

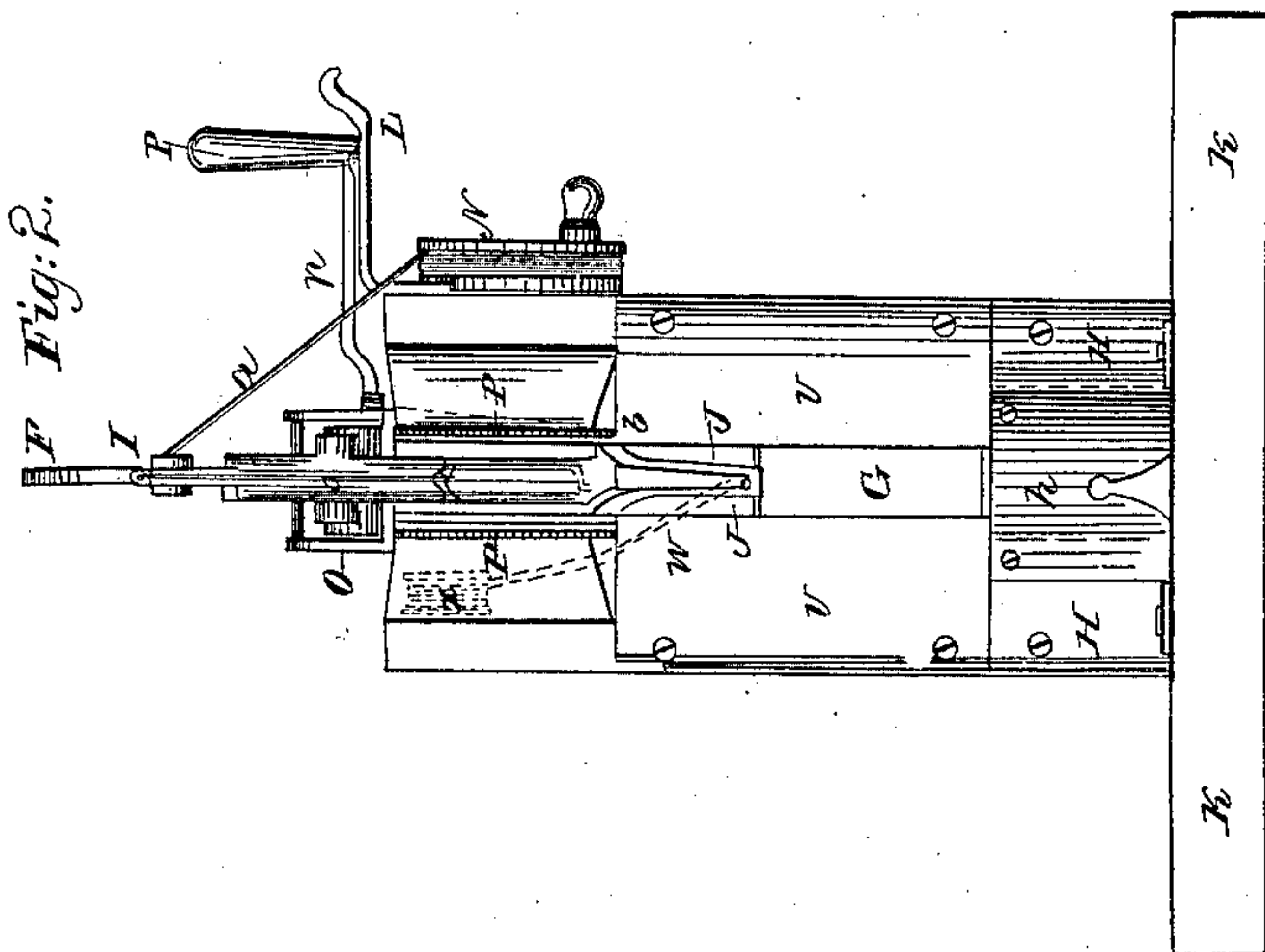
