

(No Model.)

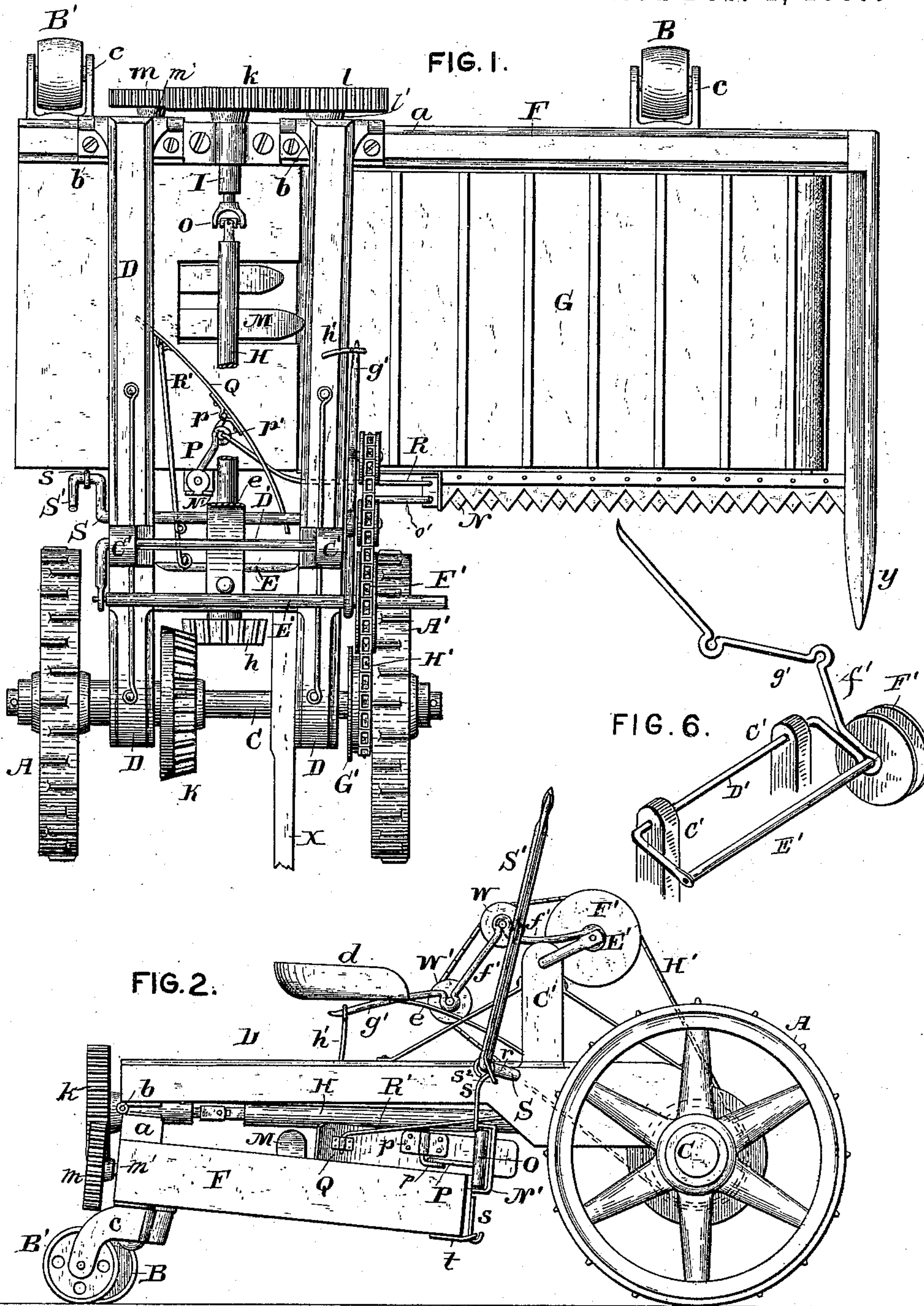
2 Sheets—Sheet 1.

J. J. PIERSOL.

LOW DOWN HARVESTER BINDER.

No. 357,026.

