

No. 654,558.

Patented July 24, 1900.

R. W. WELCH.
RICE DECORTICATING MACHINE.

(Application filed Apr. 24, 1900.)

(No Model.)

Fig. 1.

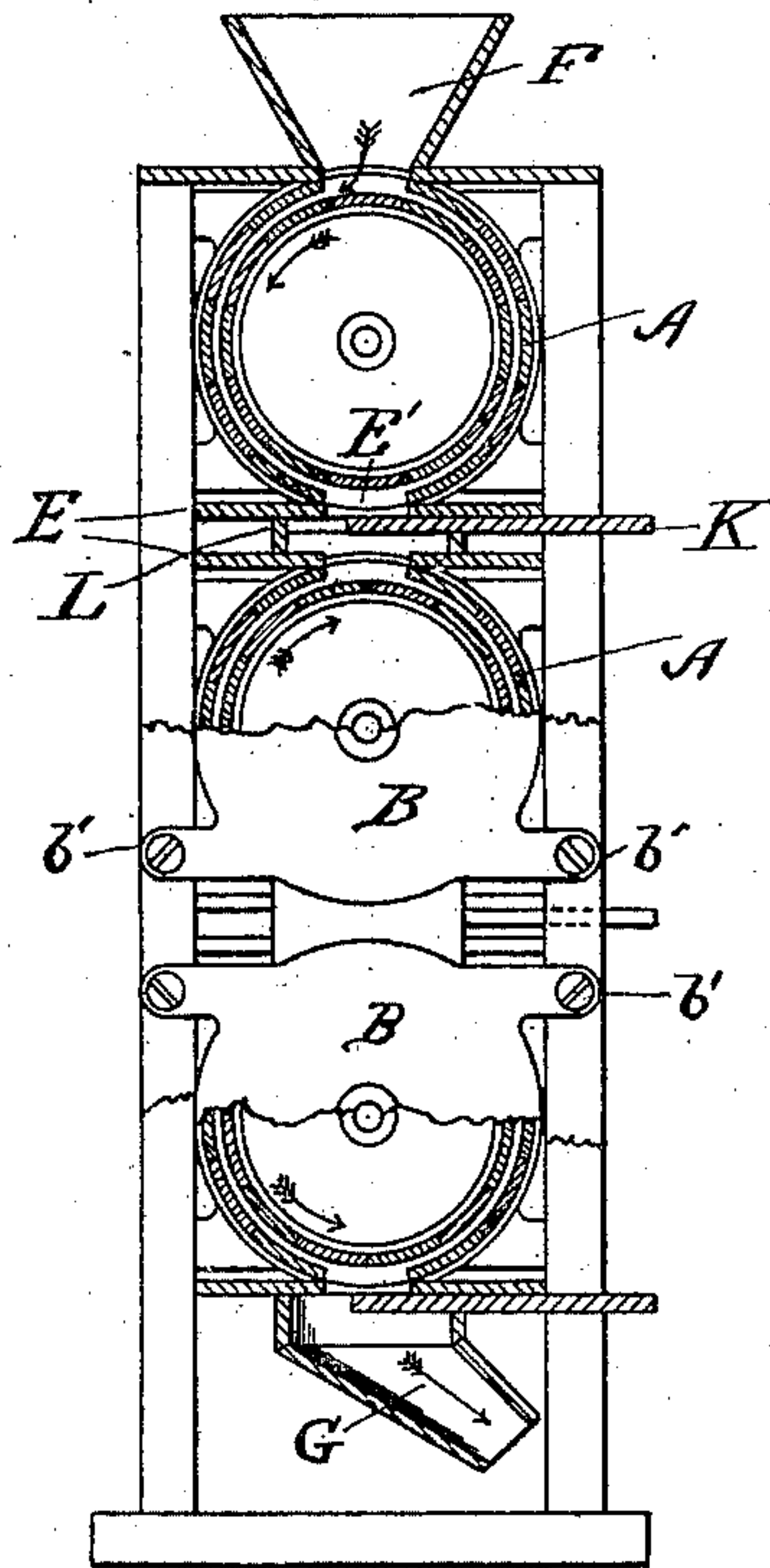


Fig. 2.

