M. R. FLETCHER.

Pulp Engines or Crushers.

No. 116,039.

Patented June 20, 1871.

Fig. 2.

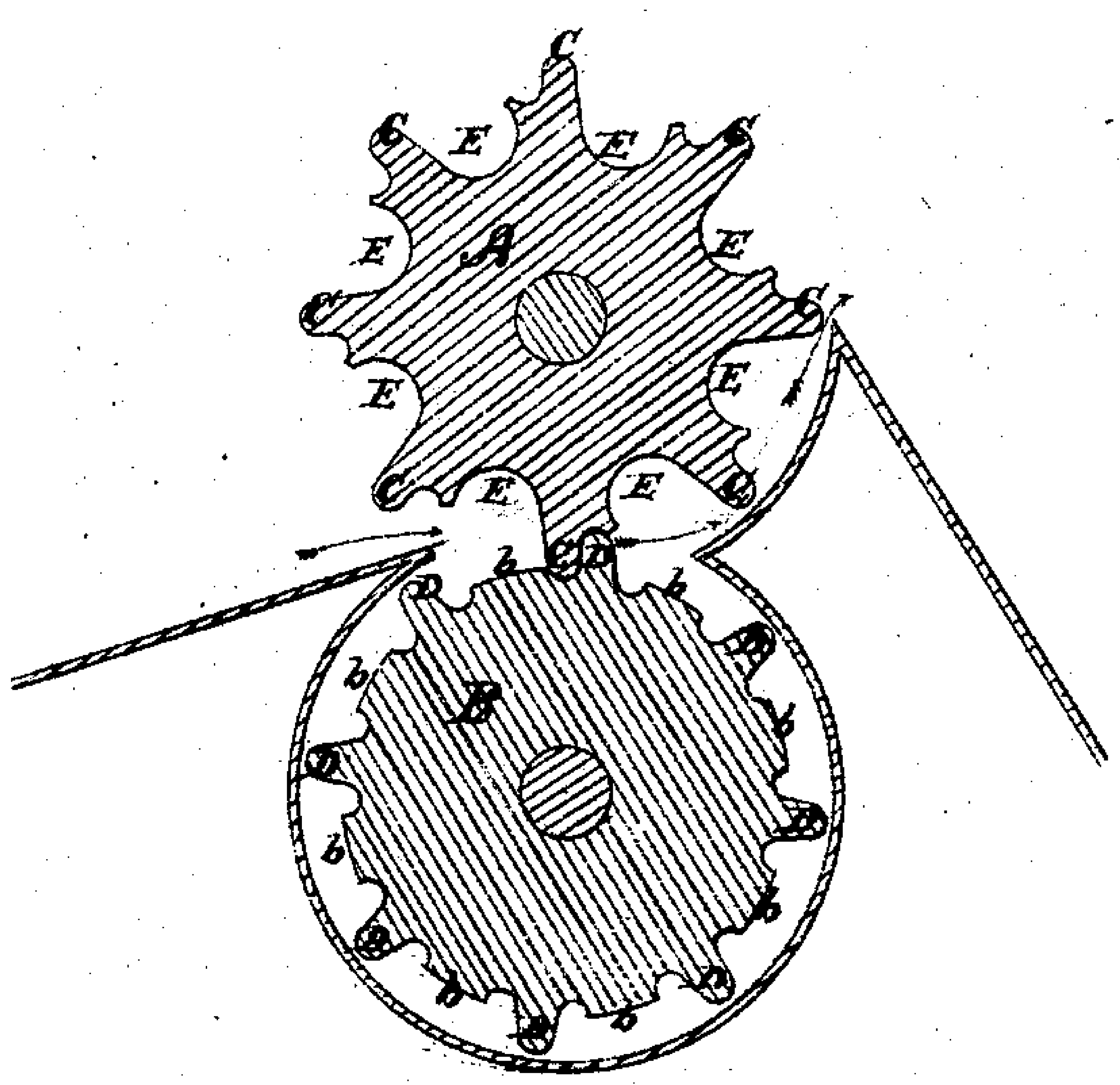


Fig. 1.

