

C. W. LEVALLEY.
Grain Binder.

No. 232,518.

Patented Sept. 21, 1880.

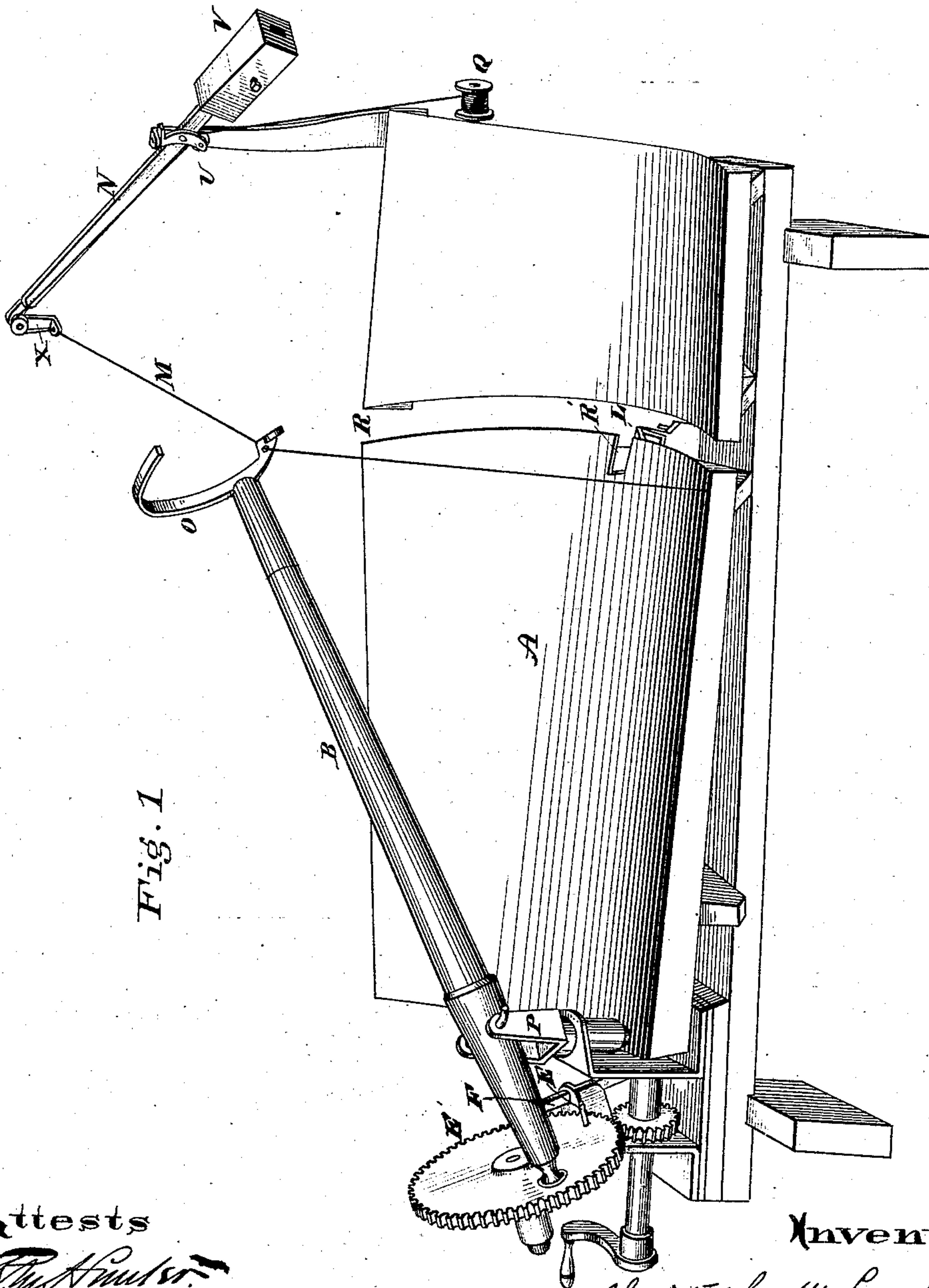


Fig. 1

Attests
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Perman

