

(No Model.)

2 Sheets—Sheet 1.

W. R. BAKER.
SHEAF CARRIER FOR HARVESTERS.

No. 420,429.

Patented Feb. 4, 1890.

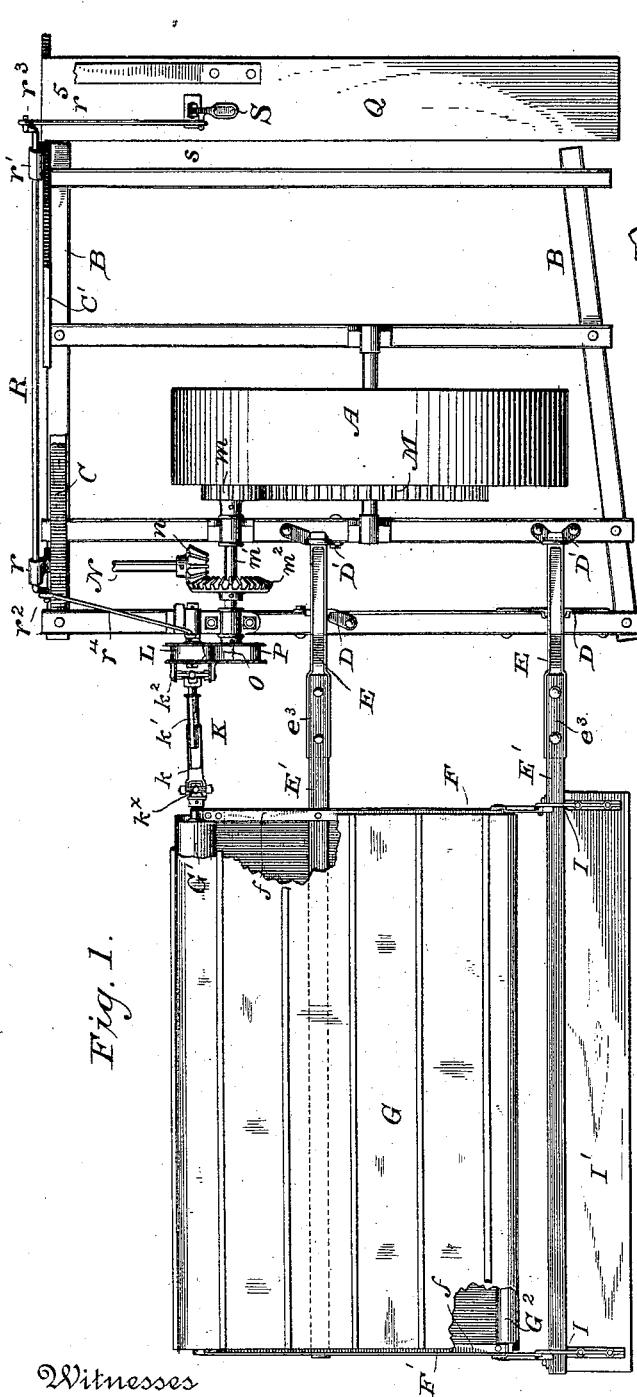


Fig. 1.

