

(No Model.)

3 Sheets—Sheet 1.

P. F. HODGES.

LOW DOWN SELF BINDING HARVESTER.

No. 323,333.

Patented July 28, 1885.

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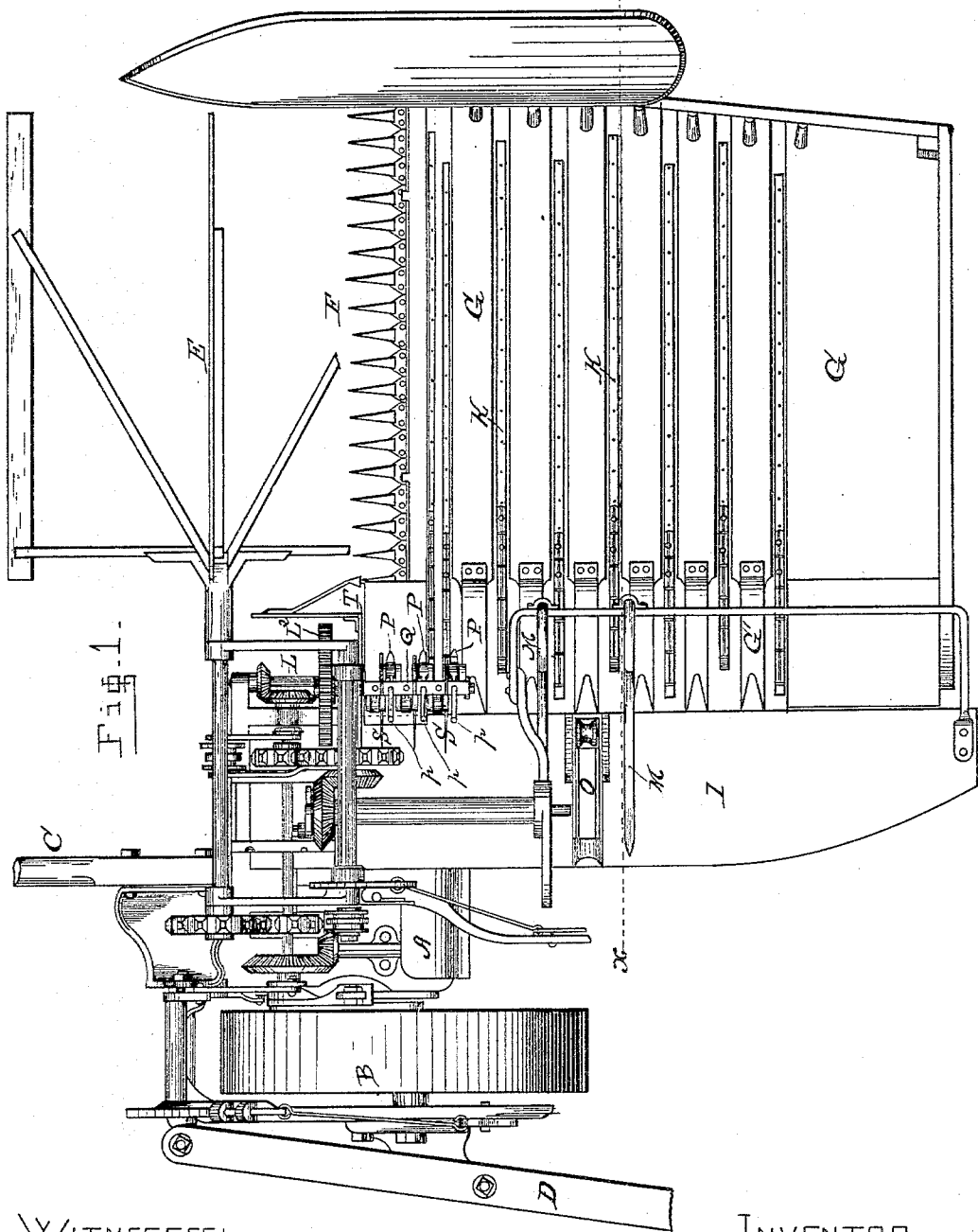


Fig. 1.

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(No Model.)

