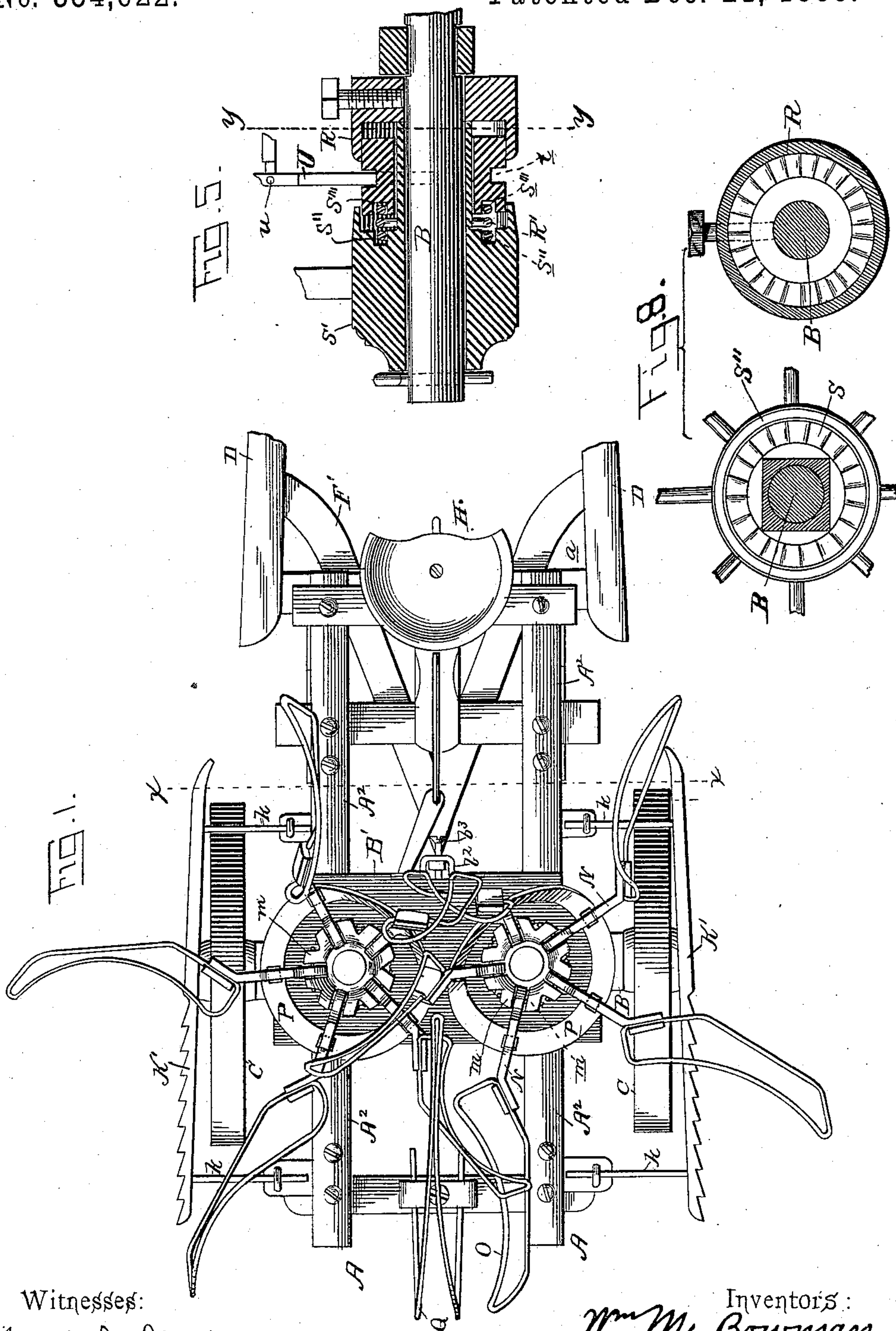


3 Sheets—Sheet 1.

## BROOM CORN TABLER.

Patented Dec. 21, 1886.



Witnesses:  
Morris A. Clark  
R. W. Bishop.

Inventors:  
Wm. M. Bowman  
Lewis N. Bowman  
By their Attorneys:  
R. B. & A. Lacey

(No Model.)

