(No Model.) 2 Sheets—Sheet 1.

F. HECKMANN.

BUNDLE CARRIER.

No. 401,032. Patented Apr. 9, 1889.

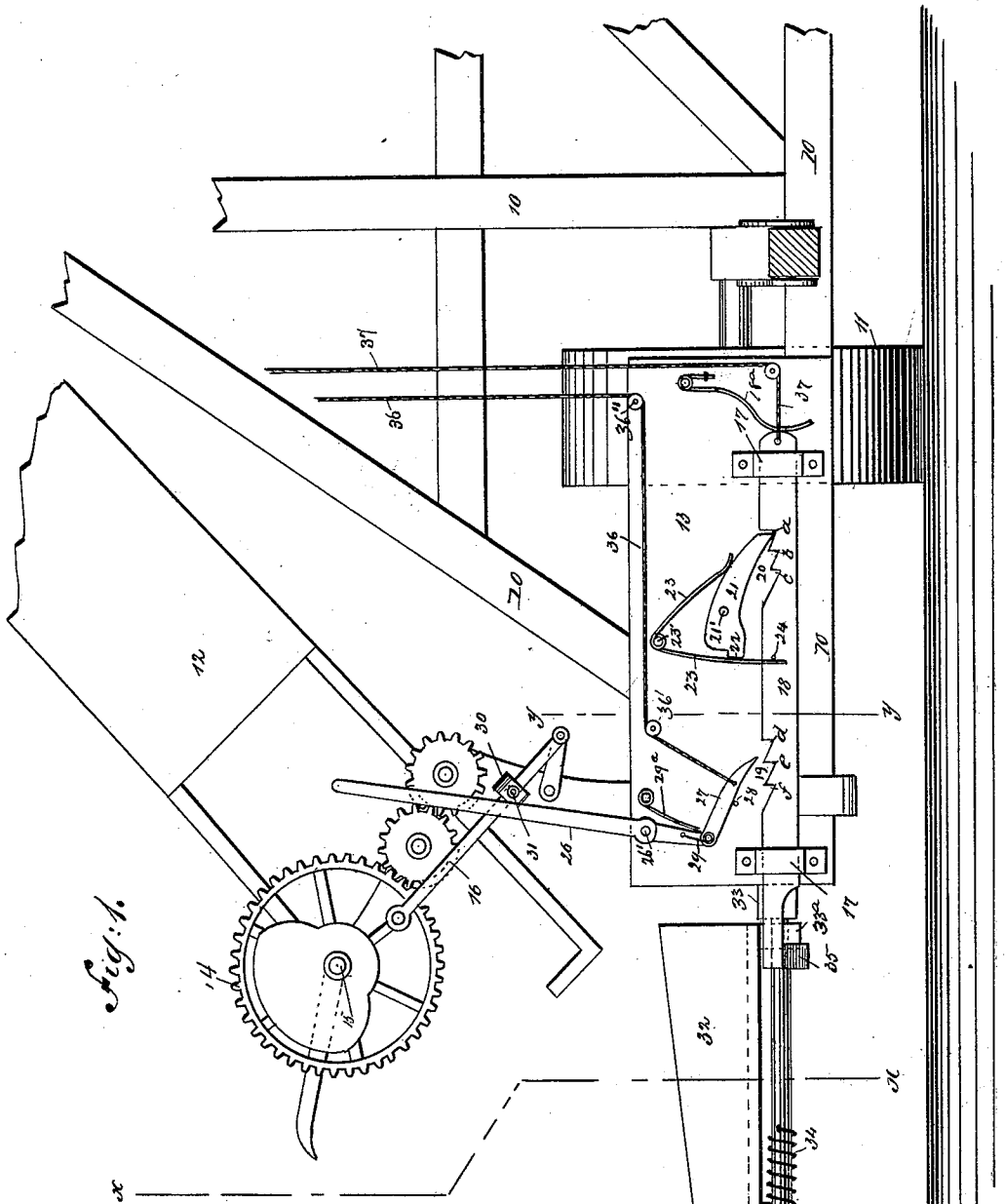


Fig. 1.

