

(Model.)
C. E. B. COOKE, J. COOKE, & G. HIBBERT.
Machine for Pulping and Grinding Fibrous and other
Material.

No. 232,460.

Patented Sept. 21, 1880.

Fig: 1.

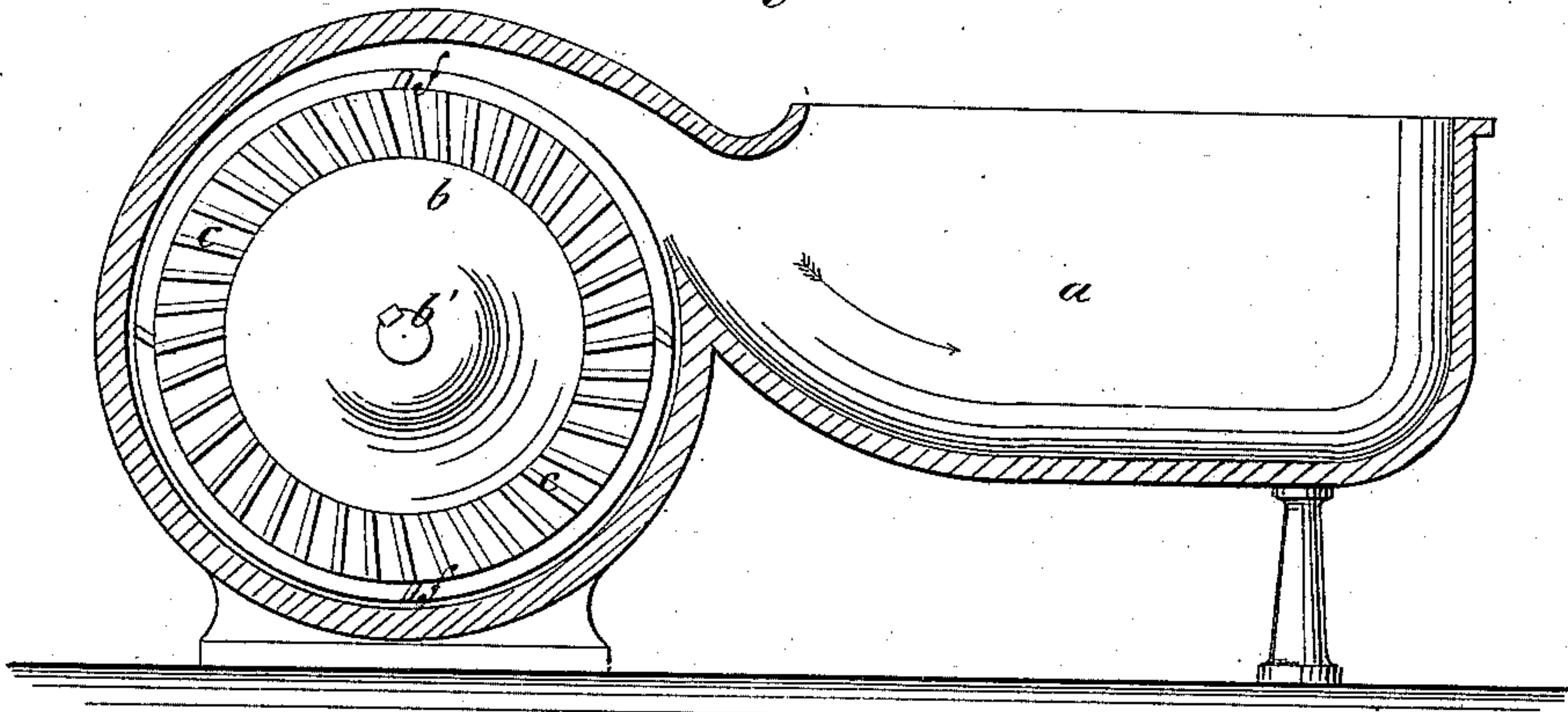


Fig: 2.

