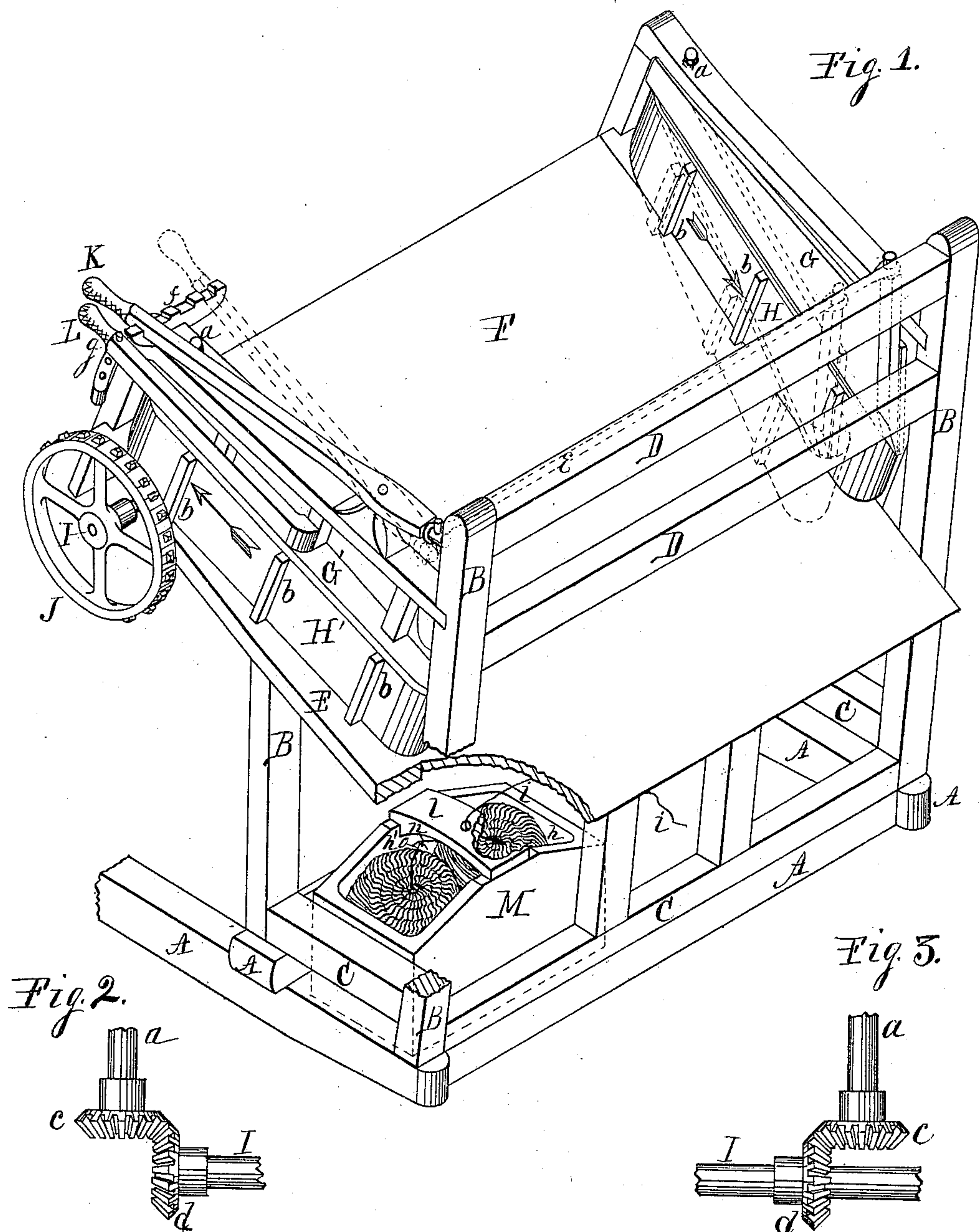


W. MCGREGOR & T. M. FLENNIKEN.
 GRAIN ADJUSTING MECHANISM FOR GRAIN BINDING HARVESTERS.
 No. 323,187. Patented July 28, 1885.



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UNITED STATES PATENT OFFICE.

WILLIAM MCGREGOR AND THEODORE M. FLENNIKEN, OF ROCKFORD, ILL.;
SAID MCGREGOR, FOR HIMSELF AND AS ADMINISTRATOR OF SAID FLENNIKEN, DECEASED, ASSIGNOR TO WILLIAM LATHROP, OF SAME PLACE.

GRAIN-ADJUSTING MECHANISM FOR GRAIN-BINDING HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 323,187, dated July 28, 1885.

Application filed May 12, 1879.

To all whom it may concern:

Be it known that we, WILLIAM MCGREGOR and THEODORE M. FLENNIKEN, of the city of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Grain-Adjusting Mechanism for Grain-Binding Harvesters, of which the following is a specification.

This invention relates to that class of machines known as "automatic binding-machines," designed for use in connection with harvesting-machines, to automatically bind the grain as it is cut by the harvester.

