

**No. 682,042.**

**Patented Sept. 3, 1901.**

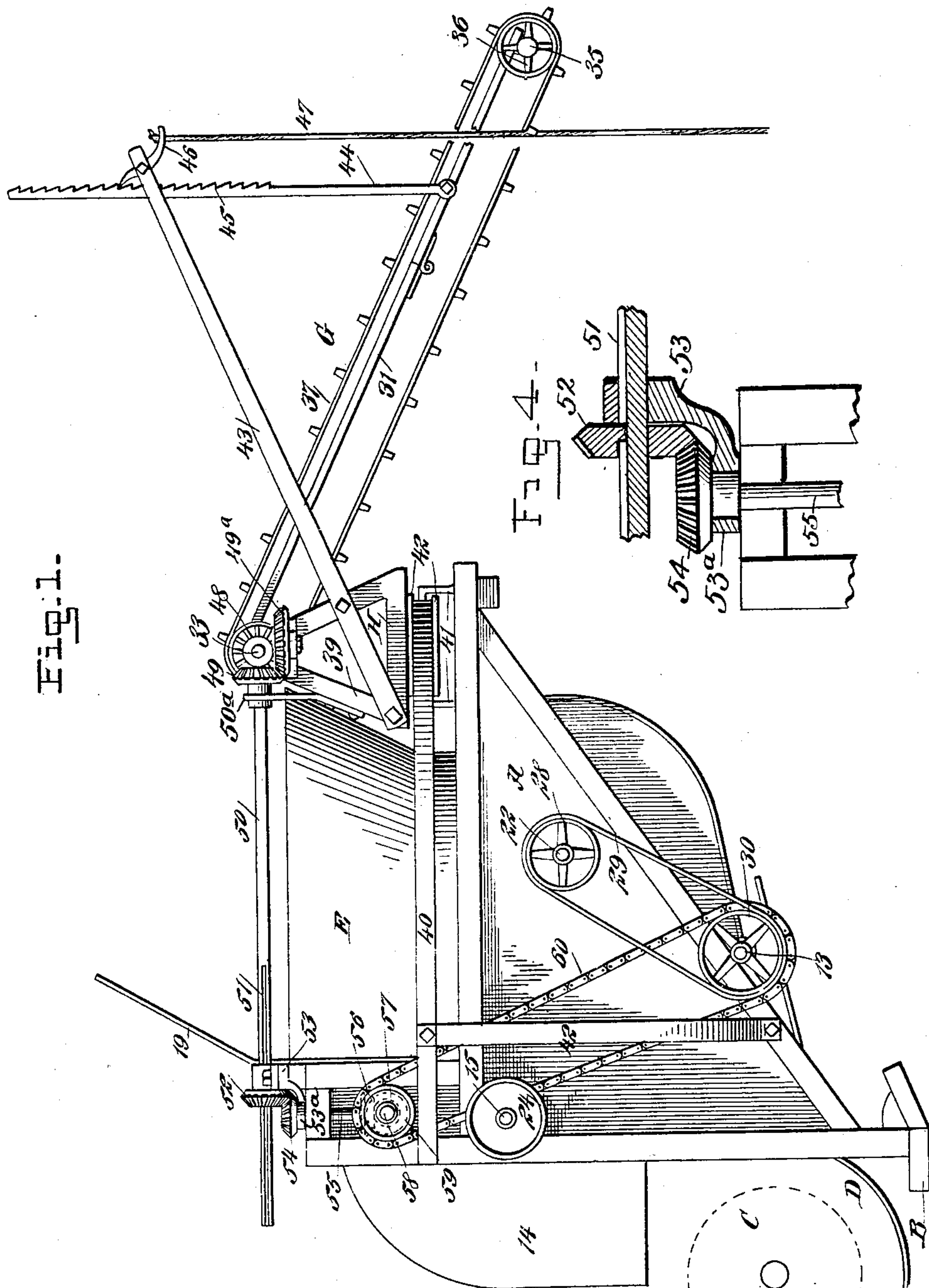
**T. L. CUMMINGS.**

## BAND CUTTER AND FEEDER FOR THRESHING MACHINES.

(Application filed Nov. 14, 1900.)

