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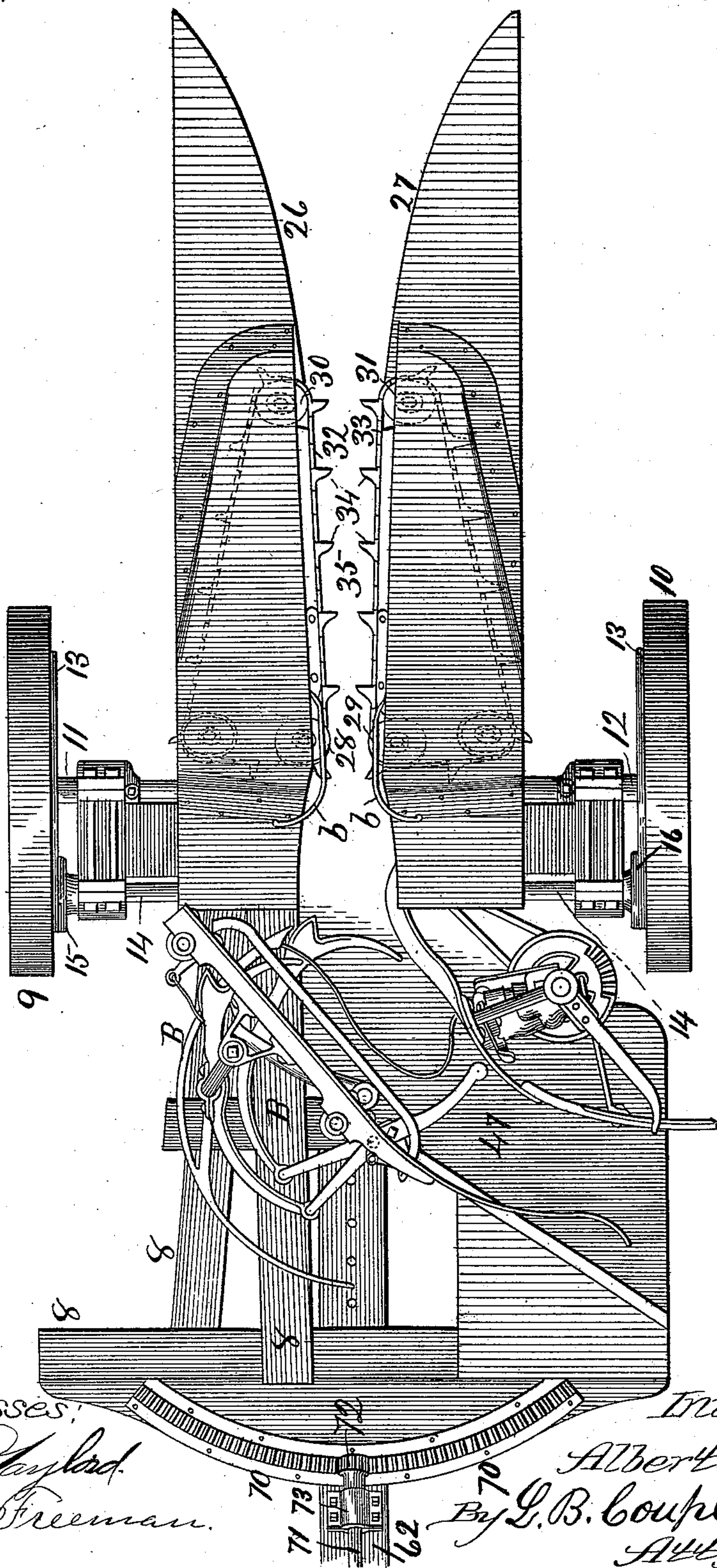
4 Sheets—Sheet 1.

A. S. PECK.
CORN HARVESTER.

No. 466,512.

Patented Jan. 5, 1892.

Fig. 1.