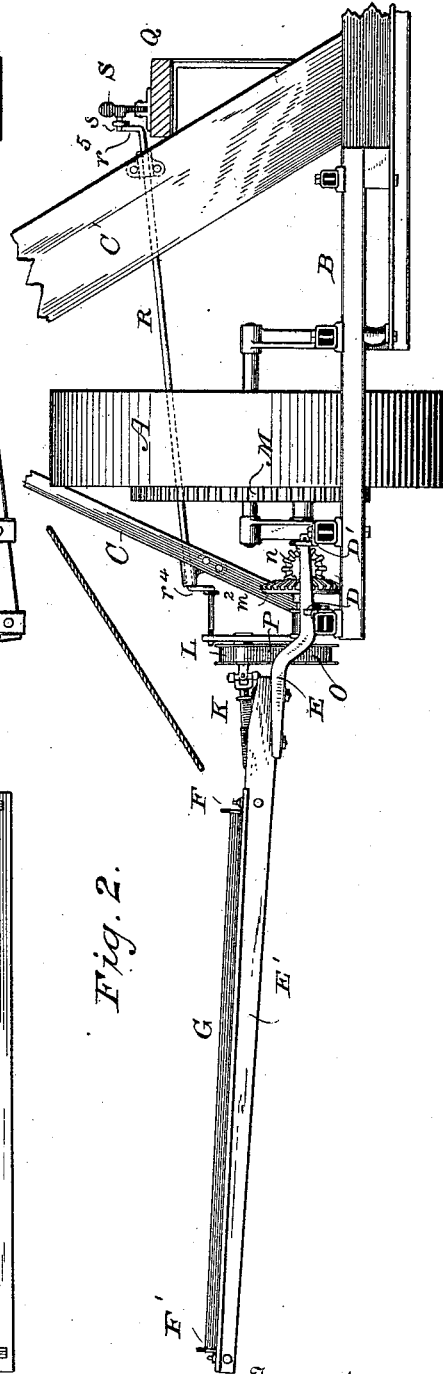


Fig. 2.

Witnesses

Wm. A. Srinkle.
Geo. W. Young.

Inventor

William R. Baker

By his Attorneys

Parsons & Parsons

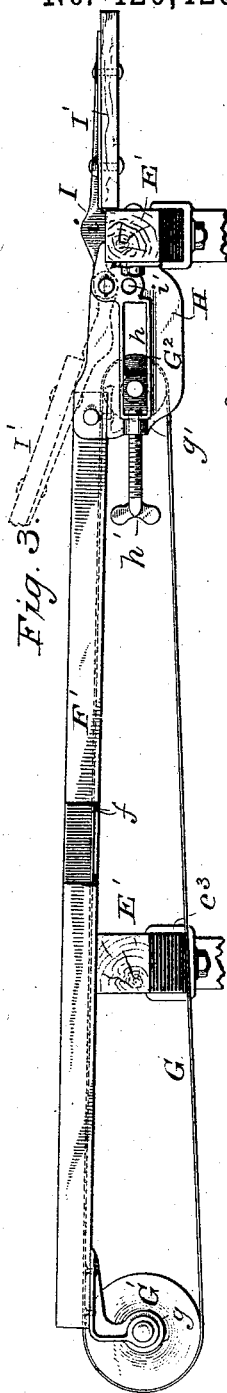
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2 Sheets—Sheet 2.

