

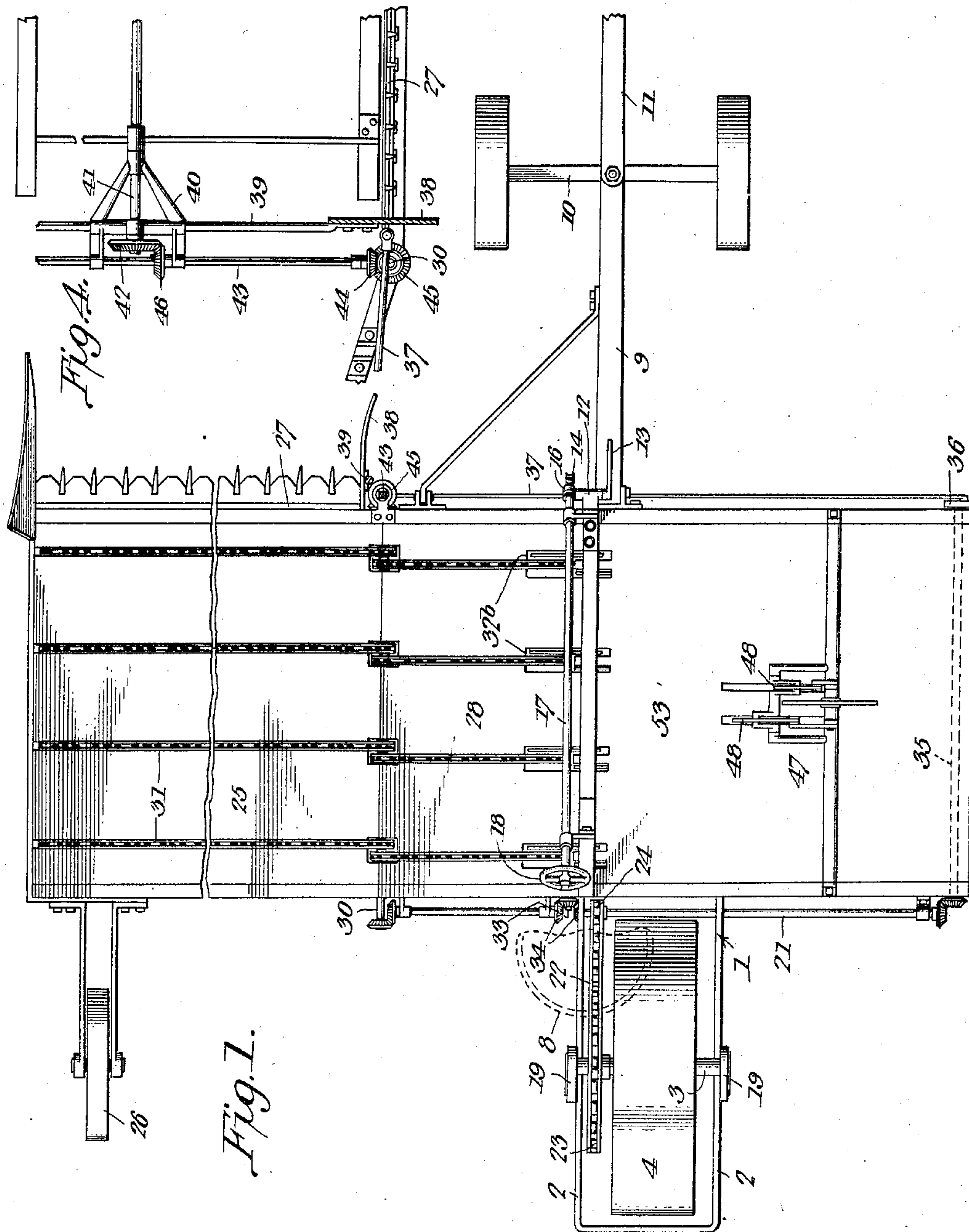
No. 789,766.

PATENTED MAY 16, 1905.

W. SMOLLEY.
HARVESTER.

APPLICATION FILED MAR. 21, 1905.