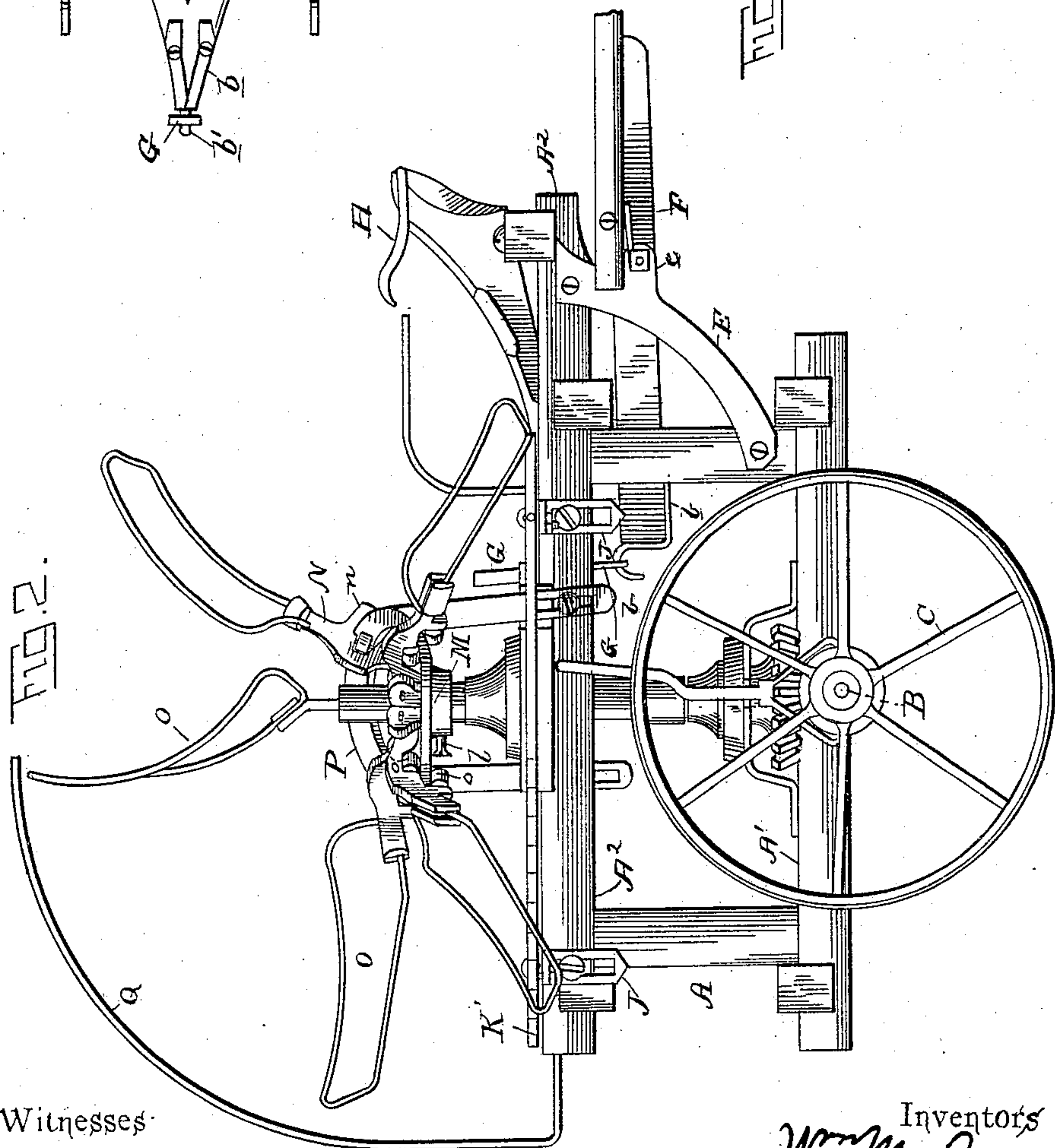
