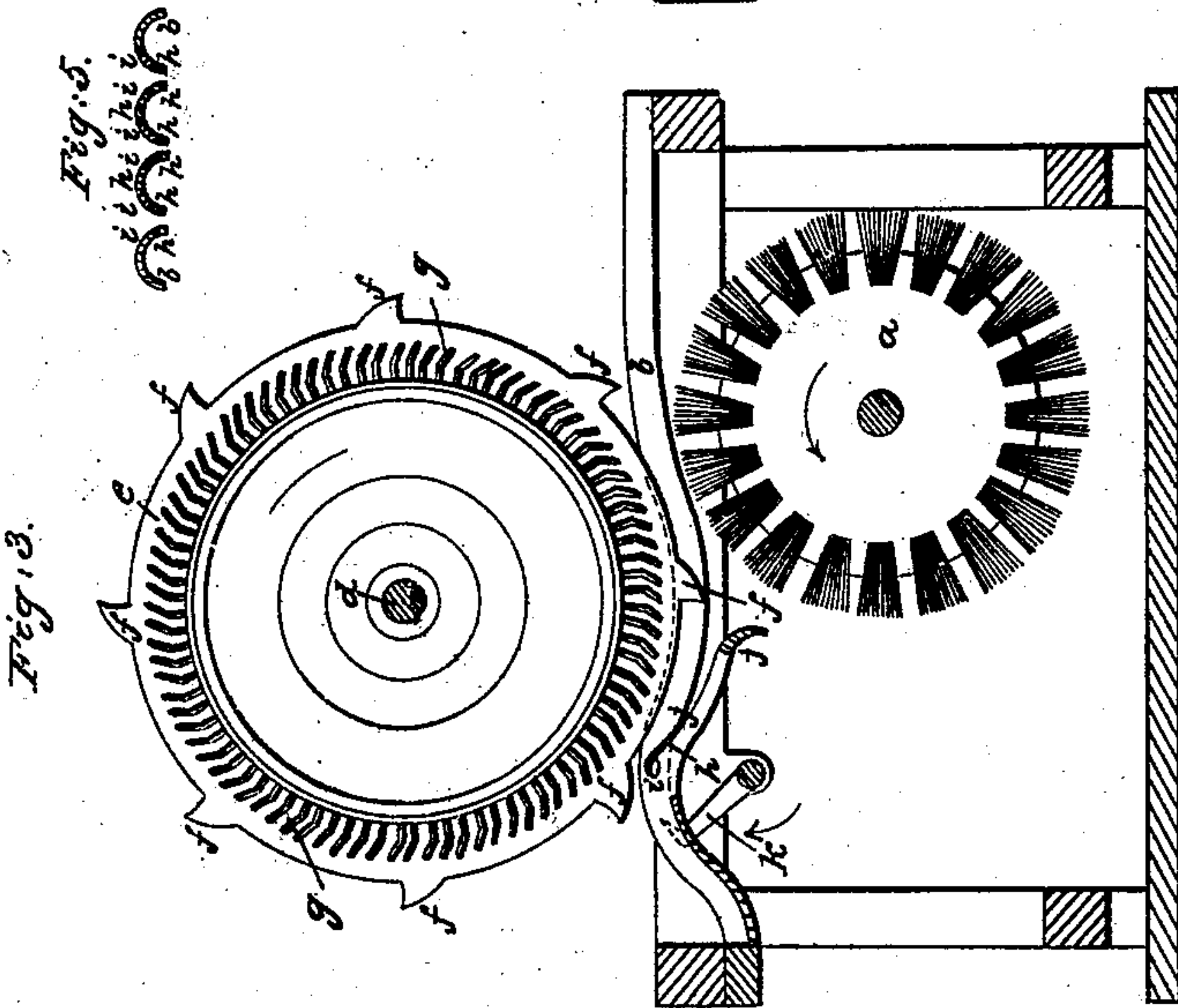