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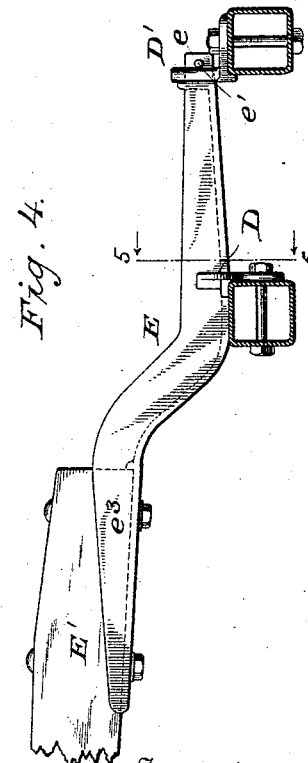
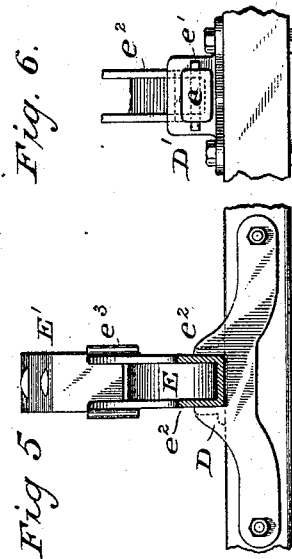
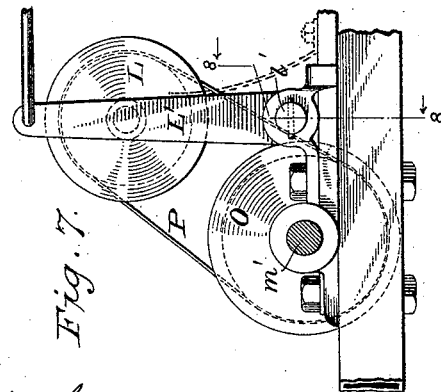
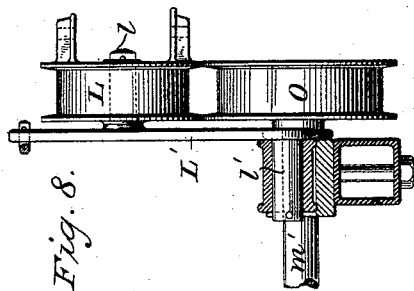
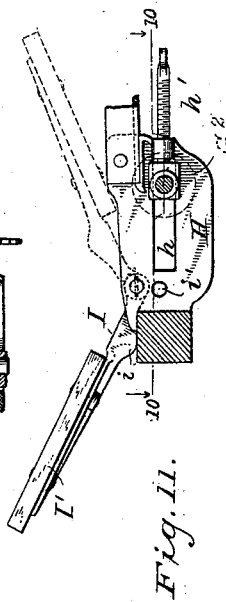
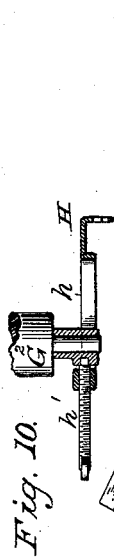
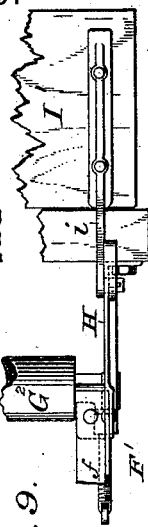
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Witnesses

Wm A. Sprinkle.
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Inventor
William R Baker

By his Attorneys

Parkinson & Parkinson

UNITED STATES PATENT OFFICE.

WILLIAM R. BAKER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE McCORMICK HARVESTING MACHINE COMPANY, OF SAME PLACE.

SHEAF-CARRIER FOR HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 420,429, dated February 4, 1890.

Application filed March 1, 1887. Serial No. 229,287. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. BAKER, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sheaf-Carriers for Harvesters, of which the following is a specification.

My invention relates to that class of sheaf-carriers in which an intermittently-moving endless apron is arranged to receive the bound sheaves as they are ejected from the binder attachment, and is started at will after a sufficient number have accumulated to form a shock or when the dumping-line is reached, so as to carry its load to the rear and deposit it upon the ground, and then again become stationary until the accumulation of another load. Such a type is exemplified in Letters Patent No. 325,710, granted to George A. Strout on the 8th day of September, 1885, and now owned by the McCormick Harvesting Machine Company; and the present improvement has for its object, mainly, to simplify and improve the means for operating such apron at the will of the driver and means for supporting it from the harvester, to produce a stationary rest for the butts of the grain convertible into a deflector for the butts or, into a wind-board for the carrier when the state of the grain permits or requires, or capable of being folded over the apron out of the way, and, generally, to make a more perfect machine, all as will more definitely appear from the ensuing description.