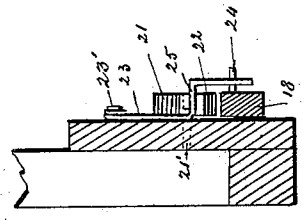


Fig. 4.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

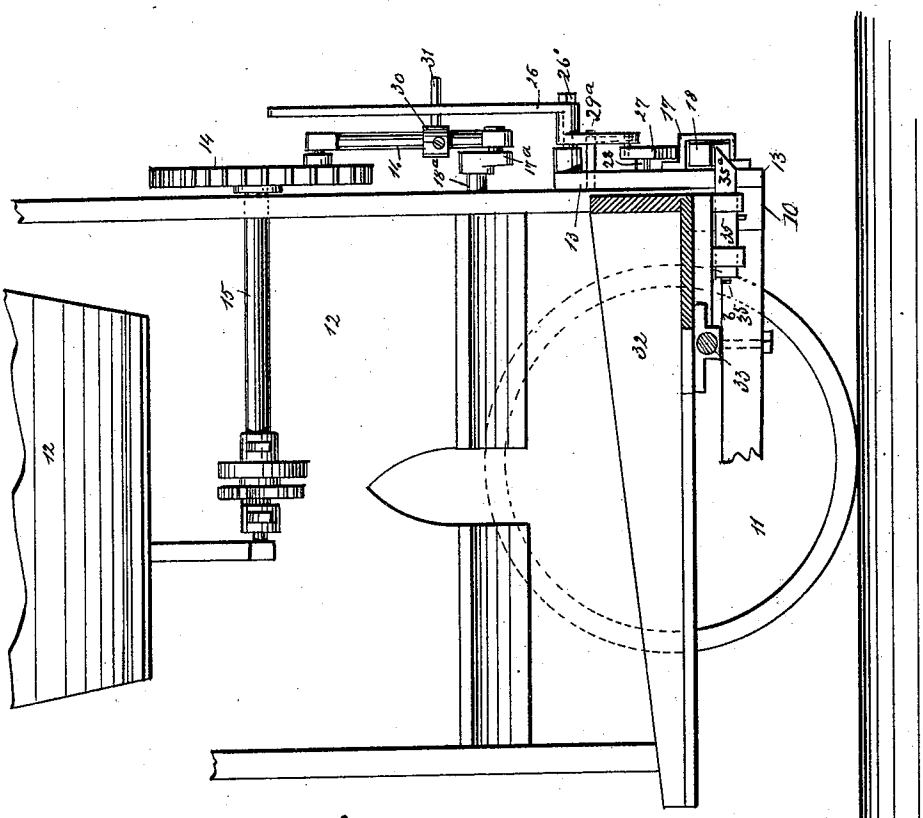
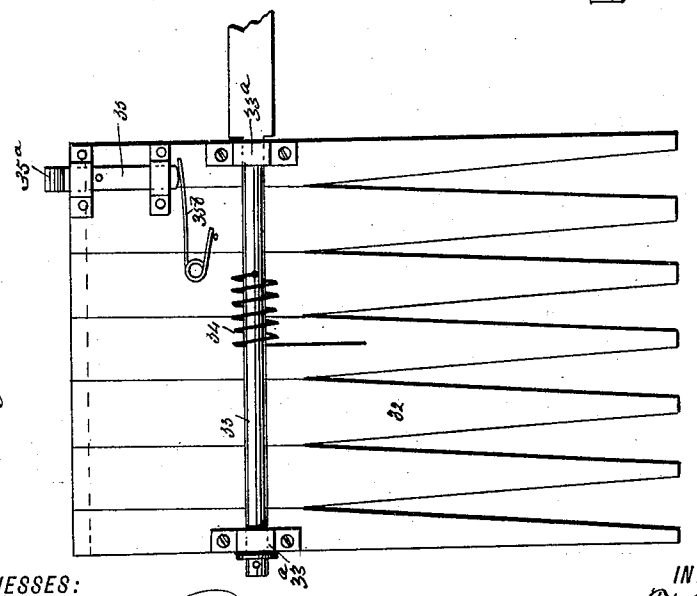


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRED HECKMANN, OF PHILOTHEA, OHIO.

BUNDLE-CARRIER.

SPECIFICATION forming part of Letters Patent No. 401,032, dated April 9, 1889.

Application filed August 23, 1888. Serial No. 283,576. (No model.)

To all whom it may concern:

Be it known that I, FRED HECKMANN, of Philothea, in the county of Mercer and State of Ohio, have invented a new and Improved Bundle-Carrier, of which the following is a full, clear, and exact description.

My invention relates to an improvement in bundle-carriers, and is adapted for attachment to the binder of a harvester; and the object of the invention is to provide a carrier of simple and durable construction capable of attachment to any binder, and wherein the said carrier will be automatic in its action.

The invention consists in the 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 figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a front side elevation of a portion of the harvester-frame, illustrating the application thereto of the bundle-carrier. Fig. 2 is a section on line *x x* of Fig. 1. Fig. 3 is a bottom plan view of the platform, and Fig. 4 is a detail section on line *y y* of Fig. 1.

The harvester-frame 10 is supported upon the drive-wheel 11 in the usual manner. 12 indicates a part of the binder-frame. Upon the front of the machine, at one side, an oblong rectangular board or plank, 13, Figs. 1 and 2, is secured, its transverse axis being vertical and its lower edge extending a short distance below the plane of the carrier 32. The part 13 serves as a support for various parts of the machine, adapted for automatically releasing the tilting carrier.