(No Model.)

**3 Sheets—Sheet 1.**



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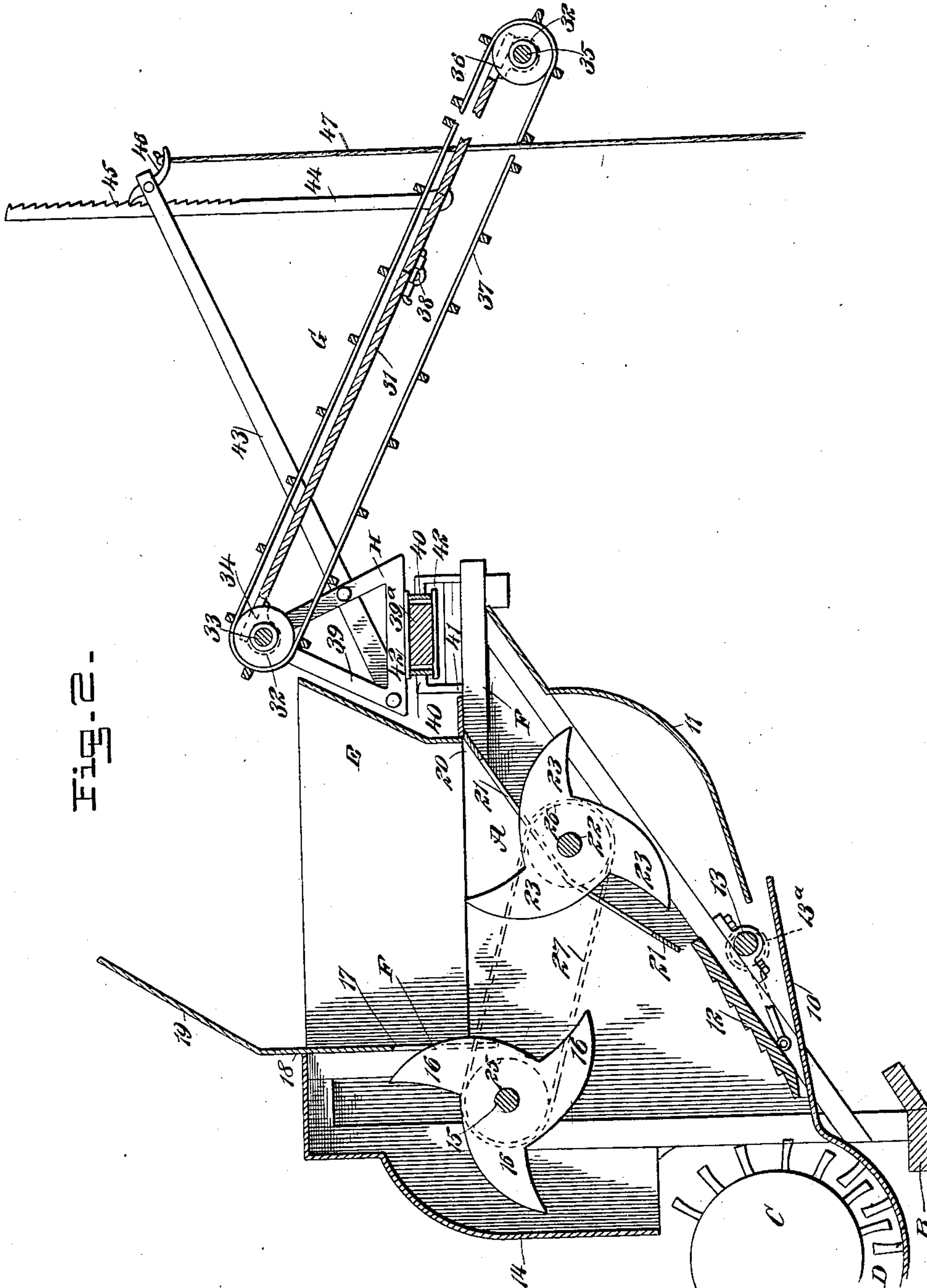
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3 Sheets—Sheet 2.