Patented Feb. 1, 1887.



ATTEST.

J. Henry Kaiser.
Harry L. Amer.

INVENTOR.

By Jesse J. Piersol
W. A. Readmond
Att'y.

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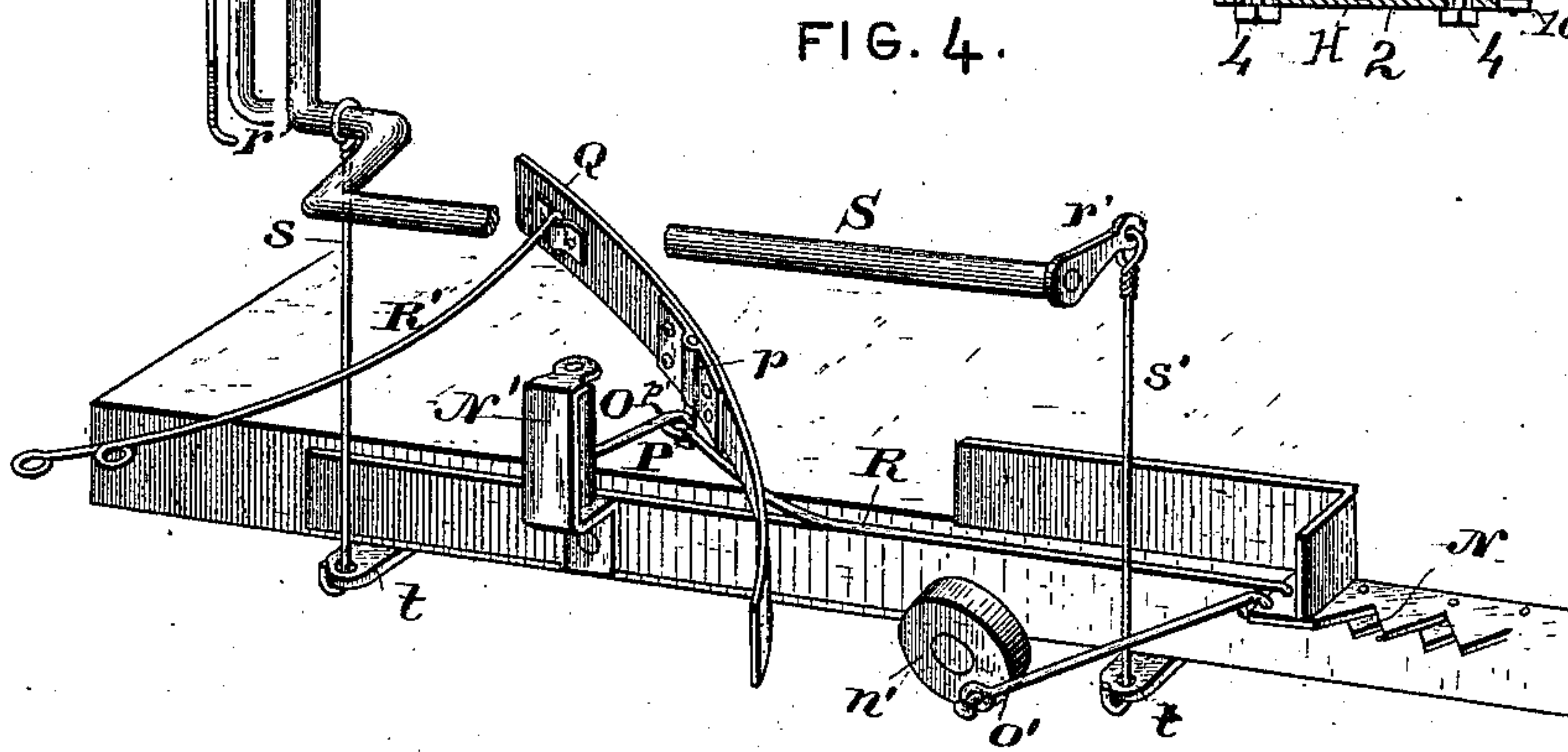
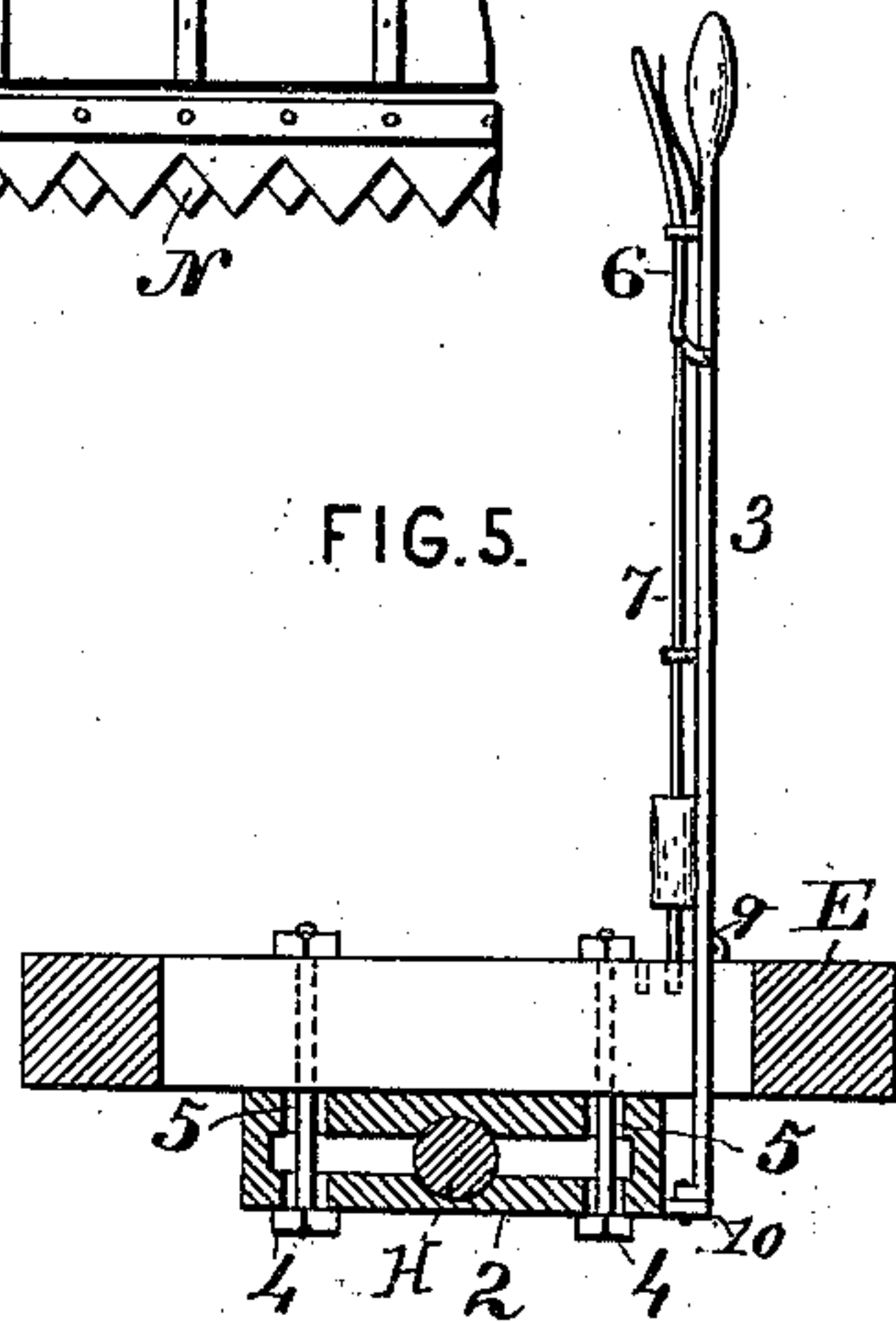
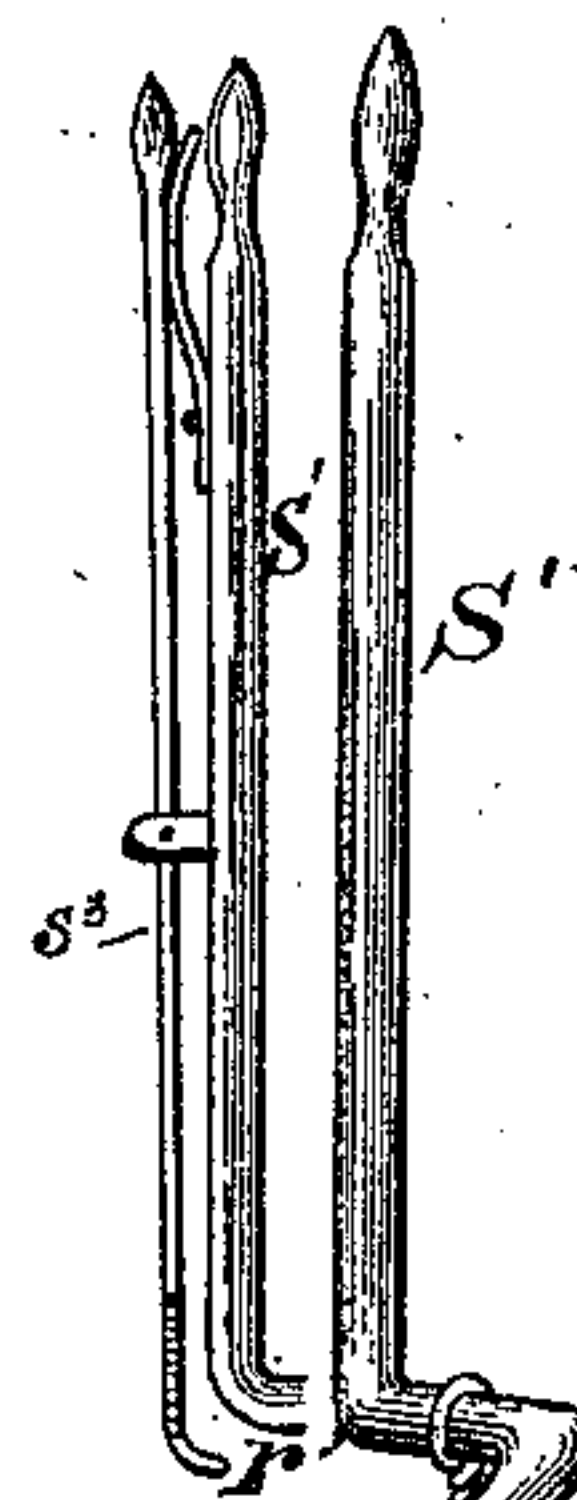
