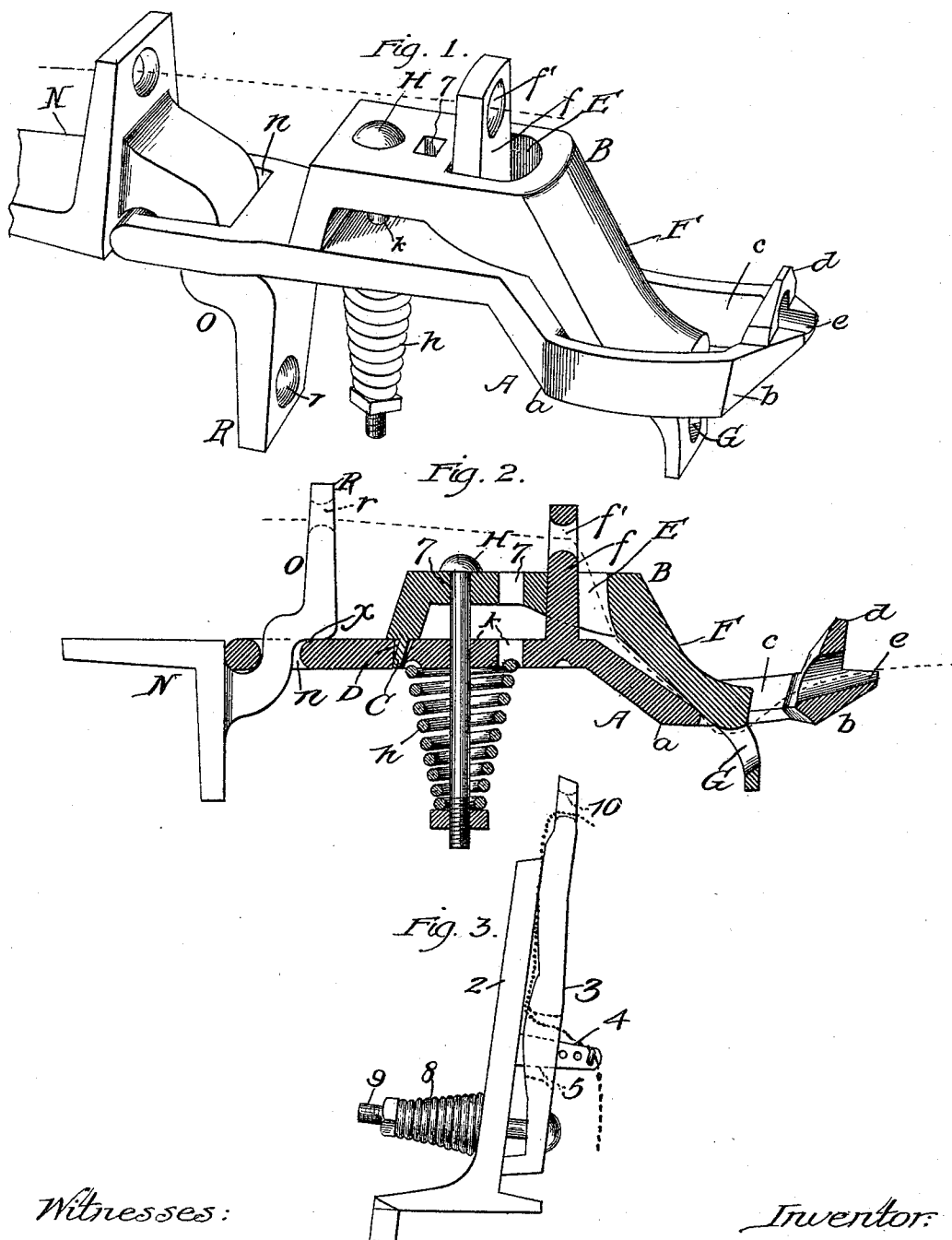


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B. F. IVESON.
CORD TENSION DEVICE.
 (Application filed Nov. 19, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

BENJAMIN F. IVESON, OF CHICAGO, ILLINOIS.

CORD-TENSION DEVICE.

SPECIFICATION forming part of Letters Patent No. 642,698, dated February 6, 1900.

Application filed November 19, 1898. Serial No. 696,928. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. IVESON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cord-Tension Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

My invention relates to cord-tension devices which are used in a great many machines wherein cord or twine is utilized, and particularly in grain-binders, to prevent the slack from interfering with the perfect action of the cord-tying devices.