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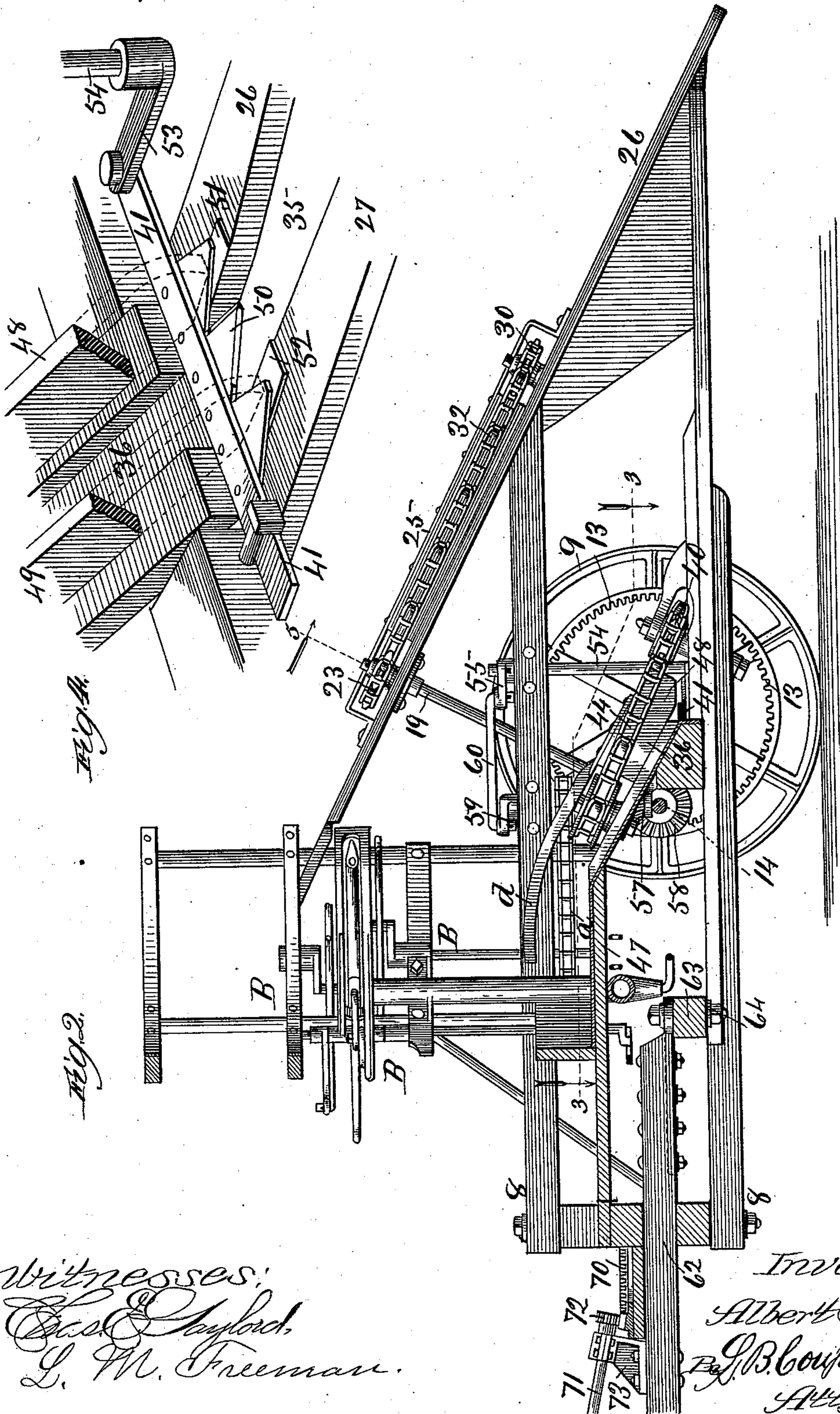
(No Model.)

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No. 466,512.

Patented Jan. 5, 1892.



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(No Model.)