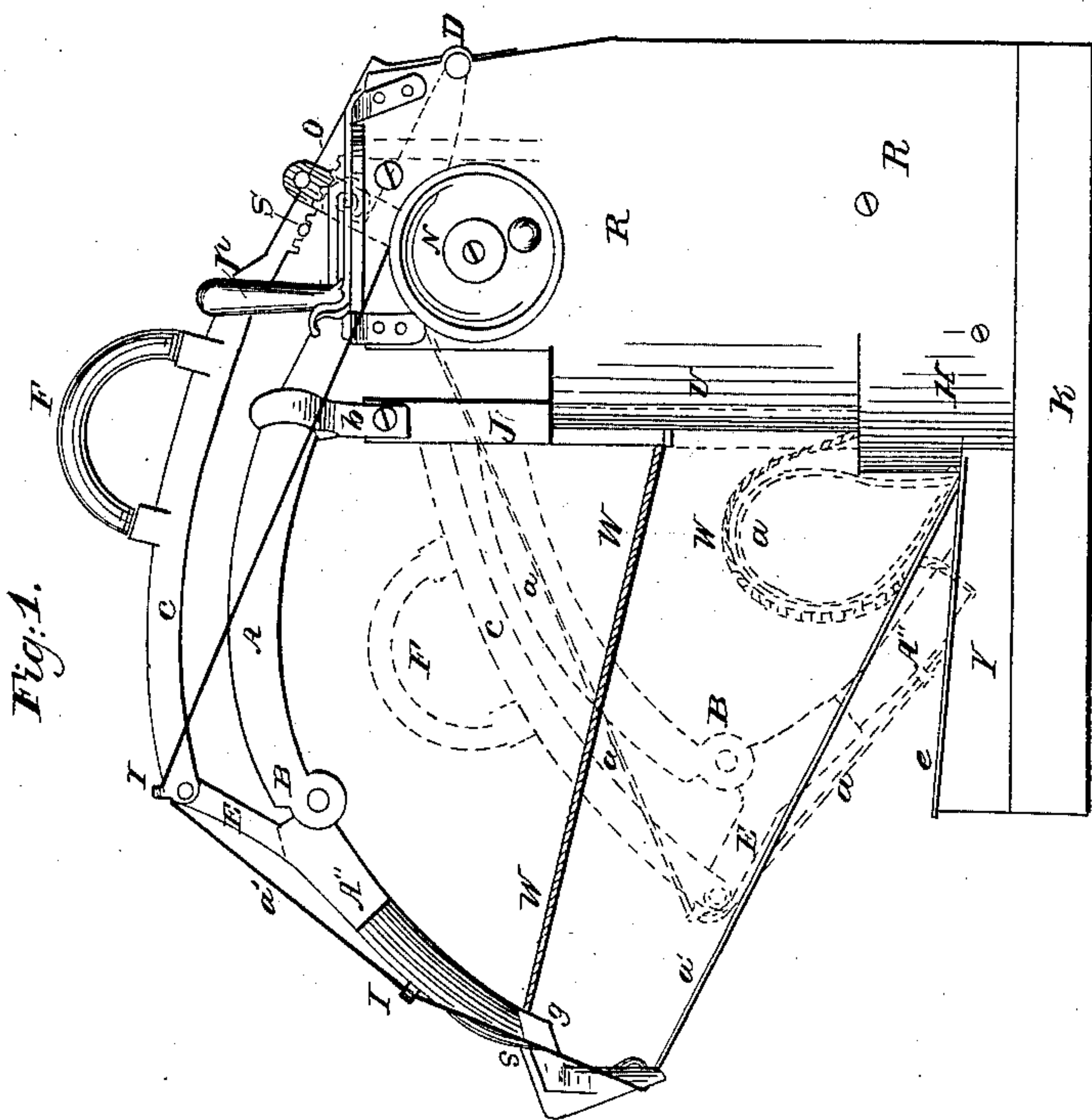
W. W. BURSON.