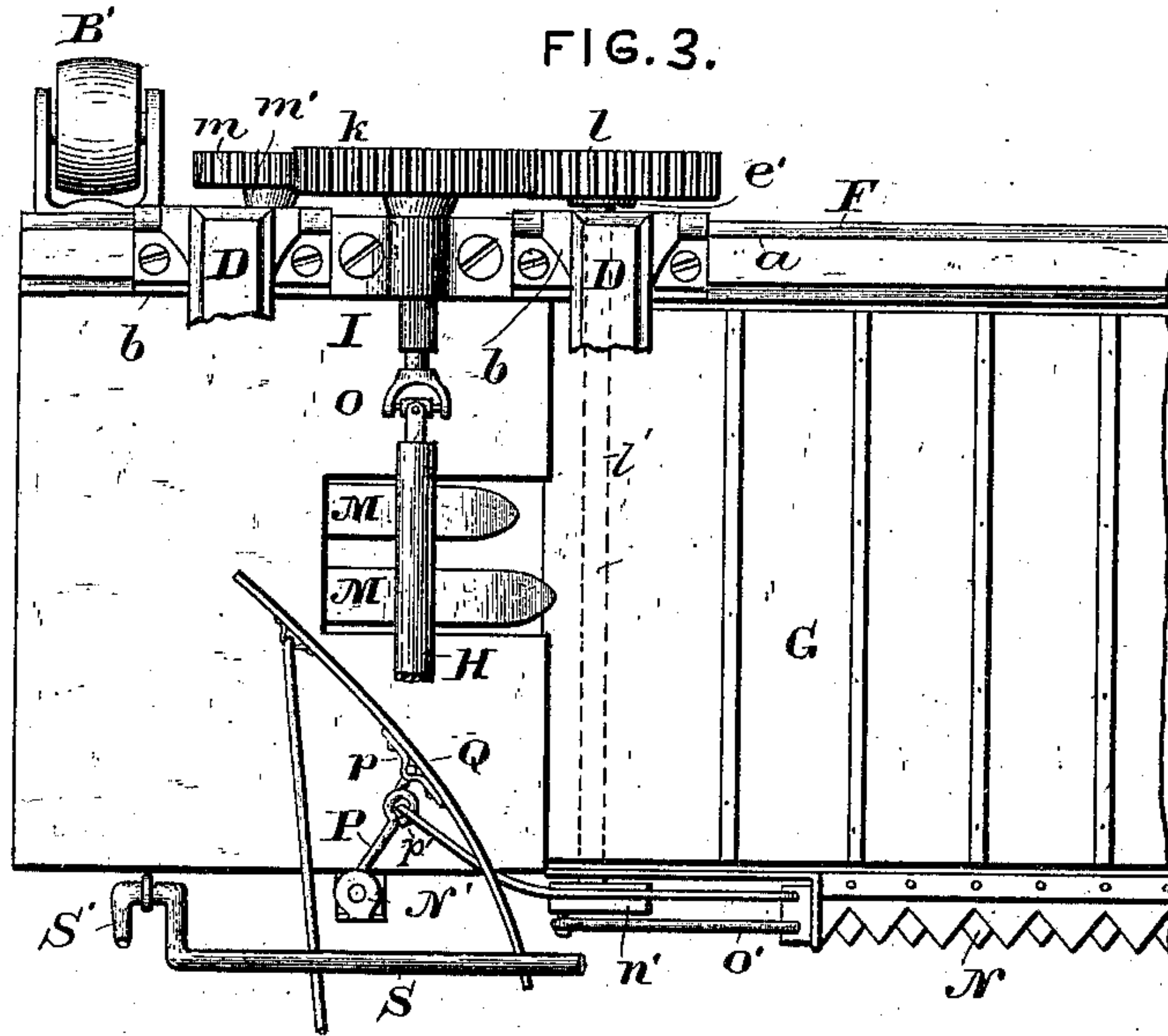
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UNITED STATES PATENT OFFICE.

