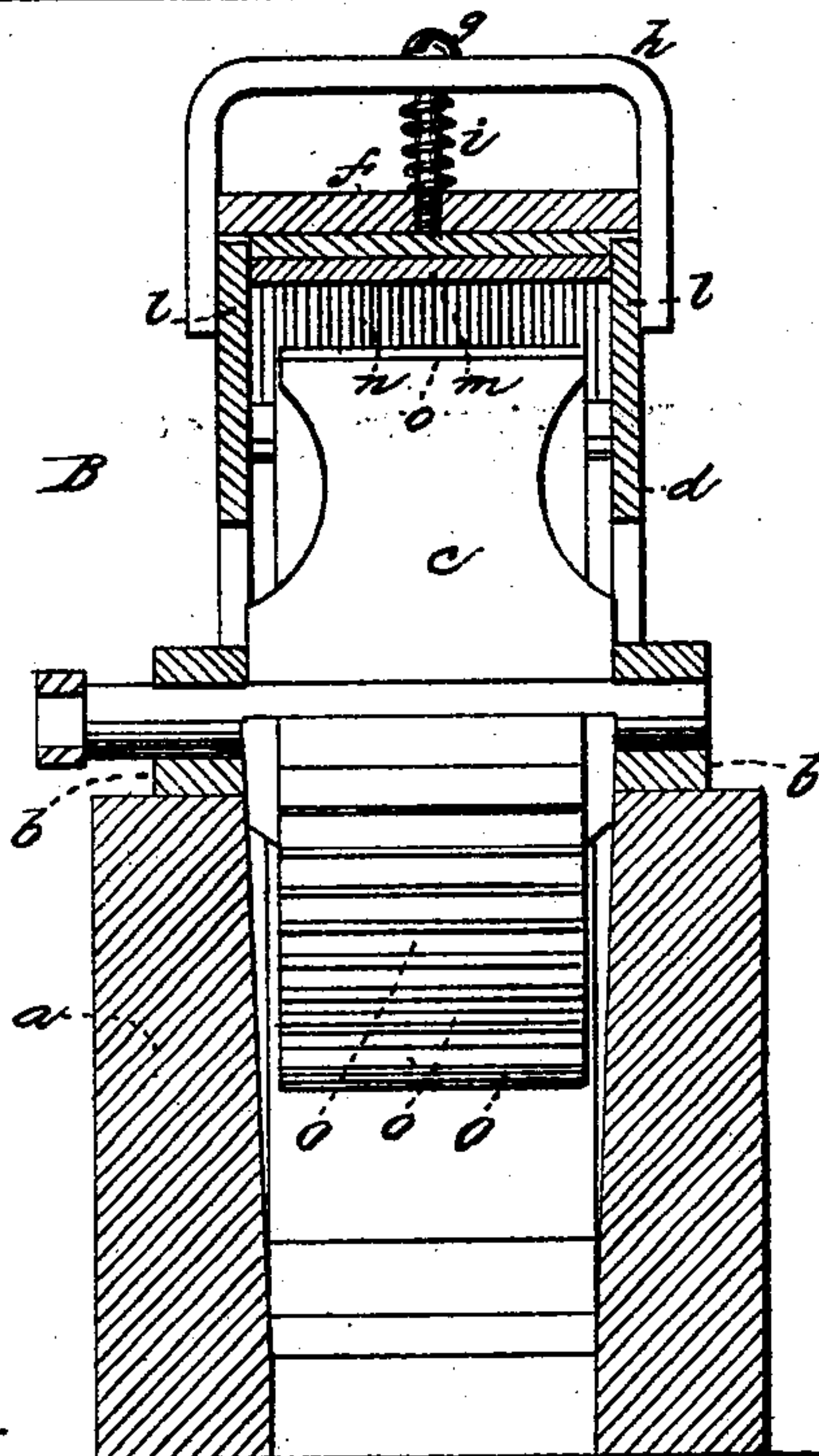
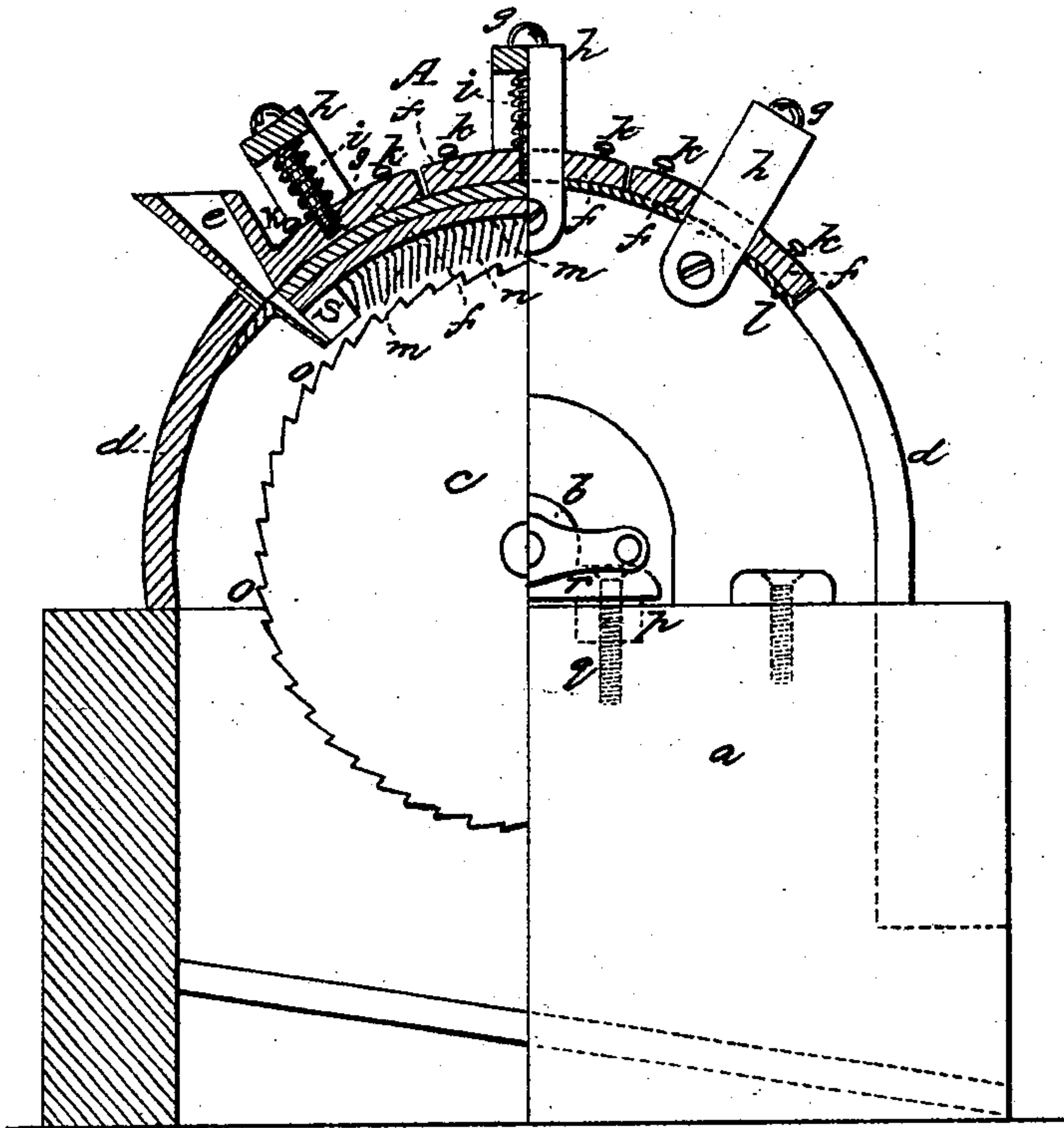