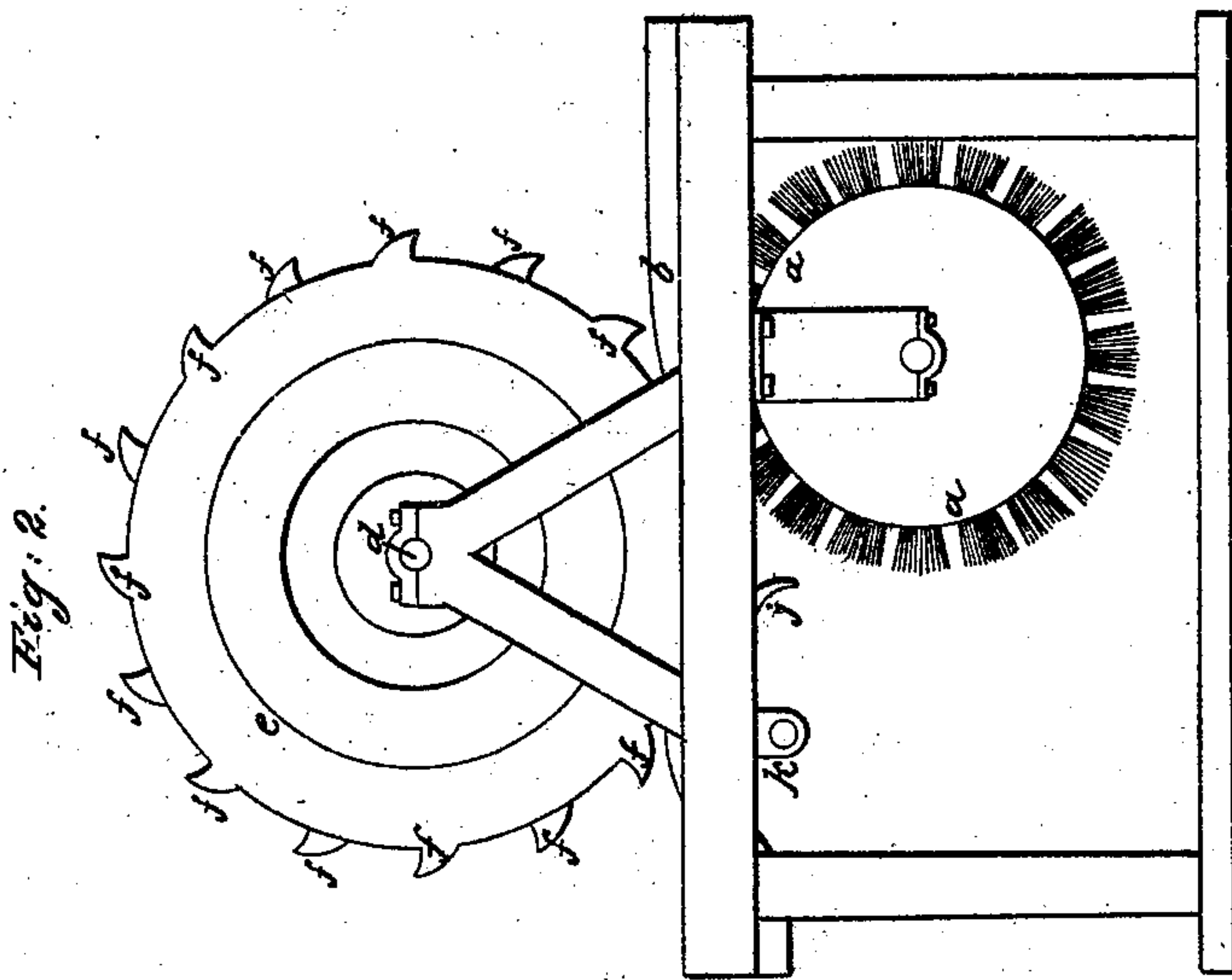
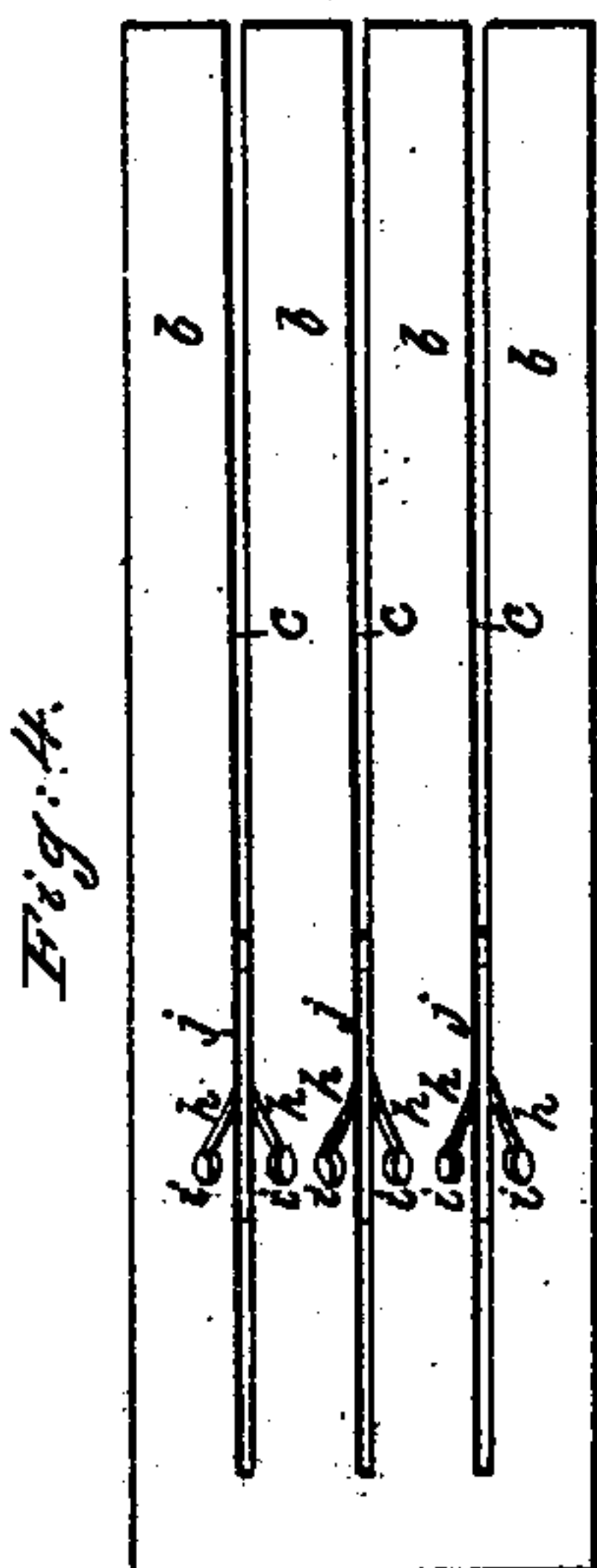