JESSE J. PIERSOL, OF TIPPECANOE, PENNSYLVANIA.

LOW-DOWN HARVESTER-BINDER.

SPECIFICATION forming part of Letters Patent No. 357,026, dated February 1, 1887.

Application filed March 4, 1886. Serial No. 194,046. (No model.)

To all whom it may concern:

Be it known that I, JESSE J. PIERSOL, a citizen of the United States, residing at Tippecanoe, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Low-Down Harvester-Binders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to harvesting-machines of the class known as "low-down binders;" and it has for its object to produce a machine of few parts, which will not be liable to get out of repair, the adjustable parts of which will at all times be under the control of the driver or operator without the necessity of his leaving his seat to adjust them, which will convey the grain directly to the binder-table, avoiding all circuitous or inclined courses, and which may be transported to and from its work on its driving and carrying wheels; and it consists of the parts and combinations of parts, as hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of my improved machine; Fig. 2, a side elevation; Fig. 3, a plan view, partly broken away to show underlying parts; Fig. 4, a detail perspective view of the device for adjusting the platform, showing the adjusting-lever in duplicate and turned so that the retaining or locking rod may be seen. Fig. 5 is a detail view of the movable bearing and its operative parts, and Fig. 6 is a detail perspective view of the reel-adjusting and chain-tightener device.

Similar letters refer to like parts throughout the several views.