# KENISTON & SAWYER.

## Coffee Cleaner.

No. 95,485.

Patented Oct. 5, 1869.



Witnesses:

M. W. Frothingham.  
P. B. Kidder

Inventors:

E. Keniston  
J. A. Sawyer  
by their Attys  
Croby, Halden & Budd



# United States Patent Office.

CHARLES KENISTON, OF SOMERVILLE, AND J. H. SAWYER, OF BOSTON, ASSIGN-  
ORS TO JOHN T. PRINCE, OF BOSTON, MASSACHUSETTS.

*Letters Patent No. 95,485, dated October 5, 1869.*

## IMPROVED HULLING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that we, CHARLES KENISTON, of Somerville, Middlesex county, and J. H. SAWYER, of Boston, Suffolk county, all in the State of Massachusetts, have invented an Improvement in Hulling-Machines; and we do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of our invention sufficient to enable those skilled in the art to practise it.

The invention relates to the construction of machines for hulling rice, coffee, and other grains or berries; and consists in forming the periphery of a wheel with grooves, around part of which periphery is a curved stripper, formed with stripping-teeth, the ends of which stand concentric with the periphery of the wheel, the stripper being attached to segmental blocks, which are made adjustable with respect to the adjacent surface of the wheel, while the wheel itself is mounted in bearings which are made capable of a vertical yielding motion.