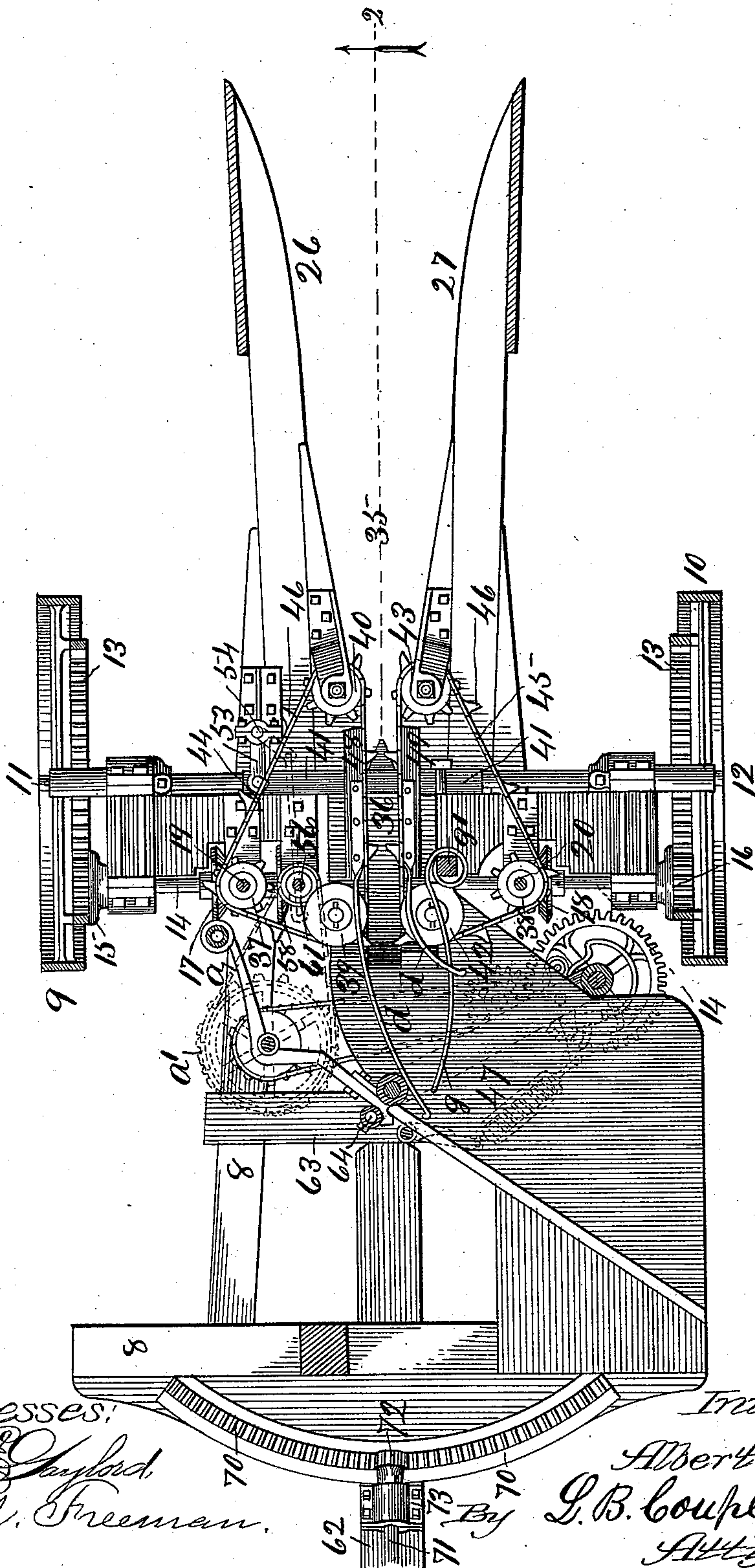
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Fig. 3.



