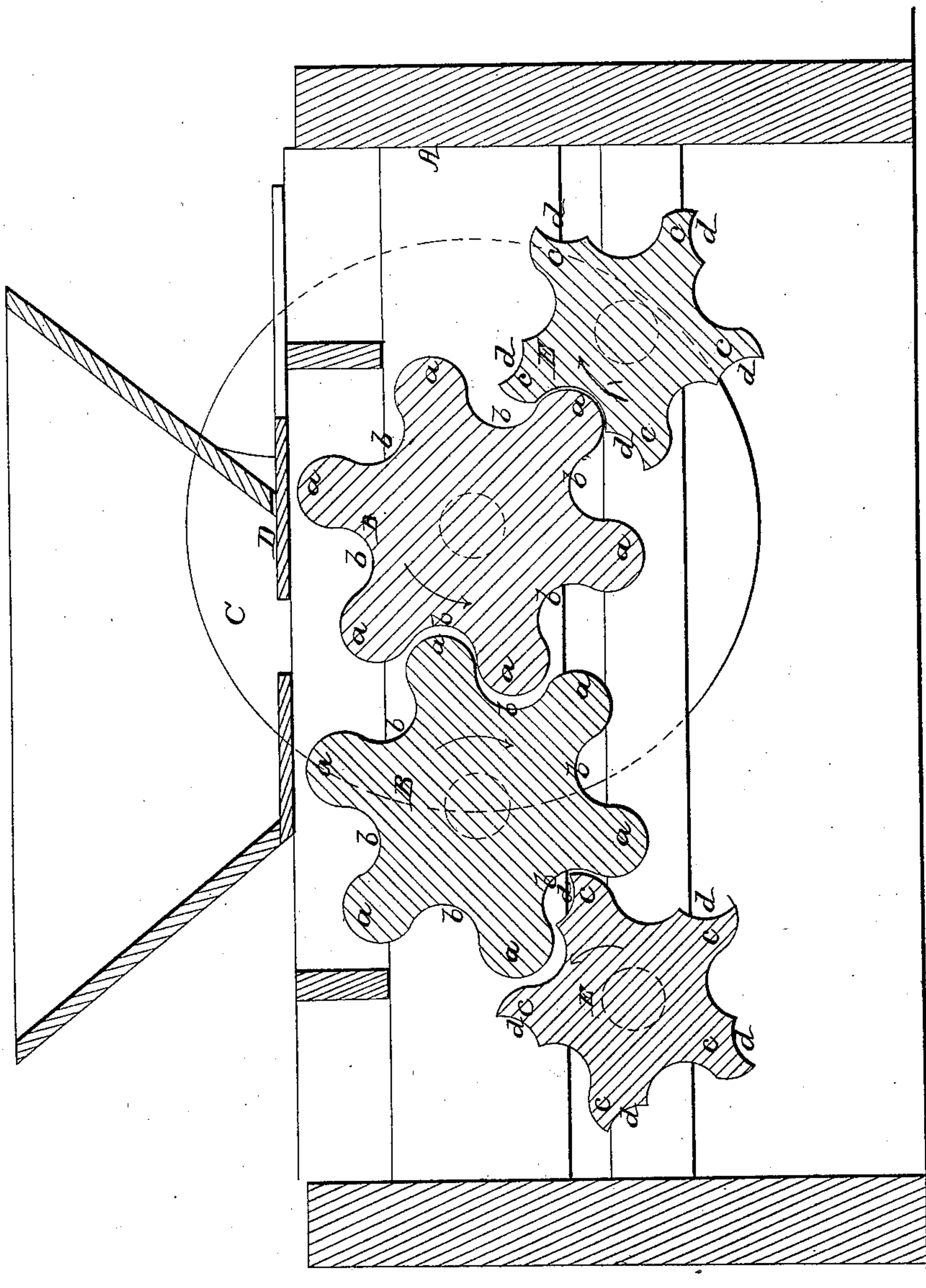


J. H. Ellis,

Cider Press.

N^o 34,296.

Patented Feb. 4, 1862.



Witnesses;
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UNITED STATES PATENT OFFICE.

J. H. ELLIS, OF BROOKLYN, PENNSYLVANIA.

IMPROVEMENT IN MILLS FOR CRUSHING APPLES, SUGAR-CANE, &c.

Specification forming part of Letters Patent No. **34,296**, dated February 4, 1862.

To all whom it may concern:

Be it known that I, J. H. ELLIS, of Brooklyn, in the county of Susquehanna and State of Pennsylvania, have invented a new and Improved Mill for Crushing Apples, Sugar-Cane, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, said drawing being a side sectional view of my invention.

This invention consists in the combination of a pair of fluted crushing-rollers and rotary cleaners, constructed and arranged as hereinafter described, whereby the crushed substance is thoroughly cleaned out of the cavities in the rollers, and the latter thereby enabled always to work in a most efficient manner. Both apples and sugar-cane in being crushed adhere to the rollers, and unless some provision is made to clean the rollers they soon choke up and operate very inefficiently.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a framing, which may be constructed in any proper way to support the working parts of the machine, and B B are two fluted rollers constructed of cast-iron and placed transversely in the framing A. The rollers are fluted longitudinally and they gear into each other, similar to two cog-wheels. The ends of the flutes *a* of the rollers are rounded so as to be of semicircular form in their transverse section, and the cavities *b* between the flutes *a* are of an inverse corresponding form, as shown clearly in the drawing. Directly over the rollers B B there is placed a hopper C, which is provided with a slide D at its bottom to regulate the supply to the rollers of the substance to be crushed. Within the framing A there are also placed two cast-iron cleaners E E. These cleaners extend the whole width of the framing and may be described as being shafts having

hawk-bill projections *c*, as shown clearly in the drawing. The projections *c* operate as scoops, and they are formed precisely like the flutes *a* of the crushing rollers B, with the exception that a longitudinal section is removed from each, as shown at *d*. The removal, or rather the absence of sections *d*, gives the hawk-bill form to the projections *c* and makes the latter serve as scrapers or scoops. The projections *c* gear into the fluted rollers B B, and are rotated by the movement of the latter.

From the above description it will be seen that by applying power to either roller B both of the latter, as well as the cleaners E E, will be rotated in the direction indicated by the arrows upon them, and the apples or cane which is allowed to pass down between them from hopper C will be crushed between the flutes *a* and cavities *b*, and the cavities *b* cleaned out thoroughly by the action of the hawk-bill projections *c* of the cleaners E E. The form of the projections *c* is an important feature of the invention, for unless made so as to have what may be termed a "scooping action" they cannot work efficiently, for the crushed substance is apt to adhere very tenaciously to the bottoms and sides of the cavities *b*, and the mere friction of radial plates or blades passing over the surfaces of the cavities would not remove it.

I do not claim separately any of the within-described parts; but

I do claim as new and desire to secure by Letters Patent—

The fluted rollers B B, in combination with the rotary cleaners E E, when said parts are provided, respectively, with flutes *a* of semicylindrical form, and with hawk-bill projections *c*, and all arranged to operate as and for the purpose herein set forth.

J. H. ELLIS.

Witnesses:

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