Grain-Binder.

2 Sheets—Sheet 1.

No. 31,526.

Patented Feb. 26, 1861.



Inventor  
W. W. Burson

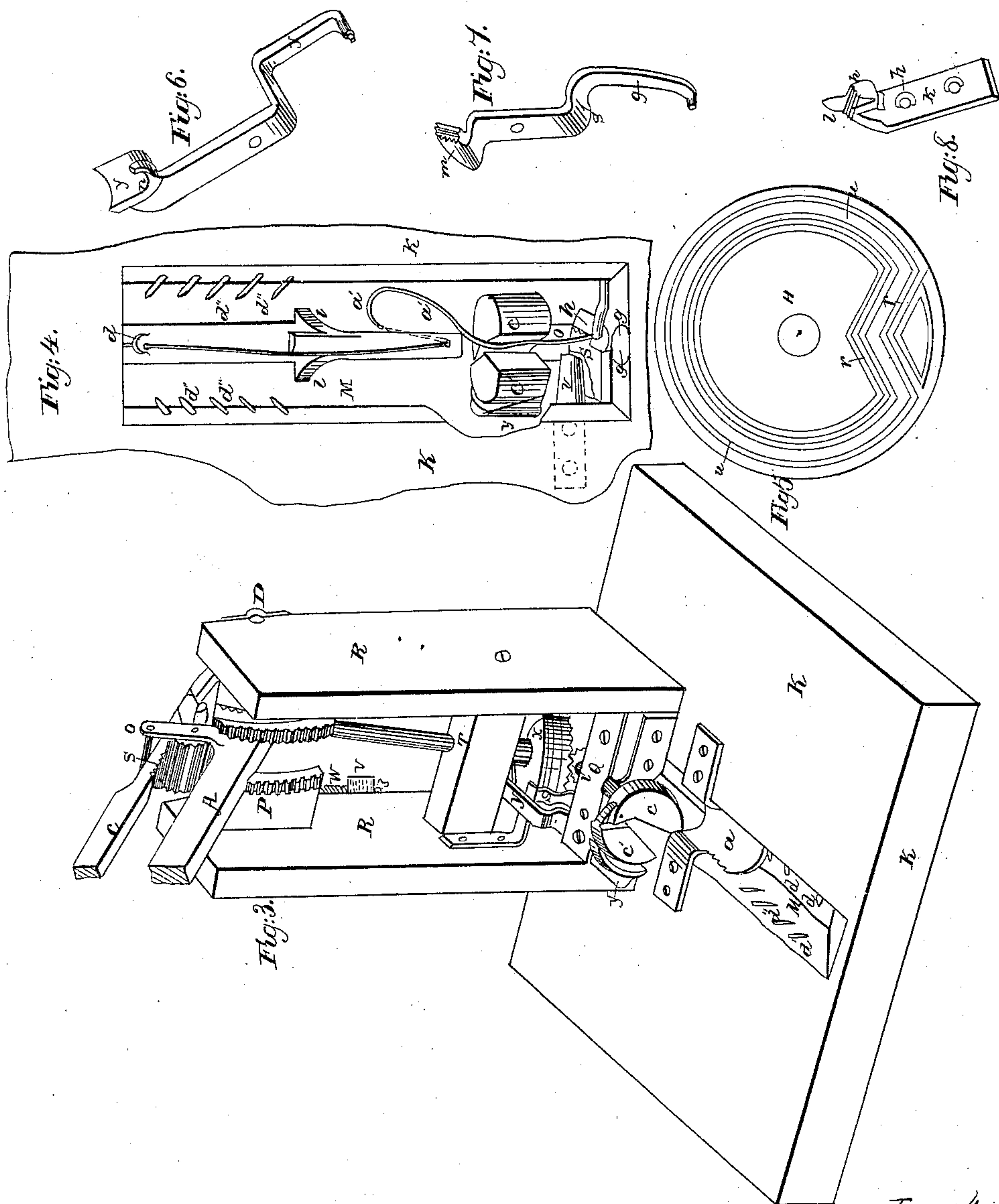
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# UNITED STATES PATENT OFFICE.

W. W. BURSON, OF YATES CITY, ILLINOIS.

## IMPROVEMENT IN GRAIN-BINDING MACHINES.

*Specification forming part of Letters Patent No. 31,526, dated February 26, 1861.*

*To all whom it may concern:*

Be it known that I, W. W. BURSON, of Yates City, in the county of Knox, State of Illinois, have invented a new and useful Machine for Binding Grain; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in the several figures of which similar letters of reference denote the same part.

Figure 1 is a side elevation, the arm A A'', full lines, being in position for receiving the gavel, the dotted lines showing its position while the band is being fastened. Fig. 2 is a front elevation, the arm A A'' and platform K being removed. Fig. 3 is a perspective view, the parts U and H being removed. Fig. 4 is a plan view of the grain-platform K, the twisting-jaws c c', and device for cutting and holding the wire. Fig. 5 shows the cam-groove of the cog-wheel x. Fig. 6 shows lever y. Fig. 7 shows lever s. Fig. 8 shows receptacle h.

My invention has reference to the binding of grain with wire upon the platform of any reaping-machine; and consists of certain combination of devices, hereinafter to be described.

In the drawing, Fig. 1, R R supports the arm A by bearing D D. The platform K receives the grain preparatory to binding, and is made with an opening, M, which the arm A'' traverses in passing the wire under and around the gavel. Said opening allows the rubbish to fall through, which might otherwise be carried by arm A'' into the twisting apparatus.