Inventor
Christopher W. Levalley
By his atty
George Harding

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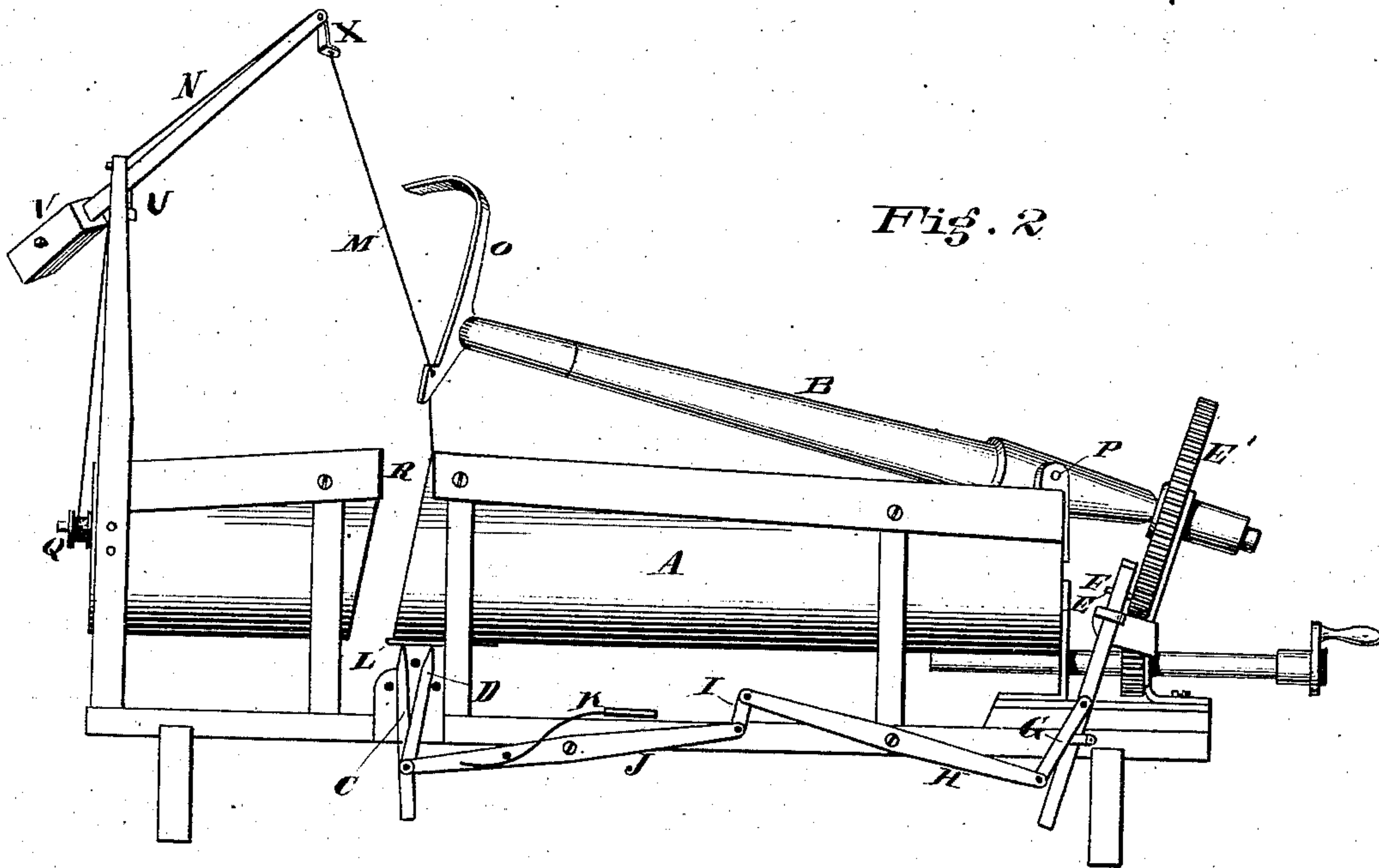