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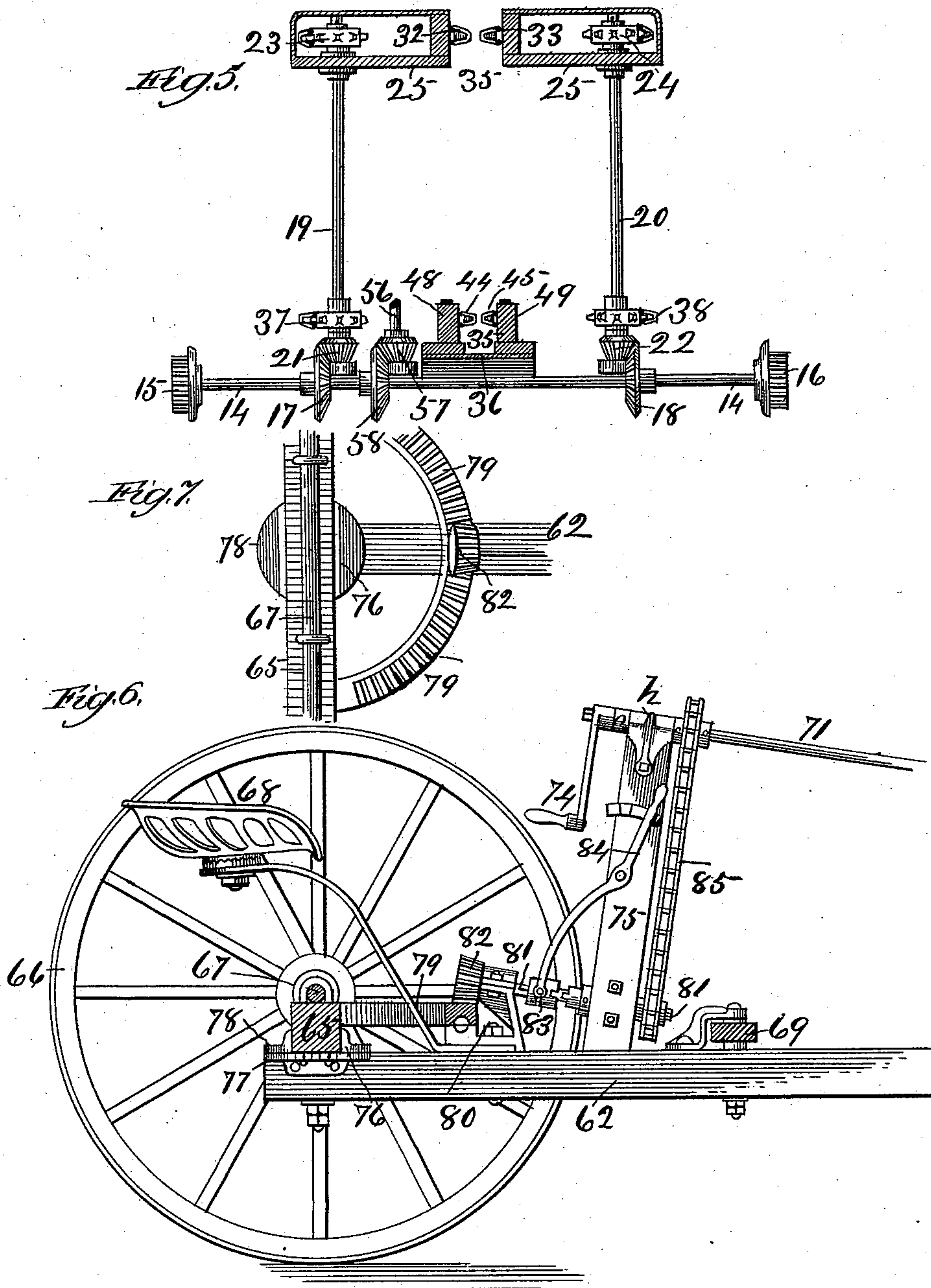
(No Model.)

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A. S. PECK.
CORN HARVESTER.

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UNITED STATES PATENT OFFICE.

ALBERT S. PECK, OF GENEVA, ILLINOIS.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 466,512, dated January 5, 1892.