In the drawings, Figure 1 is a top plan view of so much of the main frame of a harvester with the binding attachment removed and the elevator-frame broken away and having my invention applied thereto as is necessary to an understanding of said invention. Fig. 2 is a front elevation of the mechanism shown in the preceding figure, with the elevator and sill-frame partly broken away to more clearly expose the features of my invention. Fig. 3 is an elevation from the stubble side of the sheaf-carrier detached and enlarged; Figs. 4, 5, and 6, enlarged details, respectively in front, cross-sectional, and inner end elevation, of one of the supporting bars or brackets for

the carrier-frame, representing also the mode of connecting it to the harvester-girts; Figs. 7 and 8, enlarged details in side and front elevation of the friction-gearing for communicating motion to the carrier-apron; and Figs. 9, 10, and 11, likewise enlarged details showing the means for mounting and adjusting the idle-roller of the carrier-apron and of attaching the extension-board.

A represents the main wheel of a harvester, and B the sill-frame at the stubble end, from which rise the elevator-struts C C' for the support of the binding attachment and elevator apron or aprons. The bars of the sill-frame are represented as pipe-metal, rectangular in cross-section, such as now used in machines manufactured by the McCormick Harvesting Machine Company; but it will be understood that they are not necessarily so, and that this species of frame is chosen merely for illustration.

Bolted or otherwise secured to the outside or stubble girt, at a suitable distance apart, are chairs D, one adjacent to the front sill and the other farther to the rear, and generally behind the line of the main axle. Opposite each of these chairs, upon the proximate lateral bar of the wheel-frame, is secured a keeper D', having its eye in line with the seat in the corresponding chair. Brackets E rest in these chairs and at their inner ends have tongues e, which enter the keepers, and are there secured by means of keys e', while toward their outer ends, and just beyond the outside girt, they are bent upward a slight distance, and then horizontally again to receive the inner ends of frame bars or timbers E' for the support of the sheaf-carrier. These brackets are preferably formed of metal with longitudinal strengthening-flanges e², which in the outer horizontal portion are widened away from each other to afford sockets e³, that receive the inner ends of said frame bars or timbers, and wherein they are secured by bolts.

Mounted upon the timbers E' are light transverse bars, which may be of metal, one of which F constitutes the inner side bar of the carrier-frame and the other F' the outer side bar, and the two, with the supports or

timbers upon which they are mounted, constitute, practically, the frame of the carrier. These side bars are preferably formed of angle-iron, or with lateral flanges f along their lower edges, which serve as guides or supports for the edges of the apron G , which constitutes the platform of the carrier.

At the rear ends of the lateral frame-bars are bearings g for the driving drum or roller G' of the apron, and at the front ends other bearings g' for its other drum or roller G^2 , which latter may be hereinafter termed the "idle-roller." The bearings g' , however, are intended to be adjustable to preserve the tension of the apron, though other well-known provisions may be adopted to that end. However, when adjustable they will be mounted in ways h of castings H , which herein serve as rigid connections between the front support and the side bars, and will be pressed forward against the tension of the apron by means of set-screws h' , so as to take up slack. Hinged to these castings H in advance of the apron are arms I , which support a board I' , extending the whole width of the carrier, and serving, when thrown out in advance, as an extension-board to support the butts of the long grain, but may be folded in upon the hinges to give access to the machinery. The arms to which this board is secured may each have on the back side, or that farthest from the board, an enlargement or boss i , which can, by removing the pivots and turning the board, be brought either beneath or above. When above, as shown in the third figure of the drawings, the board can be shut down over the front supporting-bar until it assumes a horizontal position; but when beneath they will themselves rest upon the front support, as in the eleventh figure, and hold the board in a sloping or rising position. It is obvious, however, that the same result may be secured by employing a second pivot-hole i' beneath the others.

The inner gudgeon of the roller at the rear end of the side bars is prolonged and connected, by means of gimbals k^x , with one member k of the telescoping tumbling-shaft K , the other member k' thereof being attached through gimbals k^2 to a pulley L , journaled upon a stub-axle l , projecting from a movable support herein, a lever L' pivoted in a bearing l' upon the stubble-girt at a point eccentric to the prime-pinion shaft.