3 Sheets—Sheet 2.

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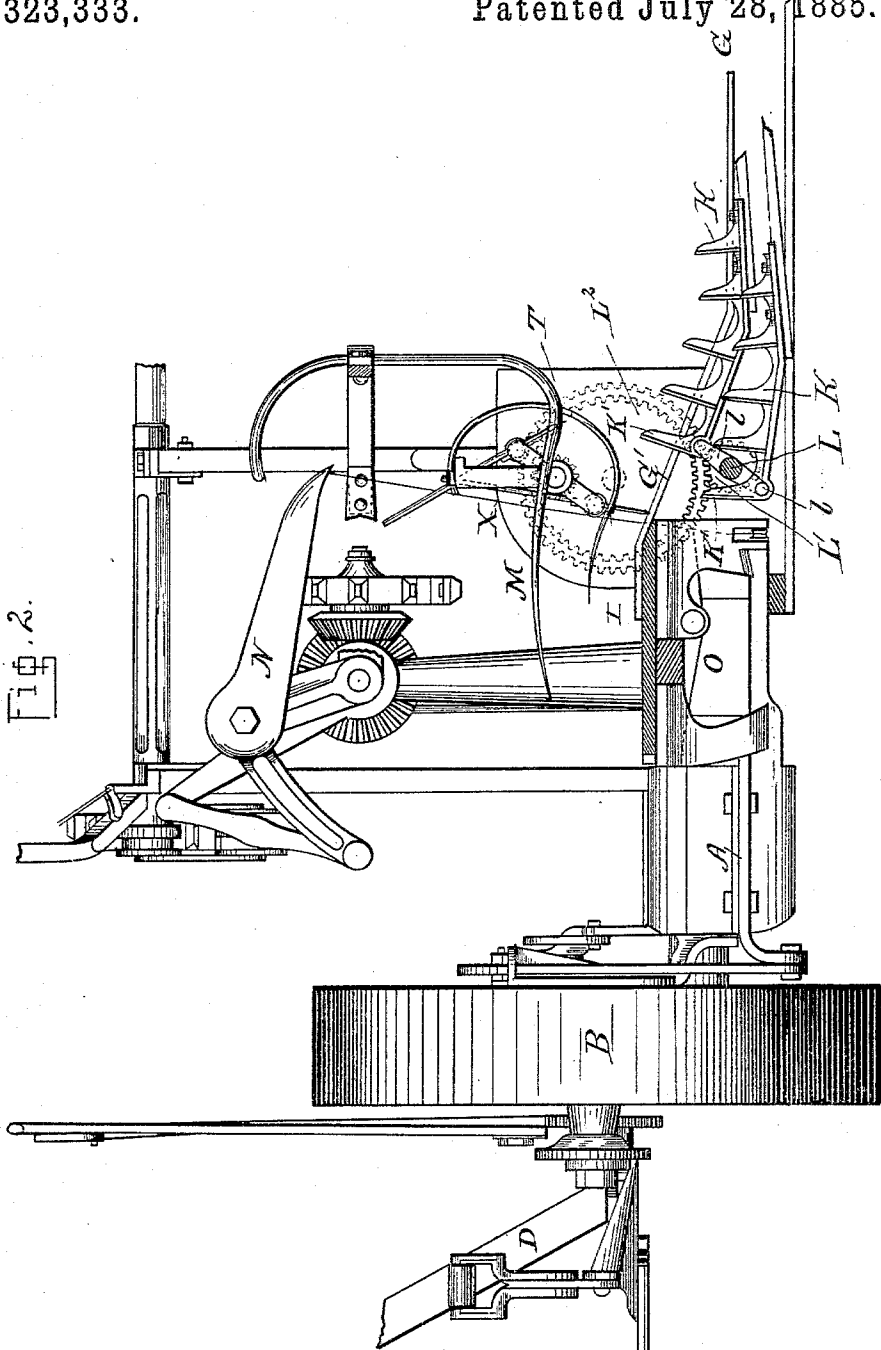


Fig. 2.