The object of my invention is to keep the cord always taut as it is fed to the cord-utilizing mechanism of the machine by means that do not materially increase the tension when lumps or knots or other impediments on the cord pass through the same. This I accomplish by the means hereinafter fully described and as particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my invention. Fig. 2 is a longitudinal central section through the same. Fig. 3 is a side view of a modified form of my tension device.

In the drawings, A represents a lower jaw of my improved tension device, the root of which may be pivotally or immovably secured to a suitable bracket, as will hereinafter be more fully described. This jaw extends in a straight direction for about one-half its length, then inclines downward for a short distance, as at *a*, and then has its free end portion *b*, which is slightly thicker and wider than the remainder of its length, extend from the lower end of the inclined portion *a* in a slight upwardly-inclined plane to its extremity. The end portion *b* of this jaw A is provided with a vertical opening *c* there-through, the upper edges of which are countersunk in such manner that the side nearest the inclined portion of the jaw is a continuation of the upper inclined surface thereof. The side of this opening next the adjacent end of the jaw has a lug *d* arising therefrom, and through this is an eye which forms an arch over the gutter *e*, which extends in a

longitudinal direction from the lower edge of the opening *c* to and through the truncated nose or extremity of the jaw. At about the upper end of the inclined portion *a* the jaw is provided with a vertical lug *f*, in the upper end of which is an eye *f'*.

B represents the upper jaw, which has a pivotal pin C extending from its rear downwardly-bent end, that enters a suitable socket D made therefor in the rear straight portion of the lower jaw A. This jaw B extends straight forward from its rear bent end to a point past the lug *f*, which latter projects up through a suitable longitudinally-elongated opening E therein, and then its forward portion F extends downward in an inclined direction sufficient for its lower extremity, which is provided with an eye G, to project through opening *c* of the lower jaw. From the point of pivotal contact therewith the upper jaw arches over the lower jaw until at or near the point where it passes through opening *c*, against the rear edge of which it is made to normally bear by means of a coil or single-helix spring *h*, through the medium of a bolt H. This bolt H is thrust down through one of two suitable longitudinally-arranged bolt-holes *7 7* in the upper jaw, near its rear downwardly-bent end, and through one of the two correspondingly-alined bolt-openings *k* in the lower jaw until its head bears against the said upper jaw, whereupon its lower screw-threaded end will extend through said spring *h*, and by tightening the retaining-nut *m* thereon the tension of the spring can be regulated. The pressure of the upper jaw upon the lower jaw can be increased, if desired, by inserting it through the bolt-openings *7* and *k*, nearer the free ends of the jaws, and, if desired, the upper end of the spring can be seated and anchored in the concentric grooves in the under surface of the lower jaw surrounding said bolt-holes.

In operation I take the cord and pass it forward through the eye *f'* of lug *f*, then down through the forward part of the elongated opening in the upper jaw, up through which lug *f* projects, and then down between the inclined portion of the two jaws past the point where said jaws normally touch and through the eye in the free end of the upper jaw. From this eye G the cord is extended through

gutter *e* to the devices for utilizing the same. These utilizing devices draw the cord out from between the jaws of my tension devices, which are so regulated that their resistance will always insure the cord being taut. Should the cord have knots in it or bunches of fiber or any other impediment, the tension is not materially increased; but when the knot reaches the place where it passes the contact-point of the two jaws the resistance there met with causes the cord between the end of the upper jaw and the utilizing devices to tighten and slightly raise the end of the said upper jaw sufficiently to permit the knot or other obstruction to pass said contact-point without obstruction.

If desired, I can cast the supporting bracket or plate for my tension devices in one piece with the jaw A, substantially as shown in Fig. 3. I prefer, however, to provide an independent bracket therefor, to which the lower jaw can be removably hinged or made to project stationarily therefrom. To effect this latter result, I provide the root of jaw A with a suitable opening *n*, and I provide a bracket N consisting, preferably, of an L-shaped supporting-plate having an arm O projecting therefrom. The transverse contours of this arm show it to be the same as opening *n*, through which it is adapted to pass, and it extends from its supporting-plate at about an angle of forty-five degrees for a short distance, during the extent of which it describes a double reversed curve, so as to produce a shoulder *z*, and then it terminates in a straight portion R, parallel with the branch of the plate from which it projects, and has an eye *r* in its end. Now when it is desired to give the tension devices a hinged or pivotal support the bracket is placed as shown in Fig. 1. When it is desired to hold said device stationary, the bracket is reversed, as shown.

