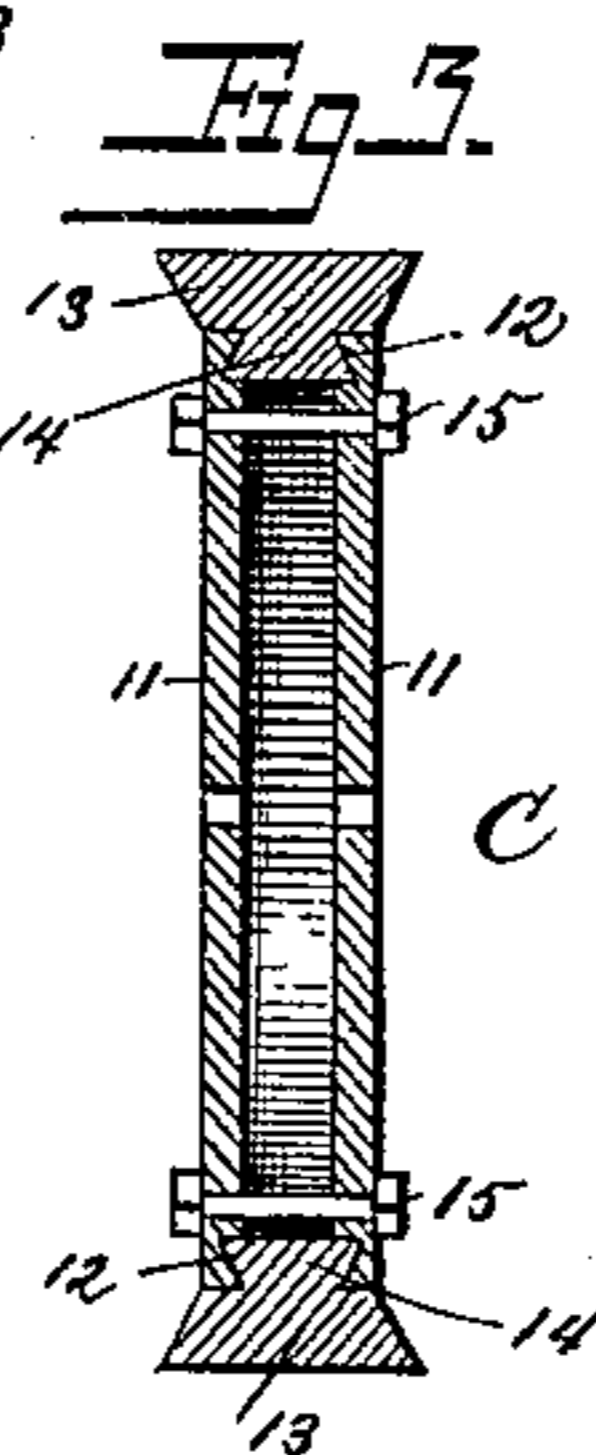
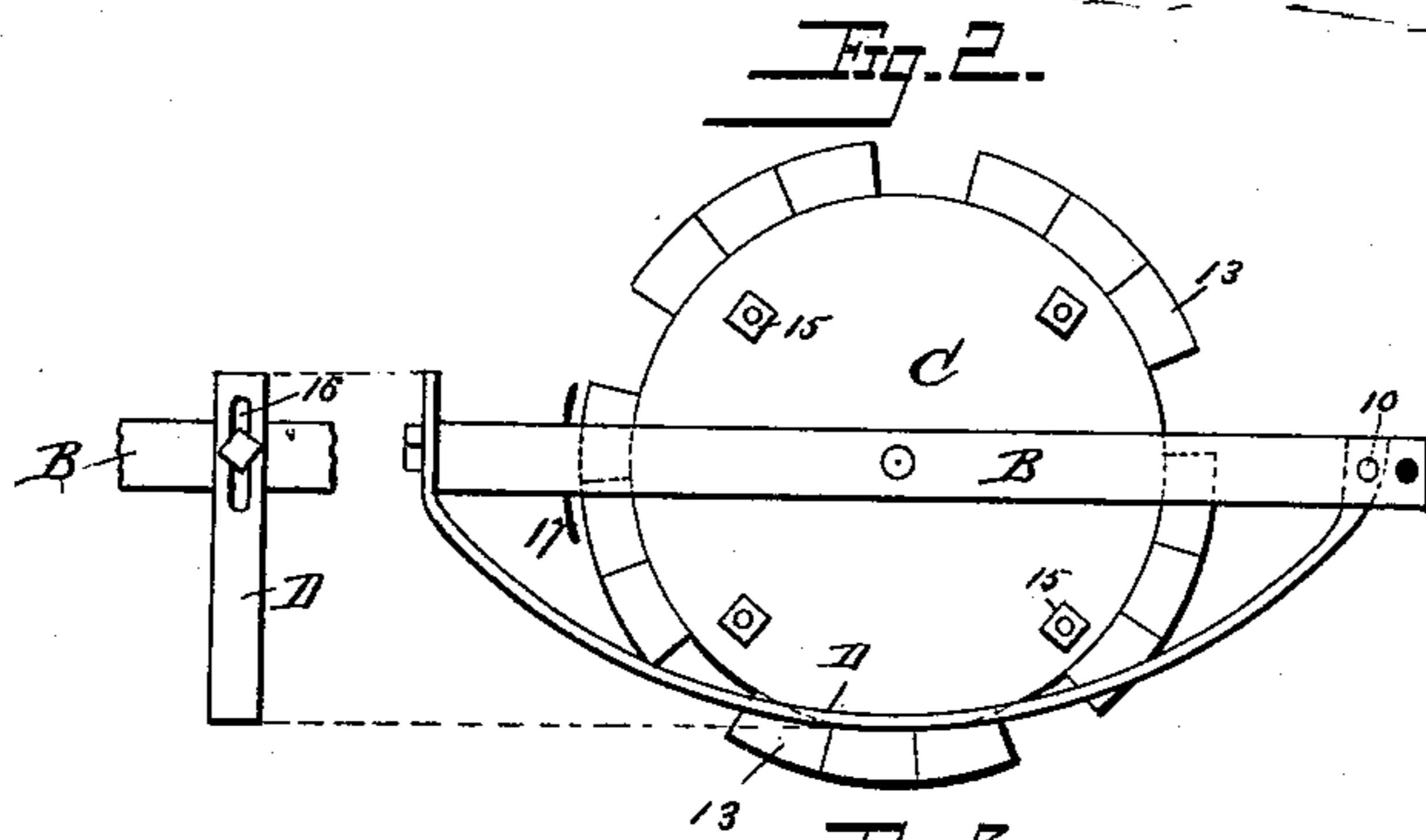
