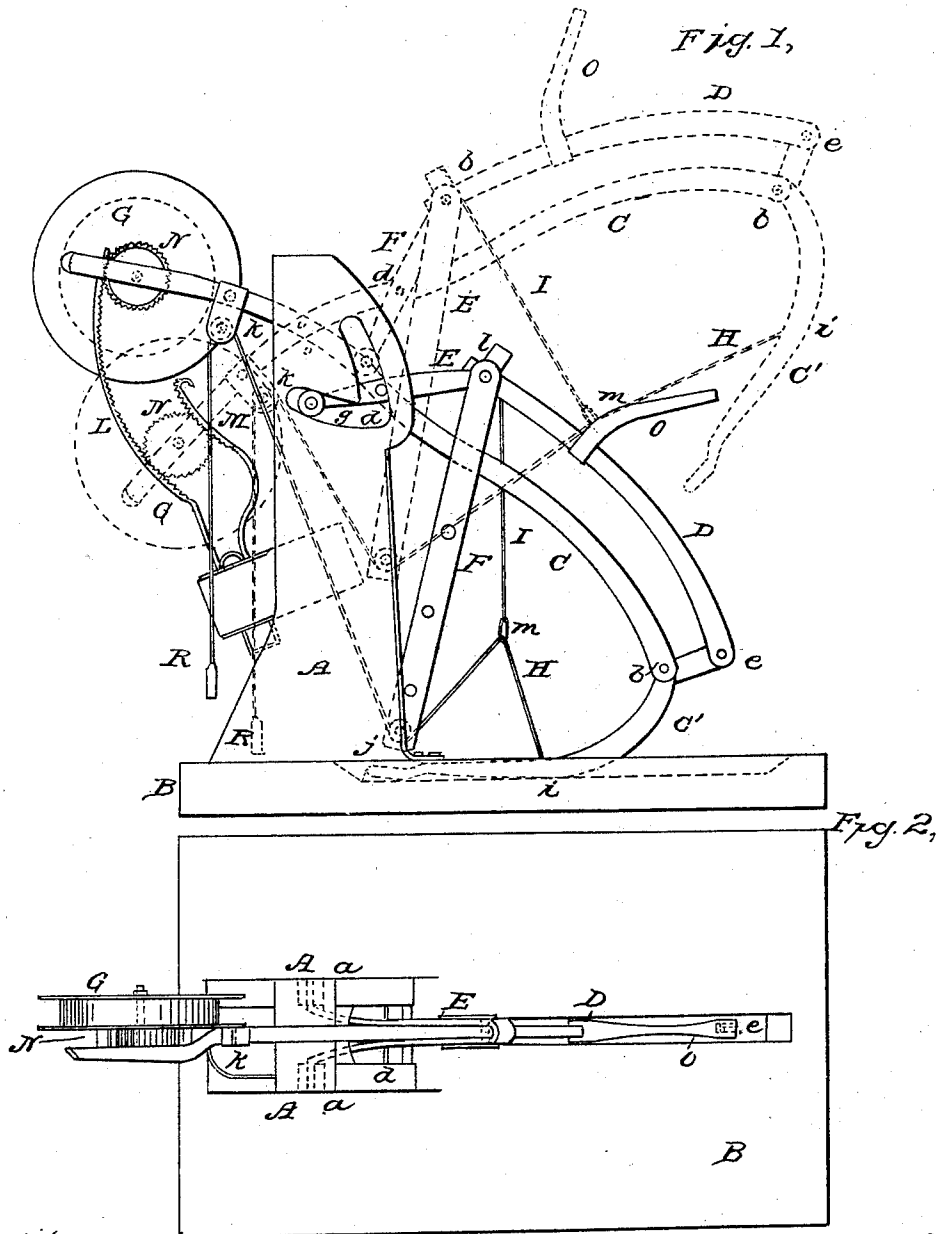


H. M. & W. W. BURSON.

Grain Binder.

No. 37,852.

Patented March 10, 1863.



WITNESSES

John Smith

INVENTORS

H. M. Burson
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UNITED STATES PATENT OFFICE.

H. M. BURSON AND W. W. BURSON, OF ATKINSON, ILLINOIS.

IMPROVEMENT IN BINDING ATTACHMENTS TO HARVESTERS.

