

(No Model.)

2 Sheets—Sheet 1.

J. F. STEWARD.

HARVESTER REEL.

No. 390,530.

Patented Oct. 2, 1888.

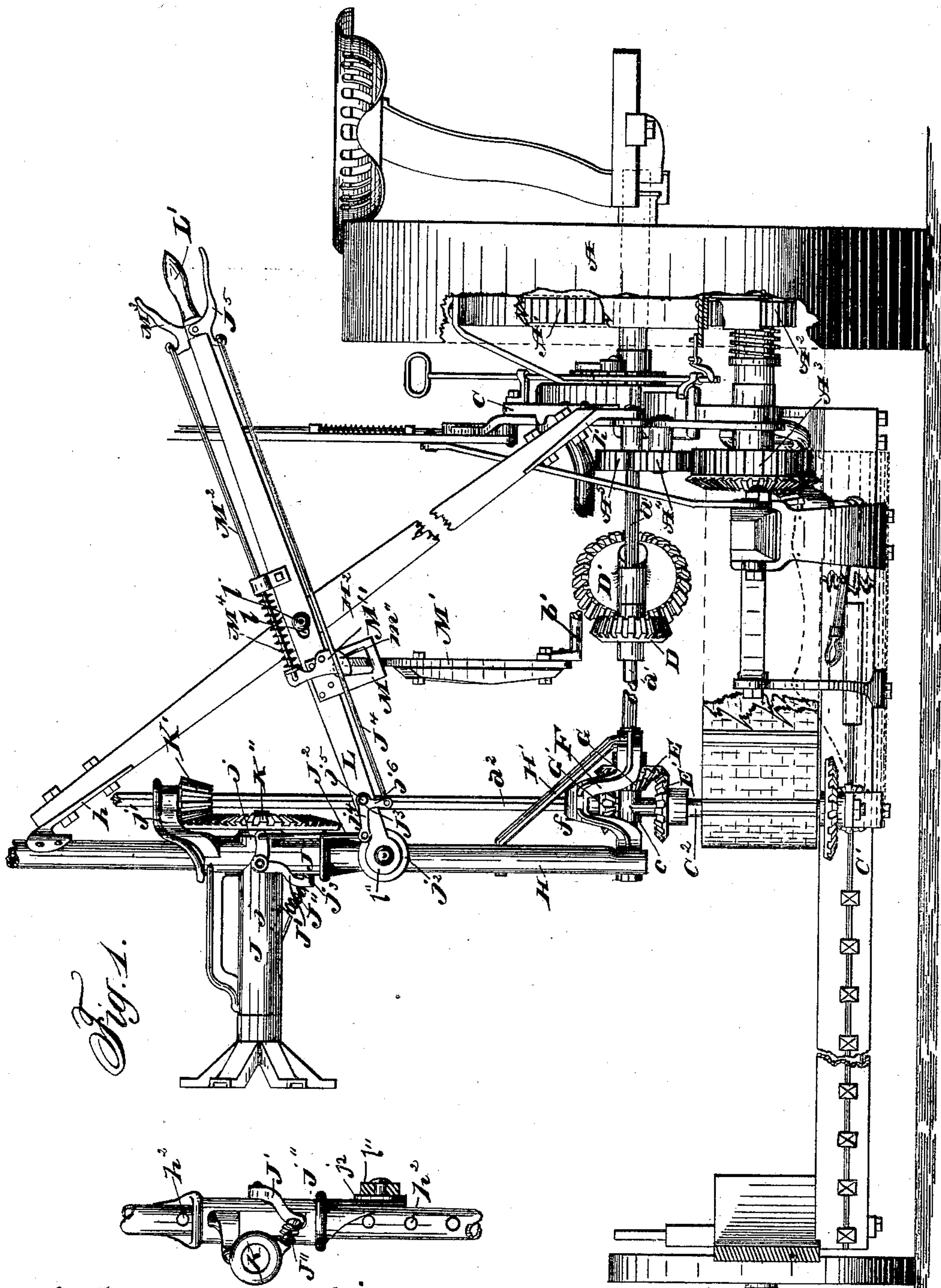


Fig. 1.

Fig. 3.

