(No Model.)

M. G. HUBBARD.

TENSION DEVICE FOR GRAIN BINDERS.

No. 268,235. Patented Nov. 28, 1882.

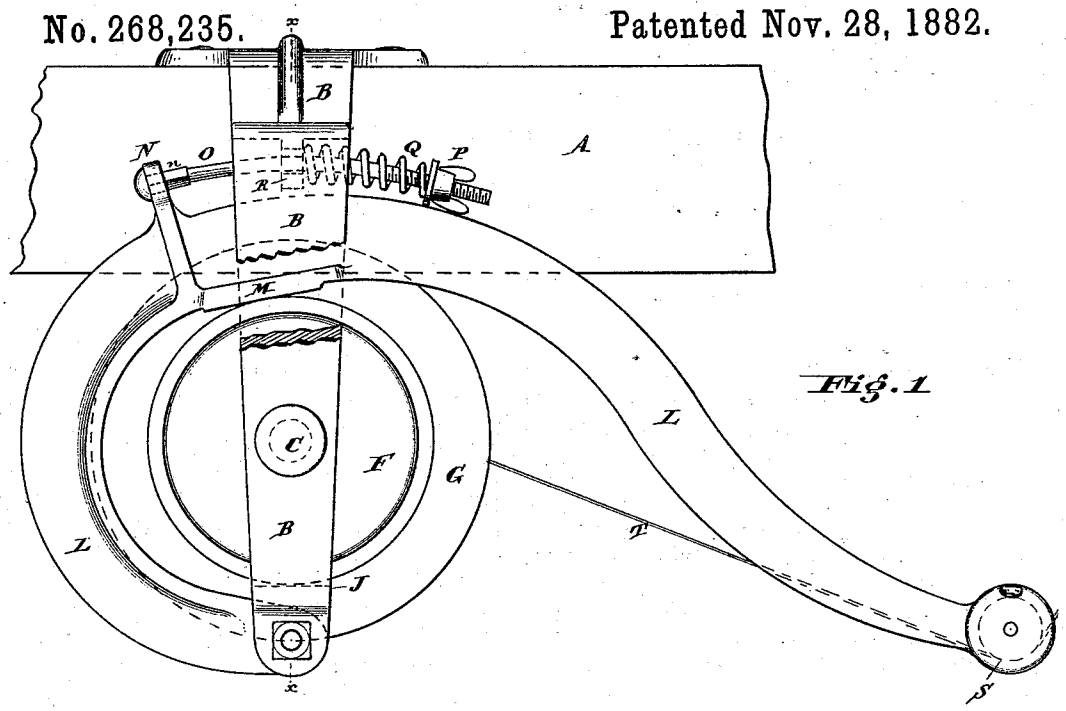


Fig. 1

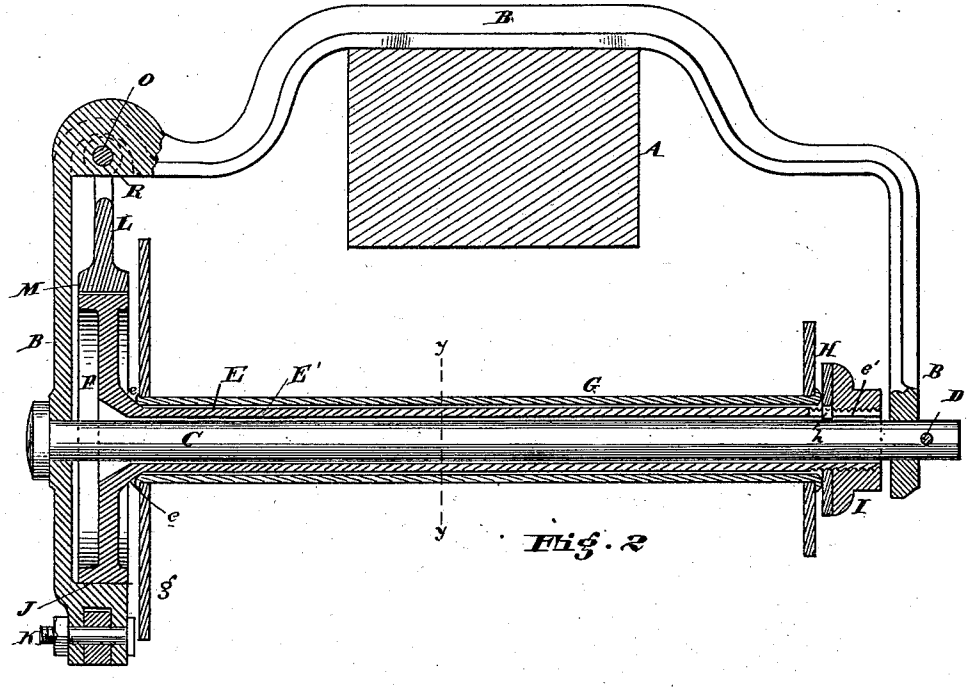


Fig. 2

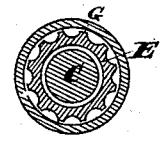


Fig. 3

Attests:
Wesley Williams
L. J. Wales

Inventor
Moses G. Hubbard
By his atty
[illegible]

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

MOSES G. HUBBARD, OF NORRISTOWN, PENNSYLVANIA.

