

No. 842,578.

PATENTED JAN. 29, 1907.

M. I. PARKHURST.

BALING PRESS.

APPLICATION FILED DEC. 26, 1905.

4 SHEETS—SHEET 1.

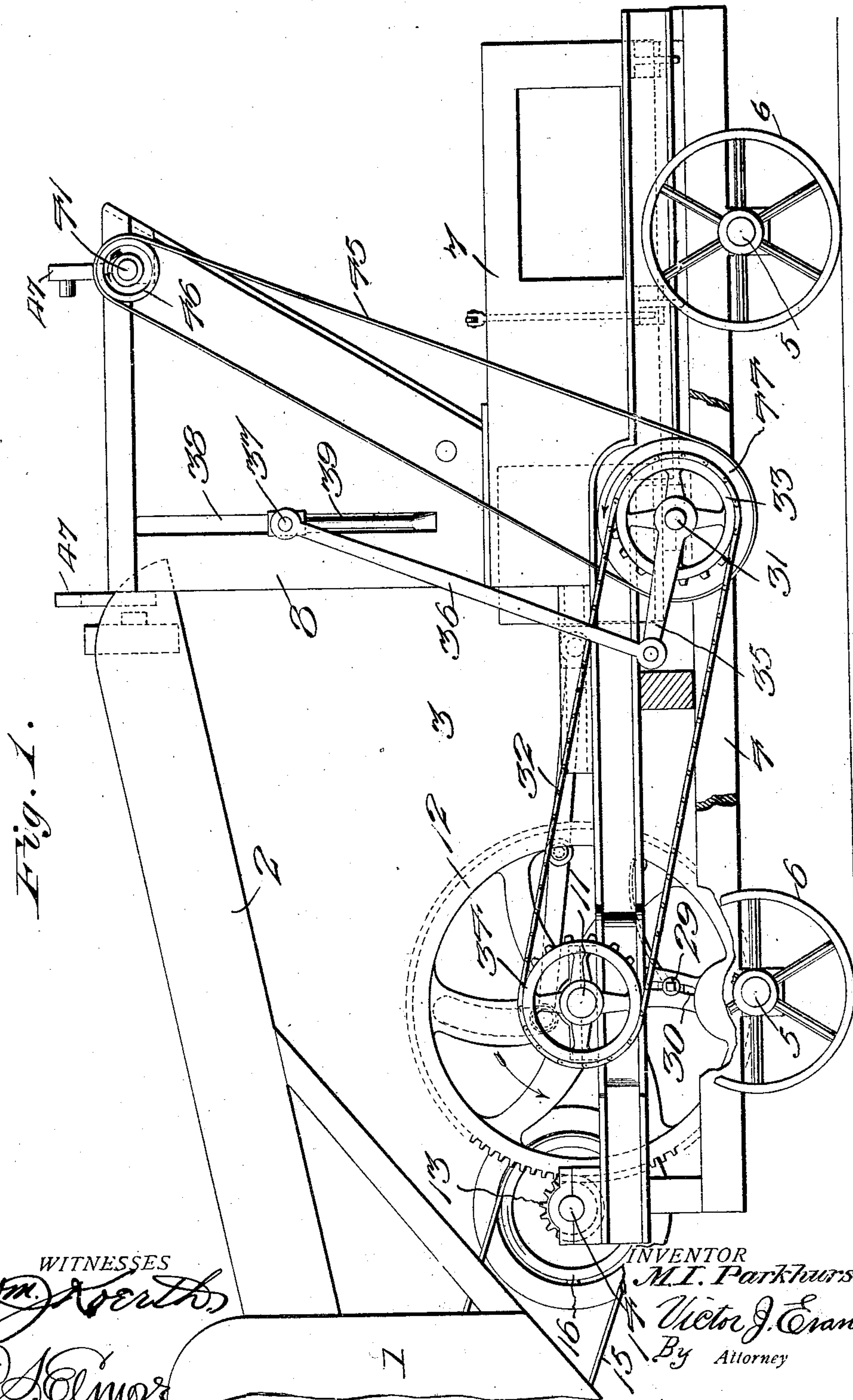


Fig. 1.

