(No Model.) 2 Sheets—Sheet 1.

G. N. TODD.

COTTON HARVESTER.

No. 457,329. Patented Aug. 4, 1891.

Fig. 1.

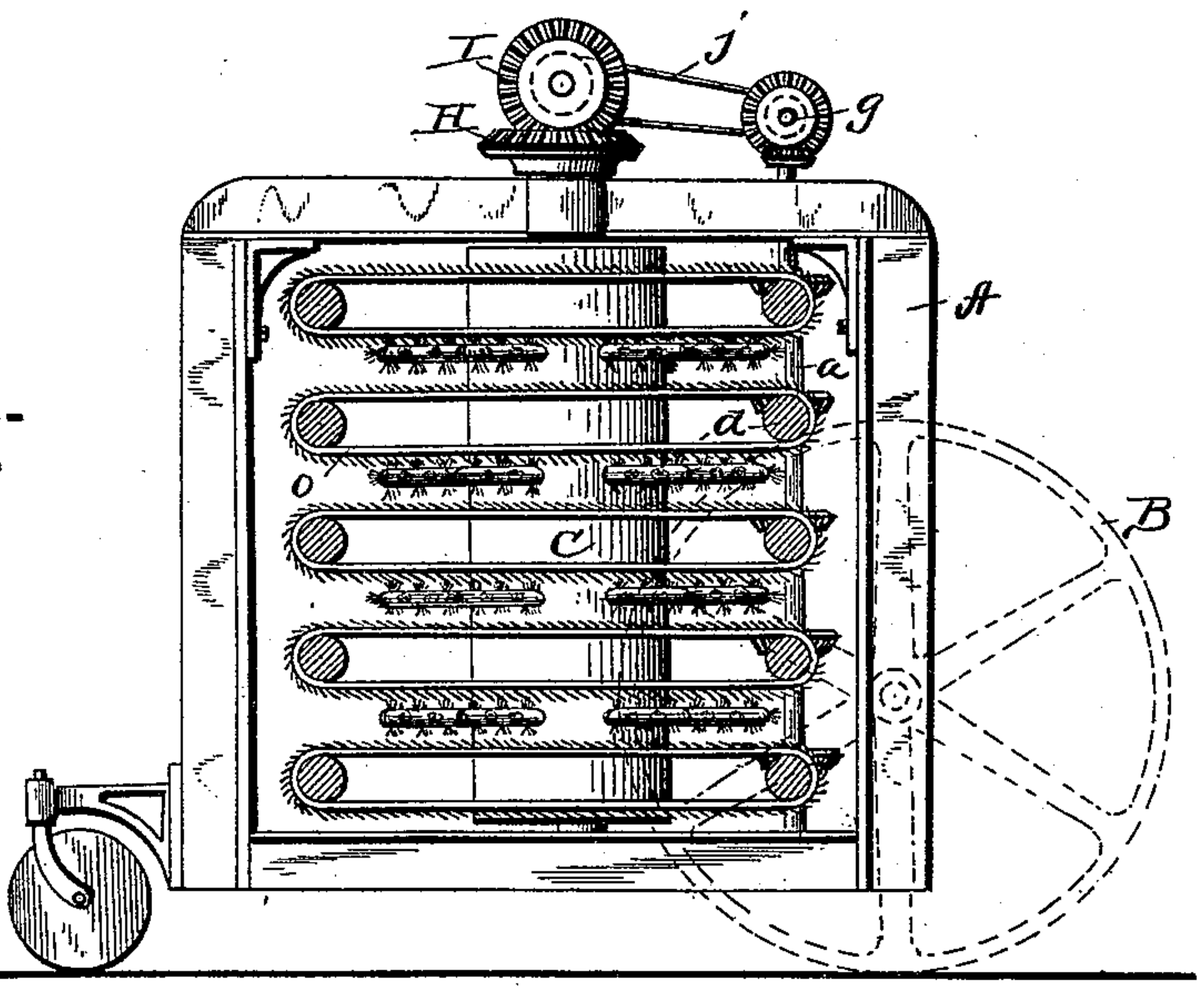
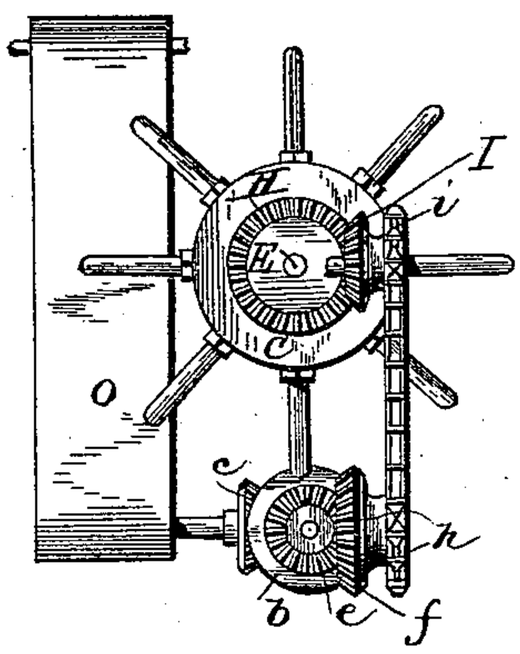