Fig. 2.



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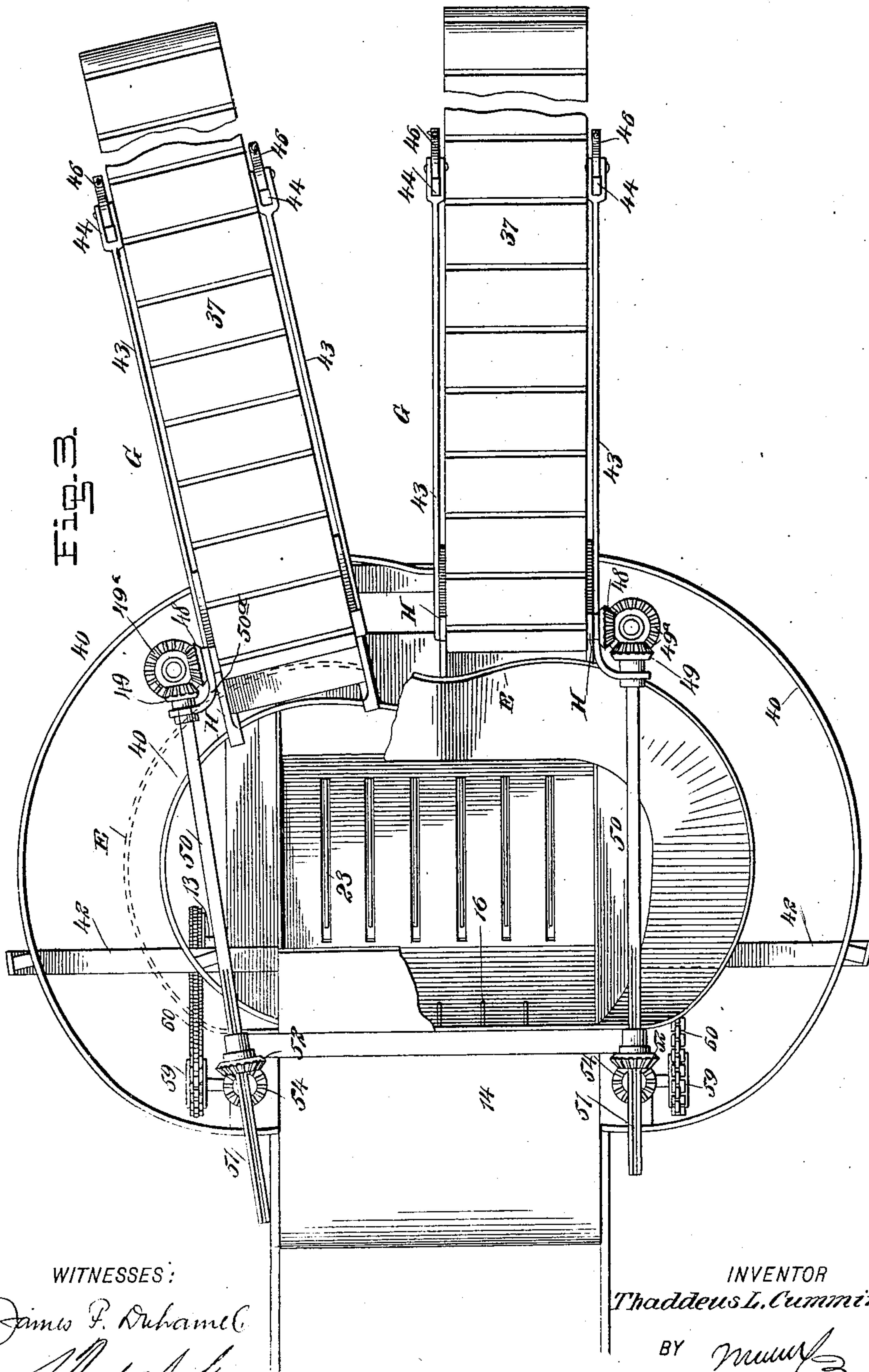
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**BAND CUTTER AND FEEDER FOR THRESHING MACHINES.**