Application filed October 16, 1890. Serial No. 368,325. (No model.)

To all whom it may concern:

Be it known that I, ALBERT S. PECK, a citizen of the United States, residing at Geneva, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in a Corn-Harvester, of which the following is a full, clear, and exact description that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in corn-harvesting machines; and the same consists of certain novel features in the combination, arrangement, and operation of devices employed whereby the cornstalks are cut and bound together in a standing position before the bundle is discharged from the machine, as will be hereinafter set forth in detail.

Figure 1 is a plan of that part of the machine in advance of the propelling power doing the cutting and binding; Fig. 2, a vertical longitudinal section in plane 2, Fig. 3, looking in the direction indicated by the arrow; Fig. 3, a horizontal section on the angular line 3, Fig. 2; Fig. 4, a broken-away detail of the cutting mechanism and adjacent parts; Fig. 5, a broken-away vertical section in detail, line 5, Fig. 2; Fig. 6, a broken-away elevation and part section of the sulky-attachment mechanism in the rear of the machine proper for controlling the operation of the same; Fig. 7, a broken-away plan of the mechanism below the driver's seat.

This machine is adapted to cut a single row of stalks, the horses being placed in the rear of and pushing the machine ahead.

Referring to the drawings, 8 represents the different parts of the main frame supporting the machine proper.

The driving or ground wheels 9 and 10 are mounted on their respective axles 11 and 12 and are provided with the toothed circle or ring 13, from which the different parts of the working mechanism receive their motion through the medium of the transmitting connections, to be hereinafter described.

The horizontal main driving-shaft 14 (see Figs. 1, 3, and 5) is provided with suitable journal-bearings and has the pinions 15 and 16 mounted on its respective ends, which engage

with the toothed circle 13, formed on the inner side of the driving-wheels. The companion bevel-pinions 17 and 18 are also mounted on the main shaft.

19 and 20 are inclined shafts extending upwardly and inclining forward from the main shaft. These inclined shafts have pinions 21 and 22 mounted on their lower ends, which engage with pinions 17 and 18, as shown in Fig. 5.

The sprocket-wheels 23 and 24 are mounted on the upper ends of the two inclined shafts just inside of the rear end of the housing 25, (see Figs. 1, 2, and 5,) located on top of the dividing-boards 26 and 27, between which the stalks are carried on their way to the binding mechanism.

The sprocket-wheels 28 and 29 (see Fig. 1) are journaled inside of the rear end of the housing on the respective dividing-boards and project a little beyond the edge, as shown. The sprocket-wheels 30 and 31 are journaled in the front end and edge of the housing. The endless link belts 32 and 33 are mounted on their respective sprocket-wheels and travel in an inclined plane, as shown in Fig. 2. These belts are armed with the fingers 34, which project into the passage 35 between the dividing-boards and engage with and assist in carrying the stalks back and up the inclined table or chute 36.

Sprocket-wheels 37 and 38 are mounted on the lower part of the companion inclined shafts 19 and 20, as shown in Figs. 3 and 5.

Sprocket-wheel 39 is mounted on a stub-shaft and journaled in the frame, and is located near the upper end of the inclined table. A third sprocket-wheel 40 is provided with a suitable supporting-bearing, and is located in advance of the front end of the inclined table 36 and the cutter-bar 41, the relative position being plainly shown in Fig. 2. On the opposite side of the inclined table and pathway of the stalks are the sprocket-wheels 42 and 43, located in a corresponding position relative to sprocket-wheels 39 and 40. These sprocket-wheels are all set at an angle, so as to impart to the link belts 44 and 45, mounted thereon, the same degree of inclination as the upper carrying-belts 32 and 33. The link belts 44 and 45 are each armed with the

fingers 46, which project into the pathway of the stalks and engage with the same near the butt-ends, the upper carrying-belts engaging the stalks near their middle. By this arrangement the stalks are carried back and deposited on the binder-table 47 in an upright position, then bound and discharged from the machine.