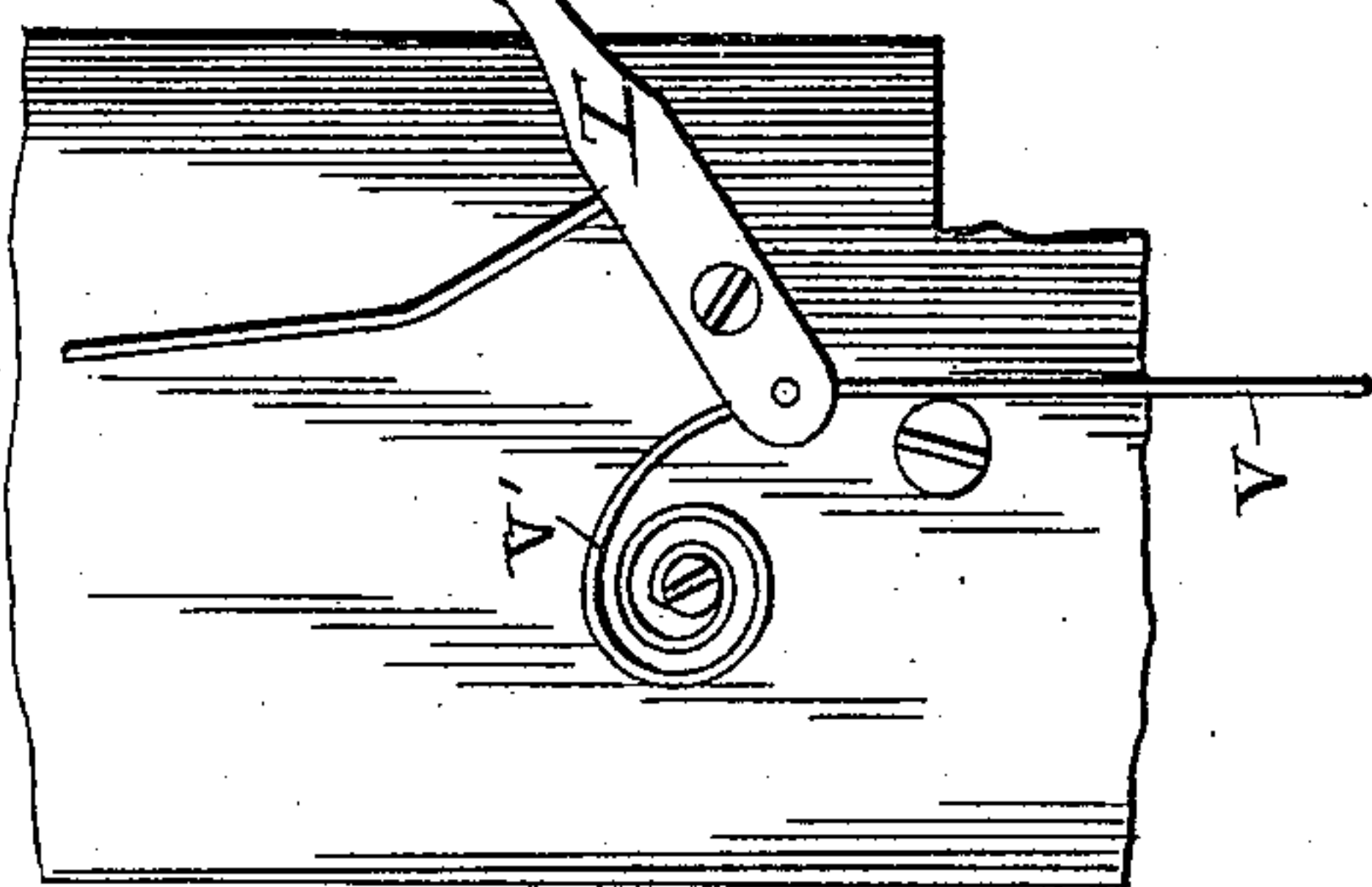