Fig. 3.



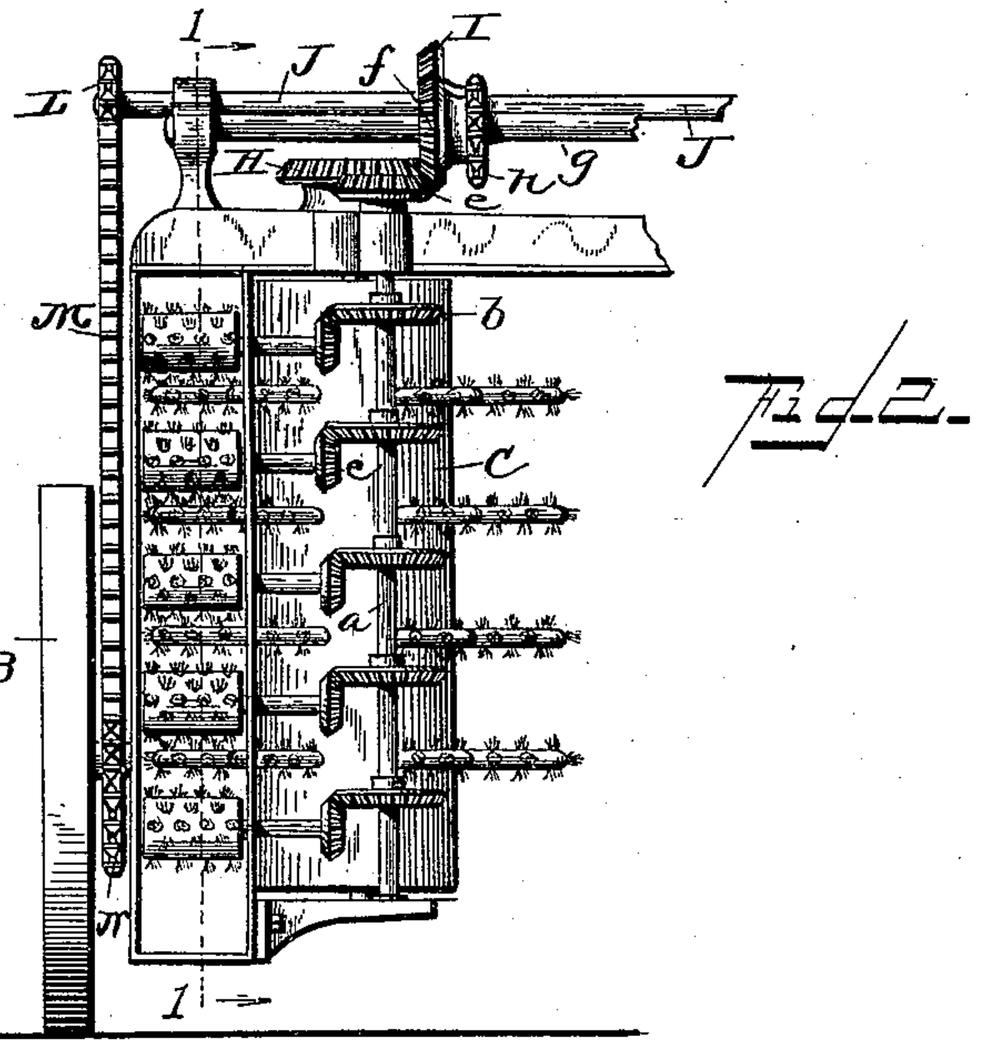


Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