Cleats or keepers 17, Fig. 1, secure to such support 13 a bar, 18, arranged longitudinally, and which is adapted to slide in said keepers. One end of this bar projects beyond the outer end of the support, as shown, and engages a latch, 35, attached to the carrier 32. In the upper edge of the said sliding bar 18 two groups of notches, 19 and 20, are produced. The notches 19 are of equal depth, and are located nearer the outer end than the said group of notches 20.

The outer wall of the last or outer notch in the group 20 is carried upward upon an inclined plane to an intersection with the upper edge of the bar. The walls of the other notches of the said group 20, not being carried up to the edge of the bar, are of less height. For convenience I will denominate the several notches in the group 20 as *a*, *b*, and *c* and the notches comprising the group 19 as *d*, *e*, and *f*.

A pawl, 21, is pivoted at 21′ above the group of notches 20 to the support 13, the said pawl being adapted to engage the said group, as best illustrated in Fig. 1. The outer edge of the pawl 21, near the lower side, is provided with a shoulder, 22, and the said pawl is normally held in engagement with one of the group of notches 20 through the medium of a spring, 23, secured fast at 23′ to the support 13, one end of which spring bears upon the upper surface of the pawl, the other end being made to pass downward to the rear of the same and bear against a pin, 24, located upon the bar 18. The said spring, passing downward toward the outer end of the pawl, is bent forward at a right angle at or near its middle, and then downward again to bear against the pin 24, as best illustrated in Fig. 4, to provide a horizontal rest, 25, adapted to engage with the recess formed by the shoulder 22 of the pawl 21, when the said pawl is to be held entirely disengaged from the group of notches 20.

Near the outer end of the said support 13, and at or near the top, a lever, 26, is fulcrumed at 26′, and to the lower end of the said lever 26 a dog, 27, is pivoted, being held normally at an angle thereto, the inner end pointing inward, by reason of a bearing upon a pin, 28, in the support 13, and a spring, 29, attached to the outer end of the dog and to the lever. A spring, 29ª, is made to bear against the inner face of the lever 26 at or near the lower end, which spring is secured to the support 13.

Upon the pitman 16, which actuates the needle from wheel 14, a sleeve, 30, is held and adapted to slide, and provided with a forwardly-projecting pin, 31, adapted to engage the inner side of the lever 26 above the fulcrum thereof.

The sleeve 30 may be secured in any approved manner at any desirable point in the length of the said pitman.

The carrier 32 is pivoted at or near its for-

ward end upon a shaft, 33, projecting from and rigidly secured to the under side of the harvester-frame. The carrier is attached to it by means of suitable boxes, 33ª, Figs. 1 and 3. A spring, 34, is coiled upon the said shaft 33, having one end secured to the shaft and the other end held in engagement with the outer surface of the said carrier, preferably at a distance to the rear of the shaft, as best illustrated in Figs. 1 and 3.

The carrier is so pivoted upon the shaft 33 as that, with the aid of the spring 34, when the said table is empty, it will be retained in a horizontal position.

A spring-actuated latch, 35, having a beveled outer end, is secured to and adapted to slide upon the under surface of the carrier at the forward end, (and at the side next to the harvester.) The latch 35 is at right angles to the sliding bar 18, and is adapted for engagement by the said bar, which at the point of contact is of less width than at other points in its length. When the carrier is in its normal position or in the position adapted to receive the bundles of grain, the latch 35 is brought in frictional contact with the reduced or recessed end of the sliding bar, as best illustrated in Fig. 1. A rope or chain, 36, is attached to the dog 27 and carried upward over suitable friction-rollers, 36′ and 36″, on the support 13 to the driver's seat, and a similar rope, 37, is secured to the inner end of the sliding bar 18 and carried up in similar manner also to a point convenient to the driver.

In operation, as each bundle is formed, the wheel 14 on knotter-shaft 15 is rotated, which actuates the pitman 16, and causes the pin 31 upon the sleeve 30 to bear against the lever 26 and carry the same in an outward direction, whereupon the dog 27, guided upon the pin 28, is pressed downward to an engagement with the first notch, *d*, whereupon the sliding bar 18 is carried inward the distance of one notch, the pawl 21 passing from notch *a* into notch *b*. As the next bundle is formed, the wheel again being rotated, the dog 27 engages the next notch, *e*, forcing the sliding bar 18 again inward, the pawl 21 passing to notch *c* at the same time, and upon the third bundle being formed the dog 27, entering the notch *f*, causes the sliding bar 18 to be carried inward a sufficient distance to disengage its recessed extremity from contact with the carrier-latch 35, whereupon the weight of the three bundles now deposited upon the carrier causes the same to tilt, so that the bundles are deposited upon the ground. After the bundles leave the carrier the weight of the forward end of the latter and the action of the spring 34 cause the said carrier to assume its horizontal or normal position. When the sliding bar 18 is making its last movement inward, the pawl 21 travels up nearly to the top of the inclined plane of the outward notch, *c*, whereby the outer notched end of the said pawl is necessarily depressed, and the horizontal portion 25, Fig. 4, of spring 23, which was released from the pin 24 at the first movement of the sliding bar, then engages with such notched end of the pawl, so that the latter is temporarily held at an elevation above the sliding bar 18. The bar 18 is moved by the dog 27 each time a distance slightly greater than what is required to enable the pawl 21 to pass over either of the teeth between notches *a b c*, yet the said pawl is thrown down and engaged with one of such notches by the spring 23 before the end of each such movement of the bar 18, save the last one, when the pawl rides up the incline to a distance slightly greater than the length of the teeth, so that the outer or notched end of the pawl is depressed far enough to engage with spring 23, as above stated.

