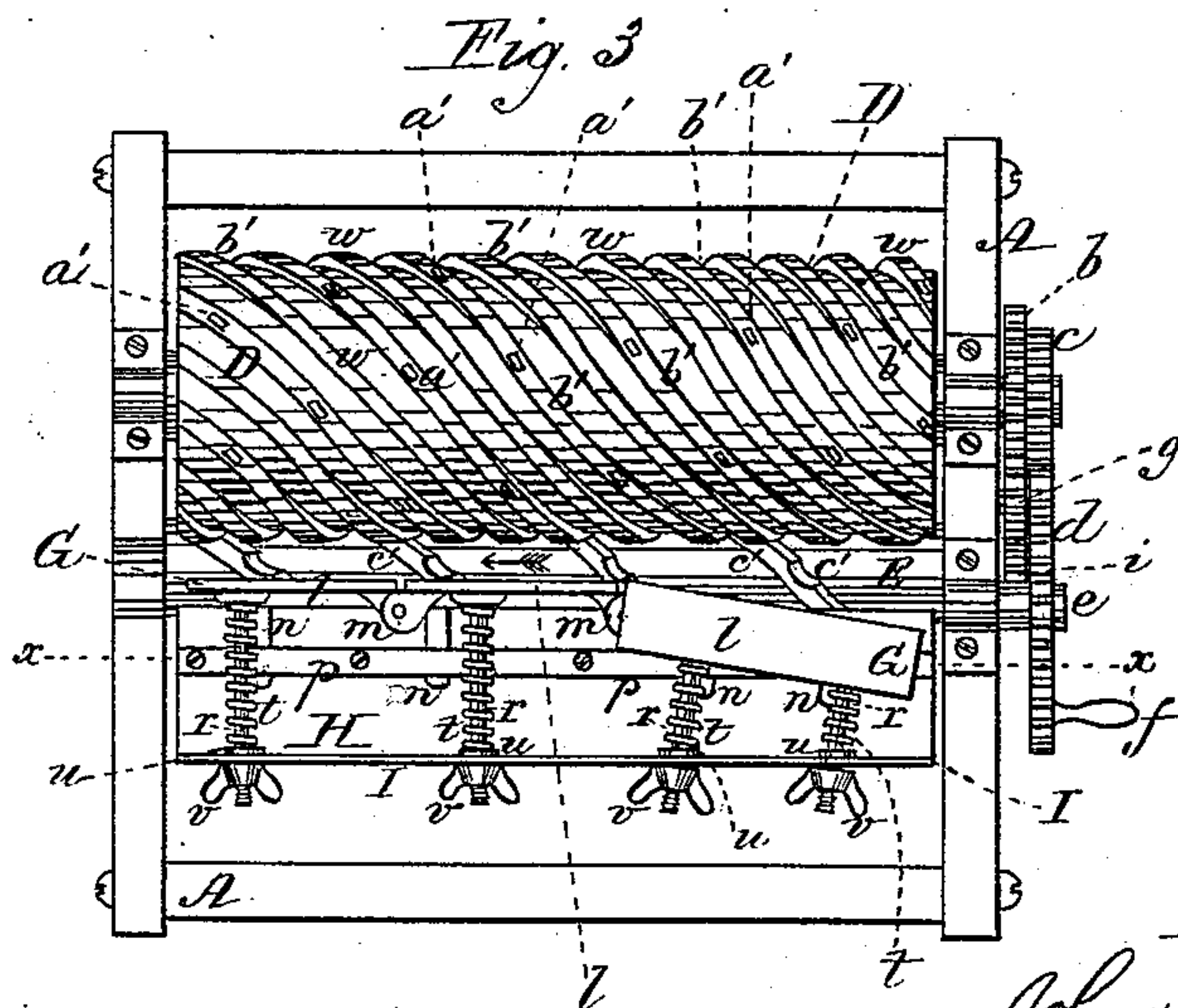