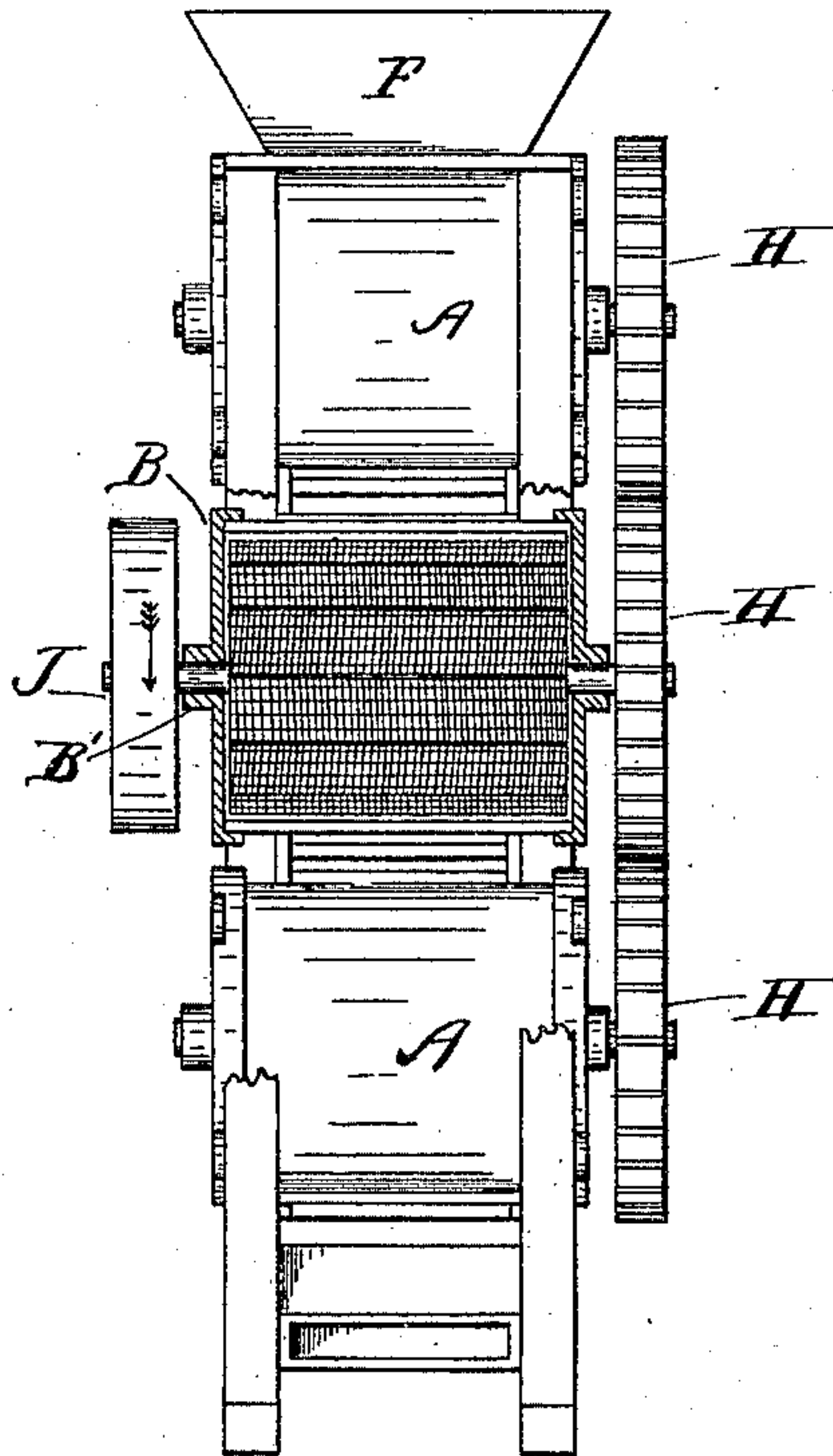


Fig. 3.