2 SHEETS—SHEET 1.



Witnesses
E. J. Blund
Wm. Bagger

Wayne Smolley, Inventor
by *C. A. Snow & Co.* Attorneys

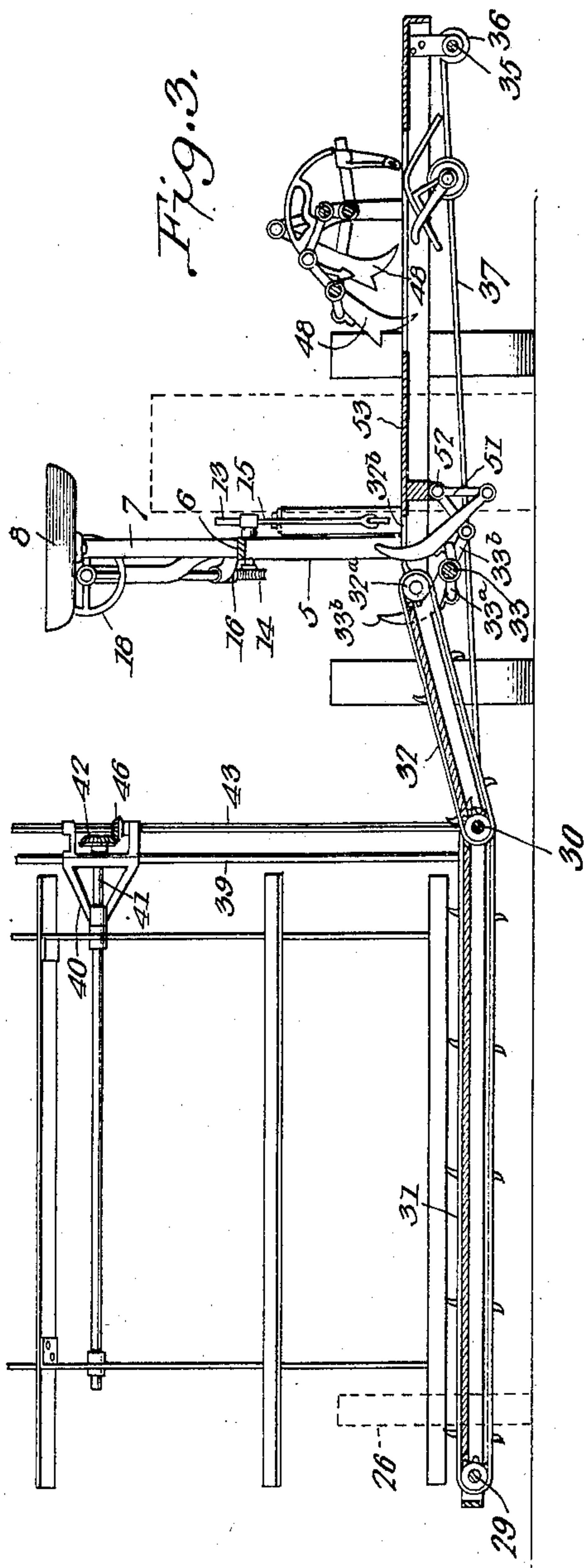
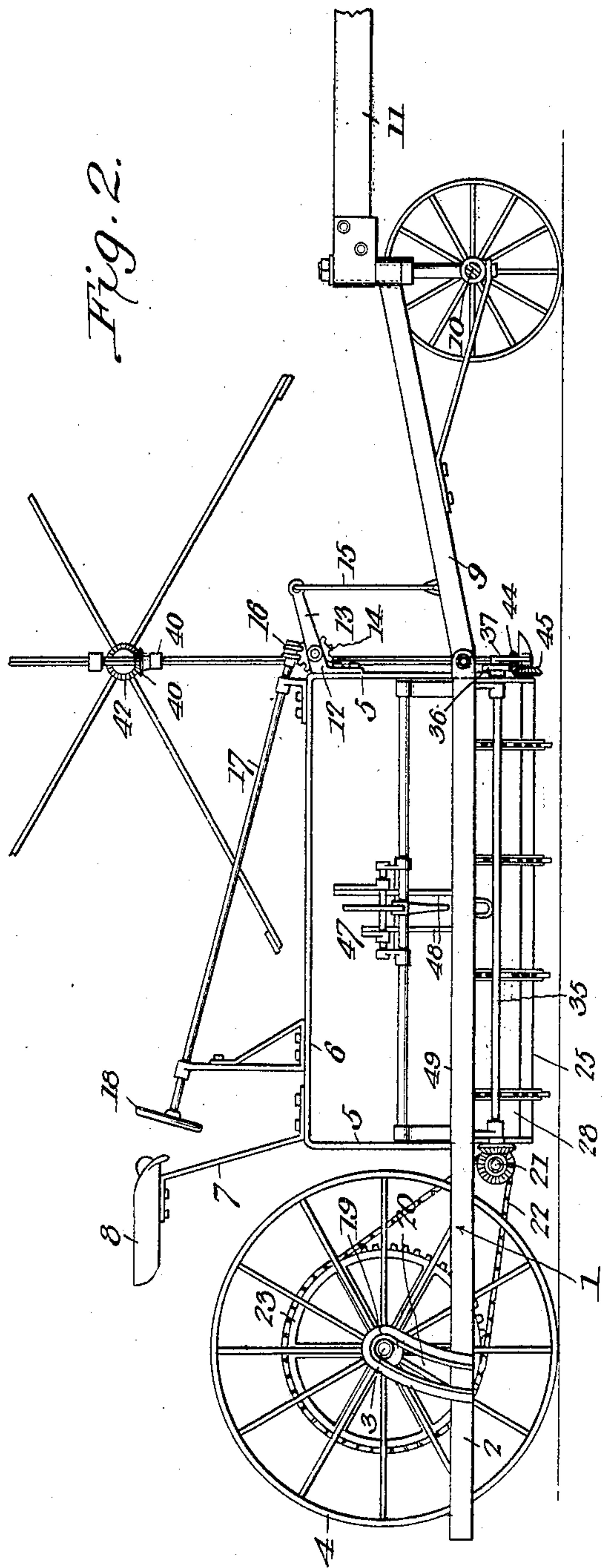
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2 SHEETS—SHEET 2.