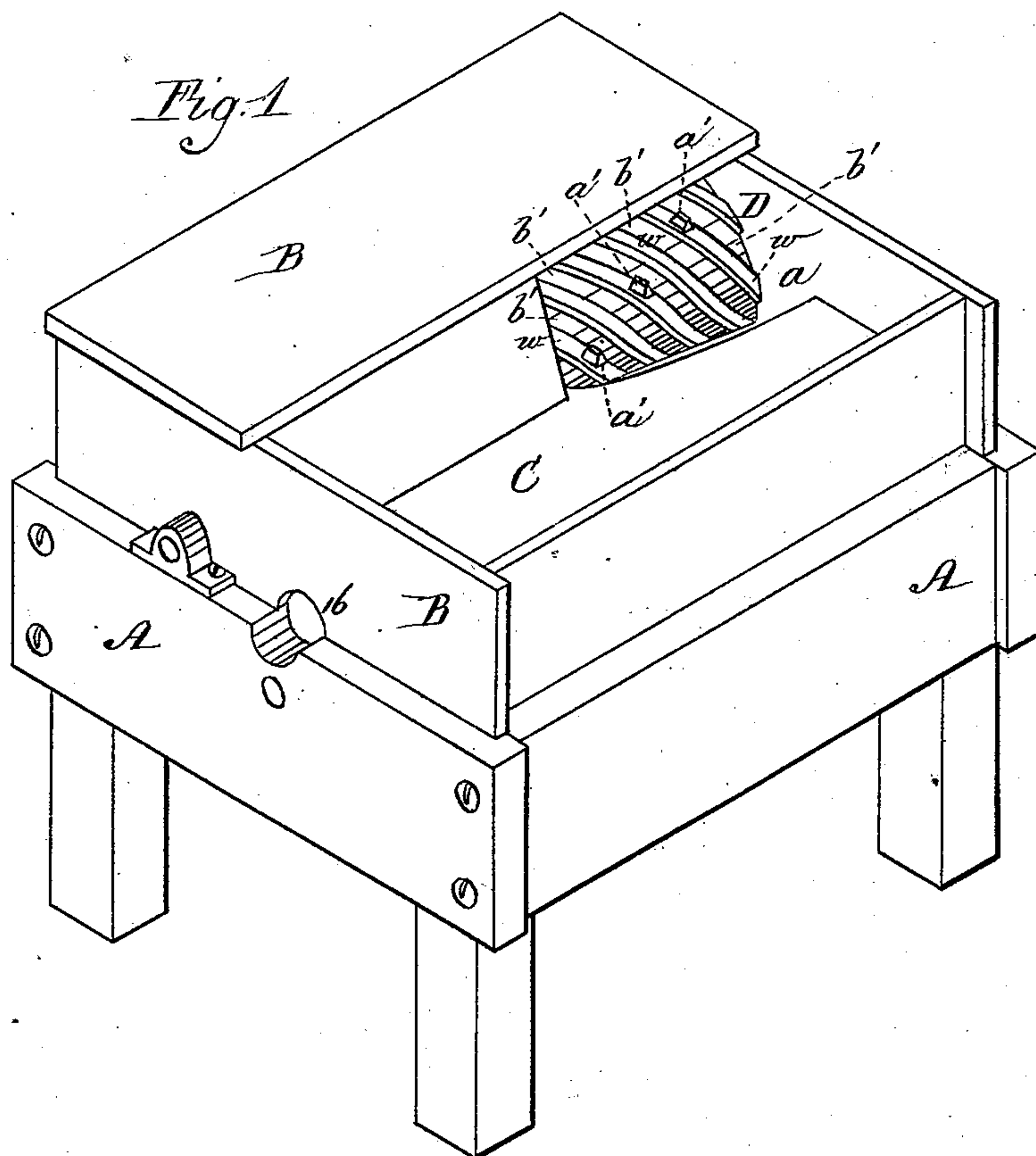