Fig. 2

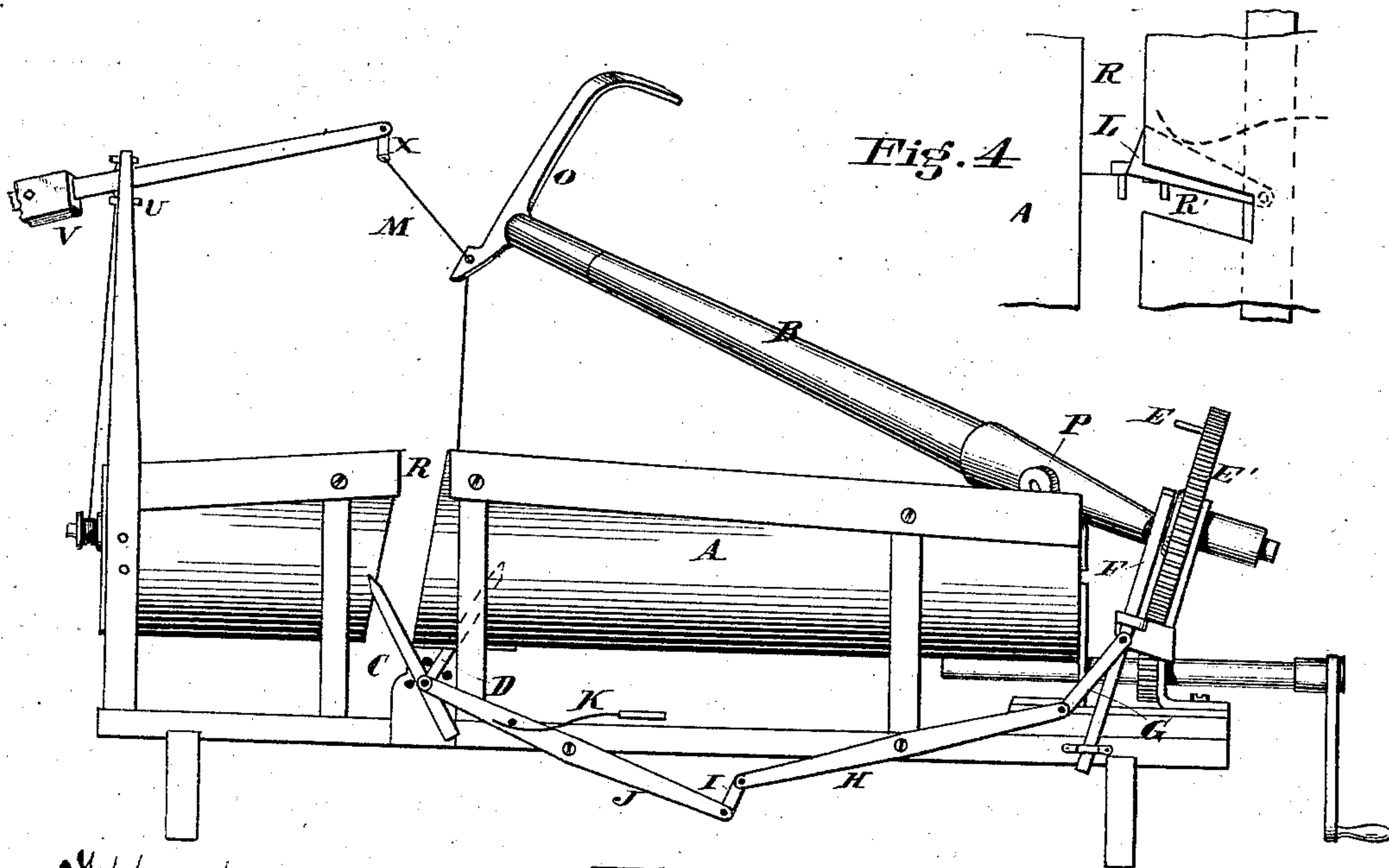


Fig. 4

Fig. 3

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UNITED STATES PATENT OFFICE.

CHRISTOPHER W. LEVALLEY, OF ST. PAUL, MINNESOTA.

GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 232,518, dated September 21, 1880.

Application filed January 14, 1880.

To all whom it may concern:

Be it known that I, CHRISTOPHER W. LEVALLEY, of St. Paul, in the State of Minnesota, have invented an Improvement in Grain-Binders, (Case B,) of which the following is a specification.

My invention relates to automatic binders for harvesters in which cord or wire may be used; and its object is to provide a device for the proper separation of the grain which is to be bound into a bundle from the other grain accumulating upon the platform or receiver.

It further has for its object the provision of a proper device or devices for creating and maintaining a proper and even tension of the wire or cord during the binding process.

In the drawings, Figure 1 is a perspective view of the concave grain receiver or platform of a harvesting-machine having my improvements attached thereto. Figs. 2 and 3 are back elevations of the same, showing the arm B in different positions. Fig. 4 is a plan view of a portion of the concave receiver, showing the stop-latch for the grain-dividing points.

A is a concave receiver or platform. B is a grain-binding arm pivotally attached to and supported on a swivel-post, P, and is operated by the wheel E', being connected to the same by a ball-and-socket or other working joint.

O is the gavel and cord-carrier, which is continued above the arm B, as shown, in order to bring the latter about centrally to lessen the strain.

