No. 745,123. PATENTED NOV. 24, 1903.

C. J. TUSETH.

BINDER TENSION.

APPLICATION FILED MAY 26, 1903.

NO MODEL.

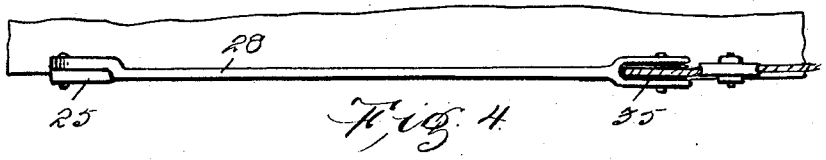


Fig. 4.

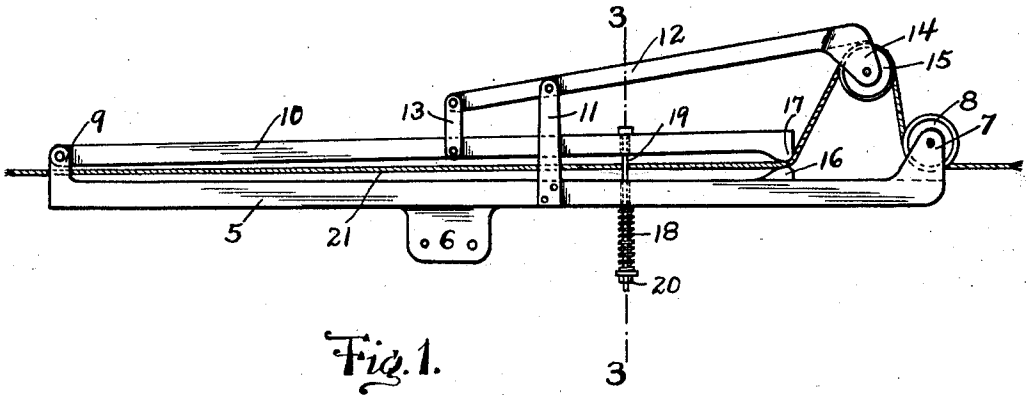


Fig. 1.

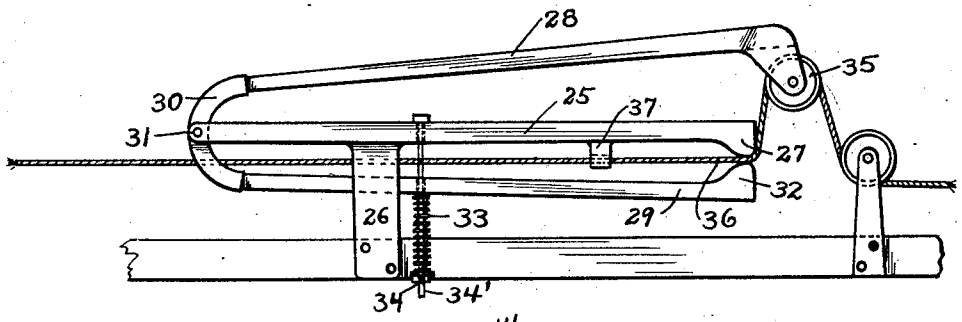


Fig. 2.

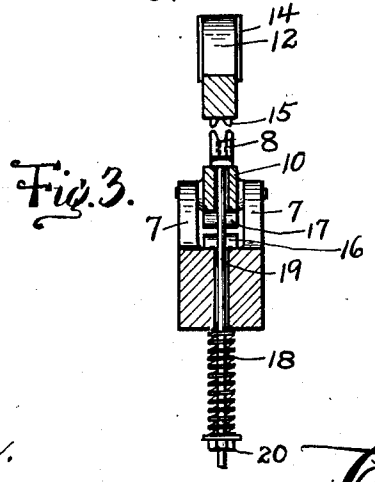


Fig. 3.

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No. 745,123. Patented November 24, 1903.

UNITED STATES PATENT OFFICE.

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BINDER TENSION.

SPECIFICATION forming part of Letters Patent No. 745,123, dated November 24, 1903.

Application filed May 26, 1903. Serial No. 158,828. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. TUSETH, a citizen of the United States, residing at Osseo, in the county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Binder Tensions; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to tension devices for grain-binders; and it has for its object to provide a construction wherein the tension on the binding-twine will be substantially constant under ordinary conditions; but when a knot or other enlargement of the twine passes through the tension device the latter will be operated automatically to reduce the tension and to permit the twine to pass freely therethrough instead of breaking the twine, as is liable when the tension device does not yield.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side elevation showing a tension device embodying the present invention. Fig. 2 is a side elevation showing a second form of tension device embodying the present invention. Fig. 3 is a vertical section on line 3 3 of Fig. 1 looking in the direction of the gripping-jaws. Fig. 4 is a top plan view of the device shown in Fig. 2.

