(No Model.) 2 Sheets—Sheet 1.

M. A. KELLER.

BUNDLE CARRIER FOR HARVESTERS.

No. 525,685. Patented Sept. 4, 1894.

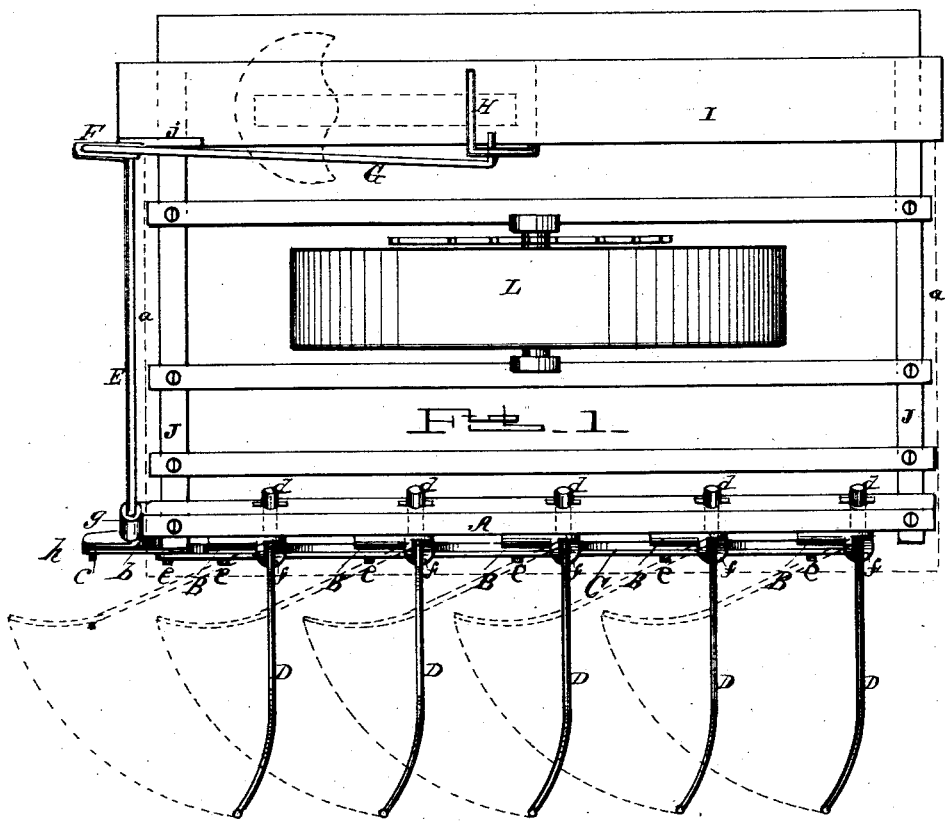

Fig. 1.

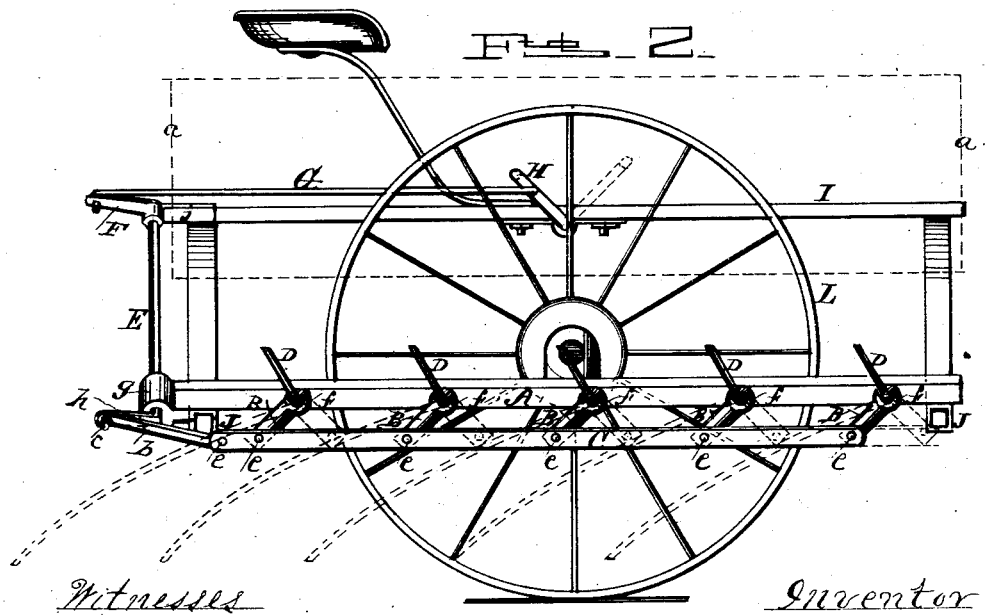

Fig. 2.