WITNESSES

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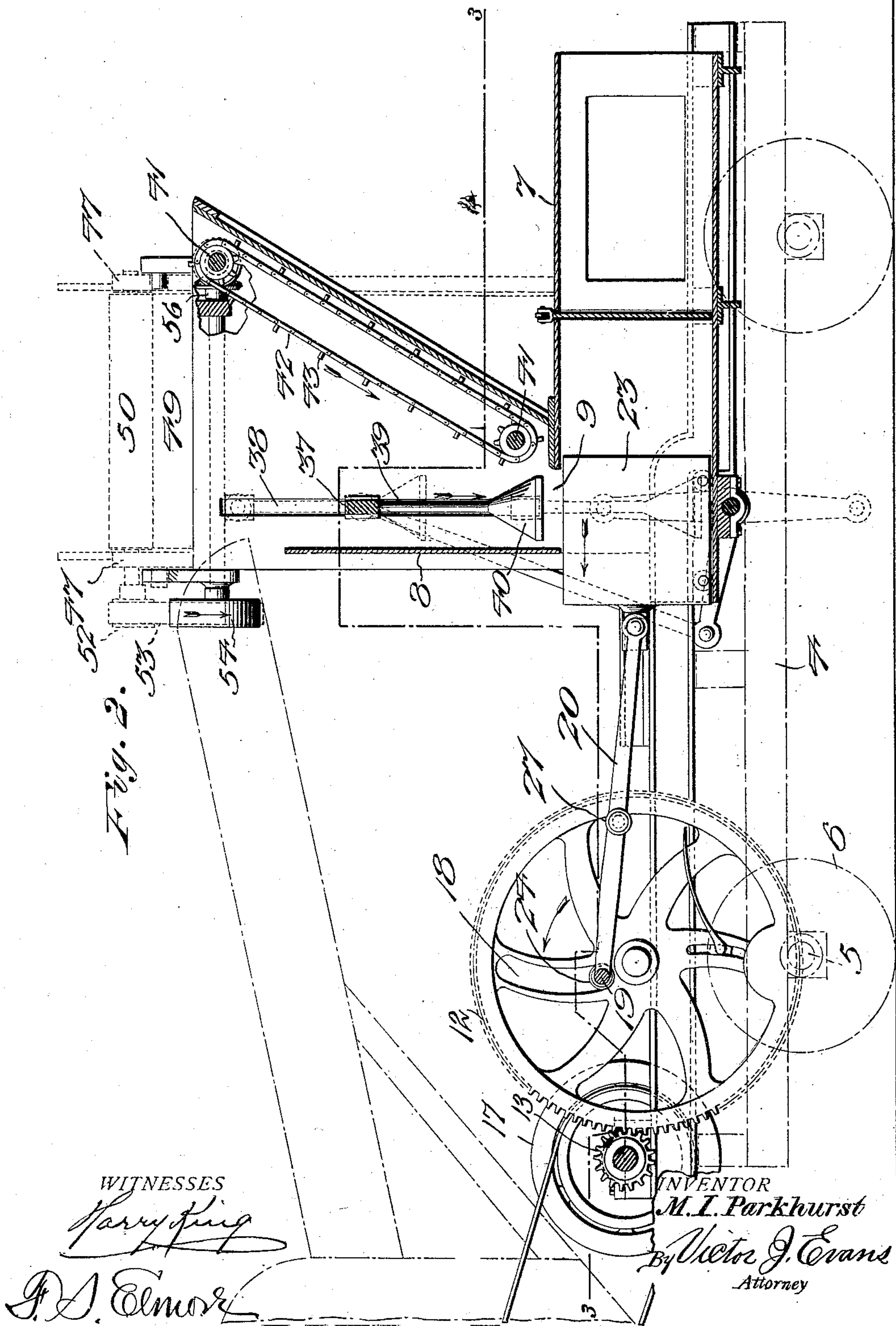
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

Fig. 3.