In Fig. 3 I show a modified construction of my invention. In this modification the jaws are in a vertical position, and what is the equivalent of the lower jaw of the device shown in Figs. 1 and 2 becomes the rear jaw 2 and what is the equivalent of the upper jaw becomes the front jaw 3. The rear jaw is straight throughout its entire length, is rigidly attached to a homogeneous base-plate, and is provided with a forwardly-projecting lug 4 about its center of length, that extends through the elongated opening 5 in the front jaw 3. This front jaw is attached to the rear jaw in the same manner that jaw B is attached to jaw A of the tension device shown in the first two figures of the drawings, and the spring and bolt 8 and 9 are substantially the same as therein employed; but the front jaw is straight from its rear bent end for the remainder of its length, and its free end extends slightly beyond the free end of the rear jaw and has an eye 10 therein. The operation of this modified tension device is the same as that hereinbefore first described, except that

the cord does not pass through jaw 2 and then back again through a gutter in the end thereof. This was necessary in a horizontally-disposed tension device, but not in a vertically-arranged one, because in the latter case the draft on the cord can be in such direction as to cause the slight separation of the jaws to permit the passage of obstructions on the cord.

I am aware that it is not new to employ two jaws in the construction of a cord-tension device. Heretofore, however, the cord was passed between jaws, the pressure of which one against the other was the same at all times. The only way in which the draft on the cord could be eased was by changing the position of the entire tension device with reference to the path of the cord. The regulation of the draft of the cord in my invention is accomplished by the limited separation of the jaws.

What I claim as new is—

1. In a cord-tension device two longitudinally-arranged jaws, one of which is pivotally connected to the other, has an elongated opening near its center of length, and has an eye in its free end beyond the point where it normally bears against the other jaw, which latter is provided with a lug that projects through said elongated opening which has an eye in the end thereof.

2. In a cord-tension device a jaw having an opening through its free end, and provided with a lug projecting therefrom at about its center of length that has an eye in its end, in combination with a companion jaw having a bent end that is pivoted to the other jaw, has an elongated opening therein through which said lug extends, and has its end extend through the opening in the end of the other jaw and provided with an eye beyond the adjacent point of contact of said jaws, as and for the purpose set forth.

3. In a cord-tension device a jaw A having an opening through its free end, and provided with a lug projecting at right angles therefrom at about its center of length that has an eye in its end, and also provided with bolt-holes back of said lug, in combination with a jaw B having its rear end bent toward and pivotally connected to the rear portion of jaw A; having an elongated opening therein through which said lug projects; having its free end extend through the opening in the free end of jaw A and provided with an eye therein, and also provided with bolt-holes alining with the bolt-holes in jaw A, a bolt, a coil-spring, and a suitable nut.

4. In a cord-tension device two longitudinally-arranged jaws one of which has an opening in its rear end, and the other of which is suitably pivoted thereto near said opening, in combination with a bracket consisting of a suitable supporting-plate and an arm projecting therefrom first in a direction at about forty-five degrees during the extent of which

it describes a double reversed curve so as to provide a shoulder *x*, and then straight in a direction parallel to its support.

5 5. In a cord-tension device a jaw A, the rear half of which is straight, having a suitable socket D and bolt-holes *k* therethrough; having the central portion thereof inclined downward, and the free end portion *b* extending in a slight upwardly-inclined plane from the
10 lower end of said inclined central portion and having the opening *c* therein; said jaw having a lug *f* projecting vertically therefrom, which has an eye *f'* in its upper end and having a gutter connecting the edge of said opening *c* and its extremity, in combination with
15 a jaw B having its rear end downturned and provided with a pivotal pin which articulates

in said socket, and being so bent that it arches over said jaw A from its pivotal point to the edge of the opening in the free end portion 20 of said jaw A through which its free end extends which latter is provided with a suitable eye beyond the adjacent point of contact; said jaw B being provided with bolt-holes 7 aligning with those, *k*, in the other jaw, and provided with a longitudinally-elongated opening E up through which said lug *f* projects, a bolt H a coil-spring *h* through which said bolt extends, and a retaining-nut *m*, as and for the purpose set forth. 25

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