TENSION DEVICE FOR GRAIN-BINDERS.

SPECIFICATION forming part of Letters Patent No. 268,235, dated November 28, 1882.

Application filed February 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, MOSES G. HUBBARD, of Norristown, in the county of Montgomery and State of Pennsylvania, have invented an Improvement in Tension Devices for Grain-Binders, of which the following is a specification.

My invention has reference to tension devices for grain-binders, and is adapted to control the tension of the binding cord or wire; and it consists in mechanism which is fully set out in the following specification and shown in the accompanying drawings, which form part thereof.

The object of this invention is to so construct a tension device that it shall at all times put the binding cord or wire under a substantially uniform tension; also, that when drawing the cord or wire from the spool the said spool shall be free to rotate, but is prevented from spinning by a friction device, which instantly arrests all movement to the spool the instant the binding cord or wire becomes slack.

In the drawings, Figure 1 is a side elevation of my improved tension device. Fig. 2 is a section of same on line *x x* of Fig. 1. Fig. 3 is a section of part of same on line *y y* of Fig. 2.

A is the shaft or other frame of the binder, and to it is secured a frame, B, having two legs or arms, and substantially ∩-shaped. Carried by these arms is a pin, C, which is held in place by pin D passing through its end. Upon this pin or rod C fits a loose sleeve, E, whose hole E′ is slightly larger in diameter than the pin or rod C, so as to allow it to rotate freely thereon and allow play to the friction-wheel F, so that it may be clamped upon the face J without bearing upon the shaft C. One end of this sleeve E is provided with a smooth-faced friction-wheel, F, the hub *e* of which is made conical on the sleeve side. Upon this sleeve E the cord or wire spool G is loosely fitted, and is pressed against the conical hub *e* by the nut I, which presses the washer H against the other end. The washer H is provided with a lug, *h*, which fits into the slot *e′* on the end of the sleeve C, which end is also threaded for the nut I. By this device the nut presses the spool against the cone *e* without tending to rotate it. The flange *g* of the spool next to the friction-wheel is large, so as to prevent any possibility of the band wound thereon becoming entangled in the tension devices.

Pivoted to the frame B, at the bottom of an arm at K, is the curved tension-lever L, carrying on its other end a roller, S, around which the binding cord or wire T passes. The pivot-point K is located at the bottom of the friction-wheel F, which rests upon a face, J, secured to or forming part of the frame B. On the lever L, opposite or nearly opposite the pivot K, and on the other side or top of the friction-wheel F, is a friction-surface, M, which is set at an incline, so as to have the effect of a wedge when the end of the lever is raised or lowered.

Projecting from the lever L, and forming part of same, is a lug, N, through which a curved bolt, O, passes, the end being made square, as at *n*, to prevent turning. This bolt O passes loosely through a hole, R, in the frame B, and is provided on its end with a thumb-nut, P. A spring, Q, encircles the bolt, and is located between the frame B and thumb-nut P. By adjusting this nut P on the bolt O and compressing the spring Q more or less the tension on the band T may be varied. When the band T is drawn off the spool G the end of the lever L is raised. This relieves the friction-wheel F, and the spool G revolves, unwinding the band therefrom. The moment the band is slackened or no more band is drawn off, the spring Q presses the friction-surface M down upon the friction-wheel F, which in turn is forced down upon the surface J, and all rotation is instantly arrested. As the friction-wheel F rests at all times on the surface J, there is a tendency to prevent spinning of the spool, even when the friction-surface M is removed.

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

1. In a tension device for grain-binders, a band-spool provided with a friction-wheel and two friction-surfaces, in combination with mechanism controlled by the tension of the band to clamp said friction-wheel between said clamping-surfaces or free it therefrom to prevent spinning of the spool and keep a uniform tension on the band.

2. In a tension device for grain-binders, a band-spool provided with a friction-wheel on one end, in combination with a pivoted lever provided with a friction-surface and controlled by the band, and a spring to press said friction-surface upon said friction-wheel, and a stationary friction-surface upon which said friction-wheel rests and against which it is pressed by the friction-surface on the lever, substantially as and for the purpose specified.

3. In a tension device for grain-binders, a band-spool provided with a friction-wheel on one end, in combination with a pivoted lever provided with a friction-surface and controlled by the band, a spring to press said friction-surface upon said friction-wheel, and means to adjust its tension, and a stationary friction-surface upon which said friction-wheel rests and against which it is pressed by the friction-surface on the lever, substantially as and for the purpose specified.

4. In a tension device, the combination of the frame B, pin or rod C, sleeve E, provided on one end with the cone *e* and friction-wheel F and on the other with a slot, *e'*, and screw-thread, spool G, washer H, nut I, lever L, friction-surfaces M and J, bolt O, spring Q, and nut P, substantially as and for the purpose specified.

5. In a tension device, the combination of frame B, pin C, spool G, secured to a friction-wheel, F, pivoted lever L, and friction-surfaces M and J, substantially as and for the purpose specified.

6. In a tension device, the combination of the sleeve E, provided on one end with the slot *e'* and screw-thread and on the other with a cone, *e*, and friction-wheel F, with the spool G, washer H, provided with the lug *h*, and nut I, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

MOSES G. HUBBARD.

Witnesses:
H. U. BRUNNER,
JOS. SLINGLUFF.