

(No Model.)

3 Sheets—Sheet 1.

A. O. SLENTZ.  
GRAIN BINDING HARVESTER.

No. 441,039.

Patented Nov. 18, 1890.

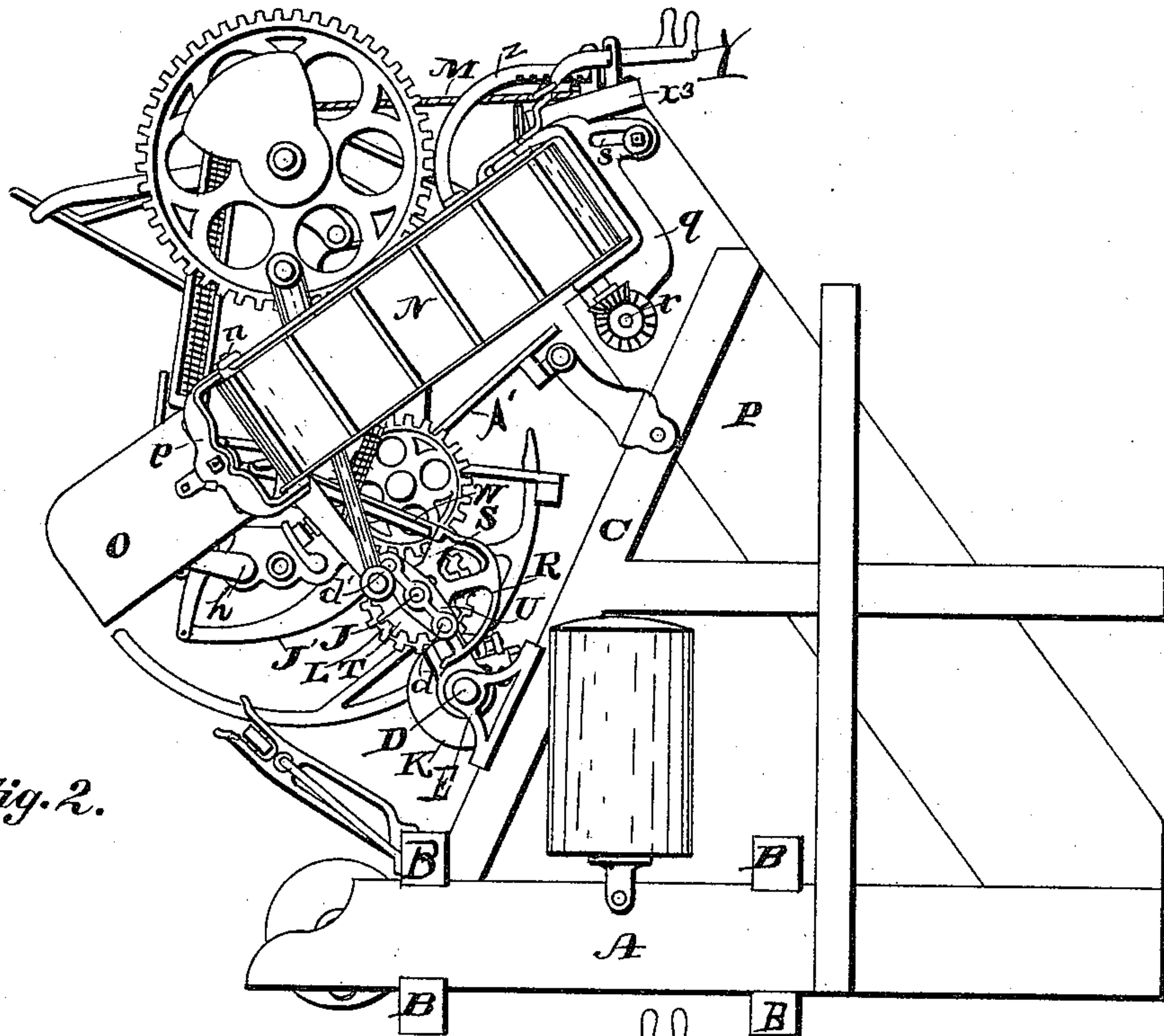


Fig. 2.