The spikes d d on the sides of the opening M prevent the arm from taking the straw into the twisting device, the strips e e partially covering said opening, and assisting in the same result.

The guide a, Fig. 3, insures the coming of the arm A'' to the proper position for fastening the wire around the gavel.

The arm A A'' is jointed at B. The pitman C attaches the fore arm A'' at E. The pinion O, secured upon A, meshes in segments P P, which are stationary upon the uprights R R. The rack S upon the rear portion of pitman C meshes in pinion O.

The cord W, attaching the fore arm A'' at d, passes through eyelet in slide J, over pulley X, and fastens to the weight-ball V.

The crank P upon shaft f rotates wheel x, which, meshing in pinion i on shaft o, rotates the twisting-jaws c c', the jaw c' being hinged to c, permanently secured upon shaft o.

The twisting-jaws c c' are opened by the spur n of lever y, Fig. 6, moving against the projection on the rear portion of c'. They are closed by the rotation of the shaft o, which brings c' within the concave H. The front end of lever y, being also concave, closing upon them, holds them closed while the rotation twists the wire.

Lever S, Fig. 7, is corrugated on its front end, its lower surface having the teeth m, and its upper surface being shear-edged.

The receptacle h, Fig. 8, matching the face of lever s', Figs. 7 and 8, has its upper surface shear-edged, and the lip t insures the proper matching of the cutting-edges.

The spool N, Fig. 2, holding the wire for binding the gavels, is secured upon the upright K, under spring-catch L, which position is necessary to enable the operator to change his hand readily from the spool to the crank, after drawing the band tightly around the gavel.

The offset q and elevation z, Fig. 1, near the end of fore arm A'', insure the placing of the wire in the twisting-jaws c c', assisted by guard k.

In operating, this grain-binder is placed upon the platform of any reaping-machine, where it would be most convenient for the raker to place the gavel upon the platform k.

The operator passes the end of wire from spool N through loops I I, and the hole in the end of A'', when the arm is brought down to its position of rest, the twisting devices being in the position of rest, as shown in Fig. 3.

With his left hand the operator takes hold of the crank P and turns to the left, simultaneously pressing down the spring-catch L. One revolution securely fastens the end of the wire. The operator then raises arm A A'' by handle F, which rotates the pinion O, meshing in segments P P, acting upon rack S to draw pitman C, attached to A'' at E, thereby extending the forearm A'', and stretching the wire from the twisting device, as shown in Fig. 1.

The gavel being placed upon platform K, the arm A is pushed down; at the same time



the spool N is reversed, thereby drawing the wire tightly around the gavel. The tightening-cord W, by this movement, being thrown around the gavel, the weight V and slide J assist in compressing it. The crank *p*, being turned to the left, rotates the twisting-jaws. The rear portion of lever *y*, moving in groove *w* of wheel *x*, holds the twisting-jaws securely closed until arriving at cam *r*, which throws the rear end toward the center of the wheel, and the spur *n* outward, and therewith jaw *c*. At the same time the rear end of lever *s*, moving in groove *u*, behind and underneath the rear portion of lever *y*, holds the end of wire until the cam *r* releases it. When the wire, running from the twisting-jaws through the eyelet of A'', is brought into position, the lever *s* closing against receptacle *k*, it is severed by the shear-edges of said lever and receptacle, while the corrugated surfaces of the said lever and receptacle securely hold the spool end of the wire, and the completed revolution of crank *p* securely fastens the now severed wire around the gavel.

The crank *p*, resting in spring-catch L, shows the twisting device in proper position for the arm A to be again raised, when the

sheaf is removed and the machine is in readiness for another gavel.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the jointed arm A A'', pitman C, rack S, segments P P, and pinion O, operating substantially as and for the purpose set forth.

2. The combination of the cord W, weight V, slide J, and arm A A'', substantially as described.

3. The platform K, constructed with opening M, said opening provided with the spikes *d'' d'' d''*, and guide *a*, substantially as described.

4. The hinged jaws *c c'*, shield or guard *k*, and the concave H, operating substantially as set forth.

5. The combination of lever *s* and receptacle *k*, constructed substantially as described.

6. The lever *y*, with spur *n*, operating for the purpose of opening and closing the twisting-jaw *c c'*, as described.

W. W. BURSON.

Witnesses:

A. G. GRIDLEY,  
G. T. HITCHCOCK.