M is the main gear secured to the master-wheel or main wheel and driving the prime pinion m , which in turn drives the shaft m' , and through this shaft and bevel-gears $m^2 n$ operates another shaft N , extending past the rear sill and eventually driving the operative parts of the harvester. The prime-pinion shaft is prolonged outside of the stubble-sill and receives a pulley O , opposed to the one just mentioned as supported upon the lever-arm, and a belt P thrown over these two pulleys then serves to communicate motion

through the foregoing train from the master-wheel to the rear drum of the sheaf-carrier, and thus to operate the apron thereon. That the load may be delivered at the proper times, however, it is necessary that this apron should be operated intermittently and only when in the judgment of the driver a sufficient load has been accumulated or a point has been reached in the field where the load, whatever its size, should be discharged. To this end a rock-shaft R is supported in bearings r, r' , secured to the rear elevator-struts, and extends from a point at the stubble side substantially in rear of the lever-arm, or whatever other suitable movable support carries the pulley connected to the tumbling-shaft, inwardly to a point just behind the foot-plank Q , and is provided at each end with a crank r^2, r^3 , thus constituting, in effect, a bell-crank lever. A link r^4 connects the crank at the outer end of this rock-shaft with the lever-arm or pulley-support, and another link r^5 connects the crank at the inner end with a lateral pin s from a foot lever or treadle S , pivoted upon the foot-plank in position to be operated by the driver in his seat.

Ordinarily the resistance of the carrier-apron and its drums and the intermediate connections with the movable pulley will be sufficient to prevent that pulley from being actuated by the driving-belt, as its bar will yield to the stress of the belt sooner than will the heavy train of mechanism be started by it. Whenever, however, the driver depresses the foot-treadle, and thereby draws the movable pulley away from the other, the belt will be tightened to a point at which the friction will be sufficient to operate said movable pulley, and through it the carrier-apron, thus discharging the load. As soon as this is accomplished the driver will release the treadle, when the stress of the belt will again draw said pulley toward the other to such an extent that the friction of the now slack belt will no longer be sufficient to drive the carrier-apron, and the latter will consequently remain at rest while a fresh load accumulates, and until again intentionally started by the action of the driver. It is obvious, however, that a spring may be applied to the lever, or whatever other instrumentality carries the journal of the movable pulley, so as to throw it toward the other as soon as released by the driver, and relieve the belt of even that labor.

I claim—

1. The combination, substantially as hereinbefore set forth, of the endless-apron carrier, a driven shaft upon the harvester, a pulley upon the end of said driven shaft, a second pulley mounted upon a swinging support having an axis eccentric to the axis of the first-named pulley, a belt connecting the two pulleys, means under the control of the attendant whereby the movable pulley can be swung nearer to or farther from the other,

and a tumbling-shaft connecting said swinging pulley with the adjacent gudgeon of the active roll of the apron.

2. The combination, substantially as here-
5 inbefore set forth, of the endless-apron carrier supported at the stubble side of the harvester, the prime-pinion shaft, the pulley upon said shaft outside the stubble-girt, the second pulley mounted upon a swinging support pivoted on said girt, the tumbling-shaft
10 connecting the swinging pulley with a gudgeon of the active roll of the apron, the bell-crank link connected to the said swinging support, and the lever upon the driver's foot-
15 board link connected with said bell-crank, whereby the driver may set the apron in motion at will.

3. The combination, substantially as here-
inbefore set forth, with the sheaf-carrier, of
the hinged extension-board at the head there- 20
of, and means whereby the inclination of said
board may be adjusted.

4. The combination, substantially as here-
inbefore set forth, with the harvester-frame
and the sheaf-carrier, of the metal brackets 25
E, formed as described, the chairs upon the
outer girt in which they sit, and the keepers
upon the inner girt into which their ends are
thrust, and the pin whereby they are secured
against removal.

WILLIAM R. BAKER.

Witnesses:

ELMER E. MERRITT,
PAUL ARNOLD.