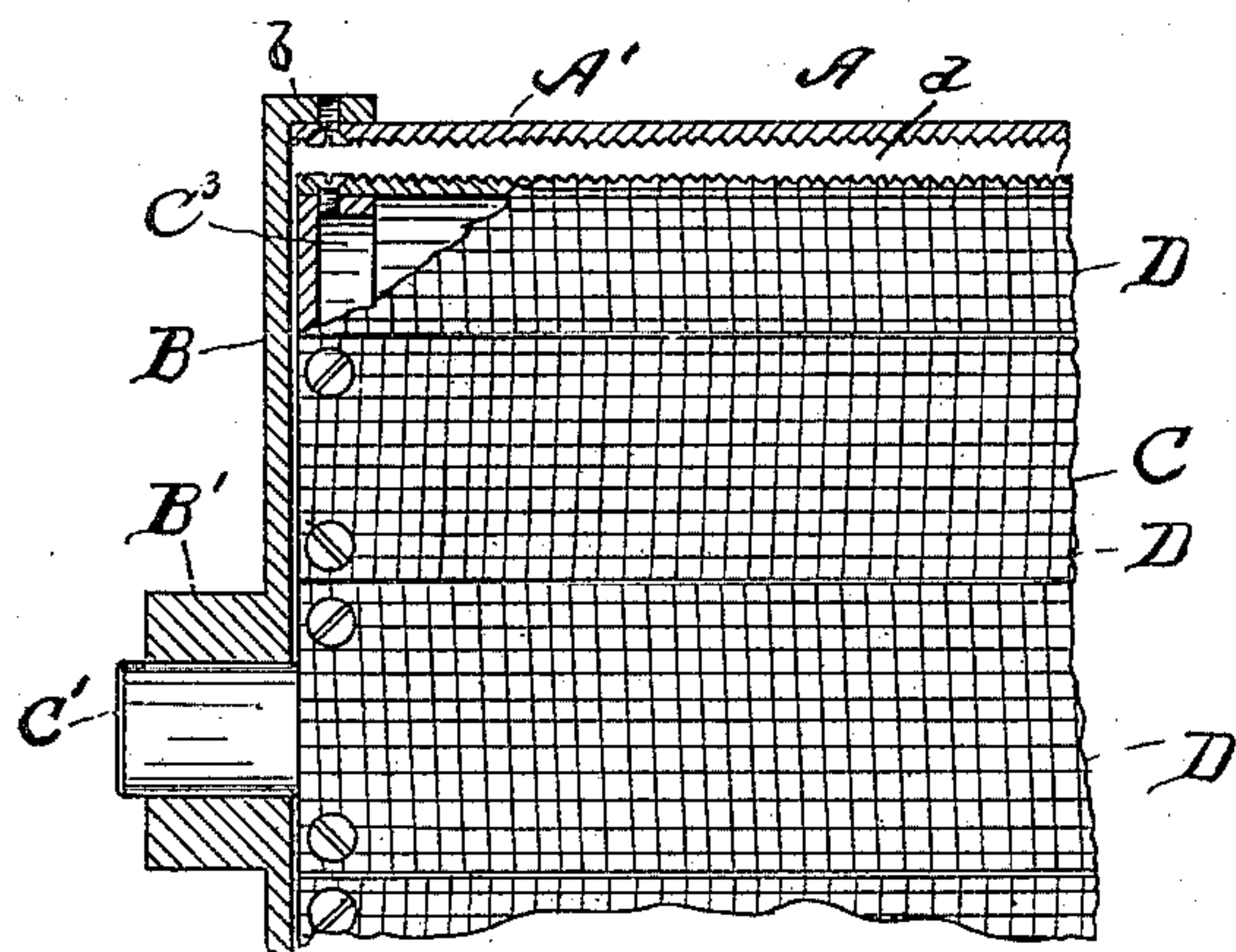