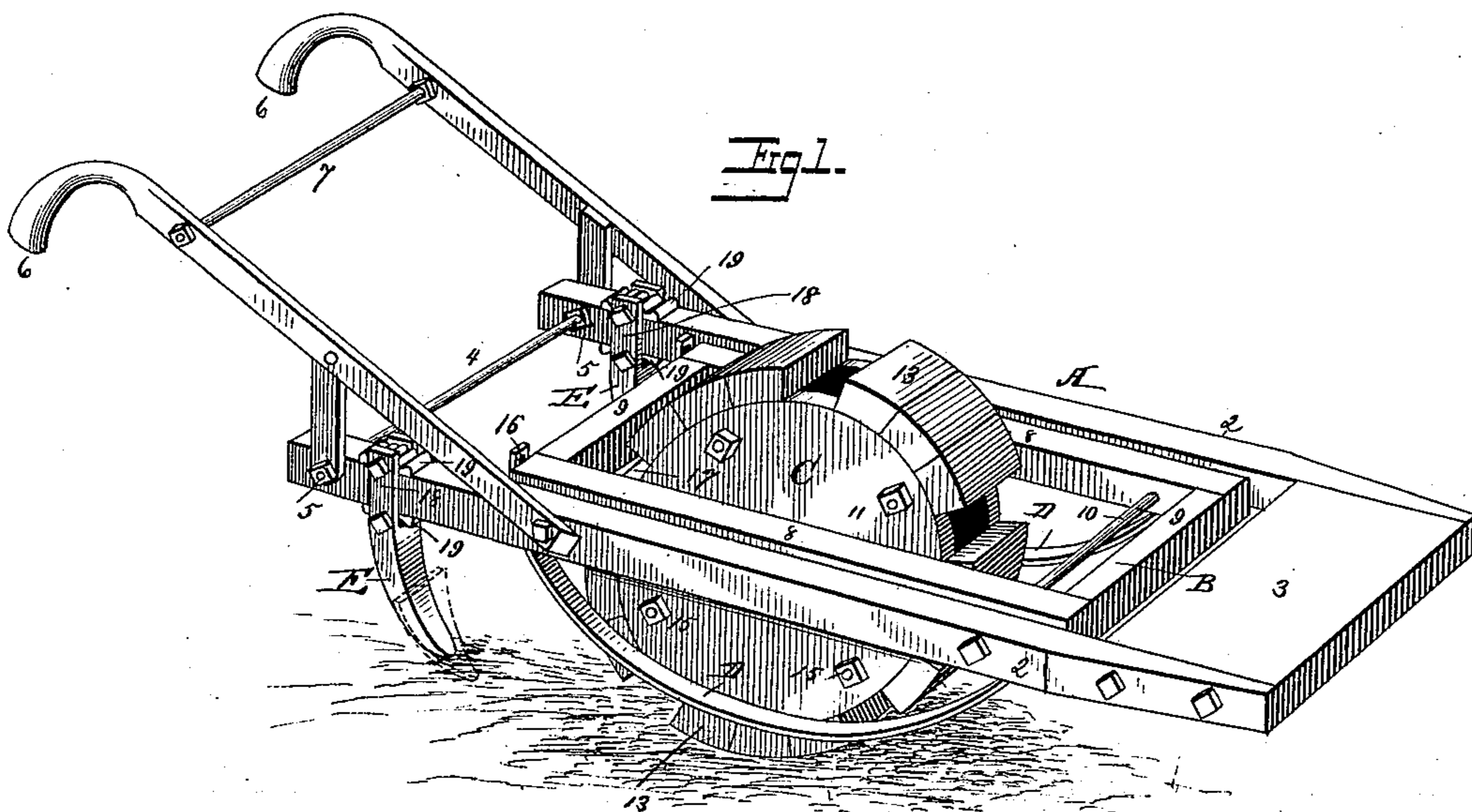