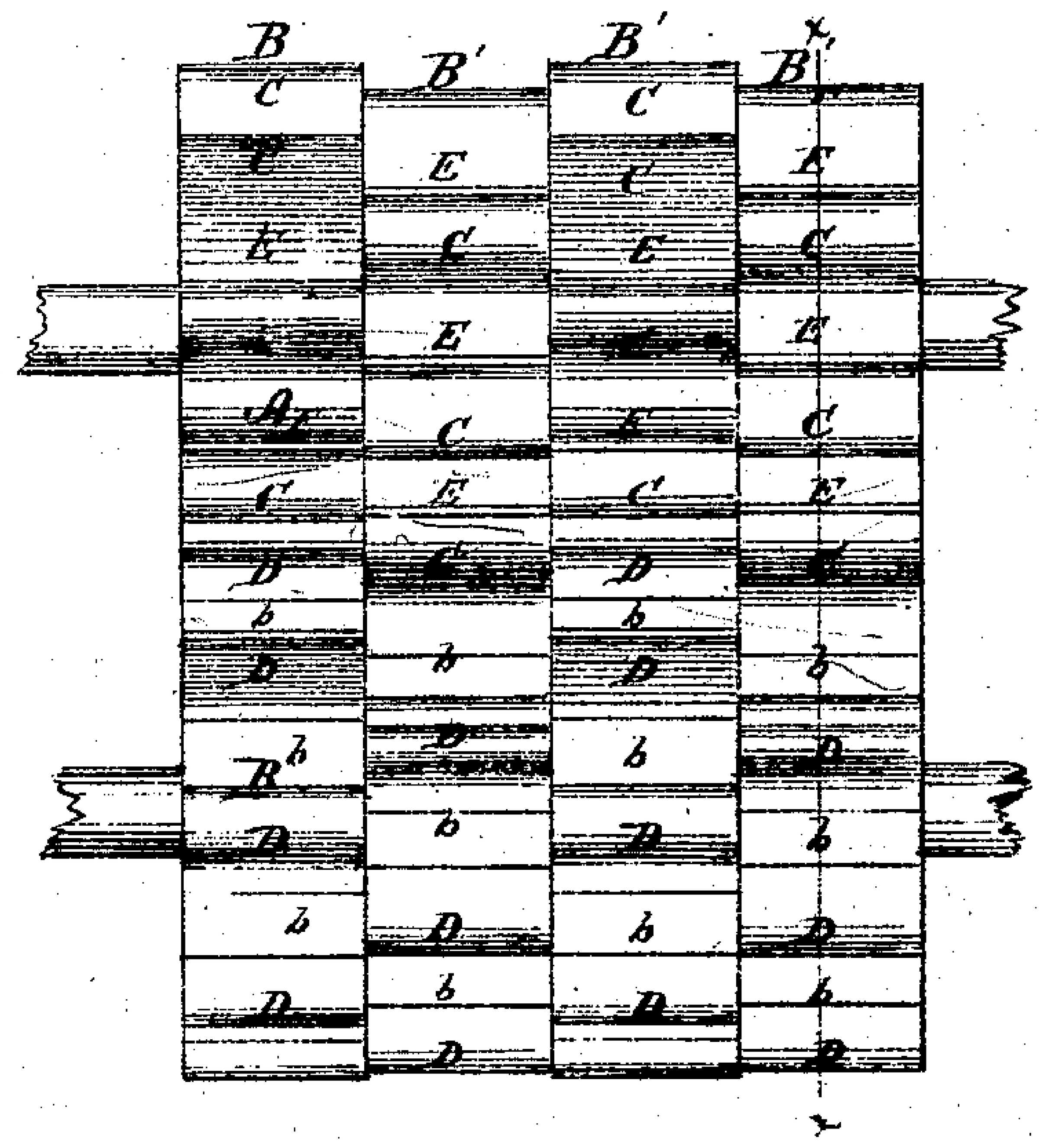
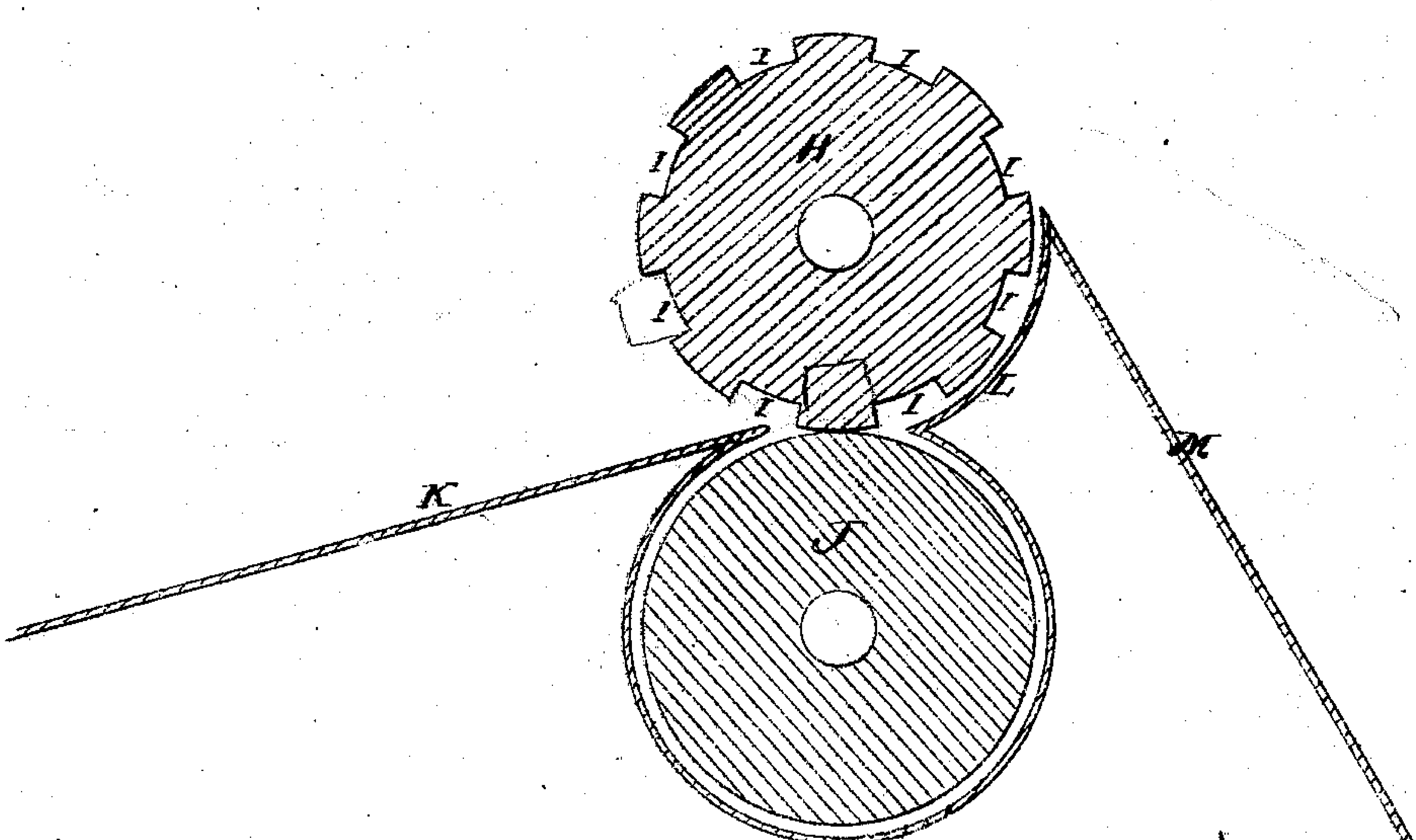


