

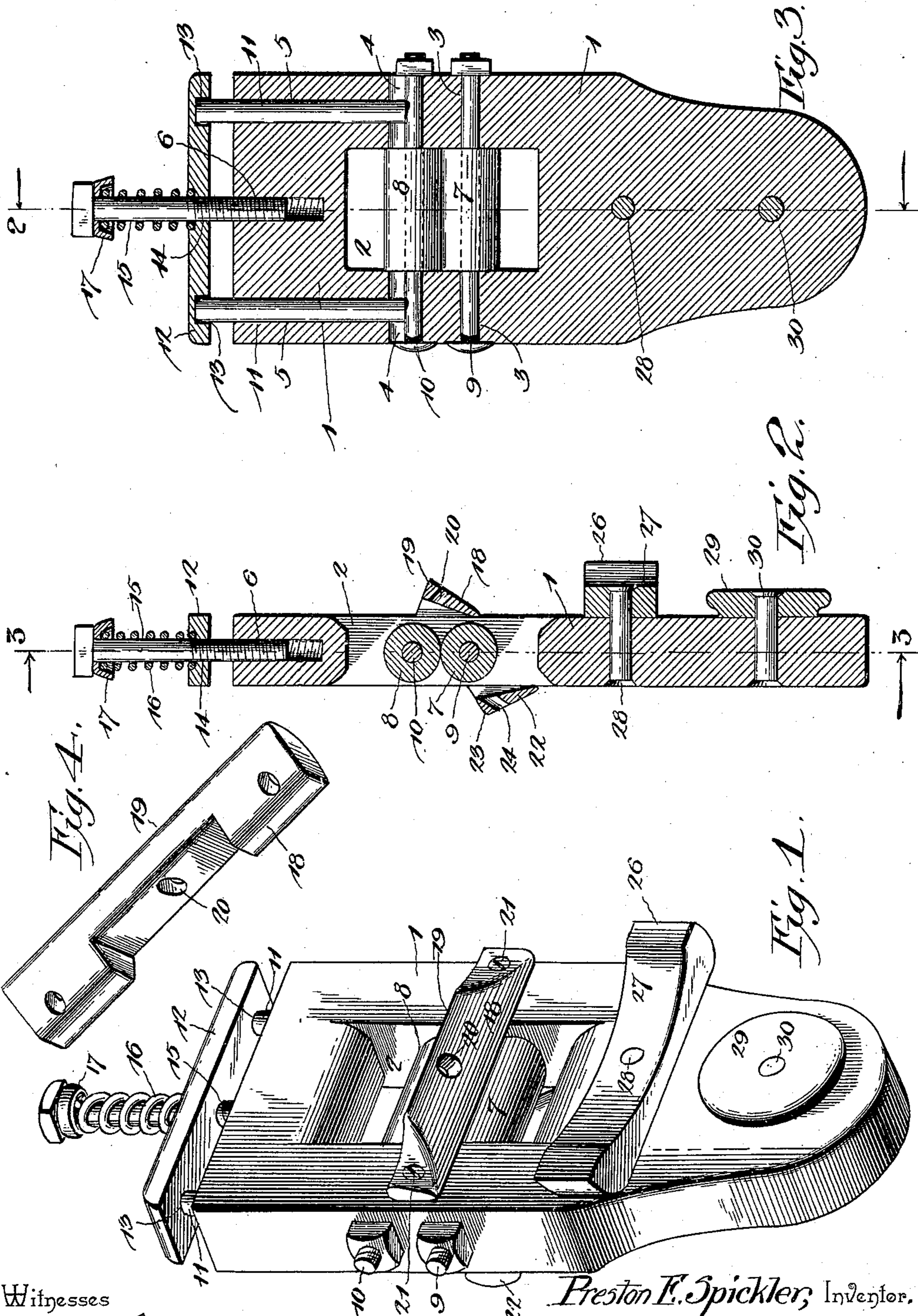
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Patented Jan. 10, 1899.

P. E. SPICKLER.
TENSION DEVICE.

(Application filed May 14, 1898.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

PRESTON E. SPICKLER, OF BYRON, ILLINOIS.

TENSION DEVICE.