N is a tension-lever mounted upon a swivel-joint, U, and thus free to act in all directions, carrying upon one extremity a weight and upon the other a swivel-guide, X, through which the cord or wire M passes.

R is a slot in the receiver, through which the lower extremity of the cord-carrier O travels, and R' is a slot in the platform, through which the diverging arms or points C and D are upwardly thrust, as shown by the full lines C and D in Fig. 3, said arms being actuated upwardly by the spring K, acting upon and under a pin carried upon the lever J, to which the arms C and D are attached.

H and J are levers which are connected together by a link, I. The other end of lever H is connected to the sliding bar F by a pitman, G. This combination of parts is actuated by

means of the pin E upon the face of the wheel E', which pin, coming in contact with the upper extremity of the sliding bar F, forces it longitudinally downward, and, through the agency of parts G, H, I, and J, the arms C and D are withdrawn from the stop L to a position below the receiver, as shown in Fig. 2, the points of the said arms being at the same time laterally thrust under stop-latch L, whereby the arms are prevented from shooting upward through the slot R' until a revolution of the arm B causes the cord-carrier O to pass again through the slot R and laterally displace the spring-controlled stop L.

It will thus readily be seen that the binding-arm B in its revolution carries the binding-cord M under and around such grain as may be in the concave receiver between the upper extremity of the receiver A and the dividing-points C and D, the binding process being perfected after the binding-arm B passes below the points C and D, during which process the grain continues to pour over the upper extremity of the receiver, but lodges itself against the grain-dividing points C and D, which have been previously thrust up through the receiver in the manner explained, and in this way the unbound grain in the receiver is kept separate and apart from the grain which is being bound.

During the binding operation the binding-cord M is kept in a proper state of tension, by being passed through the end of the weighted lever N, which acts constantly to draw the cord or wire tightly around the gavel being bound and thus compresses it. The weight of the spool or wire-holder Q is generally sufficient to create enough resistance or tension to permit the weighted tension-lever N to exercise its proper function.

In case, however, a very great degree of tension is required, a weighted friction-band or its equivalent can be used to regulate the resistance or check of the spool. By the adjustment of the weight upon the lever a greater or less tension is obtained, and consequently more or less compression of the bundle.

In this application I do not claim, broadly, the combination of a binding-arm moving over the grain-receiver with a dividing-point arranged in the path of the binder-arm, as that

is contained in my application filed June 20, 1877.

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

1. The combination of a cord-carrying arm moving over the grain-receiver, a dividing point or points arranged beneath the receiver, and a trip actuated by the cord-carrying arm in its passage to cause the dividing point or points to be projected up through the receiver.

2. The combination of a cord-carrying arm, a dividing point or points beneath the receiver, a trip actuated by the cord-carrying arm upon its outward movement to cause the points to be projected, and mechanism which, upon the return movement of the cord-carrying arm, causes the points to be retracted.

3. In combination with the cord-carrying arm moving over and through a slotted grain-receiver, a dividing point or points arranged beneath the slot and actuated to be withdrawn laterally thereof to permit the passage of the nose of the cord-carrying arm, and returned and projected up therethrough immediately upon such passage.

4. The combination of the vertically and laterally moving binder-arm, the dividing point or points, the spring and trip, the lug upon the crank-wheel, and levers intermediate of such wheel and the dividing point or points, whereby the latter may be retracted.

5. The vertically and laterally moving bind-

er-arm having the curved gaveling and wire-carrying arm projected both above and below the main arm, but not in the same plane.

6. In a harvester, the binding-arm B, pivotally attached to and supported on a swivel-post, and having the extended end directly attached by a working-joint to the driving crank-wheel, substantially as shown and described.

7. In a harvester, the adjustable weighted tension-lever N, to directly act upon the binding-cord to control the tension thereof and take up the slack of said cord, substantially as shown and described.

8. The combination of the binding-arm B, having the gaveling and cord-carrying arm O, the wire or cord M, and adjustable weighted lever N, the whole forming a gavel-compressing device, substantially as shown and described.

9. The combination of the arm B, having the gaveling and cord-carrying arm O, with the wire or cord M, adjustable weighted lever N, and automatic arms C and D, the whole forming an automatic grain-dividing and gavel-compressing device, substantially as shown and described.

In testimony of which invention I hereunto set my hand.

CHRISTOPHER W. LEVALLEY.

Witnesses:

JOHN E. MILLER,

J. H. RANDALL.