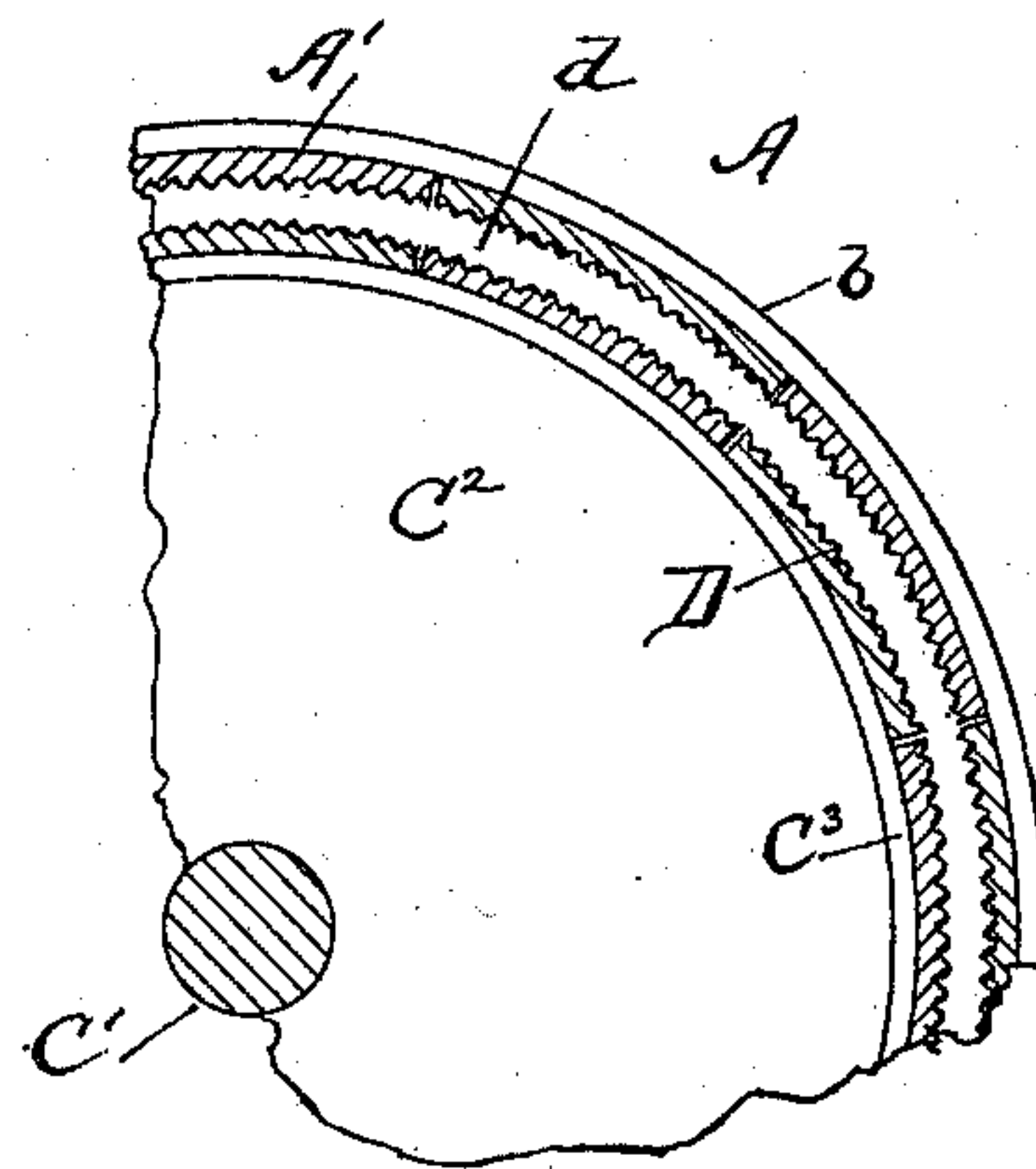