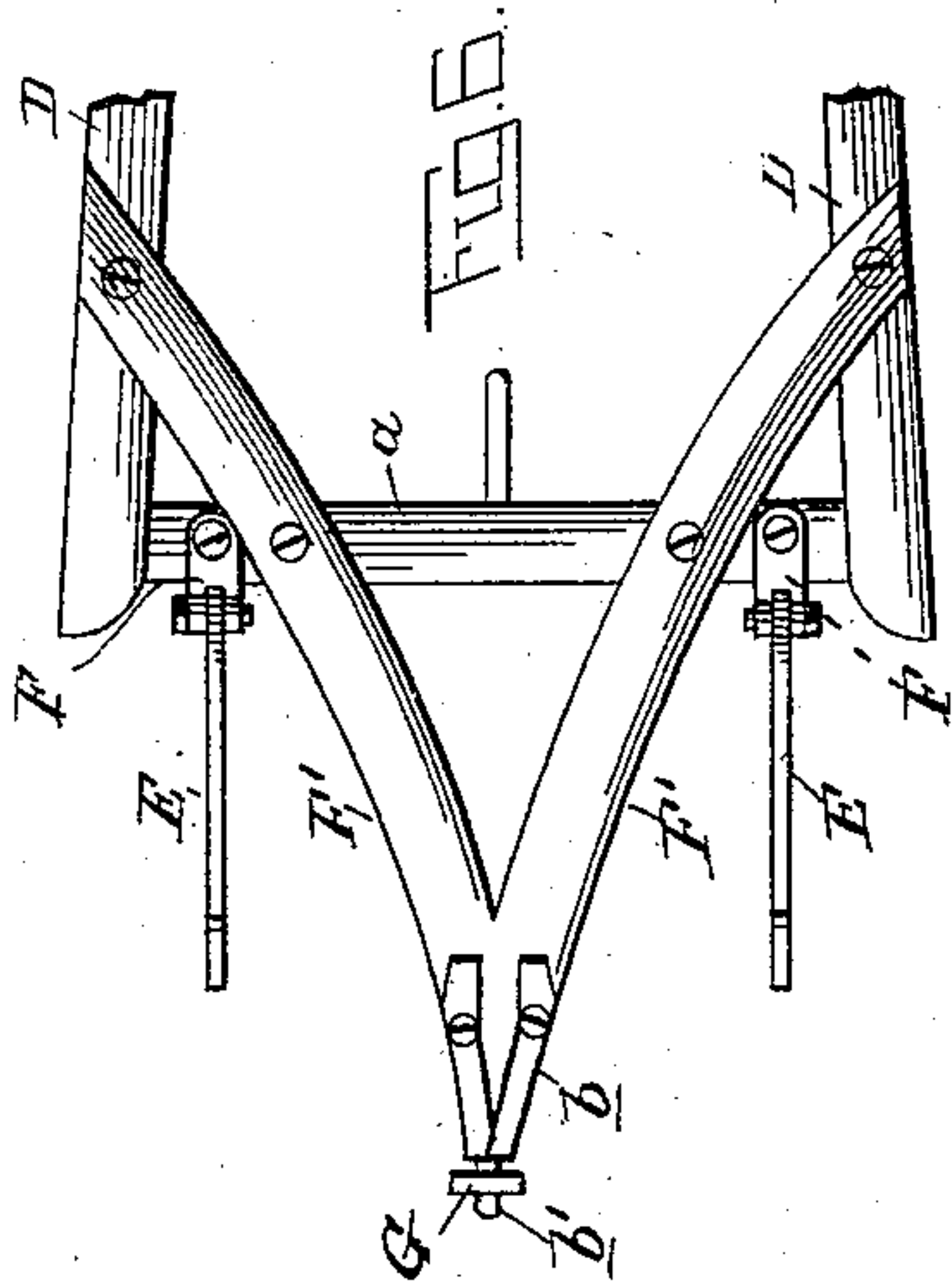
3 Sheets—Sheet 2.