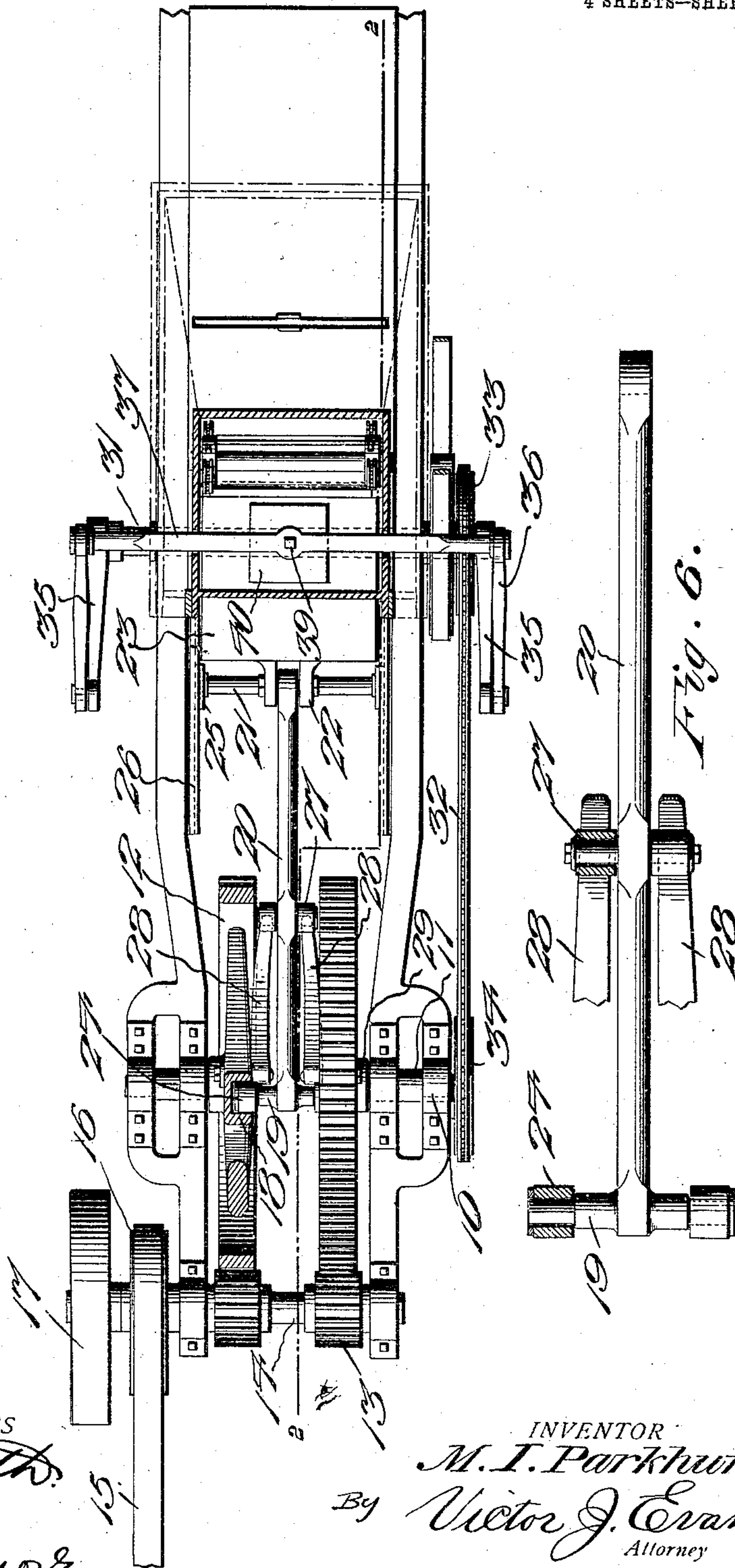


Fig. 6.