The binder mechanism will not be described in detail, as it is a well-known grain-binder placed in a vertical position and applied to this machine.

It is found that by binding the stalks together in a standing position a much more uniform and perfect bundle can be made than by binding in a horizontal position, as the stalks will cross each other and become tangled in falling.

B represents the binder mechanism as a whole.

The position of the cutter-bar 41 is clearly shown in Fig. 4, the upper part of the dividing-boards and the belt-carrying mechanism being omitted for the sake of clearness. The guide-rails 48 and 49, placed at each side of the inclined table, are also broken away, their continuation and relative position being indicated in dotted lines.

The cutter-bar 41 is provided with a number of the usual triangular knives, the center knife 50 doing the cutting, in connection with the stationary blades 51 and 52, having the inner edges sharpened and rigidly secured to the horizontal members of the dividing-boards on each side of the passage therebetween. The required reciprocating movement to the cutter-bar is transmitted through the medium of the arm 53, (see Fig. 4,) one end of which is attached to one end of said bar, the opposite or hub end being mounted on the lower end of the vertical rock-shaft 54. This shaft is located at one side of the machine and extends up through one of the upper longitudinal framing-bars. (See Figs. 2 and 3.) On the upper projecting end of this shaft 54 is mounted the crank-arm 55. The companion vertical rotating shaft 56 extends straight up from the main horizontal driving-shaft and has the bevel-pinion 57 mounted on the lower end thereof, which engages with pinion 58, mounted on the main shaft. These pinions are shown in Figs. 2 and 5; the shaft being broken away in the latter figure and shown in section in Fig. 3. Shaft 56 has the crank-arm 59, Fig. 2, mounted on its upper end. The link 60 connects crank-arms 55 and 59, whereby the rotating shaft 56 imparts a rocking motion to shaft 54, which in turn imparts a reciprocating movement to the cutter-bar. The relative positions of these parts are indicated in dotted lines, Fig. 3.

A sprocket-wheel 61 is mounted on the vertical rotating shaft 56 (see Fig. 3) at a point just above where it is broken away in Fig. 5. The link belt α connects this sprocket-wheel with sprocket-wheel α' , mounted on the lower end of the main shaft of the binding mech-

anism, by which means the required motion is transmitted thereto. Some of the parts are omitted in Fig. 2 in order to avoid confusion.

The front ends of the upper spring-arms b b , Fig. 1, are secured to the dividing-boards and extend back on each side of the passage between and end over the top of said boards. Below, Figs. 2 and 3, are the companion arms d d , the corresponding front ends of which are secured to the guide-rails 48 and 49, the opposite ends terminating loosely just above the binder-table. These arms serve to keep the stalks together after they pass the carrying-belts on their way to the binder mechanism. The spring-arm g is secured at one end to the post g' , Fig. 3, and extends loosely across the binder-table in the pathway of the stalks and assists in compressing and packing the stalks together during the operation of binding.

The inclined table and cutting mechanism are omitted from Fig. 1 for the reason that these features could not be clearly shown in this figure.

The mechanism employed in guiding and controlling the movements of the machine will now be described. The sulky attachment is placed at some distance back of the machine and is connected thereto by means of the tongue or draft-pole 62. The front end of this tongue is secured to the cross-bar 63, Figs. 1, 2, and 3, of the main frame by the bolt 64 and the rear end to the under side of cross-bar 65, Fig. 6, of the sulky-frame. The sulky-wheels 66 (but one is shown) are mounted on the axle 67 and track with the wheels of the machine proper.

68 is the driver's seat, and 69 the double tree.

On the rear end of the machine is mounted the segment-rack 70. (Shown in Figs. 1, 2, and 3.)