Witnesses:

L. C. Riggs
W. L. Parker.

Inventor:

Jno. F. Steward
by Chas. S. Burton
his Attorney

(No Model.)

2 Sheets—Sheet 2.

J. F. STEWARD.

HARVESTER REEL.

No. 390,530.

Patented Oct. 2, 1888.

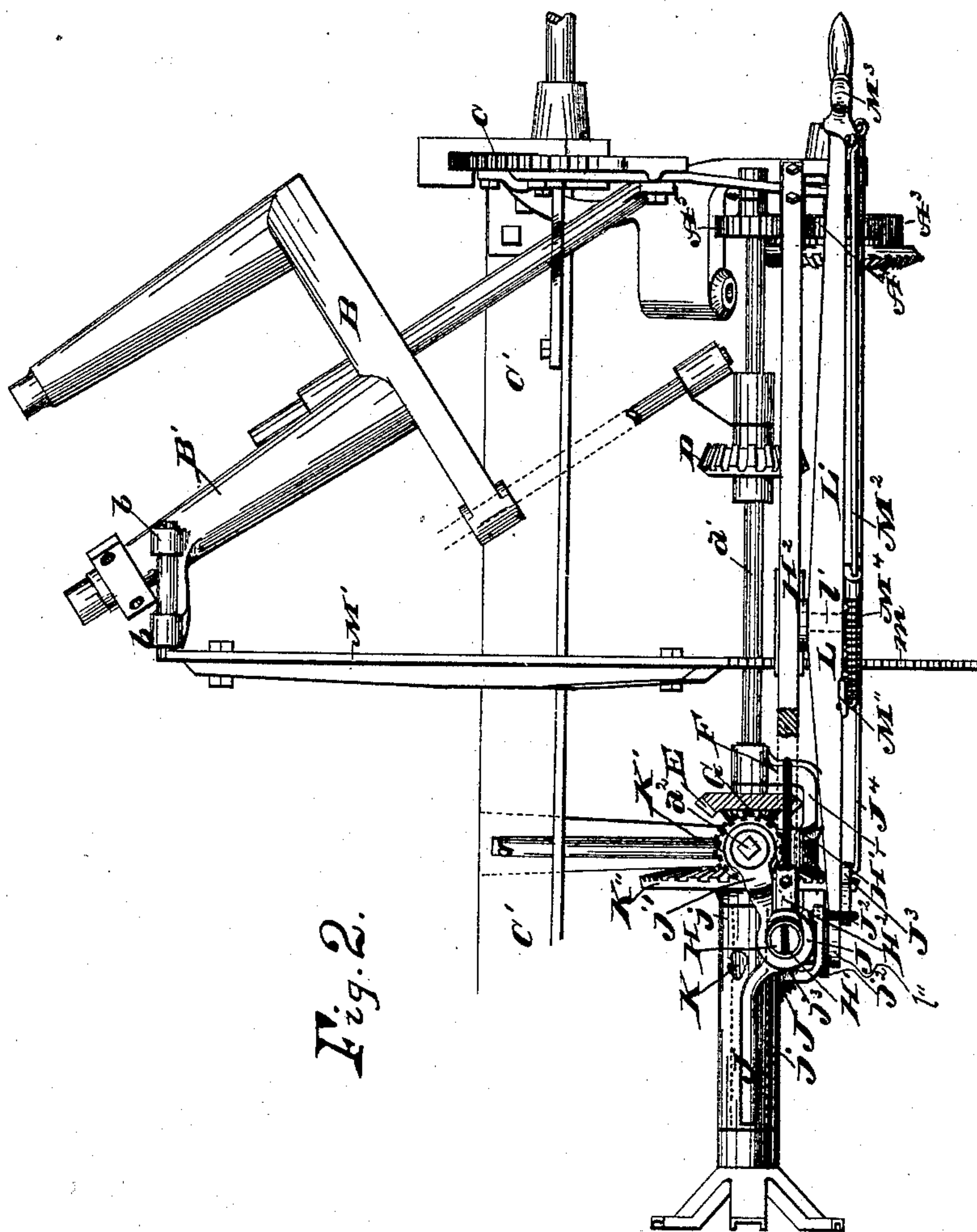


Fig. 2.