WITNESSES
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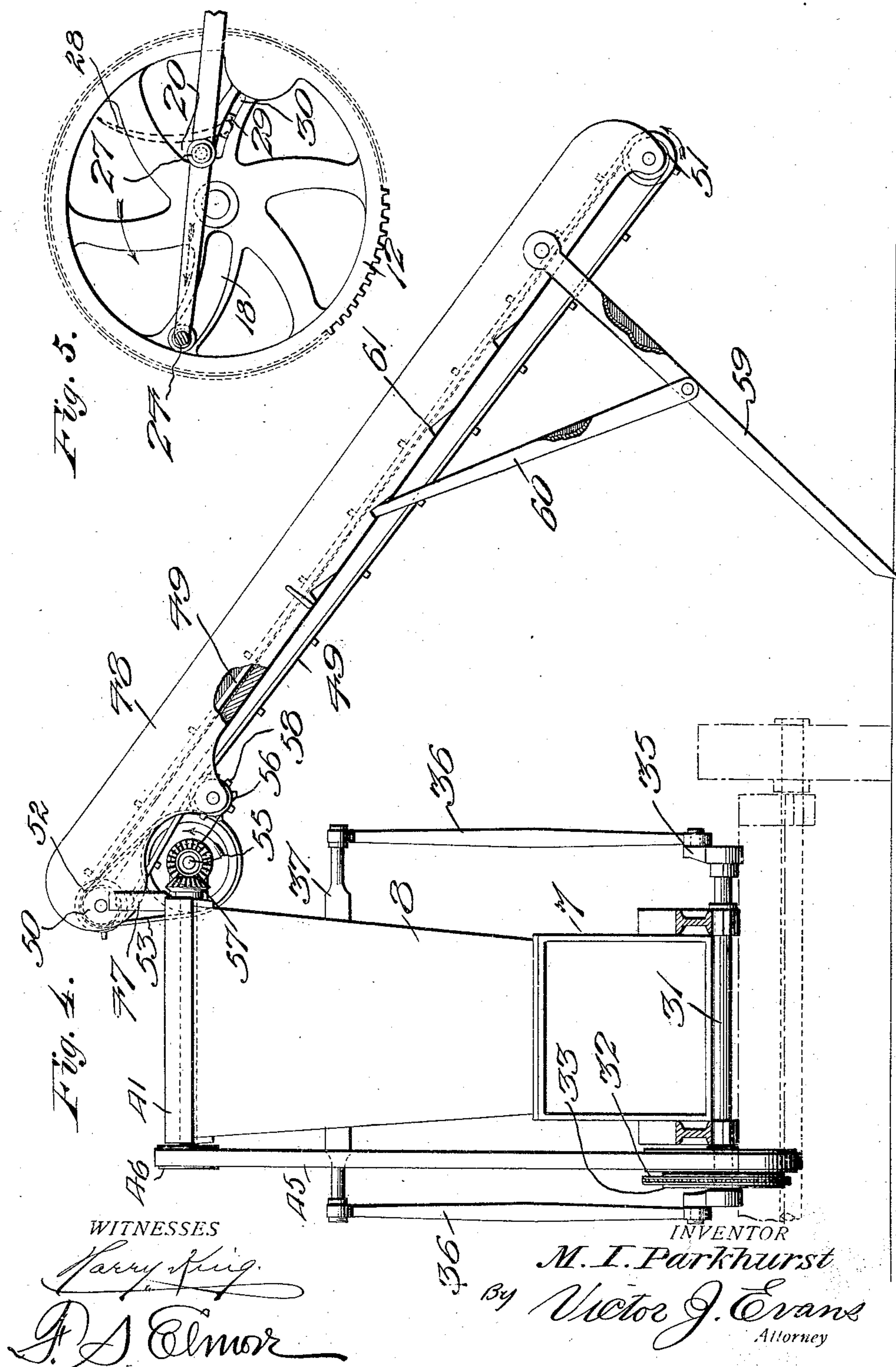
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BALING PRESS.

APPLICATION FILED DEC. 26, 1905.

4 SHEETS—SHEET 4.



UNITED STATES PATENT OFFICE.

MILTON IVES PARKHURST, OF FANCY PRAIRIE, ILLINOIS.

BALING-PRESS.

No. 842,578.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed December 26, 1905. Serial No. 293,429.

To all whom it may concern:

Be it known that I, MILTON I. PARKHURST, a citizen of the United States, residing at Fancy Prairie, in the county of Menard and State of Illinois, have invented new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to baling-presses designed especially for use in connection with threshing-machines for the purpose of baling the straw delivered therefrom, and has for its objects to produce a comparatively simple inexpensive device of this character which in practice will be operated from the power-shaft of the threshes, one in which the material will be effectually and automatically fed to the press, and one in which the pitman of the baling-plunger will receive a maximum power from the drive-wheel at the completion of the instroke of the plunger.