W. M. & L. N. BOWMAN.

BROOM CORN TABLER.

No. 354,622.

Patented Dec. 21, 1886.



Witnesses:

Morris A. Clark

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(No Model.)

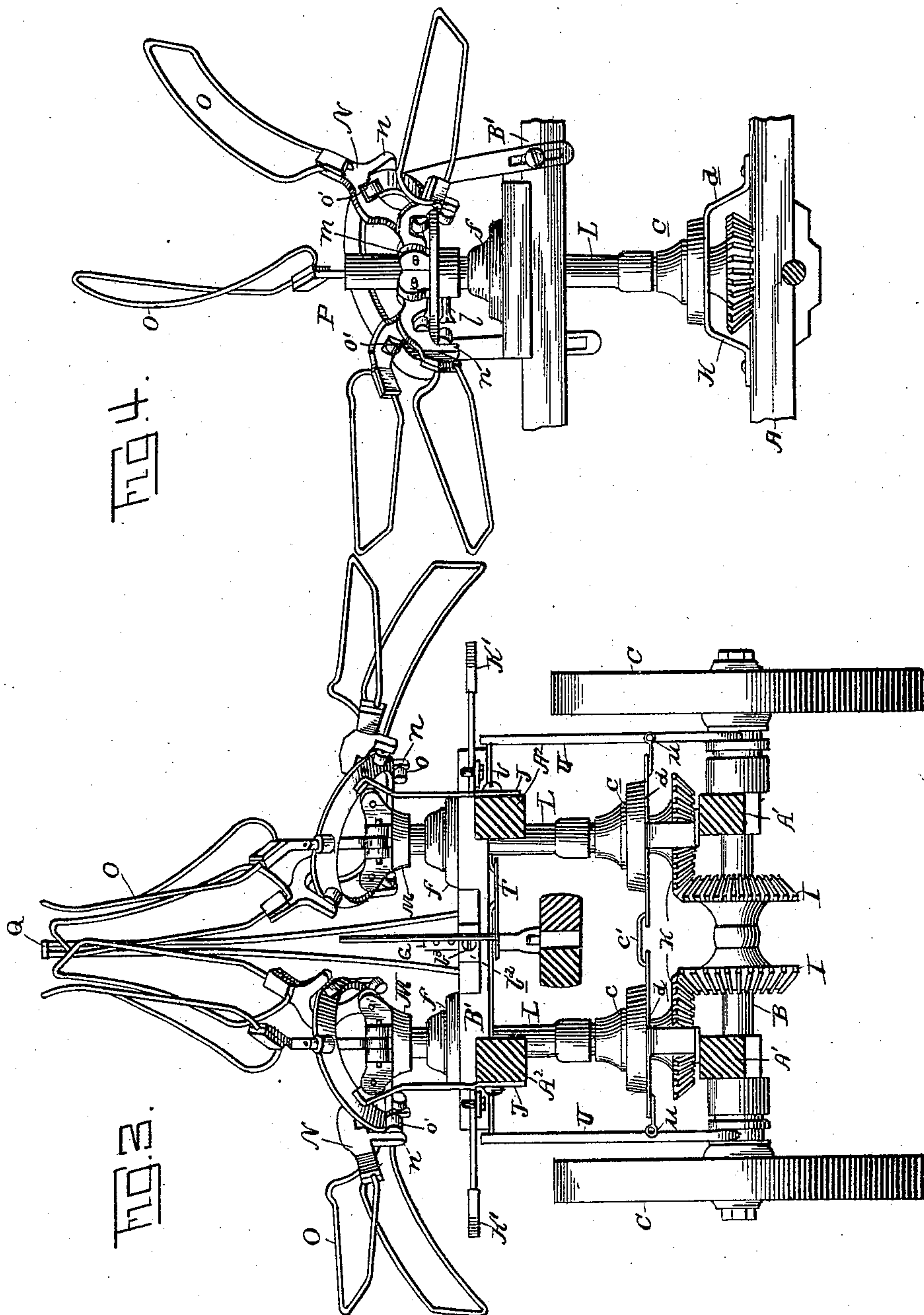
3 Sheets—Sheet 3.

W. M. & L. N. BOWMAN.

BROOM CORN TABLER.

No. 354,622.

Patented Dec. 21, 1886.



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Lewis N. Bowman  
By their Attorneys:  
R. B. & A. Lacey



# UNITED STATES PATENT OFFICE.

WILLIAM M. BOWMAN AND LEWIS N. BOWMAN, OF LINCOLN, MISSOURI.

## BROOM-CORN TABLER.

SPECIFICATION forming part of Letters Patent No. 354,622, dated December 21, 1886.

Application filed October 28, 1885. Serial No. 181,142. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM M. BOWMAN and LEWIS N. BOWMAN, citizens of the United States, residing at Lincoln, in the county of Benton and State of Missouri, have invented certain new and useful Improvements in Broom-Corn Tablers; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in corn-harvesting machines, and more particularly to what we have termed a "broom-corn tabler."