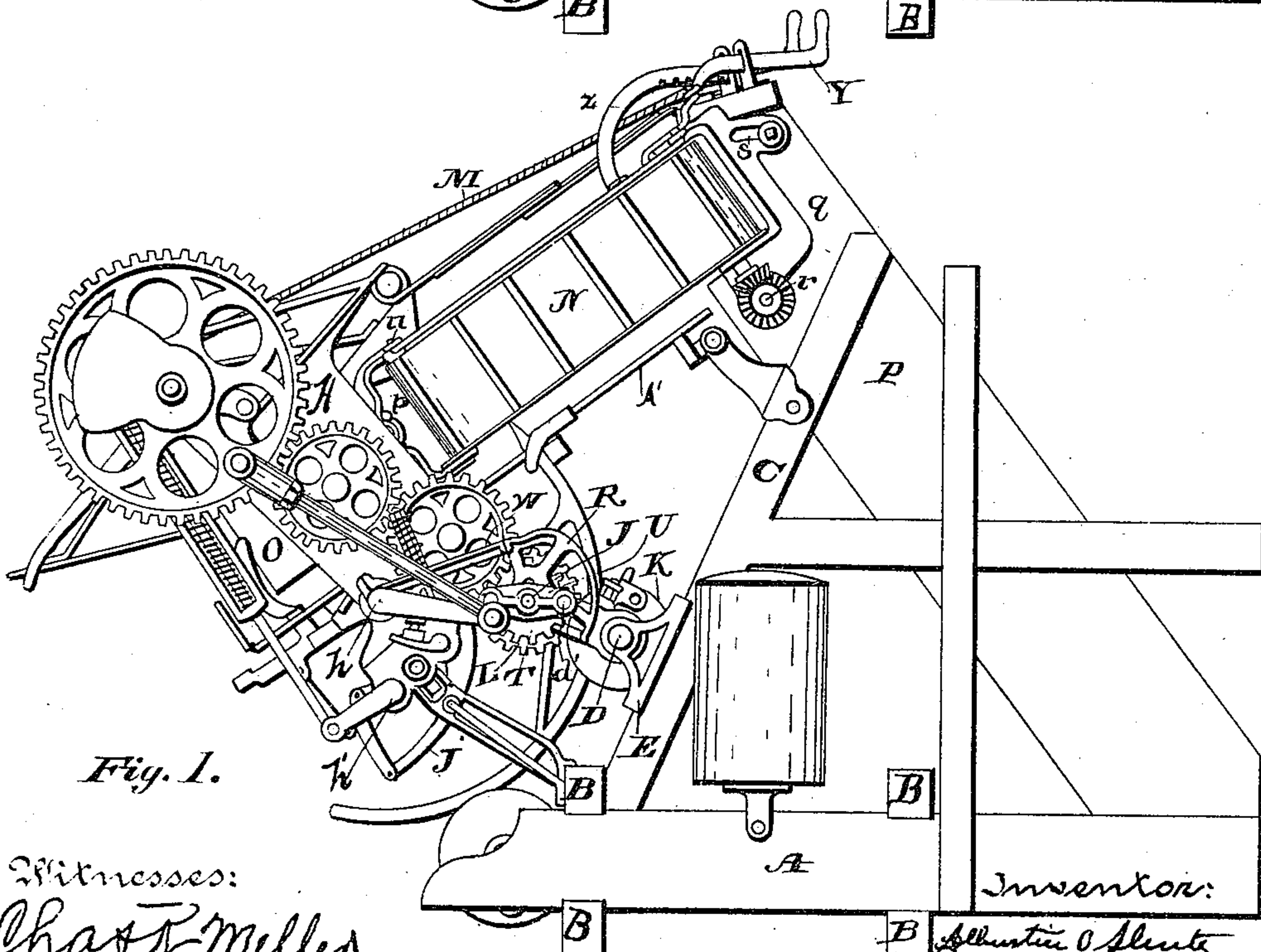


Fig. 1.