A A' represent the driving-wheels, and B B' the supporting and guiding wheels or rollers. The former are mounted on an axle, C, which is journaled in the parallel beams D, while the supporting-wheels B B' are hung in caster-frames c, swiveled to the under side of the sill a of the platform F, the wheel B' being in alignment with the driver-wheel A, while the wheel B is located near the right-hand end,

Fig. 1, of the platform so as to form a support for and to steady that portion of the platform which carries the endless apron G. The rear ends of beams D are secured to the sill a by means of the hinges b, so that the front of the platform F, which carries the cutter-bar, may be raised and lowered, as desired, to suit the grain operated upon, as will be described. These beams D are connected at a short distance back of the axle C by means of a bar, E, which forms the support for the bar or spring e of the driver's seat d. To the under surface of this bar E a shaft, H, is journaled in a movable bearing and carries a small pinion, h, which gears with a large beveled wheel, K, on the axle C, and thus imparts motion to the shaft H. The bearing is connected with a lever which extends to within easy reach of the driver, so that he may throw the machine in or out of gear. This shaft extends rearward to near the sill a, where it is connected by means of a universal joint, o, to a short shaft, I, which has its bearing in said sill and carries a gear-wheel, k, which meshes with the gear-wheels l m, one on each side thereof. The gear l is on the rear end of the shaft l' of the inner roller of the apron G and drives the same, while gear m, which is smaller, is on the rear end of the crank shaft m', which operates the packer-arms M. The Appleby binder or any other automatic binder may be attached to this machine.

On the forward end of shaft l' a crank-wheel, n', is secured, and to a wrist-pin on this wheel a pitman, o', is secured, the other end of which is connected to the knife-bar N, for actuating the same. Within an upright frame, N', secured to the front or forward side of the frame or platform, a post or jack, O, is journaled, and to this post one end of a short arm, P, is secured, its other end being caught in a lug, p, on the back of a curved butter, Q.

Formed with or secured to the arm P is a lug, p', in which is hooked or otherwise secured one end of a rod, R, the other end of which is connected with the cutter-bar so as to be reciprocated therewith, and thus vibrate the post or jack and arm P and give the butter Q a forward and semicircular movement, which brings the grain to the binder in good condition to be bound.

To the rear end of the butter Q a rod, R', is attached, and extends upwardly to within

reach of the driver's hand, so that he may adjust the butter for long or short grain, and thus insure the binder applying the twine at the proper part of the sheaf. A rock-shaft, S, extends across from beam to beam, and carries a lever, S', within easy reach of the driver. This shaft is provided at each end with cranks r r' , to which are connected the upper ends of rods s s' , their lower ends being attached to rings or lugs t , secured to the under side of the platform. By moving the lever S' the shaft S is rocked and the platform raised or lowered to suit long or short grain. The side of the beam on which is the lever is provided with a perforation, s^2 , in which a pin may be inserted, on which the crank r may rest to retain the platform at the desired height. The pin is in this instance the bent end of a rod, S³, which is pivoted to a lug on the lever S', and extends the full length of said lever, a spring being under the handle or upper end to retain the pin in place. In two uprights, C', extending up from the beams D, the support for the reel (not shown) is journaled.

The reel-support consists of a bar, D', having its two ends bent at right angles in the same direction, so as to form a U-shaped frame, and carrying in their ends a shaft, E', which carries the sprocket-wheel F'. The axle C carries a sprocket-wheel, G', around which passes the sprocket-chain H' and up and over the wheel F', thence backward over two chain-tightener wheels, W W', thus imparting motion to the reel. Extending back from the shaft E' is a rod, f' , which is formed integral with or is a continuation of the bent end of shaft D' nearest the reel, so that said shaft forms the fulcrum for the rod, which terminates in a handle, g' , which may be caught in a ratchet, h' . This rod carries the two tightener wheels or pulleys W W', and is moved up and down to preserve the proper tension of the sprocket-chain for driving the reel under all the different adjustments of the platform and reel to suit tall, short, or down grain. As clearly shown in Fig. 2, the axis of the sprocket-wheel F' and the pulleys W W' would almost strike a line drawn in a circle, with the axle C as its center. This construction insures the proper tension of the chain whenever the reel and its frame are adjusted by the driver, as the pulleys, having their bearing in the rod or lever which is moved to raise or lower the reel-frame and reel, retain their relative positions to the sprocket-wheel whatever its adjustment.

