

(No Model.)

P. R. MARTIN.

TENSION DEVICE FOR GRAIN BINDING MACHINES.

No. 568,621.

Patented Sept. 29, 1896.

Fig. 1.

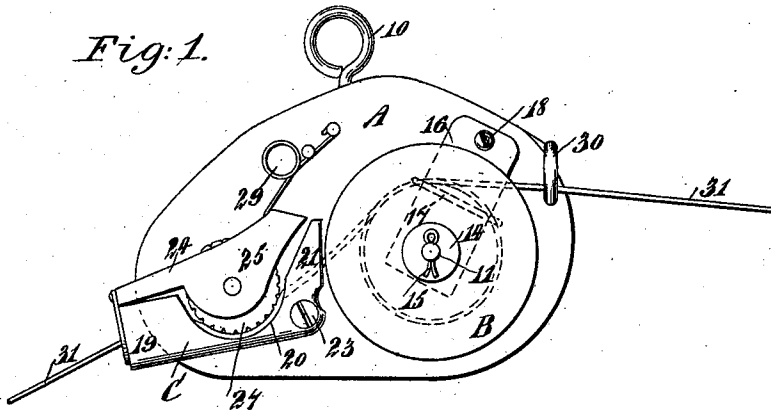


Fig. 2.

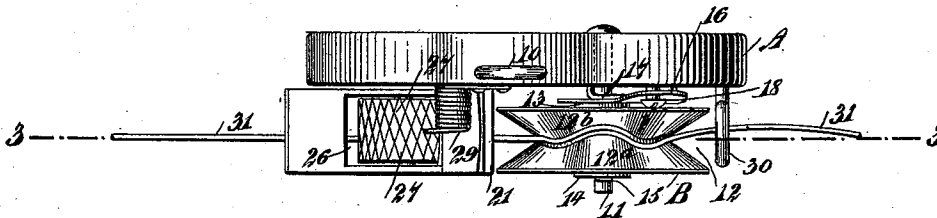
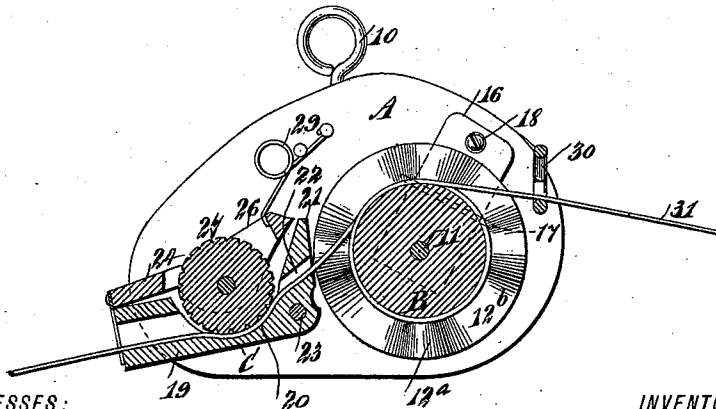


Fig. 3.



WITNESSES:

J. A. Rennie
J. H. Decker

INVENTOR

P. R. Martin
BY *Mum & Co*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

PHILIP R. MARTIN, OF BUFFALO, NORTH DAKOTA.

TENSION DEVICE FOR GRAIN-BINDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 568,621, dated September 29, 1896.

Application filed November 26, 1895. Serial No. 570,200. (No model.)

To all whom it may concern:

Be it known that I, PHILIP R. MARTIN, of Buffalo, in the county of Cass and State of North Dakota, have invented a new and Improved Tension Device for Grain-Binding Machines, of which the following is a full, clear, and exact description.

My invention relates to an improvement in twine-holders and tension devices adapted for connection with the binding mechanism or self-binding harvesters; and the object of the invention is to construct in a simple and economic manner a tension device for grain-binding machines by which the same tension may be applied to twine whether it be fine or coarse, rough or smooth, and, furthermore, to provide a means whereby the tension may be expeditiously and conveniently regulated, and to so construct the machine that it will be exceedingly simple and light and yet strong and durable.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures. Figure 1 is a front elevation of the tension device and twine-holder. Fig. 2 is a plan view of the same, and Fig. 3 is a vertical section taken substantially on the line 3 3 of Fig. 2.