Witnesses:
L. C. Riggs
W. L. Parker

Inventor:
Jno. F. Steward
by Chas. S. Burton
his Attorney

UNITED STATES PATENT OFFICE.

JOHN F. STEWARD, OF CHICAGO, ILLINOIS.

HARVESTER-REEL.

SPECIFICATION forming part of Letters Patent No. 390,530, dated October 2, 1888.

Application filed March 21, 1885. Serial No. 159,706. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. STEWARD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Harvester-Reels, of which the following specification is a full and correct description.

This invention is an improvement in the means for supporting and adjusting the reel of a harvesting-machine.

Figure 1 is a front elevation of a harvester having the driver's seat outside the wheel and having the reel constructed according to my invention. Fig. 2 is a plan of my reel and its actuating and sustaining connections, unnecessary parts of the harvester being omitted. Fig. 3 is an inner side detail elevation of the reel-carriage and its locking device.

A is the main wheel; A', the main driving-gear thereon; A², the main driving-pinion.

A³ is a gear-wheel fixed on and carried by the same shaft with the said main driving-pinion.

A⁴ is an intermediate gear driven by the gear-wheel A³ and driving the gear-wheel A⁵, which is fixed on and carries the shaft a'. Said shaft has one bearing in the gear-bracket brace rigid with the segment C and the other bearing at c in the upper end of the vertical support C², which is rigidly fixed to the platform-bar C', which in turn is rigidly secured to and projected horizontally from the lower end of the segment C. The beveled gear D on said shaft, meshing with the beveled gear D', drives the binder mechanism, and the beveled gear E on the same shaft, meshing with the beveled gear E', drives the platform-carrier, clearing-roller, and other parts of the grain carrying and adjusting mechanism, which form no part of this invention and will not be further described.

B is the binder frame; B', its upper horizontal arm.

The yoke F, pivoted on the shaft a', embraces the bevel-gears E and G on said shaft, and has the bearing f at right angles to the bearings of said shaft, in which bears the shaft a², having fixed upon it within the yoke and carrying within it the bevel-gear G', meshing with and driven by the bevel-gear G.

The reel-frame is composed of the reel-sup-

port H, the brace H', and the brace H², both said braces being rigidly joined to the reel-support H, and the entire frame being pivoted on the shaft a', the structure being, in detail, as follows: At the inner or grain end of the yoke I secure rigidly and by firm connection the reel-support H, which is preferably tubular for lightness and strength. The brace H' is rigidly bolted to the reel-support H and extends to the other end of the yoke F. Upon this reel-support H, I mount the reel-carriage J, adapted to slide up and down on said reel-support and to be locked at different positions, as hereinafter described. Said carriage has the horizontal bearing j for the reel-shaft K and the vertical bearing j' for the hub of the reel-driving pinion K', which meshes with the bevel-gear K'', which carries the reel-shaft K. Said pinion K' and hub have a square opening through them, in which slides or by means of which said pinion slides on the shaft, which is square above its bearing in the yoke F and fits said square opening in said pinion.

The brace H² is rigidly joined to the reel-support H above the extreme play of the carriage J, and thence extends down to the shaft a'. It is preferably of wood and provided at each end with suitable clips, h and h', the former constituting its rigid connection with the reel-support and the latter having a bearing on the shaft a'. The said brace H² and clips, and the securement of the upper one on the reel-support and the bearing of the lower one on the shaft are sufficiently broad and firm to resist the tendency to distortion caused by the weight of the reel.

To the lower end of the carriage J is connected the lever L, the carriage J being provided with a broad boss, j², dressed to a flat bearing on a plane parallel to that of the axes of the shafts a' and a², and the lever L being similarly provided with an expanded bearing-flange, l', so that the connection between the lever and the carriage is made such as to allow the least possible lateral play or distortion of either part.

The lever L is extended up and stubbleward and terminates in the handle L', within reach of the driver's seat, and at the point where it crosses the brace H² it has the slot l, through which passes the pivot l', securing it to said brace.