Referring now to the drawings, and more particularly to Fig. 1, there is shown a tension device comprising a base 5, which may be secured to the binder-frame through the medium of the bracket 6 or any other suitable manner, said base having upwardly-directed ears 7 at one end, between which is rotatably mounted a guide-roller 8. At the opposite end of the base 5 from the guide-roller 8 are upwardly-directed ears 9, between which is pivoted one end of a lever 10, which is movable toward and away from the base 5, above which it lies. Upon the base 5 and substantially midway of the ends thereof is a post 11, at the upper end of which is fulcrumed a lever 12, one end of which is connected, by means of a pivoted link 13, with the lever 10, substantially midway of the ends of the latter. The lever 10 reaches almost to the ears 7, and the lever 12 extends above the lever 10, and its end opposite to the link 13 is turned downwardly, as shown at 14, and reaches to a point above and in a vertical plane midway between the adjacent end of the lever 10 and the ears 7. The end 14 of the lever 12 is bifurcated and has a guide-pulley 15 rotatably mounted therein. Upon the upper face of the lever 5 is secured a gripping-jaw 16, which coöperates with a second gripping-jaw 17, which is secured to the under face of the lever 10 at the adjacent or free end of the latter, so that when the lever 10 is moved in the direction of the base the gripping-jaws will be brought together. The lever 10 is held normally and yieldably with its gripping-jaw 17 in coöperative relation to the jaw 16 by means of the helical spring 18. The spring 18 is disposed upon a bolt-bar 19, which is engaged downwardly through the lever 10 and is passed loosely through the base, the helical spring being upon the bolt-bar below the base and resting with one end against the under side of the base and the other end against the nut 20, which is screwed onto the bolt-bar and by adjustment of which the tension of the spring may be varied. When the gripping-jaws are separated, such movement is against the tension of the helical spring 18. The binding-twine (shown at 21) is passed between the ears 9 below the lever 10, thence between the jaws 16 and 17, then upwardly and over the guide-pulley 15, then downwardly and under the guide-roller 8, and thence to the knotting mechanism. (Not shown.) With this construction it will be noted that when an enlargement of the binding-twine passes between the jaws, so that the feed of the twine tends to stop, the tension on the twine at the knotter as it increases will serve to draw the pulley 15 downwardly and therewith the lever 12. As the pulley end of the lever 12 moves downwardly the opposite or attached end of the lever will move upwardly, and in this movement will raise the lever 10 so as to lift the jaw 17 from the jaw 16 and release the twine. By tightening or increasing the tension of the spring 18 a greater strain on

the twine will be required to cause the jaws to release the twine and the normal feeding of the twine will be under increased tension.

In Fig. 2 of the drawings there is shown a construction wherein the gripping or tension lever and the releasing-lever are formed in one. In this embodiment of the invention there is employed a base 25, which may be attached, through the medium of the bracket 26 or in any other suitable manner, to the proper portion of the binder, and at one end of this base and on the under face thereof is secured the removable tension or gripping jaw 27. A U-shaped lever is provided and comprises divergent members 28 and 29, connected by the curved bight portion 30, and this U-shaped lever is fulcrumed upon a pivot 31, which passes through the bight portion and is carried by or engaged with the base 25. The members 28 and 29 are laterally offset from the bight portion 30, so that the upper member lies longitudinally above the base 25 and projects with its free end beyond the jaw 27, while the lower member 29 lies longitudinally below the base and is provided upon its upper face at its free end with a removable gripping or tension jaw 32, which is disposed to coöperate with the jaw 27 to exert a gripping action when the member 29 is pressed upwardly. The member 29 is held normally and yieldably with its jaw 32 in gripping relation to the jaw 27 by means of the helical spring 33, which is disposed upon the bolt-bar 34', said bolt-bar being engaged downwardly through the base 25 and extending loosely through the member 29, the helical spring resting with one end against the under face of the member 29 and its opposite end upon the nut 34, which is engaged with the bolt-bar and which when screwed upon the bolt-bar compresses the spring to increase its tension and press the jaw 32 more firmly against the jaw 27. In the free end of the member 28 is rotatably mounted a pulley-wheel 35 beyond the jaws 27 and 32. The binder-twine (shown at 36) is passed through a guide 37 on the under side of the base 25 and then between the jaws 27 and 32, after which it is passed upwardly and over the guide-pulley 35 and thence to the knotting mechanism. When an enlarged portion of the twine tends to wedge between the jaws, the pull on the twine at the knotting mechanism serves to draw the pulley 35 in the direction of the jaw 27, so that the U-shaped lever is swung pivotally against the tension of the spring 33 and the gripping-jaws are separated to release the twine.

It will be understood that in practice modifications of the specific construction shown may be made and that any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

1. A tension device comprising a fixed gripping-jaw, a second gripping-jaw pivoted to the first jaw, an arm pivoted adjacent to the fixed jaw and having a twine-guide at one end, a connection between the remaining end of the arm and the pivoted jaw to retract the latter when the arm is moved toward the fixed jaw and adjustable means for holding the jaws in yieldable gripping relation.

2. A tension device comprising fixed and movable gripping-jaws, the latter being pivoted to the former, said jaws having alining perforations therethrough, a bolt passed through the perforations and having a tap upon its end, a spring disposed upon the bolt between the tap and one of the jaws, said tap being adjustable to vary the tension of the spring, an arm pivoted adjacent to the fixed jaw and having a twine-guide at one end and connections between the remaining end of the arm and the movable jaw to retract the latter when the twine-guide is moved toward the fixed jaw.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES J. TUSETH.

Witnesses:
ELMER OWEN,
G. W. MITCHELL.