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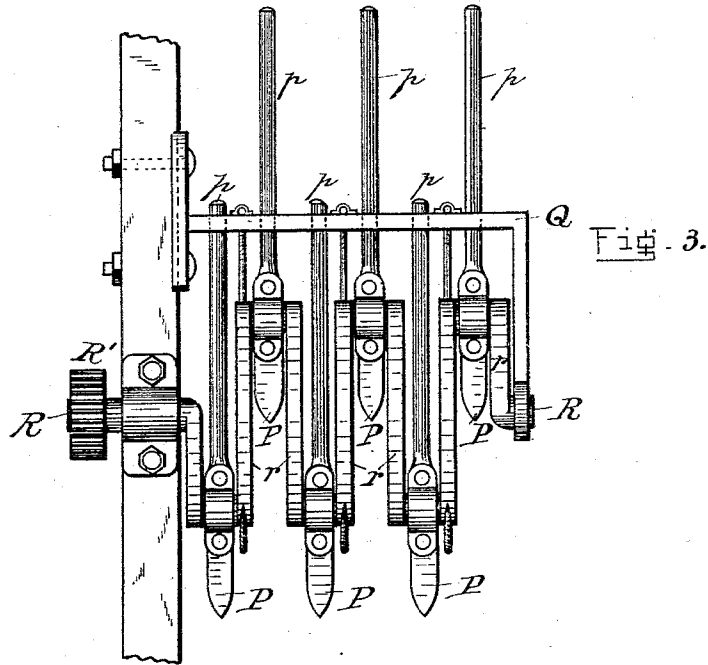
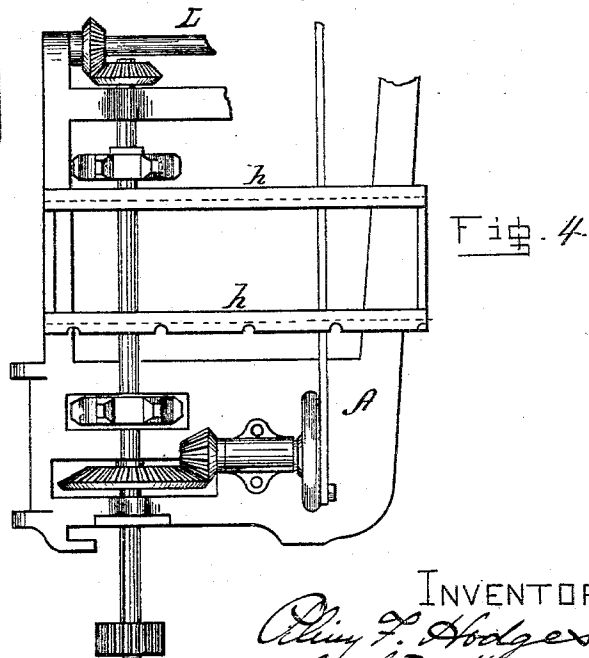
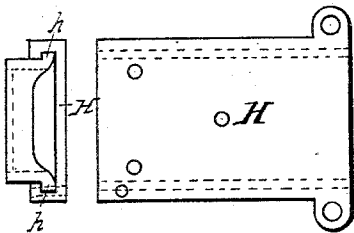


Fig. 6 Fig. 5



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INVENTOR:

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UNITED STATES PATENT OFFICE.

PLINY F. HODGES, OF CHICAGO, ILLINOIS.

LOW-DOWN SELF-BINDING HARVESTER.

SPECIFICATION forming part of Letters Patent No. 323,333, dated July 28, 1885.

Application filed February 13, 1884. (No model.)

To all whom it may concern:

Be it known that I, PLINY F. HODGES, 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 Low-Down Self-Binding Harvesters; and I do hereby 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.

This invention relates to that type of self-binding harvesters designated as "low-down binders" from the circumstance that the cut grain is delivered to the self-binder and bound thereby at about the level of the grain platform, as distinguished from the type in which the cut grain is elevated over the main or drive wheel of the machine before delivery to the binder. It is a well-known fact that in these low-down binders the cut grain, mixed as it usually is at the butt-end with grass and weeds, is apt to get choked at or near the inner end of the finger-beam, and thus cause a very serious interference with the proper operation of the machine. The main object of my invention is to overcome this difficulty.

To this end my invention consists, mainly, of a raking device, which I term a "butt-rake," so applied to a low-down binder, which embodies packers, as to operate on the cut grain near the inner end of the finger-beam and insure the proper movement of the butt-ends of grain from that point toward the binder.

In order that my invention may be clearly understood, I have illustrated in the annexed drawings, and will proceed to describe, one form thereof which I have successfully used.

Figure 1 is a plan view of a low-down binder embodying my invention, some parts of the machine being omitted or broken away. Fig. 2 is a vertical transverse section in the plane indicated by the broken line *x x* of Fig. 1. Figs. 3 to 6 illustrate details of the machine. Fig. 2 is drawn on a larger scale than Fig. 1, and the other figures are drawn on a still larger scale.

The same letters of reference are used in all the figures in the designation of identical parts.

In this machine the general construction of and the manner of connecting and combining

the main frame A, drive-wheel B, tongue C, seat-supporting bar D, reel E, and finger-beam F, with its reciprocating cutter-bar, are substantially the same as are found in other known harvesting-machines, and can be sufficiently understood from the annexed drawings by any one skilled in the art without detailed description.

The grain-platform G is constructed at the stubble side with an upwardly-inclined delivery-bridge, G', for elevating the grain to the level of the binder-table I, which occupies a little higher plane than the grain-platform in order that the sheaves or bundles, in discharging them from the binder, may clear the stubble.

The platform-carrier is composed of a series of alternately-raking toothed bars, K, disposed in suitable slots extending across the platform and its inclined delivery-bridge. At one end these toothed bars are inclined upwardly, to correspond substantially to the inclination of the delivery-bridge, and pivoted, respectively, on alternately opposite cranks *l* of a longitudinal crank-shaft, L. At the other end they are suitably supported in such a manner that they may move endwise as well as vibrate up and down on this end as a center under the action of cranks *l*. At the extremity of its inclined portion each bar K is provided with a tooth, K', which acts as a packer for packing the grain against the taut binding cord or wire X and under the compressor-finger M to form a compacted gavel on the adjacent side of the binder-table I.