Witnesses

E. H. Stewart
Wm. Bagger

Wayne Smolley,
Inventor.

by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

WAYNE SMOLLEY, OF BROOKVILLE, INDIANA, ASSIGNOR OF ONE-HALF
TO JOHN T. VANNESS, OF OXFORD, OHIO.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 789,766, dated May 16, 1905.

Application filed March 21, 1905. Serial No. 251,281.

To all whom it may concern:

Be it known that I, WAYNE SMOLLEY, a citizen of the United States, residing at Brookville, in the county of Franklin and State of Indiana, have invented a new and useful Harvester, of which the following is a specification.

This invention relates to harvesters, and particularly to grain-binding harvesters; and it has among its objects to simplify and improve the construction and operation of the same.

Another and special object of the invention is to construct what may be termed a "low-down" harvester and binder in which the inverted-V frame, which is a common feature in grain-binders of ordinary construction, shall be dispensed with for the purpose of avoiding the necessity of elevating the grain which is to be bound. Much of the power required to operate a grain-binder of ordinary construction is expended in the elevating of the grain to the binding mechanism. Under the present invention the power heretofore thus expended will be saved and an easy-running machine will be provided.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention.

In said drawings, Figure 1 is a top plan view of a grain-binding harvester constructed in accordance with the principles of the invention, the reel having been removed and the reel supporting and operating members being shown in section. Fig. 2 is a side elevation. Fig. 3 is a rear sectional elevation. Fig. 4 is a detail front view, partly in section, showing a portion of the reel and the reel supporting and operating devices.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

In carrying this invention into practical operation the principal object of the invention is attained by practically inverting the binding mechanism of an ordinary binder, so that the cut grain which is to be bound shall be fed under instead of over the binding mechanism, as has heretofore been the case. No limitation is made to any particular binding mechanism or to binding mechanism of any peculiar construction, inasmuch as almost every one of the well-known binding devices in popular use at the present day may be applied to the purposes of the invention by the simple process of inverting the mechanism from its customary and normal position. As is well known, many, if not most, binders are constructed in right and left hand patterns adapted to machines in which the cutting mechanism is disposed at the right or at the left side, as the case may be. It is obvious that when a binding mechanism of right-hand pattern is inverted and used in connection with my invention it will be used in connection with a frame carrying the cutting mechanism at the left side, and vice versa. In the binding mechanism *per se* no improvement is claimed under the present invention, and it is desired to be understood that said binding mechanism and the mode of transmitting motion thereto may be of any approved and well-known pattern.