It will be seen that the reel-carriage J may be caused to slide up and down on the reel-support H by rocking the lever L on its pivot l' , the lever sliding on the pivot in the slot l , as compelled by the necessity of the carriage J, to follow the straight line of the reel-support.

In order to lock the carriage J in any desired position on the reel-support H, the latter is pierced at short intervals by the holes h^2 , and the carriage has one similar hole, j'' , located so that by the sliding of the carriage it may be made to coincide with any one of the holes in the support. To the carriage is pivoted the bell-crank lever J' , which has one end provided with the tooth j^3 , adapted to strike through the hole j'' in the carriage and into any one of the holes h^2 in the support, and with a spring, J'' , tending to throw it into such engagement. The other end of the bell-crank lever J' is connected by the link J^2 to the arm j^4 of the bell-crank lever J^3 , which is pivoted at j^5 to the lever L, and has connected to its arm j^6 the rod J^4 , extending to the finger-lever J^5 , formed and pivoted in a familiar manner illustrated, so that by the pressure of the hand of the driver thereon the tooth j^3 is withdrawn from the hole in which it may be in the reel-support H, and the reel-carriage J unlocked and allowed to slide up and down on the reel-support H, obedient to the movement of the lever L. This structure and action accomplish the vertical adjustment of the reel.

For the purpose of its horizontal adjustment the reel is adapted to be rocked over its horizontal driving-shaft a' , that shaft being the pivot of both the yoke F and the reel-frame, so that no disturbance of any of the driving-connections or vertical adjustments is caused by so rocking it, which may be done by means of the same lever which accomplishes the vertical adjustment, said lever serving merely as a handle by which, being moved horizontally, the entire reel-frame is rocked to and fro over its driving-shaft a' .

To lock the reel-frame in any desired position within the range of such horizontal rocking movement, there is provided on the lever L, close under the slot l , the loop or guide-staple M, and to the upper arm, B' , of the binder-frame B, at b , is hinged the bar M' , passing through said loop and provided on its upper edge with the notches m . To the side of the lever L is pivoted the locking or detent latch or lever M'' , having the expanded end m'' adapted to engage the notches of the bar

M' , and having the other end connected by the rod M^2 to the finger-lever M^3 , pivoted to the handle of the lever L and provided with the spring M^4 , tending to force the rod to hold the latch M'' in engagement with the notches of the bar M' . To disengage the latch and allow the horizontal adjustment of the reel, the finger-lever M^3 will be pressed by the hand and the latch M'' caused to turn on its pivot out of range of the notched bar. The expanded form of the detent point or end of the latch is adopted in order that it may be adapted to effect engagement with the notches of the notched bar whatever the vertical position of the reel and consequent angle of inclination of the lever L to the brace.

I claim—

1. In a harvester-reel, the reel-support H, the reel-carriage J, sliding thereon, the said support having the perforations h^2 and the carriage having the perforation j'' , the brace H^2 , rigid with the support H, the lever L, pivoted on said brace and connected to the carriage, the bell-crank lever J' on the carriage, the bell-crank lever J^3 on the lever L, the finger-lever J^5 , the spring J'' , and the connecting-rods J^2 and J^4 , all combined and co-operating as set forth, whereby the lever rocks to raise and lower and lock the reel in a plane parallel with the finger-bar.

2. In a harvester-reel, the adjustable reel-support and its brace beam, the reel-carriage sliding on said reel support, the lever pivoted on the brace-beam and connected to the carriage, and the means for locking the carriage to and disengaging it from the reel-support, the notched bar M' , hinged to the frame and crossing the brace-beam and the lever near the pivot of the lever to the brace-beam, the loop M, to guide the notched bar, the latch M'' , pivoted near the pivot of the lever to the brace-beam, the connecting-rod M^2 , finger-piece M^3 , and spring M^4 , all combined and co-operating as set forth.

3. A reel-frame, the adjustment-lever secured thereto and provided with a broadened end, l'' , the reel-carriage provided with the disk-like surface j^2 , the said broadened end and disk-like surface pivotally secured together, whereby the reel-carriage is prevented from turning on the supporting post.

JOHN F. STEWARD.

Witnesses:

P. D. MIDDLEKAUFF,
HENRY CURTIS.