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3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

THADDEUS LOSSIE CUMMINGS, OF HAGERTY, IOWA.

## BAND-CUTTER AND FEEDER FOR THRESHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 682,042, dated September 3, 1901.

Application filed November 14, 1900. Serial No. 36,426. (No model.)

*To all whom it may concern:*

Be it known that I, THADDEUS LOSSIE CUMMINGS, a citizen of the United States, and a resident of Hagerty, in the county of Dickinson and State of Iowa, have invented a new and Improved Band-Cutter and Feeder for Threshing-Machines, of which the following is a full, clear, and exact description.

One purpose of this invention is to provide a band-cutter and self-feeder attachment for threshing-machines so constructed that a plurality of bundle-carriers or feed-boards may be employed and whereby the feed-boards or bundle-carriers may be moved around a hopper, which hopper conducts the bundles to the band-cutters.

Another purpose of the invention is to so construct the bundle-carriers or feed-boards that in addition to lateral adjustment they may be given vertical adjustment to any desired extent.

A further object of the invention is to so construct the band-cutters that they will be in sets, one set located above and near to the concave and cylinder, while the opposite set of cutters will be placed at a point above and in advance of the said cylinder and concave.

Another feature of the invention is to construct the band-cutter and feeder in such manner that it will be simple, durable, and applicable to any threshing-machine and whereby none of the grain will be lost which escapes when the bands of the bundles are cut, the escaping grain being conducted directly to the concave and cylinder.

Another feature of the invention is to provide a means whereby the driving mechanism for the belts of the bundle-carriers or feed-boards will not be interfered with when one of the said feed-boards or carriers is laterally or vertically adjusted and whereby the carriers or feed-boards may be swung over a vehicle containing the bundles or any portion of a stack of bundles.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improved attachment. Fig. 2 is a vertical longitudinal section through the attachment, taken at a point near the center and through one of the feed-boards or bundle-carriers. Fig. 3 is a plan view of the attachment, portions thereof being broken away; and Fig. 4 is a detail view drawn on an enlarged scale.

A represents the frame of the attachment, which is substantially of half-diamond shape, and B represents the frame of the threshing-machine, to which the frame of the attachment is applied, the frame of the attachment being so placed relative to the frame or body of the threshing-machine that material delivered to the body portion of the attachment will be conducted to the cylinder C and concave D of the threshing-machine. The frame A of the attachment is closed at its sides, and the bottom is substantially closed by a plate 10, which extends from the concave D upward and forward, and a second plate 11, which is located above the forward end of the plate 10 and is more or less concaved for a portion of its length, extending at its upper portion to the upper front portion of the said frame, as shown in Fig. 2. A feed-pan 12 is located within the frame A above the bottom plate 10, connected with the concave, and this feed-pan is preferably reciprocated through the medium of a shaft 13, an eccentric connection 13<sup>a</sup> being made between the shaft 13 and the feed-pan 12. The shaft 13 is journaled in suitable bearings at the under side of the frame A of the attachment and extends beyond the side portions of said frame.