J. W. RICKER.
Corn-Sheller.

No. 226,627.

Patented April 20, 1880.



Witnesses:

W. J. Cambridge,
Edward C. Petta.

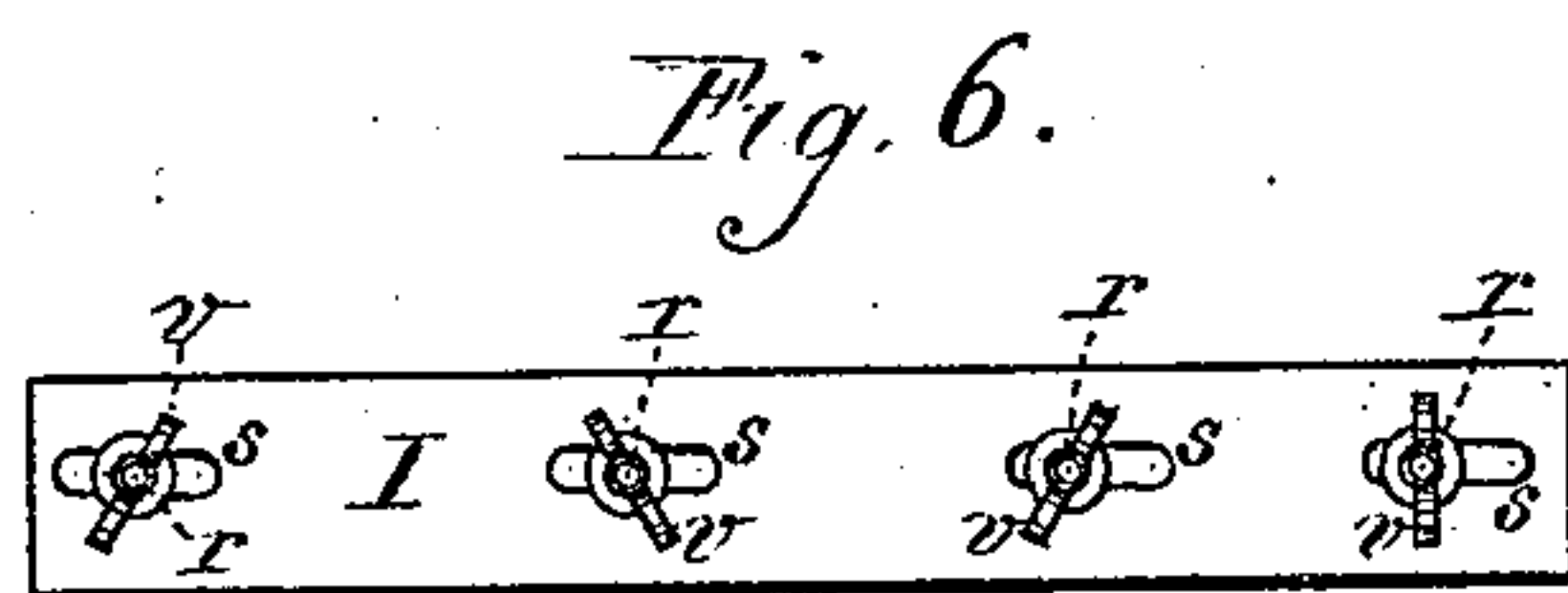
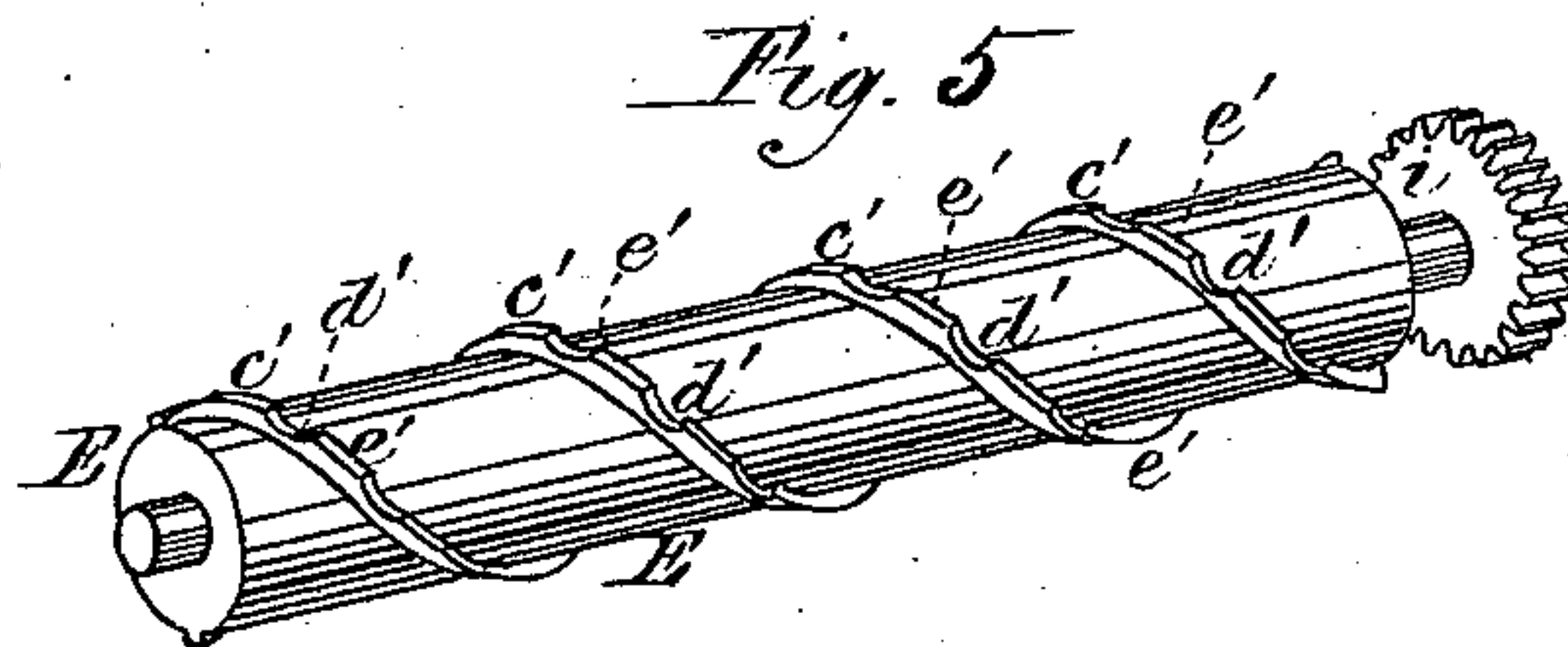