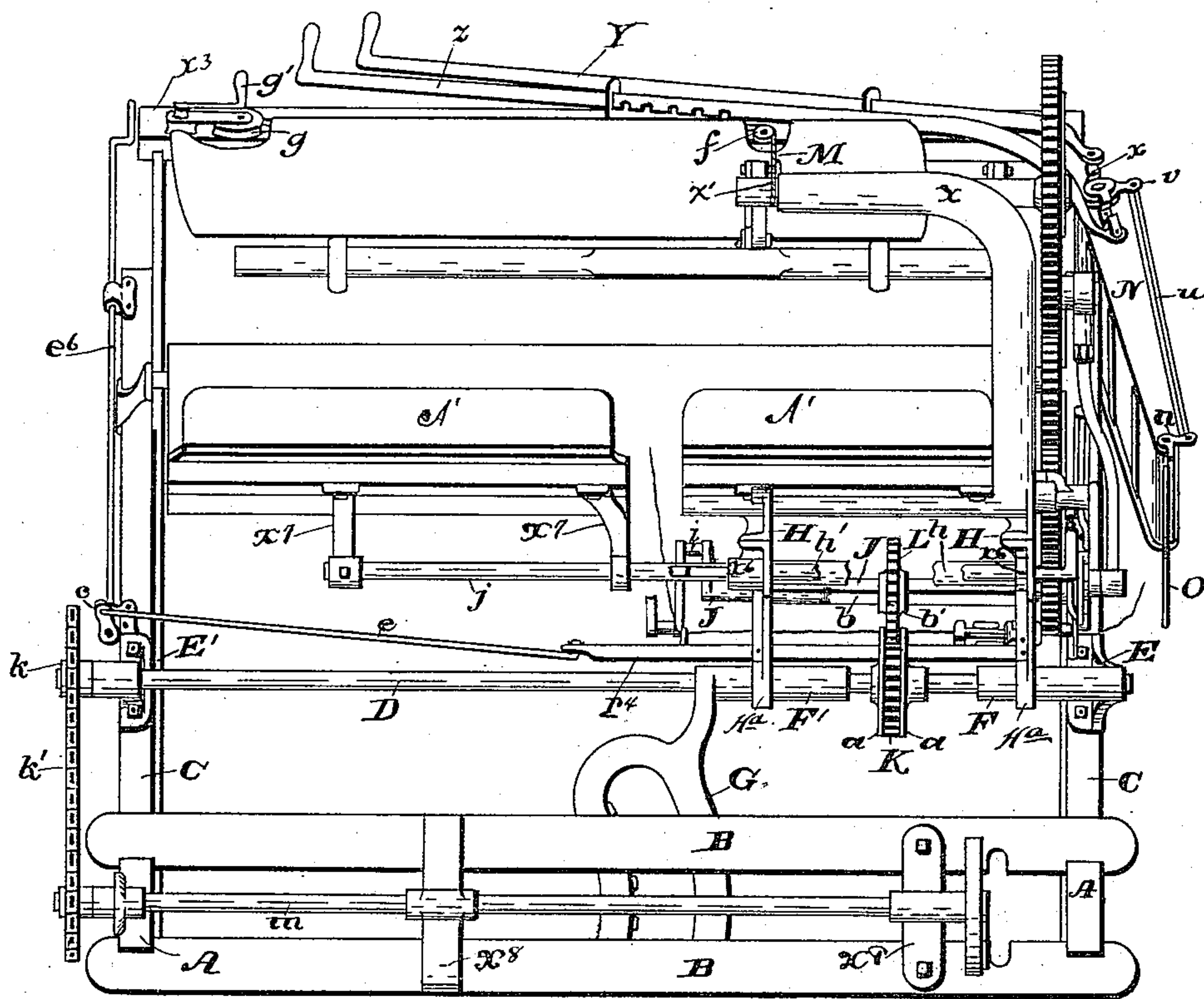
Witnesses:  
Chas. T. Miller  
Atte. Pomerehne