At the upper rear portion of the frame A of the attachment a downwardly-extending hood 14 is formed, and the bottom portion of this hood is open, so that any material which enters the hood will be conducted to the cylinder C, over which the hood 14 is located. A shaft 15 is journaled in the frame A of the attachment at its upper rear portion and adjacent to the hood 14, and on said shaft 15 a series of cutters F is secured, each cutter comprising a suitable hub or body and three radial blades 16, preferably placed at equal distances apart. The back portions of the blades are usually more or less concaved or straight, while their cutting edges are prop-



erly sharpened and are more or less convexed, as shown in Fig. 2, and these blades of the band-cutters F enter the hood 14 as the shaft revolves, and likewise enter and pass upward through the upper rear portion of the frame A of the attachment.

A hopper E is located on the top of the frame A, and this hopper may be of any desired shape. As shown, it is more or less elliptical in shape in plan view and flares upward and outward at its front and side portions. At the rear of this hopper E a vertical plate 18 is placed, having vertical slots or openings 17 therein, through which the blades of the upper set of band-cutters pass, and at the top of the said plate 18 in the hopper an upper and forward extension 19 is formed, which will prevent the bundles delivered to the hopper from escaping at the back thereof. The plate 18 in the hopper is practically a sieve or sifting-plate, as the major portion of the straw is separated from the blades of the band-cutters F as the blades pass through the slots 17 of the plate; but any material that may cling to the blades of the band-cutters will drop therefrom when said blades enter the hood 14, and such material will thereupon fall upon the cylinder C. A second sifting-plate 20 is located in the frame A of the attachment at its forward bottom portion, extending from the forward bottom section of the hopper E downward to a point over the feed-pan 12, as shown in Fig. 2. This lower sifting-plate 20 is usually angular in cross-section, as is also shown in Fig. 2, and is provided with a series of vertical slots 21, through which the blades 23 of a second set of band-cutters F' pass, the said band-cutters F' being of like construction to the band-cutters F, opposite yet slightly below which they are placed. The forward set of band-cutters F' are secured upon a shaft 22 parallel with the shaft 15, and at one end of said shaft 15 a driving-pulley 24 is secured, (shown in Fig. 1,) which pulley is belted to a pulley on the cylinder-shaft C or is driven from any other desired portion of the threshing-machine. At the opposite end of the shaft 15 another pulley 25 is secured, (shown in dotted lines in Fig. 2,) and at the corresponding end of the shaft 22 a similar pulley 26 is attached. These two pulleys 25 and 26 are connected by a belt 27, as is shown in dotted lines in Fig. 2. At the opposite end of the shaft 22, carrying the forward set of band-cutters F', a pulley 28 is secured, as shown in Fig. 1, and this pulley is connected by a belt 29 with a pulley 30, located on the shaft 13, which operates the feed-pan 12.

One of the main features of the invention consists in employing two or more bundle-carriers or feed-boards G. Each of these bundle-carriers or feed-boards consists of a division-board 31, provided with brackets 32 at its top and at its bottom, and in the upper bracket a shaft 33 is journaled, while in the lower bracket a shaft 35 is held to turn. A

drum 34 is secured to the shaft 33 and a drum 36 is secured upon the shaft 35. An endless conveyer-belt 37 is passed around the two drums. The division-board 31 of each bundle-carrier or feed-board is preferably made in two parts hinged together and connected by a latch 38 of any description, and when the latch 38 is loosened the feed-board to which the latch is connected may be dropped down out of the way at its forward end. The upper shaft 33 of each bundle-carrier or feed-board G is held to turn in the upper portion of a support H, and these supports preferably consist of two triangular blocks 39, connected at the bottom by a bar 39<sup>a</sup>. These bars are adapted to travel between tracks 40, which are supported upon uprights 41, located on the frame A at the front and side portions thereof, the said tracks extending around the hopper E. The material placed upon the conveyer-belts 37 of the bundle-carriers or feed-boards will pass therefrom directly into the hopper, and it is evident that these bundle-carriers or feed-boards may be adjusted laterally to any point at the front or sides of the hopper and may also be adjusted vertically. The tracks 40 are provided with additional supports 42, which extend from the sides of the frame, as is shown in Figs. 1 and 3. A bar 43 is attached to the outer face of each member of each block H, and these bars 43 extend upward and forward at the sides of the bundle-carriers or feed-boards, and adjusting-bars 44, pivoted to the sides of the bundle-carriers or feed-boards, are carried out through openings in the free ends of the bars 43, carried by the blocks H. The adjusting-bars 44 have teeth 45 produced in their forward edges, said teeth having a downward inclination, and pawls 46, pivoted at the ends of the bars 43, connected with the blocks H, engage with the teeth 45. Ropes or chains 47 are attached to the said pawls and extend downward to within convenient reach of the ground. Through the medium of the said pawls 46 and the adjusting-bars 44 the bundle-carriers or feed-boards may be adjusted vertically as high or as low as desired and may be held in their adjusted position.