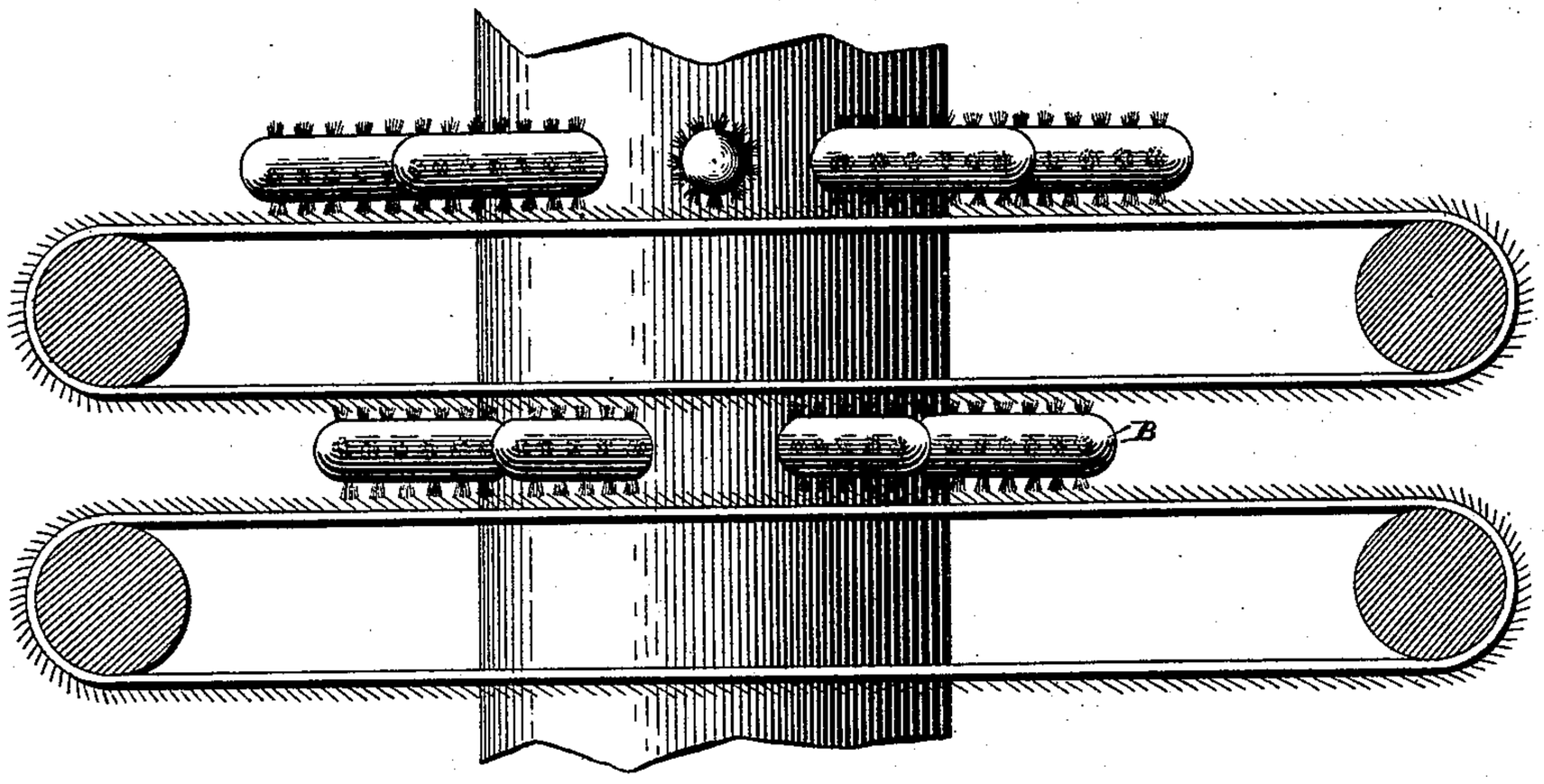
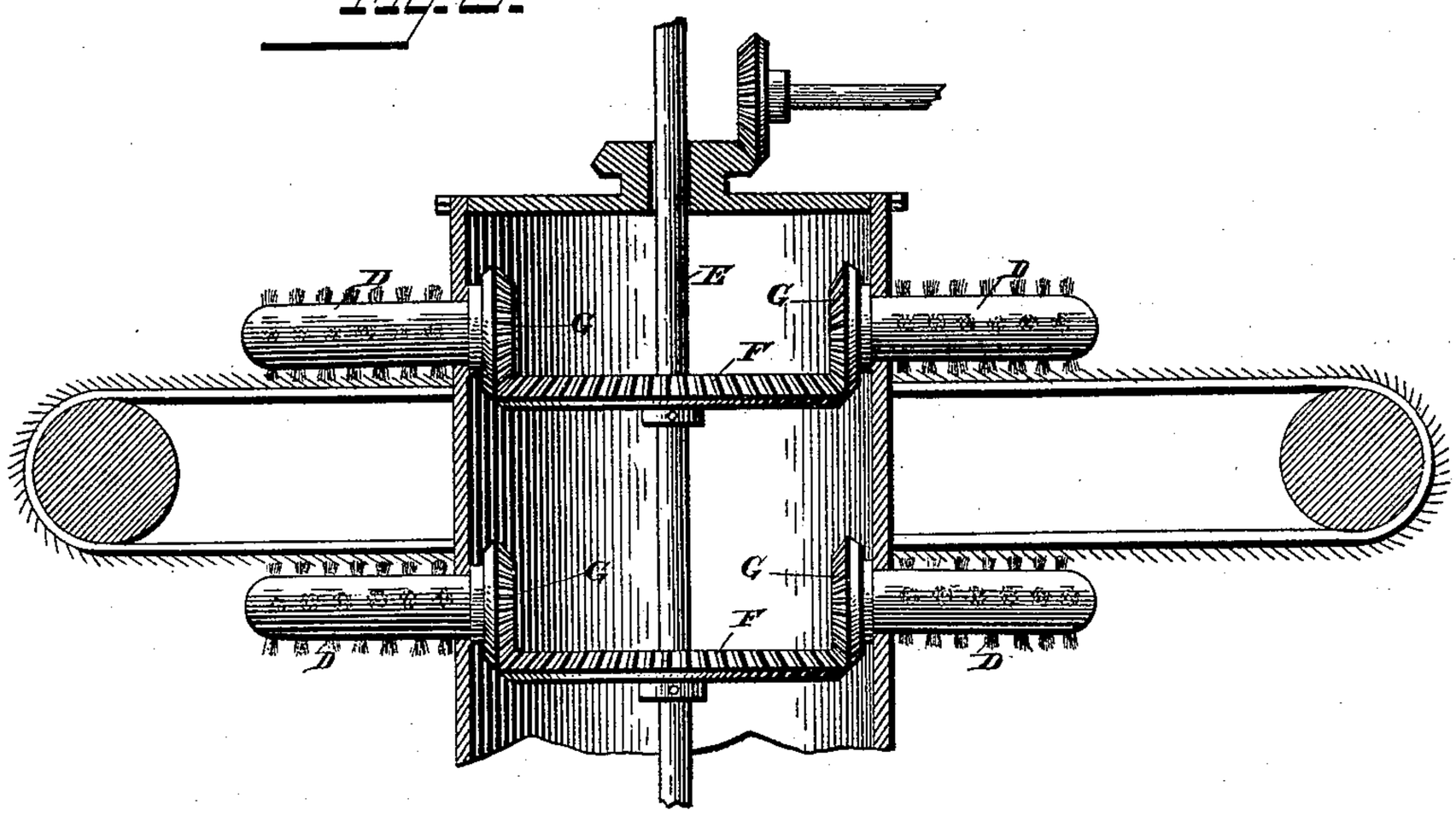