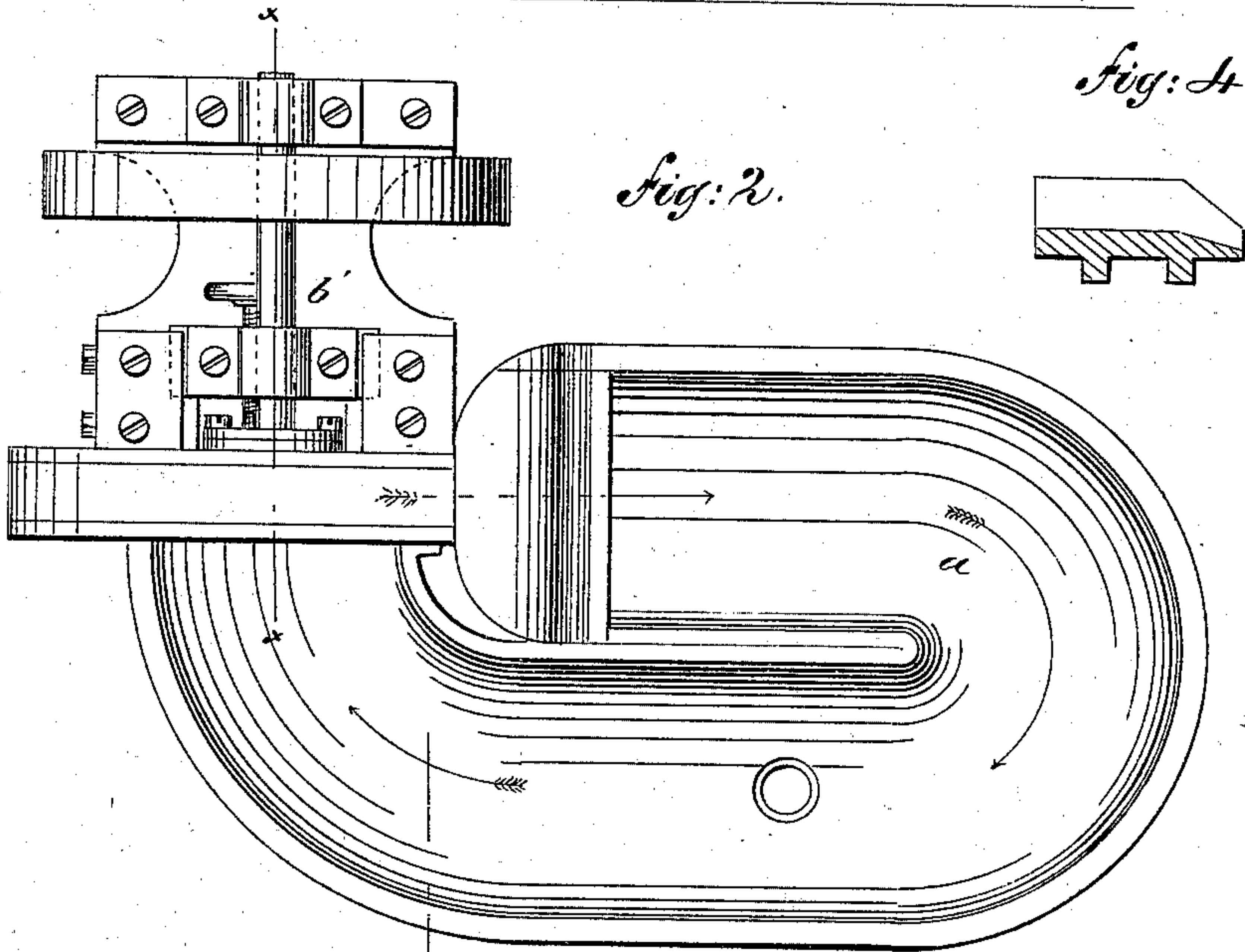
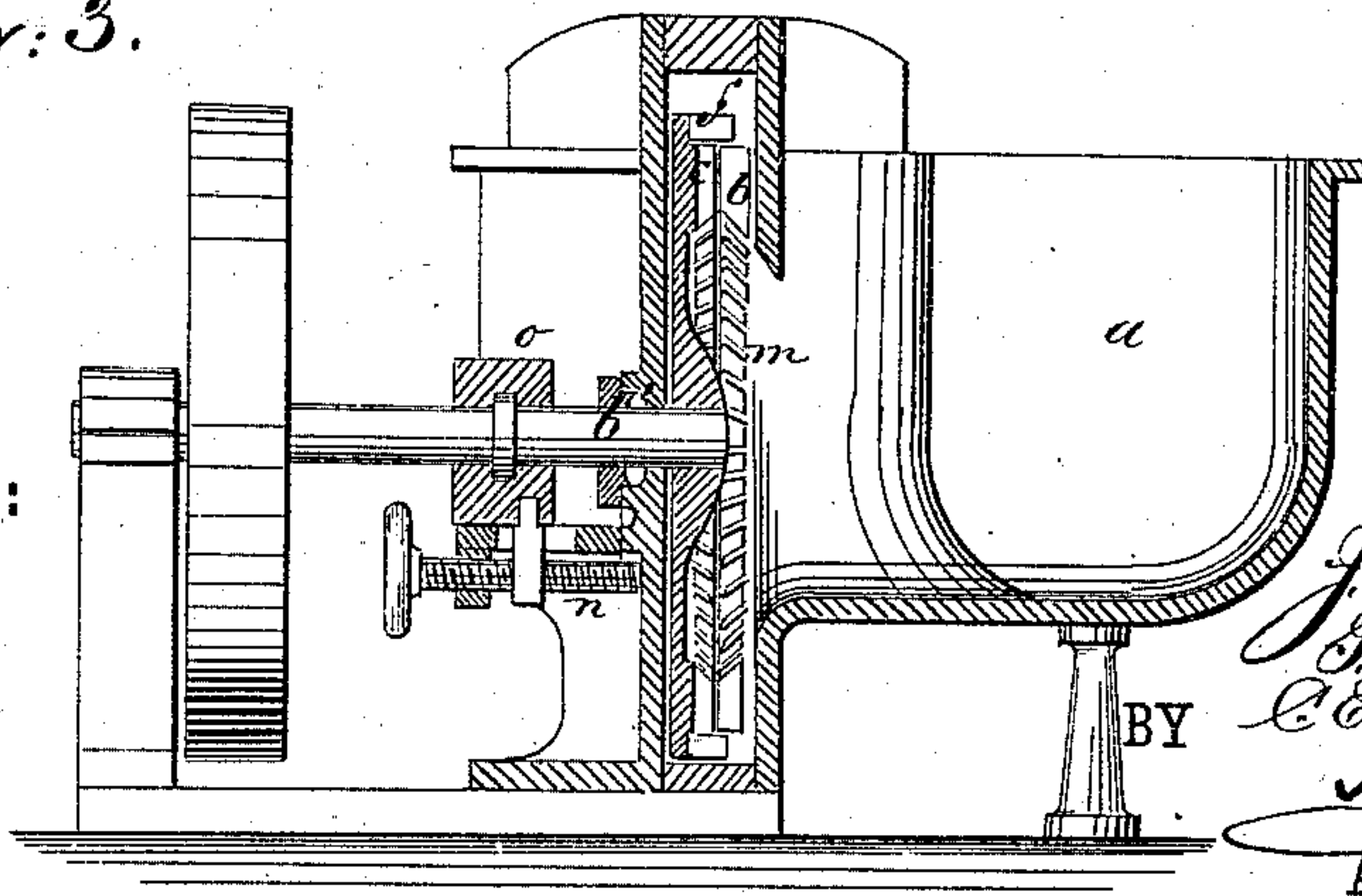