The object of our invention is to construct a machine by which this process may be carried on expeditiously and at a minimum of expense; and to this end and to such others as the invention may pertain it consists in the peculiar combination and the novel construction and arrangement of parts, as hereinafter more fully described, and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings, and letters of reference marked thereon, forming part of this specification, and in which—

Figure 1 is a plan view of our improved tabler. Fig. 2 is a side elevation of the same. Fig. 3 is a cross-section on the line *xx*, Fig. 1. Fig. 4 is a detail perspective. Fig. 5 is a sectional detail showing one form of clutch. Fig. 6 is a bottom plan of the shafts, braces, coupling-bar, &c. Fig. 7 is a detail, more particularly referred to hereinafter. Figs. 8 are sections on the line *yy* of Fig. 5, looking in opposite directions.

Referring to the drawings by letter, A designates a suitable frame, comprising upper and lower side rails,  $A^2 A'$ , respectively, braced by uprights and cross-bars, substantially as shown, journaled in suitable bearings, in which is the main axle B, carrying the traction-wheels C C.

D are the shafts, connected at the rear end by the cross-bar *a*.

E are braces, attached at one end to the up-

rights of the frame and at the other end to the upper rails,  $A^2$ . Each of these braces is provided with an offset, *e*, in which is pivoted one end of a link, F, its other end being attached to the cross-bar *a*, as shown.

The diagonal bars  $F'$  are secured to the shafts and cross-bar, and at their point of union are strengthened by the forked plate *b*, terminating in a hook, *b'*, which engages the lower end of the vertical bar G, which passes through the guide  $b^2$ , secured to the front edge of the platform  $B'$ , and is adjustable therein, a pin,  $b^3$ , being provided to fit in holes in the bar to hold the same in its adjusted position. By the means just described the shafts can be raised or lowered to accommodate horses of different heights.

H is the driver's seat, suitably supported on the main frame.

I are beveled pinions, carried by the main axle and meshing with the beveled pinions K, carried by the vertical shafts L. These shafts pass through the sleeves *c*, secured to and supported by the spiders *d*, secured to the frame A, and through similar sleeves, *f*, secured to the platform  $B'$ . The inner arms of these spiders *d* are joined together by any suitable means, as shown at *c'*.

J are brackets adjustably secured to the upper side rails of the frame A.  $K'$  are guide-rails or break-bars provided with arms *k*, by which they are adjustably secured to the said brackets. These arms are of sufficient length to extend the said rails beyond the frame, as shown. These rails are provided on their outer faces with teeth, the object of which will soon be explained.

Secured to the top of the shafts L are the sleeves M, each of which is provided with a series of lugs, *m*, between each two of which is pivoted an arm, N, to the outer end of which is secured a curved rake-arm or beater-finger, O. The sleeves M are secured rigidly to the shafts L by set-screws *l* in such manner that they revolve therewith, but can be adjusted to a higher or lower level, corresponding with the adjustment of the toothed rails  $K'$  and cams P when the latter are adjusted to correspond with the height of grain to be tabled.

Adjustably secured to the frame and ar-



ranged above the platform B', as shown, are the cam-rings P. Each of the arms N is provided with a downwardly-projecting lug, *n*, and to each of these lugs there is journaled a friction-roller, *o*, designed to travel on the under surface of this cam-ring. *o'* are similar rollers, journaled on the arms N, and designed to travel on the upper surface of said cam-rings.

Q is a guard secured to the rear end of the frame A, and extending upward and forward, and is intended to prevent the corn acted upon by the fingers O from falling into and clogging or choking the other parts of the machine.

Near each end of the main axle we provide a clutch, by means of which and the lever and connections the machine may be thrown into and out of gear, as desired. While any kind of clutch will serve the purpose, we prefer to use the spring-actuated clutch shown in Fig. 5, to which particular attention is called, and in which R is a sleeve, secured to the axle B in any suitable way, so as to revolve therewith. In the drawings we have shown it as secured by an ordinary set-screw; but of course we do not intend to limit ourselves to such means. The sleeve S is feathered on the hub S', and is provided with ratchet-teeth adapted to engage the ratchet-teeth on the interior of the sleeve R.