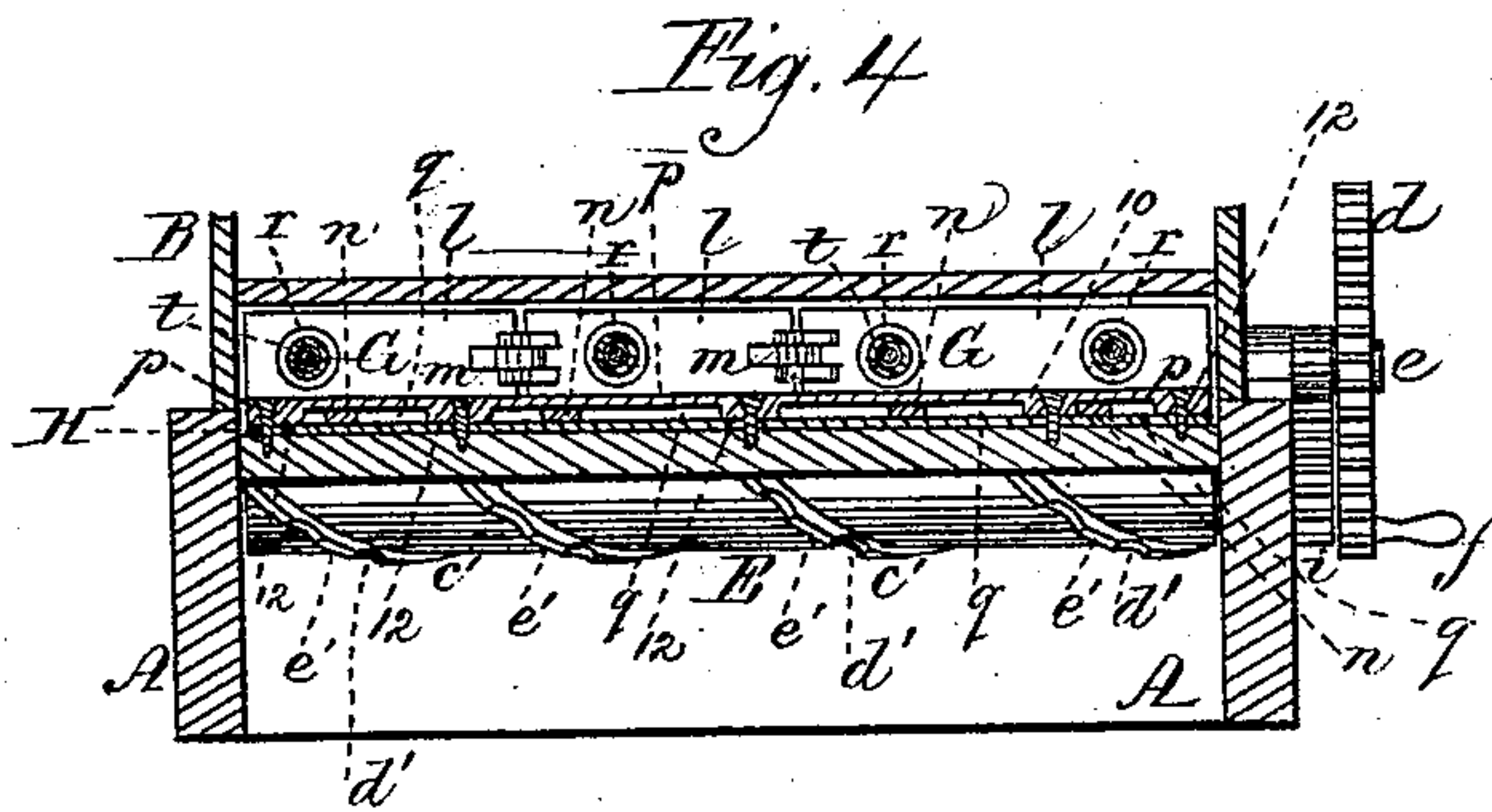
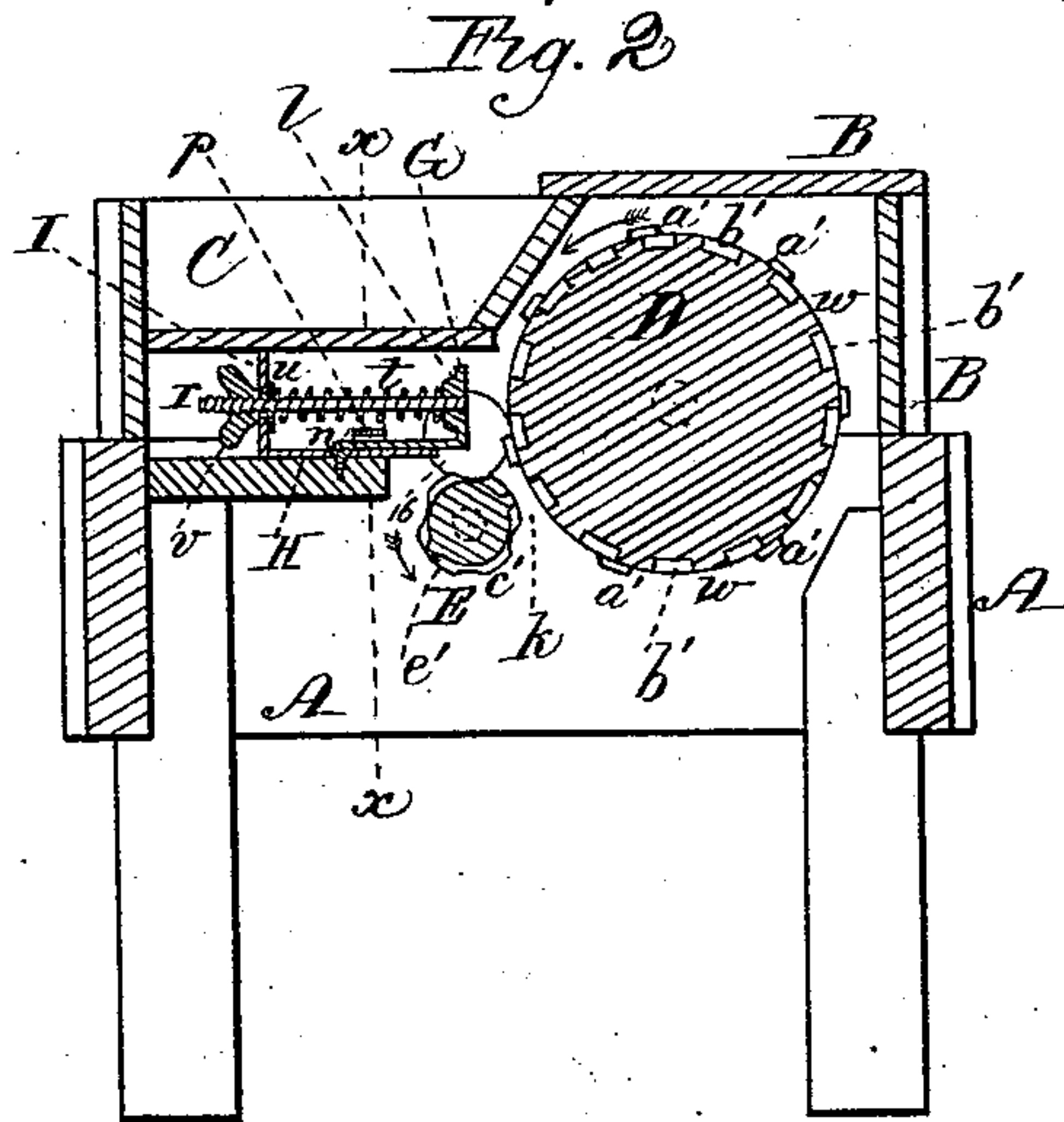
Inventor:

John W. Ricker,
per J. C. Teschemacher,
Atty.

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UNITED STATES PATENT OFFICE.

JOHN W. RICKER, OF CHELSEA, MASSACHUSETTS.

CORN-SHELLER.

SPECIFICATION forming part of Letters Patent No. 226,627, dated April 20, 1880.

Application filed February 12, 1880.

To all whom it may concern:

Be it known that I, JOHN W. RICKER, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain Improve-
5 ments in Corn-Shellers, 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 perspective view of my improved corn-sheller. Fig. 2 is a transverse
10 vertical section through the same. Fig. 3 is a plan of the same with the top of the casing removed. Fig. 4 is a vertical section on the line *x x* of Figs. 2 and 3. Fig. 5 is a perspective
15 view of the auxiliary cylinder or feed-roll; Fig. 6, detail.

My invention consists in the construction and arrangement of devices, as hereinafter described, and specifically pointed out in the
20 claim.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

25 In the said drawings, A represents the outer casing of the machine, which is provided with a removable top or cover, B, in the front portion of which is formed a hopper or receptacle, C, for the ears of corn, which pass down through
30 the aperture *a*, Fig. 1, to be acted upon by the shelling-cylinder D, which removes the kernels or grains from the cob.

To one end of the shaft of the cylinder D, outside the casing A, are secured two gears,
35 *b c*, the latter engaging with the teeth of the driving-wheel *d*, which is revolved on a stud, *e*, by means of the crank or handle *f*, for the purpose of rotating the shelling-cylinder. The inner gear, *b*, engages with an intermediate
40 gear, *g*, which revolves on a stud and meshes with another gear, *i*, on the end of the shaft of an auxiliary cylinder or feed-roll, E, which is thus revolved simultaneously with the cylinder D, the cylinder E being arranged oppo-
45 site to and parallel with the cylinder D, and at a short distance below its center, a throat or space, *k*, being formed between the two cylinders for the passage of the kernels of corn to a receptacle beneath. (Not shown.)

50 The ears of corn are pressed firmly up against

the shelling-cylinder D, and kept constantly in contact therewith, during their passage through the machine, by means of a pressure-plate, G, which is composed of sections *l*, jointed
together at *m*, each section being provided at 55 its bottom with one or more projecting fingers, *n*, which extend under a guide-bar, *p*, secured to a plate, H, attached to the casing A, this bar *p* having projections 10 12 on its under
side, which raise it up sufficiently from the 60 plate H to allow of the free horizontal movement of the fingers *n* within the spaces *q* between the bar *p* and plate H. These fingers allow the sectional plate G to be moved freely
toward or from the cylinder D, but prevent it 65 from being thrown up out of its proper working position.

To the rear of the sections *l* are firmly secured rods *r*, which project out at right angles therefrom and extend out through slots *s*, Fig. 70 6, in a vertical plate, I, secured to the edge of the plate H, each rod *r* being surrounded between the plates G and I by a spiral spring, *t*, one end of which bears against a projection on the plate G and the other end against a washer, 75
u, which prevents the spring from being forced into the slot *s*. The outer ends of these rods *r* are provided with screw-threads, over which fit thumb-nuts *v*, by means of which the tension on the springs is regulated and the dis- 80
tance of the pressure-plate G from the cylinder D varied in accordance with the kind or variety of corn being shelled.