The driving mechanism for the bundle-carriers or feed-boards is as follows: The upper shaft 33 of each feed-board is provided at its outer end with an attached beveled gear 48, which meshes with an idle gear 49<sup>a</sup>, supported by brackets secured to the frame, and the said idle gears 49<sup>a</sup> are once again the size of the gears 248, and gears 49 also mesh with the idle gears 49<sup>a</sup>. These groups of gears constitute pivots and permit the feed-boards or bundle-carriers to have free lateral movement. The shafts 50 are journaled in bearings 50<sup>a</sup>, carried by the blocks H, and in bearings 53, which are loosely mounted at the rear portion of the frame at the rear of the hopper B upon a shaft 55, to be hereinafter described and as shown in Fig. 1, said bear-



ings 53 being mounted on said shafts through the medium of ring or sleeve extensions 53<sup>a</sup>, forming portions of said bearings, as is clearly shown in Fig. 4. Bevel-gears 52 are held to turn with the shaft 50 yet slide thereon, and these bevel-gears 52 are therefore provided with feathers upon the inner faces of their hubs, which have sliding movement in slots 51, made in the shafts 50. The bevel-gears 52 mesh with bevel-gears 54, secured upon upright shafts 55, located at the rear portion of the frame A, and bevel-gears 56 are secured at the lower ends of these shafts, meshing with gears 57, secured to outwardly-extending horizontal shafts 58. These shafts 58 are provided with pulleys 59, over which belts 60 pass to suitable pulleys carried at the end portions of the shaft 13 for the feed-pan 12. Thus it will be observed that the bundle-carriers or feed-boards may be adjusted laterally, so as to be brought over bundles in a vehicle or over any portion of a stack of bundles, and that the driving mechanism for the bundle-carriers or feed-boards will remain in operative relation to the bundle-carriers or feed-boards during said lateral adjustment.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a band-cutter and feeder for threshing-machines, a hopper, a track around the said hopper, supports held to travel on the said tracks, feed-boards or bundle-carriers pivoted to the said supports, extensions from the

said supports, toothed adjusting-rods pivotally attached to the bundle-carriers or feed-boards, having guided movement in the extensions of the said supports, pawls carried by the said extensions, adapted for engagement with the teeth of the adjusting-bars, and vertically and laterally adjustable driving mechanism for each of the said feed-boards or bundle-carriers.

2. In a band-cutter and feeder for threshing-machines, the combination, with a frame adapted for attachment to a threshing-machine, a hopper carried by the frame, a track adjacent to the said hopper, and supports mounted to slide upon the said track, of bundle-carriers or feed-boards pivotally connected at their upper ends to the said supports, means for adjusting the free end portions of the bundle-carriers or feed-boards, driven shafts having gear connections with the driving mechanisms for the conveyers of the bundle-carriers or feed-boards, the said shafts being held to slide in pivoted bearings and through gears, which gears turn with the said shafts, and a driving mechanism for the said gears, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THADDEUS LOSSIE CUMMINGS.

Witnesses:

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GEORG W. VETTER.