Inventor:  
A. O. Slentz  
By  
W. K. Miller & Sonner

3. Sheets—Sheet 2.

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*Fig. 3.*

Witnesses:  
 Chas Miller  
 Atlee Pomeroy

Alburtus O. Slutz

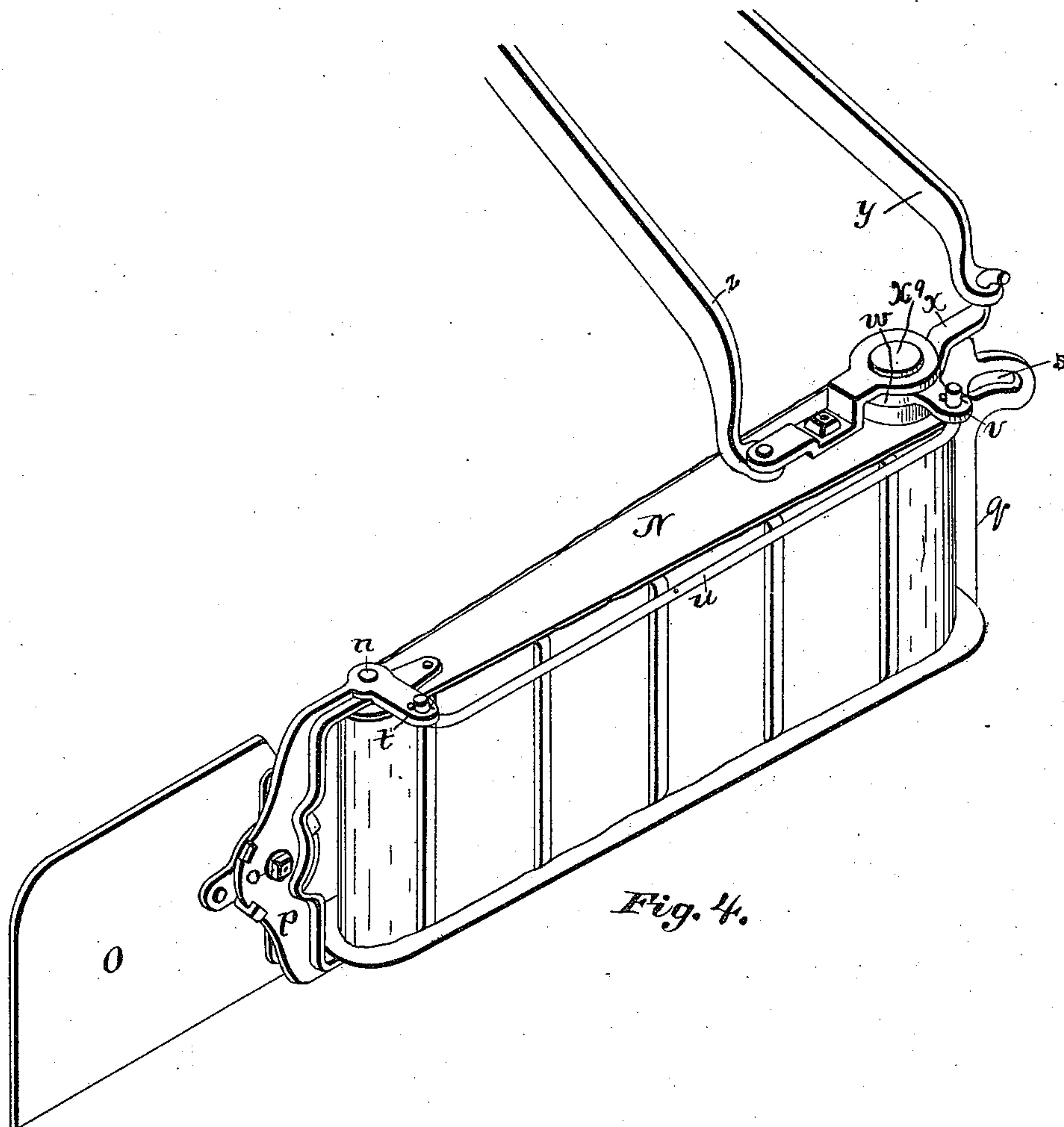
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3 Sheets—Sheet 3.

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Witnesses:  
*Chas. R. Miller*  
*Atlee Pomeroy*

*Alburtie Slentz*  
By  
*W. H. Miller* Attorney.