Fig. 4.



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UNITED STATES PATENT OFFICE.

ROSIA W. WELCH, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF
TO EDWARD A. DAUGHERTY, OF SAME PLACE.

RICE-DECORTICATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 654,558, dated July 24, 1900.

Application filed April 24, 1900. Serial No. 14,090. (No model.)

To all whom it may concern:

Be it known that I, ROSIA W. WELCH, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Rice-Decortivating Machines, of which the following is a specification.

My invention relates to rice-decortivating machines, and has for its object to provide a machine of this character which will be of comparatively few parts, easy to operate, which will effectively decorticate or take off the inner skin of the grains of rice by attrition, and in which the flow of the rice through the machine can be easily regulated, so as to keep the spaces between the concaves and cylinders gorged with the grains, and thereby cause said grains to repeatedly rub against one another and effect the desired result.

The invention consists in certain constructions, arrangements, and combinations of the parts, which will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved rice-decortivating machine with parts in section. Fig. 2 is an end elevation thereof with parts in section to show one of the decortivating-cylinders. Fig. 3 is a detail horizontal sectional view of one concave with a portion of a decortivating-cylinder, and Fig. 4 is a detail transverse section of a portion of one of the concaves and cylinders.

The framework of my improved rice-decortivating machine is provided with upright posts, in which are mounted any suitable number of superposed sets of concaves and decortivating-cylinders, all substantially the same in construction. In the present instance I have shown three. Each concave A consists of a plurality of segmental plates A', having their inner surfaces toothed or corrugated, as shown in Figs. 3 and 4, and secured by screws or the like to the inner side of inturned annular flanges b, formed on circular heads B, which are provided with lateral ears b', secured to the posts of the framework. Each head B is also formed with a hollow boss B', in which the ends of shafts C' are journaled, and

the decortivating-cylinders C are mounted on such shafts. Each revoluble cylinder C is composed of two circular heads C², having inturned annular flanges C³, to the outside of which are secured by screws or the like a plurality of toothed or corrugated plates D, the row of teeth or corrugations of one plate extending crosswise of the plate and obliquely to those of the next plate, as shown in Figs. 2 and 3.

Between two of the decortivating devices described above, one above the other, are two horizontal partitions E, one above the other and spaced apart, each partition being provided with a central opening E', which registers with spaces between the opposing side concaves A, thereby providing a continuous passage for the rice from the upper concave to the lower one and from the hopper F to the discharge-spout G at the bottom of the machine. Between the two partitions and on each side of the openings E', I place a transverse strip L, as shown in Fig. 1, which is out of alinement with the openings E' and forms a chamber e, which is kept filled with the rice, thereby compensating for any sudden or excessive discharge from the concaves.

On one end of each shaft C' a gear-wheel H is secured, the said gear-wheels meshing with each other, and thereby rotating the cylinders in opposite directions, as indicated by arrows in Fig. 1, when the band-wheel J on the opposite end of the middle shaft is connected with any suitable source of power. (Not shown.)

Now it is to be noted (see Figs. 3 and 4) that a space d is provided between the toothed or corrugated faces of the cylinders and their concaves, said space being designed to be kept gorged with rice, and by this means and the revolution of the cylinder the grains of rice will rub against each other and also against the teeth and thoroughly remove the cuticle, leaving the whole grain in a pearly-whitestate, ready for the market. The grains are not crushed or broken. In order, therefore, to keep the spaces d gorged, I provide simple means for regulating the flow of rice from one decortivating device to the next, said means consisting of slides K, fitted between the spaced partitions E and adapted

to entirely close or to extend more or less across the central openings E' of the concaves, as required. It is also to be observed, as shown in Figs. 2 and 3, that the cross-corrugations of one decortivating-plate extend obliquely to the corrugations of the next plate and that the plates are arranged alternately, whereby the corrugations extend first in one oblique direction and then in the other. By this construction and arrangement the grains of rice are caused to travel toward and from the ends of the cylinders and concaves, as well as around the same, and a much more complete decortication is in this manner accomplished.

It will be seen that I have provided a machine for this purpose which can be readily kept gorged with the rice and which will decorticate the rice by attrition in a very simple and economic manner, the rice being discharged from the machine in a pearly-white condition entirely deprived of its skin.

Having thus described my invention, what

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

In a machine for the purpose described, a framework, a series of decortivating-cylinders arranged one above the other in said framework, concaves partially surrounding and spaced from each cylinder and providing a passage from the top to the bottom of the machine, two horizontal partitions one above the other between each concave and the one next below and registering with the said passage, slides arranged to be moved across said passage between the partitions, and transverse strips extending between each set of spaced-apart partitions out of alinement with the passage whereby to form a chamber adapted to be filled with the grain.

In testimony whereof I affix my signature in the presence of two witnesses.

ROSIA W. WELCH.

Witnesses:

F. S. STITT,

CHARLES L. VIETSCH.