Referring to the drawings, 1 designates a main frame, which includes the side members 2 2, having bearings for the main axle 3, carrying the bull-wheel 4. The main frame has uprights 5, supporting a longitudinal frame member 6, upon which is mounted the seat-bar 7, carrying the driver's seat 8. Hingedly connected with the front end of the main frame is the stub-tongue 9, the front end of which is supported by means of a truck 10, and at the front end of which is also attached the draft-tongue 11. A bracket 12 upon one of the uprights of the main frame supports a lever 13, carrying a worm-gear 14, which is concentric with its fulcrum. The free end of said lever is connected, by means of a link 15, with the stub-tongue 9, and the worm-gear 14 is engaged by a worm 16 upon the shaft 17, mount-

ed for rotation in bearings supported upon the main frame and having at its rear end a hand-wheel 18, which is in a position convenient to be operated by the driver, who is thereby enabled to effect vertical adjustment of the front end of the main frame, as will be readily understood.

The main shaft or axle 3 of the bull-wheel has been illustrated as being supported in segmentally-slotted uprights 19, and means are to be provided whereby adjustment of the axle may be effected in the slots 20 of said uprights for the purpose of raising or lowering the rear end of the main frame; but devices of this kind are common in harvesters, and, being no part of the present invention, they have been omitted from the drawings. It is to be understood, however, that the slots 20 are to be concentric with the axis of shaft 21, which is supported for rotation in the main frame in front of the bull-wheel and which is driven by means of a chain 22, connecting a sprocket-wheel 23 upon the main shaft with a sprocket-pinion 24 upon the shaft 21. The latter will thus be driven by the bull-wheel without regard to the position of said bull-wheel with relation to the slots 20.

25 is the platform, which is supported by the grain-wheel 26 and which is provided at its front edge with cutting mechanism, including the cutter-bar 27. A slightly-inclined intermediate platform 28 connects the main platform 25 with the main frame. The main platform is provided with bearings for shafts 29 and 30, driving a conveyer, which may consist of a plurality of toothed chains 31. The intermediate platform 28 carries an endless conveyer 32, one end of which is supported by the shaft 30 and the other end of which is supported by individual sprocket-wheels 32^a, journaled in slots 32^b in the deck or platform. A shaft 33 is journaled longitudinally upon the main frame and connected at its rear end by bevel-gearing 34 with the driven shaft 21. The main frame likewise supports for rotation a longitudinally-disposed shaft 35, having at its front end a crank-disk 36, which is connected by a pitman 37 with the cutter-bar 27, to which motion is thereby transmitted.

The frame 38 of the platform 25 supports an upright 39, upon which is mounted the vertically-slidable reel-carrying frame 40, 41 designating the shaft of the reel, which is provided at its inner end with a bevel-gear 42. Suitably supported for rotation adjacent to the upright 39 is a non-circular shaft 43, having at its lower end a bevel-pinion 44, meshing with a bevel-gear 45 at the front end of the shaft 30. The shaft 43 also carries a bevel-pinion 46, meshing with the bevel-gear 42 upon the reel-carrying shaft 41, which is thereby driven. It will be readily seen that owing to the construction just described the reel is capable of vertical adjustment by simply moving the frame 40 upon the support-

ing-upright 39, said frame carrying with it the bevel-gear 46, which meshes with the bevel-gear 42 upon the shaft of the reel.