Witnesses
A. F. Keller
A. M. Keller.

Inventor
M. A. Keller.

(No Model.) 2 Sheets—Sheet 2.

M. A. KELLER.

BUNDLE CARRIER FOR HARVESTERS.

No. 525,685. Patented Sept. 4, 1894.

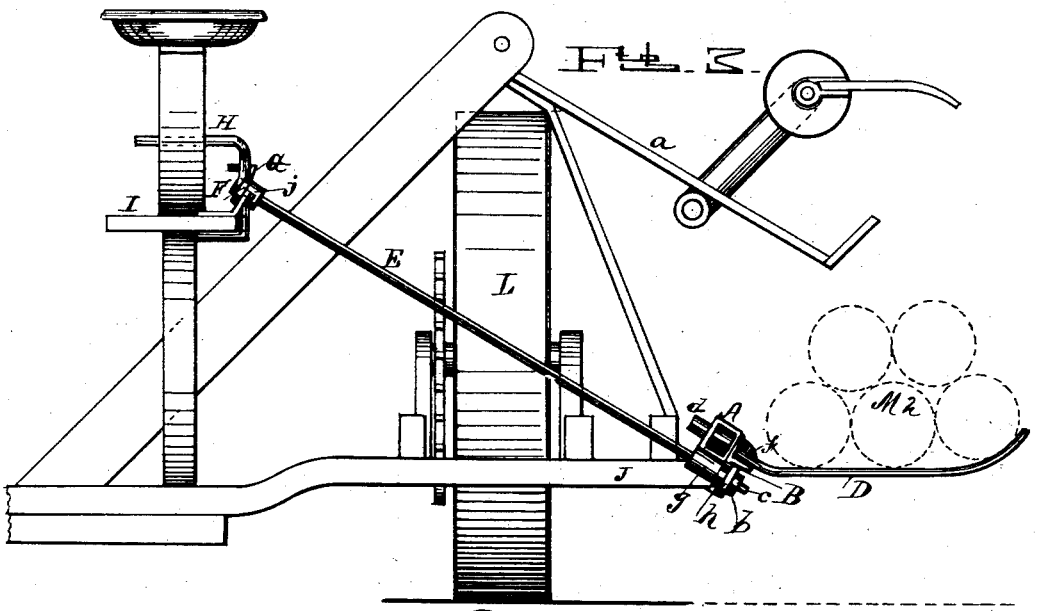

Fig. 4.

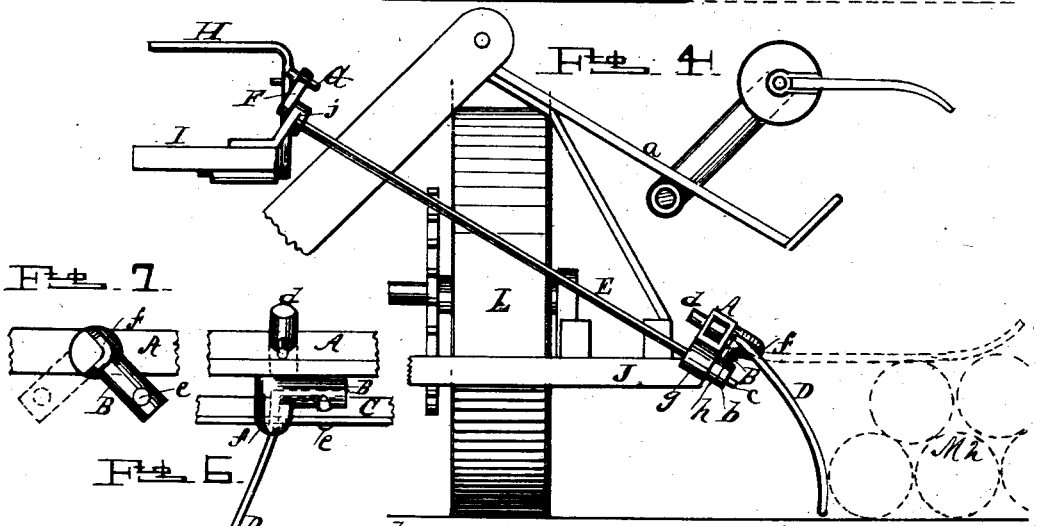

Fig. 7.

Fig. 6.