A jointed pressure-plate constructed as above described, each section having an inde- 85
pendent spring or springs, will readily adjust itself to the form and size of the ear of corn as it passes along, whether entered point or butt first, and will hold it squarely against the shelling-cylinder in such a manner as to insure 90
the complete and perfect stripping or separation of all of the grains or kernels from the cob with great rapidity, while much less spring-pressure is required to do the work than where a single rigid pressure-plate is employed, and 95
consequently the power required to operate the machine is proportionately reduced.

The first one of the sections *l* of the plate G, which lies beneath the aperture *a* in the hop-
per C, is set, by means of its thumb-nuts *v*, at 100

an angle to the axis of the cylinder D, to facilitate the admission of the ear as it drops through the aperture *a*, and it will be seen that the slots *s* in the plate I allow of the free lateral movement of the rods *r* as the sections of the pressure-plate adjust themselves to the shape and size of the passing ear of corn. The first finger of the first section *l* of the plate G bears against the projection 10, Fig. 4, of the bar *p*, which serves as a stop to prevent the plate G from being moved out of place in the direction of the length of the cylinder D by the friction of the ears of corn passing in contact with its face.

I prefer to use a plate, G, composed of three jointed sections, with a shelling-cylinder, D, of about two feet in length; but the length of the cylinder may be varied, and also the number of sections. I have found, however, that with an increased number of jointed sections less tension is required on the springs *t*, which diminishes the friction and enables the machine to be operated more easily and with less power.

The shelling cylinder or drum D is provided on its surface with a series of spiral or helical ribs, *w*, which act upon the ear of corn and assist in carrying or feeding it through the machine in the direction of the arrow, Fig. 3, and discharging it through the aperture 16.

Each of the alternate ribs *w* has projecting from its upper surface picker-teeth *a'*, which serve to strip or separate the kernels or grains of corn from the cob as the cylinder D is rotated, the kernels passing down through the throat *k* out of the machine. Each of the ribs may be provided with picker-teeth *a'*, or only a portion of them, as may be desired, and these teeth are preferably arranged in spiral rows, in order to assist in feeding forward the ear.

By the employment of the spiral ribs *w* a great advantage is gained, as grooves or channels *b'* are formed between the ribs, which afford a free passage for and facilitate the escape of the kernels after they are separated from the cob without having to diminish the width

of the throat *k*; and by this construction the liability of the kernels being crushed or broken in their passage through the throat *k* or the machine being clogged or obstructed by an accumulation of shelled corn in the throat is entirely avoided.

The auxiliary cylinder or feed-roll E is provided with spiral or helical ribs *c'*, which act upon the ear of corn held between the shelling-cylinder D and pressure-plate G, and serve, in connection with the spiral ribs *w* of the cylinder D and teeth *a'*, to carry or feed it rapidly through and out of the machine in the direction of the arrow, Fig. 3, while the picker-teeth *a'* are removing the kernels therefrom.

The ribs *c'* are each provided with notches *d'*, which thus form teeth *e'*, which materially assist in stripping the kernels from the cob, while these spiral ribs *c'* with their teeth tend to keep the cob from being drawn down and wedged between the cylinders D and E, for the reason that as the cylinder E is rotated the teeth *e'* strike against the under side of the cob and lift it away from the shelling-cylinder D, which function would not be performed by an auxiliary cylinder or roll having a plain smooth surface, and consequently by the employment of an auxiliary cylinder constructed as above described the wedging of the cob between the cylinders and the consequent clogging of the machine from this cause is effectually prevented.

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

In a corn-sheller, the sectional jointed pressure-plate G, with its guide-fingers *n* and rods *r*, in combination with the plate H and its bar *p*, the springs *t*, thumb-nuts *v*, and the plate I, with its slots *s*, all constructed to operate substantially as and for the purpose described.

Witness my hand this 10th day of February, A. D. 1880.

JOHN W. RICKER.

In presence of—

P. E. TESCHEMACHER,
W. J. CAMBRIDGE.