In carrying out the invention a back board or plate A is provided having a loop, link, or eye 10 at its top, whereby the said plate or backboard may be hung up under the binder upon any convenient support. A post 11 is secured in the back plate or board near one of its ends, and upon this post a large friction-wheel B is mounted to revolve. This wheel is provided with a peripheral V-groove 12, made quite deep, and the side walls of this groove are undulating or scalloped in such manner as to form alternating convexed surfaces 12^a and concaved surfaces 12^b, the convexed surfaces of one wall being opposite the concaved surfaces in the opposing wall of the aforesaid groove, as is shown in Figs. 2 and 3. A washer 13 is loosely mounted on the post at the rear of the friction-wheel B,

being in engagement with the said wheel, and a second washer 14 is likewise mounted on the post engaging with the wheel, while a cotter-pin 15 is passed through the outer end of the post in front of the outer washer 14.

A spring-plate 16 is perforated at one end to receive the post 11 and engages (at said perforated end) the washer 13. Above the post the spring-plate is fulcrumed upon a raised bar 17, carried by the back bar A. By these means the plate is allowed a rocking movement. An adjusting-screw 18 is passed through the upper end of the plate and into the backboard A of the device, and by moving inward the screw 18 the lower end of the spring-plate will bear against the rear washer 13, causing it to bind against the friction-wheel B and force the wheel against the outer washer 14, thus increasing the tension on the aforesaid friction-wheel, enabling it to run less freely. By reversing this operation the wheel is allowed easier movement.

Opposite the grooved portion of the tension-wheel B a shoe C is located on the back plate or board. This shoe is provided with a tubular outer end 19, a central segmental cavity 20, and an extension 21 from its inner end, the said extension being located in front of the grooved portion of the tension-wheel B, and it is provided with an opening 22, having a downward inclination and communicating with the aforesaid recess 20, the opening 22 being tangential to the base of the V-groove of the aforesaid friction-wheel. The shoe is secured to the back plate by means of a screw 23 or its equivalent, passed through the shoe at or near its lower inner corner. An arm 24 is hinged to the outer top portion of the tubular extremity of the shoe, and this arm is provided with side lugs 25, extending downward practically within the recess 20 of the shoe, and in these lugs the trunnions or their equivalents of a friction-roller 27 are journaled, the roller being smaller than the friction-wheel, and it is provided with a serrated or roughened peripheral surface, and the roller is normally held to revolve within the recess 20 of the shoe, so that it will contact with any object passed along the bottom of the shoe by reason of a spring 29, secured to the back plate or board and having constant downward bearing on the inner end of the

aforesaid arm. The said arm is provided with a slot or opening 26 in its upper surface, through which the roller may extend. At the outer side of the friction-wheel B an eye 30
5 is secured to the back plate or board.

The device is hung under the binder, and the twine 31 is made to pass from the source of supply through the tubular end of the shoe beneath the friction-roller 27, on through the
10 inclined slot 22 and once around the friction-wheel B, and from thence through the eye 30 to the binder. The peculiar construction of the friction-wheel B effectually prevents the cord from slipping thereon, gripping the same
15 tightly, and the friction-roller 27 guides the cord and at the same time prevents any undue tension and the cord from unwinding too rapidly from the friction-wheel B.

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

1. A tension device, consisting of a plate or support having a fixed post, a friction-wheel provided with a peripheral V-groove,
25 mounted to revolve loosely on the said post, a washer controlling the outward movement of the wheel on the post, a spring-plate adapted to engage with the rear of the said wheel, an adjusting device whereby one portion of the
30 plate may be made to bear to a greater or a

less degree against the said wheel, a shoe arranged adjacent to the wheel, and a spring-pressed guide-roller located within the said shoe, as and for the purpose set forth.

2. In a tension device, a support, a post
35 attached thereto, a wheel mounted to revolve on the said support, washers loosely mounted on the post at the front and back of the wheel, a tension device provided with an adjusting mechanism, engaging with one face of the
40 wheel, a shoe arranged adjacent to the wheel, a spring-controlled arm pivoted on the said shoe, and a guide-roller journaled in the said arm and adapted to revolve in the said shoe, as and for the purpose set forth. 45

3. A tension device having a plate, a post projecting from the plate, a grooved wheel mounted on the post, a pivotally-mounted plate carried on the post and capable of bearing against the side of the grooved wheel to
50 retard the revolution thereof, a shoe carried by the support, an arm pivotally mounted adjacent to the shoe, a roller carried by the arm, and means for pressing the roller against the shoe, substantially as described.

PHILIP R. MARTIN.

Witnesses:

JAMES A. WINSLOE,
C. A. PETERSON.