The shaft 33 is provided with a plurality of cranks 33^a, upon which are pivoted feeders or packers 33^b, the upper ends of which extend upwardly through the slots 32^b during the operation of the device, while the lower ends of said feeders or packers are connected with the lower ends of links 51, depending from hangers 52 upon the under side of the deck or platform. These feeders or packers serve to take the grain as it passes over the carrier 32 and to convey said grain onto a vacant space 53 upon the deck of the machine intermediate the carrier 32 and the binding mechanism, said space being of sufficient dimensions to accommodate a considerable quantity of unbound grain, which is in turn disposed of by the packers, which form a part of the binding mechanism. By this simple construction there will be no danger of overcharging or overcrowding the binding mechanism, there will be no necessity at any time of stopping the conveying mechanism, and a considerable quantity of unbound grain will at all times be ready in position to be disposed of by the binder.

The binding mechanism which as a whole is designated 47, is supported in any convenient manner in the main frame of the machine in front of the bull-wheel and the driver's seat, preferably, however, in such a manner that it may be shifted upon its driving-shaft for the purpose of accommodating the position of the needle and the knot-tying mechanism to grain of various lengths. Said binding mechanism may be driven from either one of the shafts 33 or 35, as may be deemed most convenient. It will be seen that the packers 48 of the binding mechanism operate above the slotted platform 53, which is supported upon the frame 1 and which may be termed the "binder-deck," said packers serving in the usual manner to form a bundle from the grain accumulating upon the deck between the binding mechanism and the packers or feeders 33^b.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains.

A machine constructed in accordance with this invention may be manufactured at a very moderate expense, and it will be found to possess superior advantages in point of simplicity, durability, lightness of draft, and other features which are essential in the make-up of a successful machine of the class under which the present invention belongs.

Having thus described the invention, what is claimed is—

1. In a machine of the class described, a main frame, rotary supporting means for the

same, a main platform, cutting mechanism at the front edge of said platform, a binder-deck, a slightly-inclined platform connecting the main platform with the binder-deck, endless conveyers upon the main platform and the inclined platform, a crank-shaft supported beneath the upper end of the inclined platform, packers pivoted upon the cranks of said shaft and extending through slots in the inclined platform adjacent to the binder-deck, and binding mechanism including packers operating above the binder-deck and spaced from the packers operating in the slots of the inclined platform to permit unbound grain to accumulate upon the binder-deck.

2. In a machine of the class described, a main frame, a bull-wheel supporting the rear end of said frame, a stub-tongue connected hingedly and adjustably with the front end of the frame and having a supporting-truck, a suitably-supported main platform, a slightly-inclined platform connecting the main platform with the main frame, and binding mechanism supported in the main frame and including packers operating above the binder-deck to effect an underfeed of grain passing over the inclined platform to the binding mechanism.

3. In a machine of the class described, a main frame, a bull-wheel supporting the rear end of the main frame, a stub-tongue connected hingedly with the front end of said frame and having a supporting-truck, a suitably-supported main platform, a slightly-inclined intermediate platform connecting the main platform with the main frame, cutting apparatus connected with the main platform, endless conveyers upon the main and intermediate platforms, and binding mechanism supported in the main frame and including packers disposed for operation above the binder-deck and

operating at a distance from the delivery end of the conveyer upon the intermediate platform to deliver grain passing over said platform to the binding mechanism.

4. In a machine of the class described, a main frame, a bull-wheel supporting the rear end of the main frame, a stub-tongue connected hingedly and adjustably with the front end of the main frame, a track supporting the front end of said stub-tongue, shafts supported for rotation upon the sides of the main frame, a shaft journaled transversely in the latter, means for transmitting motion to said transverse shaft from the bull-wheel, bevel-gearing connecting said transverse shaft with the longitudinally-disposed shafts upon the sides of the main frame, a suitably-supported main platform, a slightly-inclined platform connecting said main platform with the main frame, cutting mechanism upon the main platform, endless conveyers upon the main and intermediate platforms, an adjustably-supported reel, means for transmitting motion from one of the longitudinal shafts to the cutting mechanism, means for transmitting motion from the other longitudinal shaft to the endless conveyers and to the reel, a driven crank-shaft having packers or feeders extending through slots in the inclined platform near the upper end of the latter, and binding mechanism supported in the main frame at a distance from said feeders or packers and receiving the grain accumulating upon the intermediate space.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WAYNE SMOLLEY.

Witnesses:

FRANK S. MASTERS,

C. E. LURING.