(No Model.)

N. W. WORTHAM & J. I. J. BELL.
COTTON THINNER AND CULTIVATOR.

No. 352,599.

Patented Nov. 16, 1886.



Attest:
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UNITED STATES PATENT OFFICE.

NOTLEY W. WORTHAM AND JAMES I. J. BELL, OF MONROE, GEORGIA.

COTTON THINNER AND CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 352,599, dated November 16, 1886.

Application filed July 26, 1886. Serial No. 209,138. (No model.)

To all whom it may concern:

Be it known that we, NOTLEY W. WORTHAM and JAMES I. J. BELL, citizens of the United States, and residents of Monroe, Walton county, Georgia, have invented certain new and useful Improvements in Cotton Thinners and Cultivators, of which the following is a specification.

This invention relates to that class of cotton-thinners in which the operation of thinning is performed by rollers provided with alternate rolling or crushing surfaces and recesses; and it consists in providing a roller with a rim formed of blocks adjustable around the periphery of said roller, whereby the size and number of the recesses are regulated.

The invention also consists in the combination, with said roller, of a cultivator and guards or fenders, as hereinafter fully set forth, and as represented in the accompanying drawings, in which—

Figure 1 represents a perspective view of the improved cotton thinner and cultivator; Fig. 2, a side elevation showing the roller, pivoted frame, and one of the guards at the sides of the roller removed from the main frame; and Fig. 3, a cross section of the roller.

The main frame A consists of side beams, 2 2, secured at the front ends to a cross-piece, 3, to which the draft is applied, and connected at the rear ends by an adjusting screw-rod, 4, provided with nuts 5, whereby the said rear ends of the beams may be drawn together or separated. Handles 6 6, such as are used in cultivators, are secured to the rear ends of the beams, and are adjustably connected by a bracing screw-rod, 7.

Within the frame A a frame, B, is pivoted at one end by means of a rod, 10, and consists of side bars, 8 8, and end pieces, 9 9, the pivot-rod 10 passing through the said bars 8 and extending into or through the side beam, 2 2, of the frame A, back of the cross-piece 3. The said rod 10 may be used to separate or draw together the front ends of the beams 2 2.