Fig: 3.



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UNITED STATES PATENT OFFICE.

CHARLES E. B. COOKE, OF LONDON, AND JAMES COOKE AND GEORGE HIBBERT, OF RICHMOND, ENGLAND.

MACHINE FOR PULPING AND GRINDING FIBROUS AND OTHER MATERIALS.

SPECIFICATION forming part of Letters Patent No. 232,460, dated September 21, 1880.

Application filed August 19, 1880. (Model.) Patented in England October 14, 1878.

To all whom it may concern:

Be it known that we, CHARLES EDWARD BRUNSKILL COOKE, of London, in the county of Middlesex, England, and JAMES COOKE and GEORGE HIBBERT, of Richmond, in the county of York, England, have invented a new and useful Improvement in Machines for Pulping and Grinding Fibrous and other Materials, of which the following is a specification.

Our improvements relate to apparatus and machinery for washing, beating, pulping, grinding, ragging, disintegrating, shredding, mixing, or preparing the various materials and fibrous substances used for making paper-pulp and for other like purposes, or for grinding colors, dyes, paints, and other materials.

Our invention consists in a roll or disk provided with bars or ribs on one face and fitted for revolution within a chamber at the end of a cistern or trough. The inner surface of the chamber is also faced with bars, between which and the bars on the disk the material is ground, and the revolving disk is fitted with lifters at its outer edge, which act to carry the material around in the chamber.

The construction and operation will be particularly described hereinafter with reference to the accompanying drawings, wherein—

Figure 1 is a vertical longitudinal section of the machine. Fig. 2 is a plan view. Fig. 3 is a vertical cross-section on line *x x* of Fig. 2, and Fig. 4 is a detail view in enlarged size.

Similar letters of reference indicate corresponding parts.

a is the cistern or shell, which is made of cast-iron or other suitable material, and of either oblong or other convenient shape. This shell is divided by a central partition, and is formed at one end with a chamber of circular form, which communicates, by a central side opening, with the space at one side of the central partition, and by a tangential opening with the space at the other side of the partition.

b is the roll or disk-plate, made of cast-iron or other metal, and provided with bars or facings *c*, which we make of chilled iron, bronze, or other metal, and attach on the face of the disk by bolts or other suitable fastenings. The disk *b* is within the circular chamber, keyed on a shaft or axle, *b'*, which is fitted for revolution in bearings that are fixed at the outside of the cistern *a*.

In front of the roll or disk, upon the inner surface of the chamber, there are bars or facings *m*, similar to those on the disk. The disk *b* is to be fitted for movement to and from the bars *m* by suitable devices.

As shown in Fig. 3, we form the axle *b'* with a collar working in a groove in the box *o*, and fit upon the support of the box a screw, *n*, for moving the box, axle, and disk to regulate the distance between the grinding-faces.

f f are flanges projecting from the edge of disk *b*, and serving as centrifugal lifters for the material.

In operation the rags, pulp, or other material to be operated upon is fed into the cistern *a*, and is drawn by the revolving disk *b* through the central opening and between the grinding-facings *c m*, by which the material is ground. The lifters *f* raise the material as it discharges at the periphery of the disk, and cause it to pass through the tangential opening back into the cistern. By these means the material is caused to circulate through the cistern and grinding-chamber until the pulping or grinding is complete.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In pulping and grinding machines, the revolving roll or disk provided with bars or facings, combined with a cistern for holding the material, and a grinding-chamber having bars or facings contiguous to the grinding-disk, substantially as shown and described.

2. The centrifugal lifters *f*, combined with the revolving roll or disk, substantially as and for the purpose set forth.

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