The drawings represent a machine embodying the invention.

A shows the machine partly in vertical section, and partly in side elevation.

B is a vertical central cross-section of the machine.

*a* denotes a frame or case, upon the top of which are two bearings, *b*, in which is journalled the axis of a rotary metal or metal-surfaced wheel or cylinder, *c*.

The upper half of the wheel is covered by a shell, *d*, in which is a mouth or spout, *e*, for introducing grain to be hulled to the surface of the wheel *c*.

On the upper part of this shell are segmental metal plates, *f*, each applied to the end of a screw, *g*, which passes through a bar, *h*, each plate being pressed downward by a spring, *i*.

Near the opposite ends of each plate are set-screws *k*, which work through screw-threads in the plate, the end of each screw acting against the perimeter of one of the side-plates *l* of the shell *d*.

To the under surface of the plates *f* is secured a stripper-card, *m*, having teeth *n*, the ends of which (when the machine is in operation) are concentric with the axis of the wheel *c*.

The peripheral surface of the wheel *c* is formed with transverse serrations or grooves, *o*, as seen at A and at B, (the lower half of the wheel, in the latter view, being represented in elevation.)

The bearings *b*, of the wheel, are made adjustable vertically, and are preferably supported on springs *p*, the wheel being carried permanently down by turning down the screws *q*, or so as to prevent or limit its upward movement, while, as the screws pass loosely

through the ears *r* of the bearings, the wheel can be pressed down, the springs *p* returning it to position when relieved from pressure.

When the machine is set up, the wheel is first mounted in its bearings, the bearings being screwed down nearly to their position, and the shell is then placed over it without the segment-plates *f*.

The plates *f*, with the stripper-card attached to them, are then placed upon the wheel, the card-teeth resting on the periphery of the wheel, and the screws *k* are then set so that their ends abut against the perimeter of the side-plates *l*, the acting-surface of the stripper-card being thereby adjusted in concentric position with reference to the periphery of the wheel *c*.

The bearing-screws *q* are now turned down slightly, so as to leave a narrow space between the peripheral surface of the wheel and the ends of the card-teeth, to allow the grains to be carried through by the wheel, and grain being then fed in at the spout *e*, and the wheel being rotated in the direction of the arrow, the grains or seeds will drop upon the surface of the wheel, and into the grooves thereof, and, being carried on by the teeth of the wheel, the hulls will be rasped, and rubbed, and torn off by the card-teeth, the concentricity of which will cause the whole surface to be kept in action against the grains carried under them, the hulled grains and the hulls falling into the case *a*, from which they are delivered and separated by any suitable mechanism.

The springs *i* permit the segment-plates *f* to yield to any obstructions which may force in or collect between the wheel and the stripper.

To prevent the wheel from taking up the grains too fast, a gauge or throat-piece, *s*, is fixed to the under surface of the first segmental plate, just adjacent to the spout *e*, and in front of the stripper-teeth, this throat-piece gauging the amount of grain taken by the teeth of the wheel, and only permitting such quantities to be introduced to the action of the stripper as may be advantageously acted upon to remove therefrom the hulls.

Instead of constructing the stripper-card with card-teeth, the segmental plates may have attached to them teeth, similar to the teeth of the wheel *c*, such stripper-teeth being preferable in hulling coffee, and some other grains, to the card-teeth, which are particularly applicable to stripping the hulls from rice.

The wheel *c* may be cast with its peripheral serrations, or the periphery of a cylindrical wheel may have grooves planed in its surface, but it is preferable to cast the wheel with the grooves.

By this construction of the machine, a hulling-apparatus is made, which is very enduring and effective, inexpensive to build, and simple in its arrangement and operation.

We disclaim anything shown in the patent of R. and J. E. Anderson, dated October 30, 1855; nor do we claim the use of yielding stripper-plates, of themselves, nor when combined with a cylinder having stationary bearings; but

What we claim, and desire to secure by Letters Patent, is—

The adjustably-journalled serrated wheel *c*, in combination with the yielding and adjustable segmental stripper-plates *f*, provided with metal teeth, substan-

tially as described, and arranged together and operated as and for the purpose herein set forth.

In testimony whereof, we have hereto set our signatures.

CHARLES KENISTON.  
J. H. SAWYER.

Witnesses:

FRANCIS GOULD,  
J. B. CROSBY.