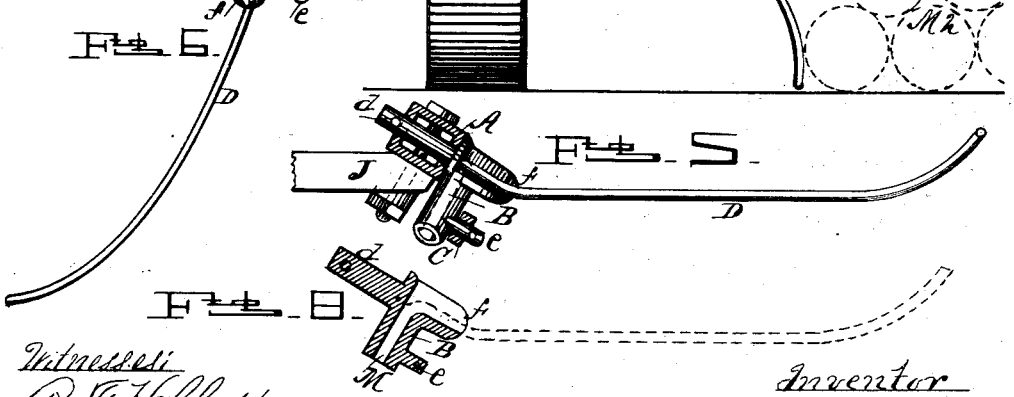

Fig. 5.

Fig. 8.

Witnesses:
C. T. Keller.
J. M. Keller.

Inventor
M. A. Keller.

UNITED STATES PATENT OFFICE.

MOSES A. KELLER, OF BATAVIA, NEW YORK.

BUNDLE-CARRIER FOR HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 525,685, dated September 4, 1894.

Application filed May 28, 1894. Serial No. 512,692. (No model.)

To all whom it may concern:

Be it known that I, MOSES A. KELLER, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, have invented a new and useful Bundle-Carrier for Harvesting-Machines, of which the following is a specification.

My invention relates to improvenents in bundle carriers in which the carrying fingers are independently journaled to a stationary support by means of double inclined joints, so that the fingers while in their normal position can each independently yield when in the progress of the machine should they come in collision with rigid obstructions, and then resume their normal position by the force of gravity.

The further object of my improvement is to produce a carrier that can be immediately returned to its normal position when the bundles have been dropped,—a feature not possessed by any bundle carrier on the market, and which becomes all important when cutting heavy and tangled grain in which the binding is in rapid succession. Experience in the field has demonstrated that in heavy grain the carriers in use cannot be restored to their normal position quick enough to catch all the bundles, and not infrequently in very heavy grain they cannot be got back to their normal position, at all, as the binding is so fast and the bound bundles fall on the carrier before it is freed from the bundles on the ground, as the fingers must trail from under the bundles as the machine moves forward before the carrier can be restored to its normal position. I overcome these difficulties by the double inclined joints and having each finger to yield independently. The fingers turn upside down, or nearly so, when dropping the load of bundles and fall at the side of the bundles with their ends downwardly; and being perfectly free to yield independently and when raised they can swing over the bundles and resume their normal position by force of gravity, thus yielding if they come in contact with the bundles on the ground. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top plan in its normal position, as the same would appear when attached to the harvester machine. Fig. 2 is a side elevation, also in the normal position. Fig. 3 is a rear side elevation in the normal position, and Fig. 4 is a rear side view, with the fingers down after the load of bundles has been dropped. Figs. 5, 6, 7, and 8 are detail views of the same.

Similar letters refer to similar parts throughout the several views.

The machine to which the carrier is attached represents the standard binders in which "*a*" represents the binding table, and "J" the main frame, and "L" the driving wheel. To the frame "J" is bolted a square tubular bar "A" in an inclined position, as shown in the drawings, and into this bar are journaled a series of angular hangers "B," in which the part "*d*" forms the bearing; this bearing is inclined by reason of the position of the bar "A," as is seen in Fig. 5, and all the hangers are thus in a line in the same inclined position. This mode of construction is adapted for its simplicity and cheapness, but the same object could be attained in other forms of construction. The hanger "B" is provided with a bearing "M" (see Fig. 8), into which is journaled the finger "D;" there is a projection "*f*" formed on the hanger, which forms a rest for the finger and which sustains the finger in its normal position. The hanger "B" is also provided with a stud "*e*," on which is journaled a reciprocating bar "C." A trip rod or shaft "E" is journaled in the hangers "*j*" and "*g*" that are secured to the main frame of the machine. This shaft is provided with a crank "*h*" at its lower end, and a pitman "*b*" journaled on the pin "*c*" and stud "*e*" connects the shaft "E" with the reciprocating bar "C," and a crank "F" and a rod "G" connects the shaft "E" with the foot lever "H" that is journaled on the seat board "I." When the foot lever is pushed forward to the position shown by dotted lines, all the hangers "B" are simultaneously vibrated on their pivots "*d*" until the end to which the bar "C" is pivoted stands at an angle of forty-five degrees, or nearly so, in the opposite direction from that shown when in their normal position, (see dotted lines in Fig. 2 and position shown in Figs. 6 and 7). When this operation occurs the fingers "D" simply turn or roll on their longitudinal axis with the hangers, until the joints into which the fingers are journaled assume the position shown in Fig. 6. Then the fingers will drop at their free end by force

