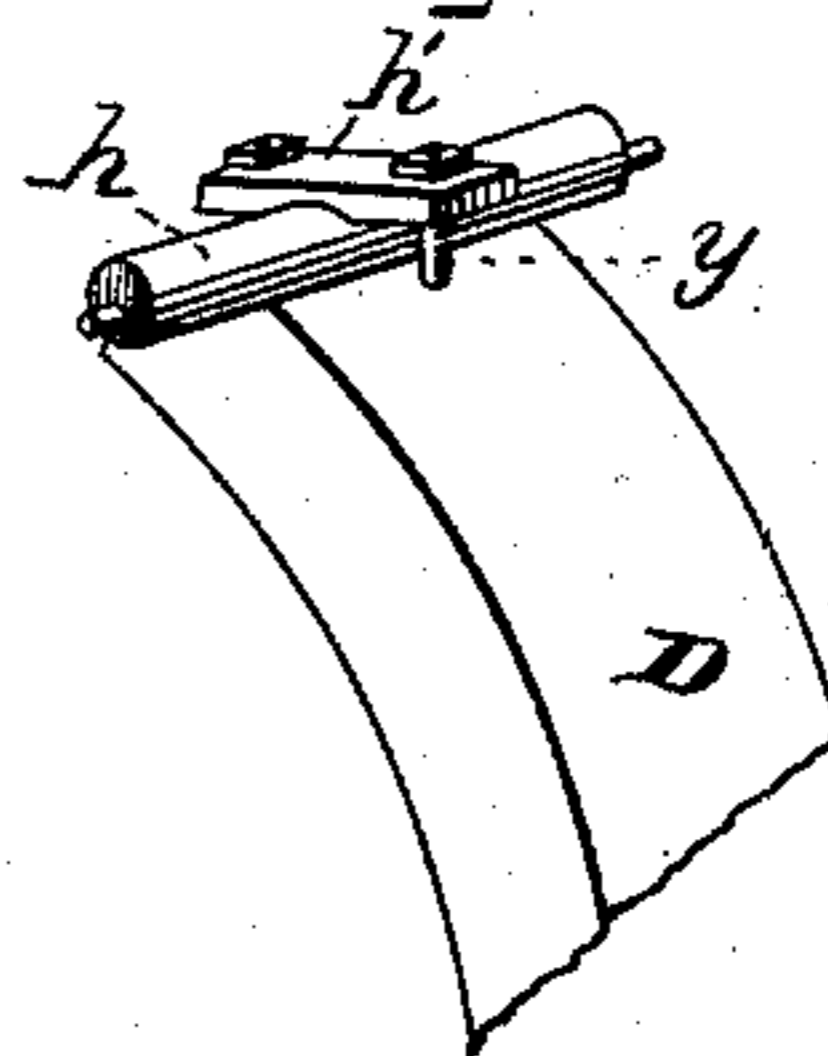


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDMUND P. HANN AND MAHLON B. ATKINSON, OF GEORGETOWN, DISTRICT OF COLUMBIA, ASSIGNORS TO GEO. W. DECKER, OF SAME PLACE, WILLIAM CAMMACK, OF WASHINGTON, DISTRICT OF COLUMBIA, AND AUGUSTUS M. HALL, OF ALEXANDRIA, VIRGINIA, ONE-FIFTH TO EACH.

IMPROVEMENT IN GRAIN-SCOURING MACHINES.

Specification forming part of Letters Patent No. **214,653**, dated April 22, 1879; application filed February 21, 1879.

To all whom it may concern:

Be it known that we, EDMUND P. HANN and MAHLON B. ATKINSON, of Georgetown, in the District of Columbia, have invented certain new and useful Improvements in Machines for Cleaning and Scrubbing Grain, of which the following is a specification.

The object of our invention is to provide a machine with which may be accomplished a perfect removal of the hull, germ, and the impurities from all kinds of cereals, a slight adjustment only being necessary to adapt it for operation upon any of the several varieties of grain.

Our invention consists in the combination of a vertically-rotating cylindrical stone, having a peripheral inclined furrow-dress, and a concave segmental brush, adapted for concentric circumferential adjustment with respect to said cylindrical stone, whereby the operative position of the furrows with relation to the brush may be arranged to either retard the travel of the grain, and thus increase the period and extent of its scouring, or to permit its rapid flow and but slight abrasion, as desired.

As is well known, a more vigorous and extended scouring is necessary for the removal of the hull from some grain than is required for others, and it is by this adjustment of the brush that our machine is especially adapted for operation upon grain of all kinds.

In the accompanying drawings, Figure 1 is a side elevation of our improved decortivating and grain-cleaning machine. Fig. 2 is a similar view, showing the brush reversed in position. Fig. 3 is a face view of the stone. Fig. 4 is a detached back view of the brush-casing and adjusting-roller.