SPECIFICATION forming part of Letters Patent No. 617,516, dated January 10, 1899.

Application filed May 14, 1898. Serial No. 680,718. (No model.)

To all whom it may concern:

Be it known that I, PRESTON E. SPICKLER, a citizen of the United States, residing at Byron, in the county of Ogle and State of Illinois, have invented a new and useful Tension Device, of which the following is a specification.

My invention relates to improvements in tension devices for holding a cord or twine under the desired strain and to prevent the same from kinking or twisting; and the object that I have in view is to provide a simple, strong, and cheap construction by which the cord may be carried in a tortuous course through the gripping devices and which enables the parts to be separated, so that the cord may be threaded to good advantage and without hindrance from the gripping devices.

With these ends in view the invention consists in the novel construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of a tension device constructed in accordance with my invention. Fig. 2 is a vertical sectional elevation at right angles to the roll-axes and on the plane indicated by the dotted line 2 2 of Fig. 3. Fig. 3 is a vertical sectional elevation on a plane at right angles to Fig. 2 and indicated by the dotted line 3 3 of said figure. Fig. 4 is a detail perspective view of one of the guide-bars.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

1 designates the frame or housing of my improved tension device and which carries all of the working parts of said device. The housing is preferably cast in a single piece of metal to form an enlarged opening 2, located substantially at the middle of the housing, and in the side bars of said housing are formed the journal-openings 3 and the longitudinal slots 4. Said housing is further provided with longitudinal passages 5, which are formed in the side bars thereof, which passages intersect with the slots 4 and extend therefrom to and through the head of the housing, and in said head of the housing is

provided a central socket 6, which is interiorly threaded to receive an adjusting-screw, as will presently appear.

7 designates the lower gripping-roll, which is arranged within the opening of the housing and has its journals fitted loosely in the openings 3 of the housing, whereby the lower roll is confined within the housing and is free to rotate therein. The upper roll 8 has its journals fitted loosely in the slots 4 of the housing to lie parallel to the lower roll and to be capable of a limited sliding movement with relation thereto. The journals for the lower roll are indicated by the numerals 9 in the drawings, while the journals for the upper slidable roll are indicated at 10 as being loosely fitted in the slots. The rolls are normally pressed into engagement with each other by slidable stems or rods 11, which are fitted loosely in the vertical passages 5 of the housing, and the lower ends of these stems rest upon the journals 10 of the upper slidable roll 8. These rods or stems are thus loosely connected to the housing to be contained therein, and they are long enough for their upper ends to protrude beyond the head of said housing.

Above the housing is arranged a cap-plate 12, which lies parallel with the housing-head, and in the lower face of said cap-plate are provided the sockets 13, adapted to receive the upper protruding ends of the slidable presser stems 11, whereby the cap-plate is fitted detachably to the stems. This cap-plate is furthermore provided with a central screw-opening 14, through which passes a vertical headed screw 15, the lower threaded end of which is screwed into the threaded socket 6 of the housing-head. The headed upper end of the adjusting-screw 15 lies at a suitable distance above the cap-plate, and around this groove is loosely fitted a coiled pressure-spring 16, one end of which is seated directly upon or within a socket of the cap-plate 12. A socketed washer 17 is interposed between the upper end of the screw and the head of the adjusting-screw, and said end of the spring is fitted in the socket of the washer so as to be held thereby in proper relation to the screw.

18 designates a guide-bar which is made in a single piece of metal separate from the

housing. This guide-bar is provided at its middle with an offset 19, that lies at an angle or diagonally to the plane of the guide-bar, and in this offset inclined portion of said guide-bar is formed a cord-eye 20. At its ends the guide-bar is formed with transverse openings, through which are passed the screws 21, that serve to rigidly fasten the guide-bar to one side of the housing, and said guide-bar is thus adapted to be applied and securely fastened against one face of the housing to have the cord-eye 20 in a plane diagonal to the horizontal plane between the contacting faces of the coacting gripper-rolls 7 and 8. To the opposite side or face of the housing is applied and secured another guide-bar 22, which lies in a different horizontal plane from the guide-bar 18. This last-named guide-bar 22 is constructed with a diagonal offset portion 23 and with an inclined guide-eye 24 in said diagonal offset. The guide-bar 22 is secured to the frame or housing on a horizontal plane below the lower gripper-roll 7 by means of the screws 25, which pass through suitable openings formed in the ends of the guide-bar and which enter the housing so as to firmly attach the bar thereto.