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE N. TODD, OF CHICAGO, ILLINOIS.

COTTON-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 457,329, dated August 4, 1891.

Application filed September 27, 1889. Serial No. 325,295. (No model.)

To all whom it may concern:

Be it known that I, GEORGE N. TODD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cotton-Harvesters, of which the following is a full, clear, and exact specification.

This invention relates to improvements in cotton-harvesters, in which a series of rotatable picker-stems are journaled in and project radially from an upright revolving cylinder or support, the said picker-stems being caused to rotate continuously in one direction upon their individual axes through the medium of pinions upon the inner ends thereof meshing with fixed internal gears, which form of machine is fully described and claimed in my application for Letters Patent of the United States, Serial No. 143,953, filed on the 25th day of September, A. D. 1884.

The object of this invention is to provide a simple and effective means for removing the gathered cotton from picker-stems when so operated and while out of engagement with the cotton plants, whereby is avoided the necessity of reversing the direction of rotation of the picker-stems in order to discharge the cotton, and the stems may be rotated continuously in one direction. This object is attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section through a cotton-harvester embodying my invention, on the line 1 1 of Fig. 2, looking in the direction indicated by the arrows; Fig. 2, a rear elevation of a half of the machine, more clearly showing one form of mechanism for operating the cleaner devices; Fig. 3, a detail plan view of the operative parts of my machine with the frame-work removed; Fig. 4, an enlarged side elevation of a portion of the picker-stem supports and cleaner-belts, more clearly illustrating the relative location and operation thereof; Fig. 5, an enlarged central section through the picker-stem support.