Another object of the invention is to provide a device of this character wherein the feeding-plunger will be timed for alternate movement relative to the baling-plunger for properly feeding the material in advance of the latter, one in which the pitman of the baling-plunger will move toward and from the center of the drive-wheel and its outward movement be automatically effected upon completion of the outstroke of the plunger, and one wherein the material to be baled will be delivered from the thresher directly into the baling-hopper.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a baling-press embodying the invention and showing the same connected for use upon the thresher. Fig. 2 is a vertical longitudinal section taken on the line 2 2 of Fig. 3. Fig. 3 is a horizontal section taken on the line 3 3 of Fig. 2. Fig. 4 is a front elevation, partly in section, of the press. Fig. 5 is a detail view of the drive-wheel, showing the manner of connecting the plunger-pitman therewith. Fig. 6 is a detail view of the pitman.

Referring to the drawings, 1 designates a threshing-machine, having a discharge-duct 2, through which the straw or other material is delivered after being threshed, these parts, which are conventionally shown herein, being of the usual or any preferred construction

and material and adapted in practice to perform their ordinary functions.

Arranged for travel behind the thresher 2 is a baling-press 3, the main frame 4 of which is provided with axles 5, designed to receive transporting-wheels 6, there being sustained upon the frame 4 a baling-box 7, having a vertically-uprising feed hooper or chute 8, into the upper end of which the duct 2 discharges and which communicates at its lower end with the box through a feed-opening 9.

Journaled in bearings 10, fixed upon the frame 4 at a point in advance of and suitably remote from the box 7, is a main drive-shaft 11, equipped with a pair of drive-wheels 12, having marginal teeth in mesh with drive-pinions 13, fixed upon an auxiliary drive-shaft 14, in turn journaled in bearings on the frame 4 and receiving power from the drive-shaft (not shown) of the thresher through the medium of a belt 15, arranged for travel over a pulley 16 on the shaft, which is also equipped with a balance or fly wheel 17, there being provided in the wheels 12 substantially radial guideways or slots 18, designed to receive the ends of a wrist-pin 19, fixed upon the forward end of a pitman-rod 20, having its rear end pivoted upon a cross-head 21, engaged with inwardly-projecting bearing portions or ears 22, provided on a plunger block or head 23, disposed for reciprocation in the baling-box 7.

Journaled on the ends of the wrist-pin 19 and for travel in the guideways 18, which are slightly curved from end to end, are antifric-tion-rollers 24, while the cross-head 21 is terminally provided with bearing-blocks 25, arranged for travel in horizontal cross-head guides 26, suitably fixed in the frame 4, there being journaled at opposite sides of the pitman 20 at a point between its ends antifric-tion-rollers 27, which in practice contact with the free ends of leaf-springs 28, having their forward ends adjustably movably connected, respectively, to the drive-wheels 12 by means of bolts 29, arranged in suitable slots 30, provided in the wheels 12.

Journaled in the frame 4 at a point beneath the forward end of the box 7 is a feed-shaft 31, adapted to be driven from the shaft 11 through the medium of a sprocket-chain 32, engaged with sprocket-wheels 33 34, fixed, respectively, on said shafts, there being fixed upon the shaft 31 for movement therewith a pair of crank-arms 35, operatively connected

by links 36 with a cross piece or bar 37, arranged for movement in vertical guide openings or slots 38, provided in the side walls of the hopper 8 and fixed upon the upper end of the stem 39 of a vertically-reciprocatory feed-plunger 40, disposed for movement in the hopper and to work through the feed-opening 9, for a purpose which will presently appear.

Mounted in the hopper 8 is a pair of rotary guide-rolls 41, on which is arranged for travel an endless conveyer-belt 42, equipped with transversely-extending blades or flights 43, while fixed upon the shaft 31 is a belt-pulley 44, connected by means of a belt 45 with a pulley 46, fixed upon the upper conveyer-roller 41 for driving the conveyer, which latter, it will be noted, is arranged at a downward and forward inclination within, and in parallel relation with the rear wall of, the hopper 8 for feeding material downward in the latter to the feed-opening 9.