Any suitable spring, 18ª, Fig. 1, is employed for sliding the bar 18 outward, or it may be accomplished by a device operated by the binder. When the said sliding bar 18 is carried outward and assumes its normal position, the pin 24, coming in contact with the lower end of the spring 23, releases the pawl and permits it to drop down into the group of notches 20. Before the carrier 32 will have assumed its horizontal position the bar 18 will have been moved to the outer position, Fig. 1, and upon the carrier coming down thereon the beveled end 35ª of latch 35 will ride over said bar 18 (the spring 35ᵇ, Fig. 3, allowing the latch to slide backward) and engage its under side, as shown in Fig. 2.

Any number of notches desired may be employed, so that the table may be made to receive more than three bundles of grain before being automatically tripped, and instead of the trip mechanism being automatically manipulated the same may be manipulated by the driver through the medium of the ropes 36 and 37; but I do not claim these or other manual means for operating the trip mechanism.

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

1. The combination, with the tilting bundle-carrier and a latch secured to the under side of the same, of a sliding bar adapted to engage said latch, provided with two groups of notches in its upper edge, a pawl engaging one group of notches, a spring pressing on one end of said pawl and engaging its other end when the pawl is tilted upward, a dog engaging the other group of notches, and a pivoted lever for operating said dog, substantially as shown and described.

2. The combination, with the tilting bundle-carrier and a latch secured to the under side of the same, of a sliding bar adapted to engage said latch, provided with two groups of notches in its upper edge, a pawl engaging one group of notches, a spring pressing on one end of said pawl and engaging its other end when the pawl is tilted upward, a dog engaging the other group of notches, and a pivoted lever for operating said dog, the knotter-shaft

and its gear, and the pitman pivoted to the latter and carrying a pin which engages and trips the aforesaid lever, substantially as shown and described.

3. The combination, with a tilting bundle-carrier and a spring-actuated latch secured to the under side of the same, of a sliding bar engaging said latch and provided with an inner and outer group of notches in the upper edge, a pawl engaging the inner group of notches and provided with a shoulder at the outer end, a spring bearing upon the said pawl and provided at its outer end with a horizontal projection to engage the said shoulder, a pin attached to the bar and engaging the outer end of the said spring, a dog pivoted above and engaging the outer group of notches, and means connected with the binder, substantially as shown and described, for operating the said dog, as and for the purpose specified.

4. The combination, with a tilting bundle-carrier, a latch secured to the under side of the same, and a horizontal sliding bar on the harvester engaging with the said latch and provided with an inner and an outer group of notches in the upper edge, the inner group being lower than the outer, of a pawl pivoted above the inner group of notches provided with a shoulder at the outer end, a spring, its upper end bearing upon the upper surface of the inner end of the pawl, passing downward to the outer end of the pawl, and provided with a horizontal projection adapted to engage the shoulder of the pawl, a pin in the bar bearing against the inner surface of the lower end of the spring, a lever pivoted above the outer group of notches, a spring-dog pivoted to the extremity of the said lever, and a sleeve carrying a forwardly-extending pin engaging the said lever, which sleeve is attached to the pitman connecting the needle and knotter shafts of the binder, substantially as and for the purpose specified.

5. The combination, with the knotter-shaft, of a binder, the needle-shaft, the pitman-connection between the two shafts, a sleeve adjustably mounted upon the pitman carrying a forwardly-extending pin, a tilting bundle-carrier below the binding mechanism, and a (spring-actuated) latch secured to the under face of the said carrier, of a sliding bar engaging the latch of the carrier and provided with an outer and inner group of notches in the upper edge, a pawl pivoted above the inner group of notches, a lever fulcrumed above the outer group of notches, a dog pivoted to the lower end of the said lever, and means, substantially as shown and described, for elevating the pawl out of engagement with the inner group of notches, as and for the purpose specified.

FRED HECKMANN.

Witnesses:
LORENZ LOCHTEFELD,
AUGUST HECKMANN.