Similar letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A indicates the frame of my machine supported upon ground-wheels B, of any suitable character or arrangement, and carrying a vertical drum or cylinder C, loosely journaled therein and constituting a support for picker-stems D, arranged in horizontal series about and projecting radially from the support. This drum is centered upon and revolves loosely about a fixed central shaft E, secured rigidly to the frame of the machine in any well-known and convenient manner, upon which shaft is mounted a series of beveled annular gears F, adapted and arranged to mesh with and drive correspondingly-beveled pinions G, secured to the inner ends or journals of the picker-stems.

The drum or cylinder C may be caused to rotate in any suitable manner, a simple form of mechanism for accomplishing this end being illustrated in the drawings, consisting of a beveled gear H, secured to the upper end of the drum, with which meshes a corresponding beveled gear I, mounted upon a cross drive-shaft J, suitably journaled upon the frame of the machine, upon the outer end of which is mounted a sprocket-wheel L, driven by a sprocket-chain M, working over a sprocket-wheel N, secured to the ground or drive wheel B.

So much of the machine as has been described forms no part of the present invention, except for the purpose of producing the bodily travel and axial rotation of the picker-stems, it having been previously described in my hereinbefore-mentioned application. These picker-stems are passed into the cotton-plants in the opposite direction from the travel of the machine, where they gather the cotton and then pass forward while out of the plants to be relieved of the gathered cotton, and to accomplish this end I provide a series of horizontal belts O, arranged at one side of the machine in a suitable compartment, occupying the spaces between the horizontal series of picker-stems, which belts are driven in the same direction as the stems move bodily, but at a greater speed than the peripheral travel of the stems, in order to strip the gathered cotton therefrom, it being understood that while I have shown in the drawings a bristle-like picking-surface for the stems this surface may be composed of any other form of teeth, metallic or otherwise, that will engage

the fibers of the cotton. These belts may be arranged so as to have one belt for each horizontal series of stems, or a single belt may be employed for cleaning two sets or series of stems, for with the stems all rotating in the same direction and the two parts of the belt traveling in opposite directions between the series—that is, one below and the other above a series—the proper direction of travel of the belt relative to the picker-stems will be preserved. These belts may be driven by any suitable mechanism; but for the purpose of illustration I have illustrated one form of belt-operating mechanism consisting of a line-shaft *a*, suitably journaled in the frame of the machine and having mounted thereon a series of beveled gears *b*, meshing with and driving corresponding beveled gears secured to the ends of the journals of the rollers *d* at one end of the belt, to the upper end of which shaft is secured a beveled gear *e*, with which meshes another beveled gear *f*, mounted upon a counter-shaft *g*, journaled in the frame of the machine. This counter-shaft is in turn driven by means of a sprocket-wheel *h* thereon and another sprocket-wheel *i* upon the main drive-shaft J, over which wheels works a sprocket-chain *j*, communicating the rotary motion of the main to the counter shaft.

It will be observed that the relation and sizes of the various gears are such that the belts will have imparted thereto a faster travel than the peripheral travel of the picker-stems; and it will of course be understood that the cleaner-belts will be brought in contact with that surface of the stems which moves in the direction the stems are moving around the cylinder where a separate belt operates upon each series of stems; but where a single belt operates upon two series of stems this arrangement cannot and need not be preserved. The cotton will be discharged from the ends of the cleaner-belts by the combined action of gravity and centrifugal force, and may be there received and removed to any suitable receptacle carried by the machine.

The vertical rotating support carrying the rotatable picker-stems projecting radially therefrom and the series of separate belts for removing the cotton from the stems, such as is herein described, were illustrated and described in an application for Letters Patent of the United States filed by me on or about the 23d day of June, A. D. 1885, Serial No. 169,498, but were not specially claimed therein, other forms of cleaner devices being also illustrated in said case, and the whole covered by the generic claims, and this application is therefore made for the purpose of embodying specifically the features set forth in my aforesaid application.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a cotton-harvester, the combination of a vertical revolving cylinder, radially-projecting picker-stems carried by said cylinder, mechanism for rotating said stems upon their own axes, a series of cleaner-belts, and mechanism for imparting to said belts a movement in the same direction as the stems, the belts being made to move more rapidly than the combined motion of the stems, substantially as described.

2. In a cotton-harvester, the combination of a vertical revolving cylinder, radially-projecting picker-stems carried by the cylinder, mechanism for revolving the stems upon their own axes, a series of cleaner-belts arranged over the stems and moving in the same direction, and mechanism for operating the belts and moving them more rapidly than the combined motions of the stems.

GEORGE N. TODD.

Witnesses.
W. R. OMOHUNDRO,
A. L. MORSELL.