Specification forming part of Letters Patent No. 37,852, dated March 10, 1863.

To all whom it may concern:

Be it known that we, H. M. BURSON and W. W. BURSON, of Atkinson, in the county of Henry and State of Illinois, have invented a new and useful Improvement in Grain-Binders; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, forming part of this specification, in the several figures of which similar characters of reference denote the same part.

Figure 1 is a side elevation, the full lines showing the arm in position when around the gavel, the dotted lines its position ready to receive the gavel. Fig. 2 is a plan view.

Our invention has reference to the binding of grain upon the reaper-platform with twine or wire; and consists of certain combinations of devices, hereinafter to be mentioned.

In the drawing, B is the base or platform, in which are fastened the uprights A A, supporting the arm C, which turns upon its bearing *a a*. The main arm C, Fig. 1, and fore arm C' are jointed at *b*. The handle-piece D joins C', extending beyond the joint *b* at *e*. The lever E is secured to the arm C at *d*, and to the handle-piece D at *f*. The rear end, relieved by friction-rollers, moves in the groove *g*.

The wire-reel G rotates upon its bearing *h*, and is secured upon the rear extension of the arm C, whereby its weight, as also the weight of the band material wound upon it, may serve to counterbalance the weight of the arm and its attachments.

The ratcheted pulley N of reel G acts upon ratchet-spring L when the arm is being raised, as shown in dotted lines, Fig. 1, allowing the band material to unwind until arriving at spring-ratchet M, when the reel is held from turning or turned back, holding the wire stretched when the arm is fully raised.

The tightening-cord H attaches fore arm C' at *i*, passing through loop *m* of cord I, under friction-roller *j* of slide F, over the pulley *k*, secured to the rear extension of arm C, and has attached to it the weight K, Fig. 1.

The cord I is secured to handle D at *f*, as also slide F, by which means they are raised much more rapidly as the lever E changes from a horizontal to a perpendicular position than if secured to the main arm C, which relieves the sheaf when bound from the hinder-

ance of the tightening-cord in its removal from the binding-platform.

In operating, we take hold of the handle O and raise it. The rear end of lever E, guided by groove *g*, directs the handle-piece D, acting upon fore arm C', in such manner that the point of C moves nearly horizontally until it reaches the point designed as the limit of its grasp, when it is raised nearly perpendicularly, and is finally drawn in toward the uprights. By this movement the least possible amount of wire is being drawn out, while the band, being held nearly perpendicular, is less in the way of bringing the gavel to the binder than those which hold the wire more nearly horizontal.

While the arm is being raised the rear extension is lowered, carrying the reel G downward, whereby the ratcheted pulley N is brought in contact with spring ratchet L, causing the reel to give off the band material (wire or twine) until the spring-ratchet M is reached, when the reel is held from giving off more, and the band material is held tight, when, the gavel being shoved to the binder, the spring-ratchet L acts continually to draw the band tightly around the gavel. This ratcheted arrangement of pulley N and springs L and M is designed to offer little or no resistance to the reel turning in one direction, while any desired resistance can be given it in the other, still allowing a sufficient length of band to be drawn off.

The tightening-cord H is thrown around the gavel every time the band is, and by placing the pulley *k* back of the point of rotation of arm C, that pulley is lowered while the fore arm is raised, thereby compensating for the length of cord drawn out, and avoiding the lifting of the weight R, attached to that cord, as in the patent of W. W. Burson, dated February 26, A. D. 1861. The cord I, when the arm is being raised, lifts the cord H from the sheaf, thereby aiding much in the ease of its removal.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the arm C, fore arm C', handle-piece D, lever E, with groove *g*, acting substantially as and for the purpose set forth.

2. The combination of the ratchet-pulley N

with spring-ratchets L and M, acting substantially as described.

3. Extending the arm C back of its bearing *a*, and placing thereon the reel G and pulley *k*, for the purposes herein set forth.

4. The combination of the handle-piece D, slide F, lever E, and cord I, acting substantially as and for the purpose set forth.

In testimony whereof we have hereunto set our hands and seals.

H. M. BURSON. [L. S.]
W. W. BURSON. [L. S.]

Witnesses:

JOHN TUFTS,
W. C. BIGGS.