The letter A indicates a vertically-rotating cylindrical scouring-stone, having its shaft mounted in bearings upon a frame, B, and having furrows *a* across its periphery. These furrows I prefer, in practice, to form about one-sixteenth of an inch deep, each with one abrupt wall or shoulder, *b*, an inclined face, *c*, about three-eighths of an inch in extent, terminating in a land, *d*, of about the same extent, and reaching to the shoulder of the next fur-

row. These dimensions may, however, be varied as desired. The abrupt shoulders of the furrows do not extend transversely entirely across the face of the stone, but terminate usually at about half an inch from each edge thereof, and are then beveled outward, as at *x*, Fig. 3, gradually decreasing in height, and, in the space of about one-fourth of an inch, vanishing on the adjacent inclined face.

Immediately behind the beveled portions of the shoulder of each furrow are cut short oblique shoulders *z* in the land, said oblique shoulders having extensions parallel with the main furrow and the edges of the stone, respectively, and these extensions gradually decrease in height, and vanish on the land in the space of about one-fourth of an inch.

The purpose of the beveling of the shoulders at their ends and of the inclined short shoulders *z* is to direct the grain inward from the edges of the stone, and so prevent its scattering or crowding out from between the stone and brush.

A concave segmental brush, C, is arranged opposite to the periphery of the stone A, and has its back secured in a casing, D, beyond the opposite ends of, and on both sides of, which extend two arms, E E', branching from arms F, pivoted upon opposite ends of the shaft of stone A, and held in place by gibs *f* and keys *f'*; or the inner ends of these arms F may terminate in sleeves fitting upon the shaft of the stone. Upon and near the outer end of each of these arms E E' is mounted a worm-wheel, *g*, and the two opposite worm-wheels, near each end of the casing D, are connected by an eccentric-roller, *h*. Each of these worm-wheels gears with a separate arm, *i*, on the end of a shaft, *k*, journaled in a bearing arranged upon the side of the casing D, or upon brackets projecting from the arms E E'.

The inner ends of the shaft *k* are provided with hand-wheels *l*, by which they may be turned. The casing D, in which the back of the brush C is secured at its ends, fits and is movable between the opposite arms E E' and E' E'; and on the back or outer wall of this casing, near each end, is a loop or frame, *h'*,

through which the eccentric-roller passes loosely. It will now be seen that when the worms *i* are turned by means of the hand-wheels the worm-wheels *g* and the eccentric-rollers will also be turned, and the action of these eccentric-rollers on the upper or cross bars of the loops or frames *h'* lifts the casing and brush away from the stone, or permits them to approach it by gravity, according to the way the rollers are turned. Thus both ends of the brush may be adjusted equally to the stone or differentially, as desired.

Upon opposite sides of the frame B are arranged stops *n* for the ends of the casing D to rest upon, and as the arms F are pivoted upon the shaft of the stone this casing may be swung to either of these stops.

The hopper H is provided with ears *m* at its opposite sides, by means of which and suitable screws it is detachably secured to either end of the casing, as required, in proper position to feed the grain between the stone and brush.

In Fig. 1 the brush is shown in position to permit the grain to pass rapidly between it and the stone when the stone is rotating in the direction indicated by the arrow marked thereon, this adjustment being suitable in operating upon wheat, rice, and other grain from which the hull is easily removed. In Fig. 2 the brush is swung to the opposite side of the stone, and when the grain is fed between them, while the stone is moving in the direction indicated by the arrows thereon, the abrupt shoulders or faces of the teeth will retard the flow of the grain, and prevent, to a great extent, the action of gravity thereupon, thus retaining

it between the brush and stone, in order that it may receive a thorough scouring. The brush, however, sweeps the grain from above the shoulders of the furrows successively, and presses it against the following lands and inclined faces, which scour off its hull and germ and effectually clean it. This adjustment is preferred to use in treating wheat, corn, and other grain having a thick hull difficult to remove, and in cleansing unusually dirty grain of any kind. A suitable blower may be arranged to deliver a blast upon the grain, hulls, &c., as they fall from the spouts S, carrying off the hulls and scourings.

We do not confine ourselves to the particular form of dress shown and described for the stone, one form being shown that secures the desired result. Nor do we confine ourselves to the particular devices for adjusting the brush, as they may be replaced by any others performing the same functions.

What we claim, is—

The combination of a vertically-rotating cylindrical stone, having a peripheral inclined furrow-dress, and a concave segmental brush, adapted for concentric circumferential adjustment with respect to said stone, substantially as and for the purpose set forth.

In testimony that we claim the foregoing we have hereunto set our hands in the presence of the subscribing witnesses.

EDMUND P. HANN.

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Witnesses:

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