# UNITED STATES PATENT OFFICE

ALBURTICE O. SLENTZ, OF CANTON, OHIO, ASSIGNOR TO THE PEERLESS  
REAPER COMPANY, OF SAME PLACE.

## GRAIN-BINDING HARVESTER.

SPECIFICATION forming part of Letters Patent No. 441,039, dated November 18, 1890.

Application filed July 24, 1888. Serial No. 280,916. (No model.)

*To all whom it may concern:*

Be it known that I, ALBURTICE O. SLENTZ, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have invented a new and useful Improvement in Grain-Binding Harvesters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

The invention relates to improvements in grain-binding harvesters.

It has for its object to provide means for hinging and supporting the binder-frame, on which is supported the packer-shaft, grain-deck, and binding mechanism, in a bearing whose center is that of the binder-actuating shaft, about which the above-mentioned parts, which may be of the improved or usual construction, may be folded for transportation or raised or lowered to adapt them to the crop to be cut; furthermore, to provide means by which the packers and binding mechanism may be actuated during the raising and lowering movements of the binder-frame, packer-shaft, packers, grain-deck, and binder mechanism about a pivotal point whose center is that of the binder-actuating shaft; furthermore, in providing means for raising and lowering the binder-frame, upon which is supported the above-mentioned parts, about a pivotal connection with the harvester, whose center is that of the binder-actuating shaft, and, finally, in providing a grain-butt adjuster and means for folding and operating the same.

With these objects in view the invention consists in the improved construction and combination of parts of the same, as will be hereinafter fully set forth.

In the accompanying drawings, wherein similar letters of reference designate corresponding parts, Figure 1 is a front elevation of a portion of a harvester-frame with the binder mechanism attached and illustrating my improvements as embodied in a binder in a normal position. Fig. 2 is a similar view showing the binder raised or folded up about the actuating-shaft as an axis. Fig. 3 is a side elevation with the binder raised or folded up, showing the hinged connection of the binder-frame, binder-actuating shaft, the con-

necting gear-wheels, and the folding butt-adjuster; and Fig. 4 is an enlarged isometrical view of the butt-adjuster.

As the invention is applicable to any of the well-known forms of grain-binding harvesters now in use, it is only necessary, it is thought, to describe those parts which accomplish the objects of the invention.

A denotes the front and rear sills; B, the end sills; C, the uprights that sustain the elevator P and the binder mechanism. The binder-actuating shaft D is supported in journal-boxes E and E', secured to the uprights C, the box E being provided with an inwardly-projecting sleeve F. A corresponding sleeve F' is also provided, and is supported by the segment G, secured on sill B. Said sleeve is adapted to embrace shaft D and form a support therefor, in the manner substantially as shown in Fig. 3 of the drawings.

To provide for raising, lowering, and folding of the binder-frame H, which may be of the well-known or improved construction, about the shaft D, extensions H<sup>a</sup> project downward from the lower sleeve of the binder-frame H and are hinged upon the sleeves F and F', which embrace the binder-actuating shaft D. The packer-shaft J is journaled in the binder-frame in the usual manner and is carried with the packer-arms J' by said frame up and down and about the said binder-actuating shaft D as an axis. The grain-deck A' and binding mechanism are also secured to the frame H and are carried with said frame about the shaft D.

To provide for a continuous rotary movement of the packer-shaft and the proper movement of the binder mechanism, allowing the binder to be raised or lowered or folded up during the progressive movement and operation of the machine, a spur-wheel K is mounted on the actuating-shaft D at the right-hand portion of the same, as shown more clearly in Fig. 3, said wheel being provided with side flanges, as *a*, and on the packer-shaft J is loosely mounted an engaging-wheel L, the teeth of which pass between the flanges *a* and engage the teeth of the wheel K. That portion of the packer-shaft J on which the wheel L is placed is square, as shown at *b*. The perforation *b'* of the wheel L is adapted



thereto to slide on said shaft when the binder mechanism is moved forward or back on the sleeves F F' by the operating-rod  $e^6$ , link  $e$ , and crank  $c$ , connected to the binder-frame by the rod  $r^4$  to adjust the binder to the cut grain. The wheel L remaining engaged with the driving-wheel K, the movement of the binder mechanism will not be interrupted either when the binder is moved back or forward or folded about the actuating-shaft D, the flanges  $a$  at all times holding the wheel L in alignment with the wheel K.