A roller, C, has bearings in the side bars, 8, of the frame B, and as shown, consists of a cylindrical body portion, formed of side disks or plates, 11 11, held together by bolts 15, each disk having on the inner face and near the periphery an annular groove, 12. A sectional rim is formed of blocks 13, in number either

sufficient to complete the rim or to leave one or more spaces or recesses therein, and each provided with a dovetail lug or tongue, 14, which projects between the plates and at the sides into the grooves 12, while the body of the block is exterior to the said disks. The disks may be drawn together to clamp the blocks in any desired position, and are separated to permit the adjustment of the same around the periphery of the roller without removing the lugs from the grooves. The sides of each block are beveled or radial, so that the blocks when placed in contact will fit snugly one against the other, and we prefer to bevel the ends of each block, so that the face will be of greater length than the back and extend beyond the sides of the roller, as shown in Fig. 3. To the frame B, at the sides of the roller, are attached guards or fenders D, the front ends being pivoted to the said frame by the rod 10 or by bolts, and the rear ends bent upward and provided with slots 16, and secured adjustably to the rear end of the frame by bolts or screws passing through the said slots. We also provide a scraper, 17, such as is usually employed with land-rollers, and secure it on the frame B, at the rear of the roller, to keep the face clean.

We attach plows or coverers E to the frame A, near the rear end thereof, by any suitable means, but prefer to use for each plow a standard with a bifurcated upper end, 18, embracing one of the beams 2 2, and we place on the upper and lower sides of each beam, between the forks of the standards, corrugated or grooved plates 19. Each standard is secured to the beam by bolts passing through the two parts of the end 18, above and below the beam, and resting in the grooves of the plates 19. As the bolts do not pass through the beam, each standard may readily be adjusted and secured at any point thereon.

The blocks forming the rim of the roller having been adjusted and secured so as to form between them one or more recesses in said rim, each fender is set a suitable distance above the ground and the plows and beams 2 2 are also properly adjusted, and the operation is as follows: On being drawn over the ground the rim of the roller will crush all the plants, except where the recesses are brought opposite the plants, which enter the recesses

and are not acted upon. By moving or removing the blocks the recesses may be formed at any desired points of the periphery and of any desired number and width.

5 The guards or fenders prevent injury to plants adjacent to the roller, and also serve to clear the roller from sticks or other obstructions that may enter the recesses in the rim thereof.

10 The roller being connected to the main frame by the pivoted frame, it will pass over inequalities in the field without lifting the plows attached to the said main frame.

15 On removing the frame B, with the roller and guards, the frame A, with a suitable number of plows attached, may be used as a cultivator.

It is evident that means of attaching the roller to the main frame other than by the 20 pivoted frame may be employed, and that the guards may be attached to the main frame or may be dispensed with. It is also evident that other means than those described may be used to retain the blocks in movable connection 25 with the cylinder and to permit the adjustment thereof.

If a sufficient number of blocks be used to complete the rim, the roller may be used for any purpose to which a roller is adapted.

30 Without limiting ourselves to the precise construction and arrangement of parts shown, we claim—

1. In a cotton-thinner, a roller provided with a sectional rim formed of blocks adjustable around the periphery of said roller, 35 whereby any desired number and relative size of recesses and rolling-surfaces may be formed without removing the blocks, substantially as described.

2. In a cotton-thinner, a roller having a 40 body formed of disks or plates and blocks arranged at intervals around the periphery of the body, and means for clamping the blocks adjustably between said plates, substantially as described.

3. A cotton-thinner consisting of a frame carrying plows or coverers, a roller with a rim provided with alternate crushing-surfaces and recesses, guards or fenders at the sides of the 45 roller, and pivoted connections between the roller and frame, substantially as described.

4. A cotton-thinner consisting of the main frame A, pivoted frame B, roller C, with alternate crushing-surfaces and recesses, and adjustable guards or fenders D at the sides of 55 the roller, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

NOTLEY W. WORTHAM.

JAMES I. J. BELL.

Witnesses:

M. G. MICHAEL,
L. SCHEVENELL.