The binder-table, composed of two leaves separated by a cross-gap, is secured upon the base of the binder-frame, of which base I have especially illustrated the plate H, by which the binder-frame is mounted on the longitudinal ways *h h* of the main frame A in such manner that the whole binder may be adjusted longitudinally along the edge of the delivery-bridge of the grain-platform, in order to adapt the binder to the proper binding of grain of whatever length.

The binder-arm N is constructed and operated and assisted by a tucker, O, in the cross-gap of the binder-table, substantially the same as the binder-arm described in my application for Letters Patent filed November 10, A. D. 1880, Serial No. 20,349. Whatever novel

features exist in the before-described organization of the grain-platform, platform-carrier, packers, binder-table, binding-arm, and tucker are claimed in the said prior application, wherein a similar organization of like parts is illustrated and described in detail.

The delivery-bridge G' of the grain-platform extends forward about as far as the extreme outer ends of the fingers of the finger-beam. The butt-rake is arranged above the forward portion of the delivery-bridge, and consists, in this instance, of a series of six rake-teeth, P, each of which is pivoted on a separate crank, r, of a longitudinal crank-shaft, R, supported at one end in a bearing on one of the reel-posts and at the other end in a bracket, Q, on such reel-post, as best shown in Fig. 3. Each rake-tooth P has a rigid stem or tail, p, which passes loosely through a hole in the top bar of bracket Q. By this means a proper raking action is imparted to the teeth P when the crank-shaft R is rotated. Crank-shaft R is driven from crank-shaft L through the intervention of a pinion, L', on crank-shaft L, the intermediate both externally and internally toothed wheel, L², with the external teeth of which pinion L' meshes, and pinion R', which is secured to crank-shaft R, and meshes with the internal teeth of wheel L. Fixed strippers S are applied to the bracket Q of this butt-rake for stripping the rake-teeth, on receding, of adhering stalks of grain or weeds. A fixed shield, T, acting as a butt-board is arranged directly in front of the forward end of the delivery-bridge. This butt-board extends part way across the binder-table, but is disconnected therefrom, so that the binder can be adjusted without affecting the butt-board. The teeth of this butt-rake move at a somewhat greater speed than the platform-carrier and packers in order to more effectually clear the machine at the difficult point where such butt-rake operates. Thus speeded, the butt-rake swings the stalks of grain at their butt-end and leaves them in an oblique position to be straightened again by the packers. The practical result of this is that the butt-ends of the grain packed on the binder-table lie farther to the rear than the butt-ends of the grain on the platform-carrier. In other words, a rearward adjustment of the grain is effected to a greater or lesser extent, according to the difference between the speed of the butt-rake teeth and that of the platform-carrier.

While I consider it desirable to speed the butt-rake beyond the speed of the platform-carrier, I desire it to be understood that I do not primarily limit myself to a butt-rake so speeded; nor do I qualify my broad claim for the combination with the packers of a butt-rake to one constructed as herein described, since any known form of rake may be used in its stead; and in some cases the rake may operate on the grain from underneath instead of from above. I believe that I was the first to employ in a low-down binder which embodies packers a butt-rake located at the stubble end of the finger-beam, and my principal claim is designed to cover this feature broadly, irrespective of the special construction of such rake, and irrespective of the special construction and arrangement of other parts of the low-down self-binding harvester. Such a butt-rake may be applied to other styles of low-down self-binding harvesters.

By the term "butt-rake" I mean a mechanical device or structure which rakes across the prostrate grain near the butt-ends to move it substantially in the same direction in which it is moved by the platform-carrier, as distinguished from a butting device which operates against the butts of grain to push or rake the grain back endwise or in a direction crosswise to that in which the grain is moved by the platform-carrier.

I claim as my invention—

1. The combination, substantially as before set forth, of the butt-rake at or near the stubble end of the finger-beam and packers.
2. The combination, substantially as before set forth, of a platform-carrier, a butt-rake at or near the stubble end of the finger-beam, packers, and a low-down binder-table.
3. The combination, substantially as before set forth, of a platform-carrier, a fixed butt-rake at or near the stubble end of the finger-beam, and a longitudinally-adjustable low-down binder.
4. The combination, substantially as before set forth, of a platform-carrier, a fixed butt-rake at or near the stubble end of the finger-beam, and a fixed butt-board.

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

PLINY F. HODGES.

Witnesses:

C. M. CASTLE,
HENRY HONKOMP.