To raise and lower the binder during the progressive movements and operation of the machine, or to fold it up for convenience of transportation, a lifting-cord M is provided, one end of which is secured to an arm X of the upper portion of the binder-frame, as shown at  $x'$ , Fig. 3, and passes over a pulley  $f$  to a windlass  $g$ , each of which is mounted upon a cross-piece  $x^3$ , secured to the top of the elevator-frame, and may be wound about the windlass by the crank  $g'$ .

In Fig. 3,  $h$  represents the needle-shaft, and  $h'$  the trip-rod, both of which have been cut away to show the gear-wheel L, packer-shaft J, and packer-operating cranks  $i$ , and the rod  $j$ , which latter is secured to the binder-frame H, as shown at  $x^6$ , and supports the left-hand side of the grain-deck by means of arms  $x^7$ .

To rotate the actuating-shaft D, a sprocket-wheel  $k$  is mounted on its rear end and engages a chain  $k'$ , which engages a similar wheel on the crank-shaft  $m$ , journaled in suitable bearings, as  $x^8$ , (shown in this instance as being secured to the sills B B,) thus simplifying the construction, reducing wear and tear as well as the initial cost.

The incompleteness of a folding binder will be apparent unaccompanied with a folding butt or grain adjuster, and to provide so desirable an adjunct there is secured to the lower portion of the ordinary butt-adjuster, as shown at N, a folding extension O, adapted to fold horizontally on its pivotal connection  $n$  with the butt-adjuster N and vertically on a pivotal connection  $o$  with a supporting-frame  $p$ , hinged to the lower end of the butt-adjuster.

The butt-adjuster N is secured to the elevator-frame P by a metal frame  $q$  of the usual form, secured to the upper end of the butt-adjuster, and which is pivoted about the butt-adjuster-actuating shaft  $r$ , which is journaled

in the elevator-frame P, said frame having a slot, as  $s$ , to allow the butt-adjuster to rise or rotate a limited distance about the actuating-shaft  $r$ .

The frame  $p$ , pivotally secured to the free end of the butt-adjuster, has an arm  $t$ , which is secured by a link  $u$  to an arm  $v$  of a bell-crank  $w$ , which is pivoted upon a journal  $x^9$ , secured to the upper end of the upper side of the adjuster, and to the remaining arm  $x$  of said bell-crank a rod, as  $y$ , is secured, said rod extending to a point within convenient reach of the operator. By the use of the operating-rod  $y$  the operator may swing the frame  $p$  and the extension O about the end of the butt-adjuster N and secure it in desired adjustment; and when it is desired to fold up the binder mechanism, as shown in Fig. 2, the extension may be turned about the pivot  $o$  into a position at right angles to the plane of movement of the adjuster N, when the adjuster and extension O may be swung out from the binder by the use of the rod  $z$ , secured to the butt-adjuster and extending within convenient reach of the operator to a position shown in Fig. 2, after which the binder may be folded up, as shown. The extension is then placed in line with the butt-adjuster.

Having thus described my invention, I claim—

1. The combination, with a rotary actuating-shaft D, mounted in sleeve-bearings, of a binder-frame hinged on said bearings, a binder-actuating shaft journaled in the hinged binder-frame, and intermeshing gear secured on the said actuating-shaft D and on the binder-actuating shaft, substantially as set forth.

2. In combination, the grain-adjuster N, the frame-piece  $p$ , supported on vertical pivots  $n$  at the lower end of the adjuster and having a projecting arm  $t$ , an extension O, pivoted to said frame on a pivot, the axis of which is at right angles to the pivotal connection of the frame  $p$  with the grain-adjuster, and means for folding said frame-piece about its pivotal connection with the grain-adjuster, substantially as set forth.

In testimony whereof I have hereunto set my hand this 17th day of July, A. D. 1888.

ALBURTICE O. SLENTZ.

Witnesses:

W. K. MILLER,  
CHAS. R. MILLER.