The object of this invention is to deliver the cut grain in its passage from the harvester centrally to the binding-machine, so that it may be automatically bound practically in the center of its length whether the grain is long or short in the straw. To this end we have designed and constructed the machine represented in the accompanying drawings, in which—

Figure 1 is an isometrical representation of a machine embodying our invention. Figs. 2 and 3 represent the toothed-gear connection to impart motion to the endless-belt guides employed to deliver the grain centrally to the binding devices.

Only such parts of a complete machine are shown as are necessary to represent our invention. Other portions required to produce a complete machine may be any of the known devices employed in any known form for like purposes, and hence are neither shown nor described in this application.

In the figures, A represents a portion of the main frame of a harvester, on which is mounted a frame capable of use as the frame of a binding-machine. This frame is mainly composed of corner-posts B, sills C, lengthwise beams D, and the necessary intermediate parts, framed or otherwise firmly connected to produce a rigid frame. In this frame E are inclined end beams fixed to the corner-posts, and in connection with lengthwise side beams immediately connected therewith serve to support the inclined binding-table F, which receives the cut grain delivered from the harvester, and on which it descends to the binding devices properly located in or near the binding-table. In this arrangement it will be seen that

a binding mechanism fixed in such relative position with the binding-table that grain having straw of medium length descending the inclined table to the binder would be bound at its proper center, would if the straw were long bind it too near the stubble end, and if the straw were short would bind it too near the heads.

In our improved machine, which forms the subject-matter of this application, we have employed the swinging end frames represented at G and G', which are pivoted near the upper inner corners of the binding-table, and at right angles to the plane thereof, on pivot-journals *a*, supported in suitable frame-work in such a manner that the lower ends of the frames will be free to swing over the table. These frames are provided at their pivoted ends with suitable rollers fixed on the pivot-shaft *a*, to revolve therewith. The free end of each of these swinging end frames is also provided with a roller fitted to revolve in the frame on suitable journals.

H H' are endless belts or aprons mounted on the end rollers of the swinging frames, which aprons, when motion is imparted to the pivot-shafts *a*, will be made to travel in the direction of the arrows.

b are slats or battens fixed to the endless belts crosswise thereof at proper intervals, and are employed to increase their carrying capacity. The lower ends of the pivotal shafts *a* of the rollers are fitted with miter-gear wheels *c*, the teeth of which engage the teeth of like wheels *d*, mounted on the horizontal driving-shaft I, placed under the upper portions of the binding-table, and fitted to revolve in suitable bearings fixed to the main frame.

J represents a sprocket-wheel mounted on the projecting end of the driving-shaft, and designed to connect with the harvester by means of a chain, belt, or other suitable means.

K represents a lever pivoted to the upper end bar of the frame, and having its handle located within easy reach of the attendant. Its outer end is connected with the swinging end frame, G, by means of a rod, *e*, in such a manner that the movements of the hand-lever will cause the swinging frame to move forward or back on the binding-table.

f represents a bar notched to receive the le-

ver, and fixed to the frame near the handle of the lever in such a manner as to hold the swinging frame in its adjusted position.

In use the grain from the harvester will be delivered on the binding-table with its stubble end near the swinging frame G, and if long in the straw will descend the table to the binder without endwise movement, and the moving belt on the swinging frame will engage its stubble end and insure its passage to the binder. When the straw is short, the swinging end frame is moved back on the table, as represented in dotted lines. The stubble end of the grain will be engaged by the moving apron, and in its descent over the table the grain will be shifted endwise thereon, and thus presented centrally to the binder. In this operation the inclination of the swinging frame will be varied according to the length of straw, and its inclination will control the central delivery of the grain to the binder.

By means of this device we are enabled to deliver the cut grain centrally to the binder, whether the straw is long or short.

The swinging end frame, G', is useful, mainly, when the straw is long, to insure the passage of the head ends to the binder or through the frame, and lessen the waste of grain in shelling. The angle of this end frame can be varied by means of the lever L, and fixed, when adjusted, by means of the retaining-pin g.

At M we have represented a box as a convenient means of carrying an immediate sup-

ply of binding material, and at h and h' have represented balls of twine placed therein to be used for binding the grain.

We claim as our invention—

1. An endless belt moving in the direction of the grain-delivery, operating when in contact with the heads of the grain on its passage from the elevators to insure their passage over the table, substantially as and for the purpose set forth.

2. The combination, with an inclined table, the shaft I, pinions d, pinions c, shafts a, and rollers and belt-carrying frames secured to the said shafts a, of the endless belts moving in the direction of the grain-delivery, one of the said belts operating when in contact with the heads of the grain on its passage from the elevators to insure their passage over the table, and the other operating on the stubble ends of the grain, substantially as set forth.

3. The combination, with the shaft I, pinions d, pinions c, and shafts a, of belt-carrying frames secured to the shafts a, endless belts mounted in said frames and provided with slats, and levers for adjusting the belt-frames independent of each other, substantially as set forth.

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