In practice and during the operation of the thresher the straw will be delivered through the duct 2 into the hopper 8, as before explained, and the shaft 14 will be driven for transmitting motion through the medium of pinions 13 and wheels 12 to the shaft 11, which in turn drives the feed-shaft 31 through the medium of the chain and sprocket connections, it being noted that the sprockets 33 and 34 are similar in size, whereby the shafts will be driven at a corresponding rate of speed. As the shaft 11 revolves the pitman 20 will be operated for reciprocating the baling-plunger 23, while at the same time the feed-plunger 40 will be driven from the shaft 31 through the medium of crank-arms 35 and links 36, it being noted in this connection that during the operation of the pitman the wrist-pin moves back and forth in the slots 18, the movement being such that at the completion of the instroke of the baling-plunger the pin will lie at the inner ends of the slots 18 and near the axis of rotation of the drive-wheels 12, whereby a slower rate of movement and at the same time an increased power is imparted to the baling-plunger, and, further, that the connections are such and the movements of the plungers 23 and 40 so timed that during the outstroke of the baling-plunger the feeding-plunger will move downward for feeding material from the hopper into the box 7, to be acted upon by the plunger 23 during its instroke. As the drive-wheels rotate the wrist-pin 19 will move inward in the slots 18 under the action of gravity and will, after completion of the baling stroke and upon further rotation of the drive-wheel, be returned to the outer ends of the slots by means of the spring 28 acting upon the antifriction-rollers 27, as illustrated more clearly in Fig. 5. As the parts are driven the conveyer-belt 42 will be operated, as before explained, for feeding the

material downward in the hopper to be acted upon by the plunger 40, as will be readily understood.

Fixed upon the upper end of the hopper 8 and at one side thereof is a pair of spaced vertical bearing members or arms 47, with which is detachably engaged the upper end of a conveyer-frame 48, containing an endless conveyer-belt 49, arranged for travel upon end rollers 50 51, suitably journaled in the frame, there being fixed upon the shaft of the upper roller 50 a belt-pulley 52, connected by a belt 53 with a belt-pulley 54, fixed upon one end of a stub-shaft 55, journaled in suitable bearings at the upper end of the hopper and equipped with a bevel-pinion 56, in mesh with a corresponding pinion 57, fixed upon one end of the upper conveyer-roller 41, whereby motion will be imparted from the latter during the operation of shaft 31 through the medium of the gears 56 57 and belt 53 to the conveyer 49, the lower lead of which travels at a point adjacent its upper end over a toothed idler 58, journaled in the frame 48 and adapted to take up slack in the conveyer-belt. The frame 48 is sustained at its lower end by means of supporting-legs 59, pivoted at their upper ends thereto and adapted for adjustment through the medium of braces 60, adapted for engagement with spaced stops 61 to vary the height of the conveyer relative to the ground. The conveyer 49, the frame of which is detachably engaged with the bearings 47, is intended for use in baling straw or other material directly from the stack and when the thresher is not in operation, it being obvious that in action the straw will be pitched onto the conveyer 49 and delivered thereby into the hopper 8, from which it is fed in the manner heretofore described into the baling-box.

From the foregoing it is apparent that I produce a simple device admirably adapted for the attainment of the ends in view, it being understood that in attaining these ends minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus described my invention, what I claim as new is—

1. In a device of the class described, a baling-box, a plunger arranged for operation therein, a drive-wheel having a substantially radial guideway, a pitman connected with the plunger and having a wrist-pin movably disposed in the guideway, said pin being adapted to move inward in the slot during instroke of the plunger, and spring-fingers connected for operation to move the pin outward in the slot during the outstroke of the plunger.

2. In a device of the class described, a baling-box, a plunger arranged for operation therein, a drive-wheel having a substantially radial guideway, a pitman connected with

the plunger and having a wrist-pin movably disposed in the guideway, an antifriction-roller mounted on the pitman at a point between its ends and a spring-finger carried by the drive-wheel and designed to act upon said roller for moving the wrist-pin outward in the guideway during outstroke of the plunger, said pin being adapted to move inward in the guideway during instroke of the plunger.

3. In a device of the class described, a baling-box having a feed-opening and a hopper leading thereto, a baling-plunger arranged for reciprocation in the box, a feed-plunger mounted for reciprocation in the hopper to

operate through the feed-opening, a drive-shaft, operative connections between the shaft and baling-plunger, a feed-shaft operatively connected with the drive-shaft, connections between the feed-shaft and feed-plunger, a conveyer-belt sustained for travel in the hopper, and operative connections between said belt and the feed-shaft.

In testimony whereof I affix my signature in presence of two witnesses.

MILTON IVES PARKHURST.

Witnesses:

THOMAS DORGAN,
EDWIN P. H. DORGAN.