Fig. 5 shows the movable bearing for shaft H. E is the cross-bar, and 2 the movable box. The shaft rests securely between the top and bottom plates of the box, in concavities therein, which prevents it from moving out of place. The box rests on the heads of the two bolts 4, which are passed through the bar E and through slots 5 in said box. A lever, 3, is pivoted to a lug, 9, on the bar, and its lower end secured to a lug, 10, on the box. By moving the lever 3 to the right or left the bear-

ing-box 2 is moved therewith, thus throwing the pinion on shaft H in or out of gear with the wheel K. A short locking-lever, 6, is pivoted to lever 3, and to this a rod, 7, is pivoted, the lower end of which enters perforations in the bar E, to retain the box in whatever position it may be adjusted. A spring is placed between the levers 3 and 6.

Y is the grain or divider board. All the machines with which I am acquainted have their divider-boards projecting all the way from one hundred and ten degrees to one hundred and thirty degrees from the frame or platform and stands out far ahead of the knife, in order to catch and bring in grain to the knife, so that the grain-wheel may have a clear track. The grain, when thus brought in, leans and, when cut, falls diagonally across the apron and is carried to the binder-heads first, making bad sheaves. My divider is short and stands nearly at a right angle to the knife, and brings in no extra or leaning grain, and thus presents the grain to the binder in good condition.

The tongue X is bolted to the inner beam, D, thus making it a stiff or standing tongue, bearing its own weight and putting the weight of the double-trees and tongue-chains on the driving-wheels, and not on the horses' necks, as is the case in all the machines of this class with which I am familiar. The knife is to be on a level with and as close to the apron as is possible without interfering with the operation of either of them to prevent short grain falling lengthwise of the knife and obstructing the cutting. The grain-wheel now in use at the outer or grain side of the platform in two-wheeled binders is so far away from the center of power that no weight can be put on it for fear of creating side draft, and if the weight is centered on one driving-wheel the machine is very easily overturned.

In my machine the use of two driving-wheels in front and two supporting-wheels in the rear, one being in line with one of the drivers and the other but slightly to one side of the other driver, gives me a square even support all around, making it impossible to upset, and preventing all zigzag motion, which worries and injures the horses.

I am aware that a ribbed butting-board supported at each of its ends by arms, one of which is pivoted in an adjustable bearing whereby the board may be adjusted in or out to suit grain of different length and the other having its bearing in a rigid arm projecting from the main frame and connected to a crank-lever which is operated by the sickle-pitman through a connecting-link, is old, and I do not therefore desire to be understood as claiming the same.

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

1. In a harvester-binder, the combination of the curved butter Q, pivotally supported at its center, the arm P, the pivoted post O, the

frame N', the rod R, connected at one end to arm P and at the other end to the cutter-bar, and the rod or lever R', pivotally connected to the rear end of the butter, whereby the latter may be adjusted to suit the length of grain operated upon, substantially as described.

2. The combination, in a harvester-binder, of the platform F, pivoted at the rear of the main frame, the parallel beams D, the main shaft H, located between said beams and driven from the main wheels located in front of the platform, the shaft I, the universal joint O, connecting said shafts, the rock-shaft S, having the crank-arms r, r, the rods s s, the lever S', and means for retaining said lever in its adjusted position, whereby the platform may be raised or lowered to accommodate grain of different heights, substantially as described.

3. In a harvester-binder, the combination of the supports or uprights C', the shaft D', 20 journaled in said supports and having bent ends, one of which terminates in a rearwardly-extended rod, f', having the handle g' and provided with bearings, the ratchet h', the shaft E', the sprocket-wheel F', the sprocket- 25 chain H', and the tightener-pulleys W W', the latter being journaled in the bearings of the rod f', whereby the reel may be adjusted and the tension of the sprocket-chain kept uniform by one movement, as described. 30

In testimony whereof I affix my signature in presence of two witnesses.

JESSE J. PIERSON.

Witnesses:

J. A. SEARIGHT,
GEORGE B. SHUMAN.