Fig. 3.



Witnesses.

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNES' PROCESS)

UNITED STATES PATENT OFFICE.

MOORE R. FLETCHER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PULP-ENGINES OR CRUSHERS.

Specification forming part of Letters Patent No. 116,039, dated June 20, 1871.

To all whom it may concern:

Be it known that I, MOORE R. FLETCHER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Pulp-Engines or Crushers, of which the following is a specification:

Figure 1 is a side elevation of my invention; Fig. 2, a section through line *x x*, Fig. 1; and Fig. 3, a similar section, showing a modification.

This invention relates to the crushing of pulp for paper manufacture; and it consists of a peculiar form and arrangement of crushing-cylinders, as will hereinafter more fully appear.

In the drawing, A B represent the crushing-cylinders, which are located one above the other, and composed of sections B′, shown in Fig. 1. The cylinder A is provided with projections or cogs C, which engage with cogs D on the lower cylinder B and revolve the same, power being applied to the shaft of cylinder A. E E, &c., represent buckets located between cogs C of cylinder A, while the corresponding spaces *b* between cogs B are flattened, as shown in Fig. 2. The sections B′ are so located as to cause the cogs C and buckets E to alternate longitudinally, thereby breaking joints, as it were, and avoiding continuous lines of buckets and cogs along the periphery of cylinder A, while the cylinder B, being correspondingly arranged, meshes perfectly therewith.

Fig. 3 shows an equivalent construction, in which H represents a cylinder, provided with depressions I on its periphery and revolving over a plain cylinder, J, the cylinder H being constructed in sections arranged like those of cylinder J.

Operation.

The cylinder A is revolved in the direction of the arrows in Fig. 2, the cogs C thereof engaging with the cogs D of cylinder B and revolving the same. The pulp in passing through the tub flows over the "riser" K, and, entering the buckets E on the lower side of the cylinder A, is carried by the same up the inclined apron L, and is thrown out over the "back-fall" M, and is crushed in its passage by the alternating buckets and cogs much more thoroughly than if the same were continuous, while the deep buckets E, in connection with the flat surfaces *b* of cylinder B, constitute conduits of sufficient capacity to create a current in the pulp of the desired rapidity.

This device not only crushes the pulp more rapidly than by the ordinary arrangement of bars and bed-plates, but it also preserves a longer and stronger fiber, thereby producing better and stronger stock.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The cylinder A, provided with cogs C and buckets E, the same alternating longitudinally, substantially as described.

2. The cylinder B, provided with cogs D and flattened spaces *b*, the same alternating longitudinally, substantially as described.

3. The combination and arrangement of cylinders A B, substantially as described.

4. As an equivalent of cylinders A B, the indented cylinder H and plain cylinder I, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MOORE R. FLETCHER.

Witnesses:

CARROLL D. WRIGHT,

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