71 is an inclined shaft, on the front end of which is mounted the pinion 72, which engages with said rack. This hand-shaft is also provided at this point with journal-bearing 73, fastened to the tongue. This shaft extends backwardly, Fig. 6, to a point convenient to and within reach of the driver. Hand-crank 74, mounted on the rear end of this shaft, provides means for the rotation of the same. The rear end of this shaft 71 is provided with the bearing h , secured to the upper end of the standard 75. By rotating this shaft the machine is swung to either side and guided as circumstances may require. The tongue connection with the sulky attachment is in the form of the fifth-wheel 76, Figs. 6 and 7, consisting of the lower plate 77, attached to the pole, and the upper plate 78, attached to the under side of the cross-bar 65.

The sulky-axle 67 is rigidly secured to the upper side of the bar 65, as shown in Fig. 7. The segment-rack 79 is placed just in advance of the sulky-axle and has its respective ends rigidly secured to cross-bar 65. This rack is supported at its central part by the bracket-

bearing 80, set on top of the tongue at that point. The rear end of the clutch-shaft 81 is journaled in said bracket and has pinion 82 mounted thereon, which is adapted to engage
 5 with segment-rack 79. The front part of the clutch-shaft is journaled in the lower end of standard 75, the two members forming the clutch-shaft being connected and disconnected by the usual sliding collar 83, operated by
 10 means of the hand-lever 84. Motion is transmitted to the clutch-shaft from hand-shaft 71 by the link-belt 85, running over sprocket-wheels mounted on said hand-shaft and the clutch-shaft. This arrangement enables the
 15 driver to make a shorter turn and handle the machine with greater facility than can be done with the steering connection on the machine proper alone, as by this construction the steering mechanism on the sulky can be
 20 used with that on the machine proper or be thrown out of action, as desired.

By having the horse placed in the rear, so as to push the machine ahead, the labor and time are saved of first having to cut a number
 25 of rows by hand in order to get room to start in. The driver always has a clear and unobstructed view. All of the working mechanism being ahead, it is much easier handled and controlled than under the ordinary arrangement.
 30 ment.

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

1. In a corn harvester and binder, the combination, with the dividers 26 27, the inclined flooring 36, the horizontal binder-table 47, and the vertically-arranged binder B of the main driving-shaft, the inclined shafts 19 and 20, geared therewith, sprocket-wheels on the upper
 35 ends thereof, and the endless link belts 32 33, running forward of and adapted to be actuated by said sprocket-wheels, of the auxiliary sprocket-wheels 37 38, mounted on the inclined shafts 19 and 20 just above the inclined flooring, and adapted to actuate the
 45 short auxiliary link belts 44 and 45, having

their rear ends extending in rear of the link belts 32 33, substantially as described.

2. In a corn-harvester, the combination, with the dividing-boards and the inclined table-
 50 rails, of the spring-arms *b b*, the companion arms *d d*, and the arm *g*, substantially as described.

3. In a corn-harvester, the combination of the machine, the sulky located in rear thereof, a tongue having vertical pivotal connections at its opposite ends with the frame and the sulky, gear-racks mounted on the frame and sulky between the connections of the tongue therewith, gear-wheels carried by the
 60 tongue and engaging the said racks, and a single operating device for actuating either the front gear-wheel or both, as desired, substantially as described.

4. In a corn-harvester, the combination of
 65 the machine, the sulky located in rear thereof, a tongue having vertical pivotal connections at its opposite ends with the frame and the sulky, gear-racks mounted on the frame and sulky between the connections of the
 70 tongue therewith, a shaft carried by the tongue, a gear-wheel fixed on the shaft engaging the rack on the machine, and a loose gear-wheel engaging the rack on the sulky and adapted to be locked to the shaft, sub-
 75 stantially as described.

5. In a corn-harvester, the combination, with the machine proper, the tongue 62, pivoted thereto, the segment-rack 70 on said machine, the pinion 72, engaging said rack, the shaft
 80 71, carrying said pinion, and the hand-wheel for operating the said shaft, of the sulky located in rear of the machine and pivotally connected with the tongue 62, the segment-rack 79 on said sulky, pinion 82, clutch-shaft
 85 81, lever 84, controlling the clutch, and a sprocket connection between the shafts 81 and 71, substantially as described.

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