R' is a coil-spring, held in place between the end of the sleeve S and the hub by being inserted in the annular grooves S'' S''' in said sleeve and hub, respectively. A groove, *t*, is formed in the sleeve S, and into this groove fits the forked or bifurcated end of the lever U, fulcrumed at *u* on one arm of the spider *d*, its other end being connected by the rod or link V to the hand-lever T, pivoted to the under side of the platform B'.

While we have described but one clutch and one lever and connecting rod or link, it will be understood that there are two, one at each side of the machine, as clearly shown in Fig. 3, so connected and arranged that they are operated simultaneously by one movement of the hand-lever.

Instead of the coil-spring R', arranged between the sleeve and hub, as above described, we sometimes dispense with said spring and extend one of the connecting-rods V to form a spring, V', as shown in Fig. 7, the end of which is fastened to the under side of the platform B'. One end of the lever T is connected with this spring, as shown, the other connecting-rod being attached to said lever on the other side of its pivoted point, so that the moving of said lever in one direction or the other will throw the clutches simultaneously into or out of operation.

The cam-rings have a substantially horizontal portion and a gradually-inclined portion, and are so arranged in relation to each other that the beater-fingers in their revolution clear each other, as will be readily understood.

The operation of our machine is as follows: As the machine is drawn along, the draft ani-

mal or animals traveling between the rows of broom-corn, the vertical shafts are revolved by means of the beveled pinions, as described. These shafts carrying the beater-fingers, the latter necessarily revolve with them, and these beaters break or beat down the tops of the broom-corn over the break-bars K, which serve as rests for the standing stems or stalks while the beaters act upon them. The beater-fingers work or rotate underneath the guide Q, which latter prevents the stems or stalks from becoming entangled with or wrapping around the beaters and clogging up and preventing the successful operation of the machine. The beater-fingers, by means of the construction of the cam-rings and their arrangement, are so arranged that they clear each other in their revolution, as will be readily understood. It is preferable to have the beater-fingers strike the corn obliquely, and for this reason the break-bars are shown at an inclination to the sides of the frame; but said bars can be readily adjusted to bring them parallel with the frame when desired.

While we have shown two break-bars and two sets of breaker-fingers, whereby two rows of broom-corn may be tabled simultaneously, one upon each side of the machine, we do not intend to limit ourselves to such, as it is evident that one break-bar and one set of beater-fingers may sometimes be used, and still embody the spirit of our invention.

The clutch-lever is within convenient reach of the driver's seat, and by its manipulation the machine may be thrown into or out of gear at will.

By making the breaker-bars adjustable to and from the sides of the frame the machine may be used to operate on rows of broom-corn of varying distances between the rows, and by making the break-bars and the cam-rings adjustable vertically and pivoting the arms that carry the beater-fingers, the same may be made to break the stems at a greater or less distance from the ground, as may be desired. By providing the back bars with teeth a more extended surface is presented, and the grain is prevented from slipping out of the path of the beaters.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, with the break-bars arranged one upon each side of the machine, the vertical shafts, and beater-fingers carried thereby and arranged to clear each other in their revolutions, as set forth, of the guard Q, secured to the rear end of the frame and extended upward and forward directly over the adjacent beaters, substantially as and for the purpose described.

2. The combination, with the frame, the spiders *d*, the vertical shafts L, pinions K, secured thereto, and the main axle carrying pinions I, of clutches on said axle, levers acting on said clutches pivotally supported by the spiders, the hand-lever T, and rods con-



necting the levers with the hand-levers, one of said rods being secured to the under side of the platform B' and coiled to form a spring, substantially as and for the purpose specified.

5 3. The combination, with the frame A, the braces E, provided with offsets e, the shafts, and the diagonal bars F', of the links F, secured at one end to the cross-bar of the shafts and their other ends pivoted in the offsets e,  
10 the hook b', secured to the inner ends of the

bars E', and the bar G, adjustably secured to the frame, substantially as and for the purposes set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM M. BOWMAN.

LEWIS N. BOWMAN.

Witnesses:

J. P. ALLEN,

J. F. BROWN.