of gravity, and the position or angle of the joints will cause them to swing in toward the machine with the bottom side up, or nearly so, as shown in Fig. 4, with the bundles M^2 at the side on the ground, and not on the fingers as is the case in carriers in which the fingers drop first and swing rearward, in which the machine must move forward to allow the fingers to trail out from under the bundles before they can be restored to their normal position.

In my construction, when the fingers "D" drop, they turn bottom up, or expose their convex side toward the bundles as shown in Fig. 4, and by reason of their independent joints they can yield away from the bundles as the foot lever is pressed back to restore the carrier to its normal position. This operation can be performed while the machine stands still, and thus the carrier can be immediately restored to its normal position as soon as the bundles have been dropped, without waiting for the machine to move forward and past the bundles.

When the foot lever is pressed back to restore the carrier to its normal position, the fingers "D," through their independent joints and the position of the angle the joints assume, the fingers will all assume their normal position by force of gravity; and thus when coming into collision with any rigid obstruction, will yield upward and toward the machine, and as they pass the obstruction will each independently resume their normal position, and all without any attention of the driver; an obvious advantage over a carrier which is practically locked in a rigid position until the driver unlocks the same and drops the fingers to the ground.

By various trials and experiments in the field, it has been fully demonstrated that the fingers cannot be restored to their normal position while the bound bundles lay up against the fingers when either of the joints of the fingers was in a horizontal or vertical position,—and the fingers can only operate as described, provided the double joints are in an inclined position as described and shown and the fingers bend upwardly and rearwardly, at their free end as shown. And I am not aware that a carrier has been made or used to show this peculiar construction and operation, and there is not a carrier on the market that can be restored to its normal position until the machine has passed the dropped bundles.

What I therefore claim as new, and desire to secure by Letters Patent, is—

1. In combination with the inclined journaled vibrating hangers, of the bundle carrying fingers journaled in said hangers on independent diagonal pivots, so as to cause said fingers to have a simultaneously upward and rearward movement or folding action toward the binding table, and to maintain their normal position by the force of gravity, and when in their normal position have their free ends turned upward and rearward so as when discharging the load of bundles, to point downward, rearward and inward, and bottom side up or nearly so and become entirely disengaged from the dropped bundles, in the manner substantially as shown and described.

2. In combination with the bundle carrying fingers having their free ends turned upward and rearwardly when in their normal position and journaled on independent diagonal pivots upon independent vibrating inclined hangers, means connected with said hangers to vibrate all of the hangers simultaneously, and cause said fingers to turn with the hangers, then rearwardly and downwardly on their diagonal pivots, and cause the load of bundles to roll off on the ground and become completely disengaged from the fingers, so that said fingers may be immediately returned to their normal position, in the manner substantially as shown and described.

3. In combination with the vibrating hangers independently journaled on a stationary support in an inclined bearing, of the bundle carrying fingers journaled independently in said hangers with their pivots at right angles or nearly so, to the longitudinal plane of the fingers and in an inclined position, and having their free ends turned upward and rearwardly when in their normal position, means connected with said hangers to vibrate, all of them, simultaneously, and cause them to operate substantially as shown and described.

4. In combination with the inclined independent vibrating hangers of the bundle carrying fingers, independently journaled in said hangers or pivots, whose axes are inclined and transversely to the longitudinal axis of the hangers, so that said fingers shall have an upwardly and rearwardly folding movement, independently when coming in collision with a rigid obstruction while in their normal position, and resume their normal position by force of gravity, substantially as and for the purpose specified.

5. The combination of the independent inclined vibrating hangers, the bundle carrying fingers independently journaled in said hangers on inclined pivots transversely to the longitudinal plane of the fingers, means connected with the hangers to sustain the fingers in their normal position, independently, and cause all the fingers to turn simultaneously when discharging the bundles.

6. In a bundle carrier for harvesting machines, a series of fingers each journaled on a stationary support by means of longitudinal and transversely inclined double joints, in combination with trip mechanism.

7. In a bundle carrier for harvesting machines, a series of fingers each journaled on a stationary support by means of longitudinal and transversely inclined double joints.

M. A. KELLER.

Witnesses:
J. R. KELLER,
A. P. KELLER.