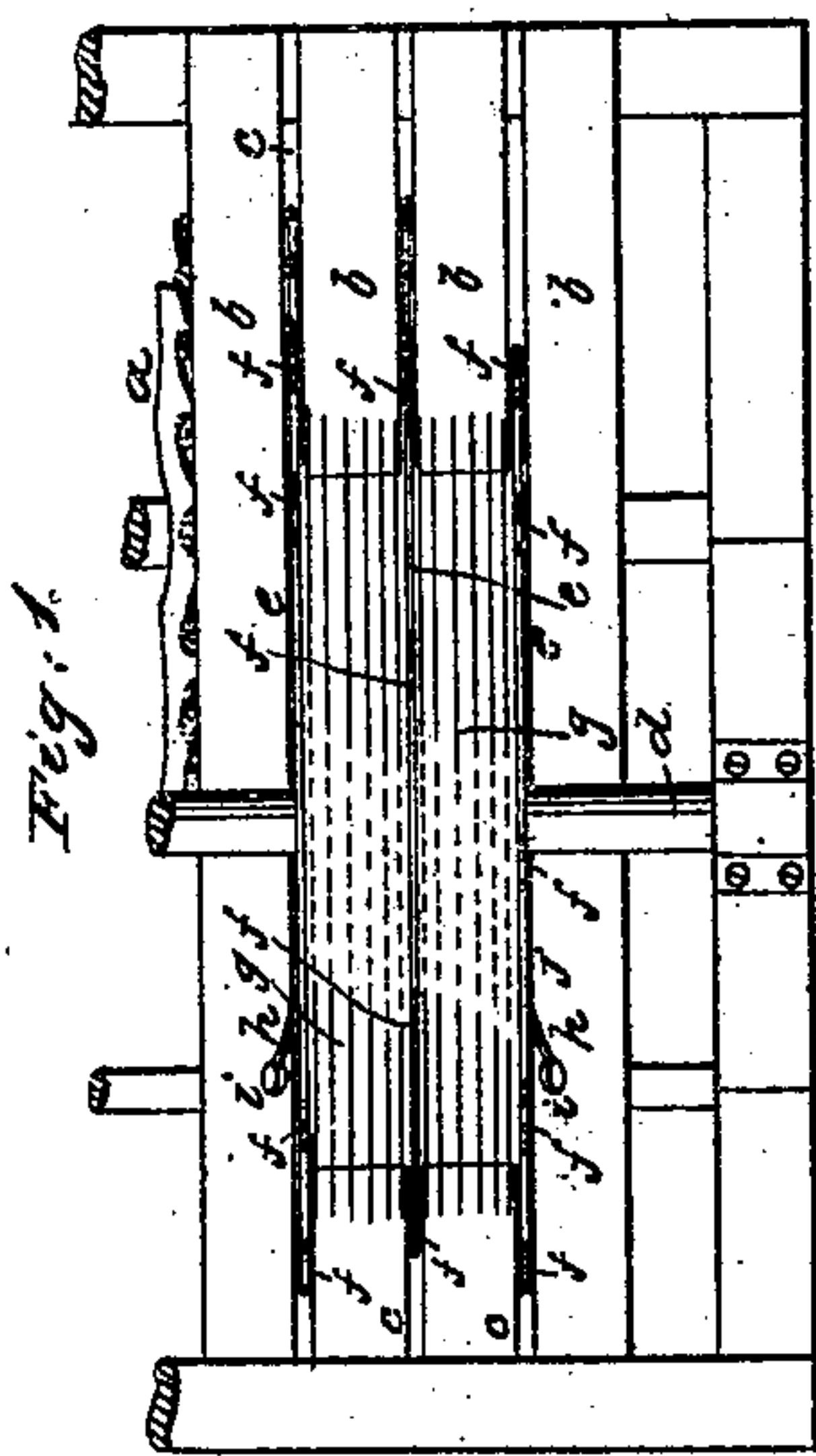