From the foregoing description, taken in connection with the drawings, it will be observed that I have provided the tension device with a pair of guide-bars which are secured to the housing in different horizontal planes, and these guide-bars are constructed with diagonal offsets having cord-eyes formed therein to lie in reversely-inclined planes to the line which intersects the gripper-rolls at the contacting faces thereof. The cord or twine which is to be threaded through the tension device is first passed through the guide-eye 20 of the guide-bar 18 in an upward direction. It is then carried horizontally between the rolls. The cord is then led downwardly toward the lower guide-bar 22 and finally carried through the guide-eye 24 in the offset portion of the bar 22. The cord is thus given a tortuous or irregular course through the guide-bars and rollers of the tension device, and this is advantageous because the proper frictional engagement between the working parts of the tension device and the cord is obtained for preventing the cord from twisting or kinking and to enable the proper strain or tension to be exerted thereon.

One of the important features of my improved tension device resides in having the cap-plate detachably fitted to the pressure-stems of the upper roll and employing the adjusting-screw with the spring to normally bear upon the cap-plate for the purpose of forcing the upper roll normally toward the lower roll and for regulating the pressure exerted by the spring upon the two rolls. By having this cap-plate detachable and by making the screw readily accessible the parts may be readily separated to relieve the upper roller from pressure and permit the rolls to be adjusted to positions where the cord or

twine may be threaded through the guide devices and between the rolls without hindrance from any of the working parts, after which the cap-plate should be adjusted for the upper ends of the stems to fit in the sockets thereof and the screw tightened to make the spring exert its pressure upon the cap-plate, the stems, and the journals of the upper slidable roll.

My tension device is equipped with an attaching-bar 26, which is fitted laterally against the solid lower portion of the housing below the opening 2 therein. The attaching-bar is provided with a concave face 27, and it is united to the housing by a transverse rivet 28, which passes centrally through the bar and is attached to the housing. At the foot of the housing and against the face thereof to which the attaching-bar 26 is applied a disk 29 is fitted against said housing, and this disk is attached to the housing by a central pivot 30.

My improved tension device is adapted for use generally in the arts, although it is especially well adapted to be used on the twine-receptacle of harvesting-machines.

The tension device is readily applied, and it serves to keep the twine in its proper place and effects a saving of the twine by preventing it from kinking and holding it under proper tension.

The device is threaded very expeditiously, and the operator is not required to pass under the machine.

The tension device is capable of use to good advantage in connection with extremely coarse or rough twine, on which it operates with the same facility as on smooth high-grade cord.

When my improved tension device is used on a twine-box, the bar 26 and disk 29 provide the means by which the housing or frame may be seated firmly against the outside of the twine-box, and through the housing, the bar, and the disk are passed rivets or screws which are secured to the twine-box. The frame or housing may thus be secured to a twine-box, so as to space the tension device thereon and provide for the easy passage of the cord or twine from the box to the eye of the guide-bar 18.

Having thus described the invention, what I claim is—

1. A tension device comprising a frame or housing, the coacting gripper-rolls journaled therein, a guide-bar, 18, provided with an offset middle portion and with a diagonal guide-eye and secured to one side of the housing substantially in the horizontal plane of the meeting faces of said rolls, and another guide-bar secured to the opposite side of the housing in the horizontal plane of the lower face of the lower roll and also provided with a diagonal offset and a diagonal guide-eye therein, the offset and guide-eye in the last-named bar being inclined reversely to the offset and guide-eye in the first-named bar, substantially as described.

2. A tension device comprising a frame,
gripper-rolls journaled therein, a bar having
a guide-eye in a plane diagonal to a plane
tangent to the contacting faces of said rolls,
5 and another guide-bar on the opposite side of
the frame and having a diagonal guide-eye
inclined reversely to the guide-eye in the first-
named bar, substantially as described.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

PRESTON E. SPICKLER.

Witnesses:

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S. B. STUART.