Cotton Gin.

Patented Feb. 14, 1854.



UNITED STATES PATENT OFFICE.

LEWIS S. CHICHESTER, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINES FOR CLEANING WOOL.

Specification forming part of Letters Patent No. **10,515**, dated February 14, 1854.

To all whom it may concern:

Be it known that I, LEWIS S. CHICHESTER, of Brooklyn, New York, have invented certain Improvements in the machine for separating fibers of wool, cotton, and other substances from motes, seeds, and other impurities, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of so much of the machine as is necessary to a clear understanding of my invention; Fig. 2, a side elevation; Fig. 3, a longitudinal vertical section; Fig. 4, a separate plan of the ribs, and Fig. 5 a cross-section thereof.

The same letters indicate like parts in all the figures.

In my improved machine I employ teeth or pickers for drawing the fibers through spaces between ribs, leaving the motes, seeds, and other impurities behind.

The nature of my invention consists in making lateral inclined or curved slots terminating in openings, circular or otherwise, smaller than the burrs, &c., in the edges of the ribs, so that the fibers which are caught by the picker-teeth to be drawn through shall be guided by the lateral slots into the circular openings, and thus avoid cutting or chafing them, as would be the case if they were drawn through between the ribs and the teeth.

My invention also consists in making the said slots at or near that part of the length of the ribs where the picker-teeth begin to leave the line of the ribs, and thus avoid all tendency to chafe and cut the fibers between the ribs and teeth.

My invention also consists in uniting the contiguous barbs or points of any two ribs formed by the cutting of the lateral inclined slots, and extending them below the line of motion of the points of the picker-teeth to insure the carrying of all the fibers which are caught by the picker-teeth into the lateral slots; and, finally, my invention consists in the employment of card or equivalent teeth between the rows of picker-teeth, to catch and draw through such of the fibers as may have escaped from the picker-teeth after being drawn into the lateral slots.

In the accompanying drawings, *a* represents a rotating brush, to which the fibers to be cleaned or picked are presented by hand, or by

a feed-apron, or by any other suitable means, and by which they are taken and presented to a set of ribs, *b*, placed above. These ribs are segments of hollow cylinders curved longitudinally, as represented, and placed side by side, leaving spaces *c* between them for the passage of teeth, to be presently described. Above the ribs there is a shaft, *d*, mounted in suitable bearings, and carrying a picking-cylinder composed of a series of metal plates *e*, with hooked picker-teeth *f* on their peripheries. The teeth are cut at considerable distance apart, and move in the spaces between the ribs. The surface of the cylinder between the plates of picker-teeth is covered with card-teeth *g* or other equivalent teeth. The ribs in their longitudinal direction curve a little over the periphery of the brush and then upward for a short distance, to be concentric with the periphery of the plates of the picker-teeth *f*, and then curve down. Where the ribs begin to curve away from the circle of the teeth *f* there are oblique slots *h* cut into them—one or more on each edge—and ending in an enlargement or hole, *i*. As these slots are cut into the edges of the ribs obliquely they form projecting points or barbs *j*, to catch the fibers as they are drawn forward by the teeth, and guide them into and through the oblique slots, the burrs, seeds, &c., remaining below the enlargement or hole *i* to be knocked off by clearers or beaters *k*, placed below and attached to a shaft rotated in any suitable manner. Effectually to separate the fibers and direct them laterally into the oblique slots, I extend the two barbs *j j* of two contiguous ribs down some distance below the points of the teeth *f*, keeping them separated, that the points of the teeth may pass between them, and below the teeth I unite and curve them downward, to prevent the fibers from catching on the point.

Motion being given by belts or other well-known means to the brush, the picking-cylinder, and the beaters in the direction indicated by the arrow, and fibers of wool, &c., being fed in below the ribs by the brush, so soon as they come in reach of the teeth *f* of the picker-cylinder they are caught and drawn forward until they reach the barbs *j*, by which they are drawn laterally into the slots to the hole *i*, out of the space between the ribs and teeth and in reach of the card-teeth between the plates, by which they are drawn out straight or carded,

and gradually, fiber by fiber, separated from the motes and other impurities, which, not being able to pass through the hole *i*, remain on the under surface of the ribs, whence they are knocked away by the rotating beaters or clearers *k*, thus aiding in liberating the fibers as they are drawn out by the picker and the card-teeth of the picker-cylinder. The union of the bars below the ribs effectually prevents any fibers from passing off without being drawn up between the ribs, for the moment a fiber is caught by any one of the picker-teeth and drawn forward it rides on the tongue formed by the union of the two barbs, which directs it into the two lateral slots, thus effectually keeping it on the tooth and bringing it within the reach of the card-teeth, so that if one end be liberated before the other, which would permit the picker-tooth to leave it, the card-teeth hold and draw it out from the motes and other impurities; but when the barbs are not united, then I make one or more oblique slots in each edge, to catch the fibers which might escape the first.

By means of the lateral or oblique slots made in that part of the ribs where the picker-teeth begin to leave the line of the ribs, and therefore to draw the fibers through, I avoid all tendency to cut the fibers, for they are drawn away from the teeth and cannot lie between the teeth and the edges of the ribs, as in other machines heretofore used for that purpose.

I do not deem it necessary to describe any means of stripping the fibers from the picker and card teeth, as this makes no part of my invention, and can be done by any of the known means employed in other machines; and, although I have described and represented the form of the ribs, barbs, and picker-teeth, I do not wish to be understood as limiting myself thereto, as this may be greatly varied without changing the principle or character of my in-

vention; nor do I wish to limit myself to the use of a rotating brush for presenting or feeding the fibers to the ribs and picker-teeth, as this makes no part of my invention and can be done by other means; nor do I wish to limit myself to the form, number, or manner of making or operating the teeth, as these may also be greatly varied and yet effect the same purpose.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Making the edges of the ribs, when combined with picker-teeth for catching and drawing the fibers through, substantially as specified, with lateral inclined or curved slots terminating in an enlargement or hole to receive the fibers and guide them away laterally from the picker-teeth, to prevent them from being chafed or cut between the teeth and ribs, substantially as specified.

2. Making the lateral slots in the edges of the ribs substantially as specified, and in combination with the picker-teeth at or near that portion of the length of the ribs where the fibers begin to be drawn through, substantially as specified, whereby I effectually avoid the cutting of the fibers.

3. Uniting the contiguous barbs of any two ribs and extending them down below the points of the picker-teeth, substantially as specified, to prevent fibers from passing without being picked or drawn through, as specified.

4. In combination with the ribs having lateral slots, substantially as specified, the employment of card-teeth interposed between the picker-teeth, substantially as and for the purpose specified.

LEWIS S. CHICHESTER.

Witnesses:

ALEX. PAFFER BROWNE,
CHAS. W. BAMBURGH.