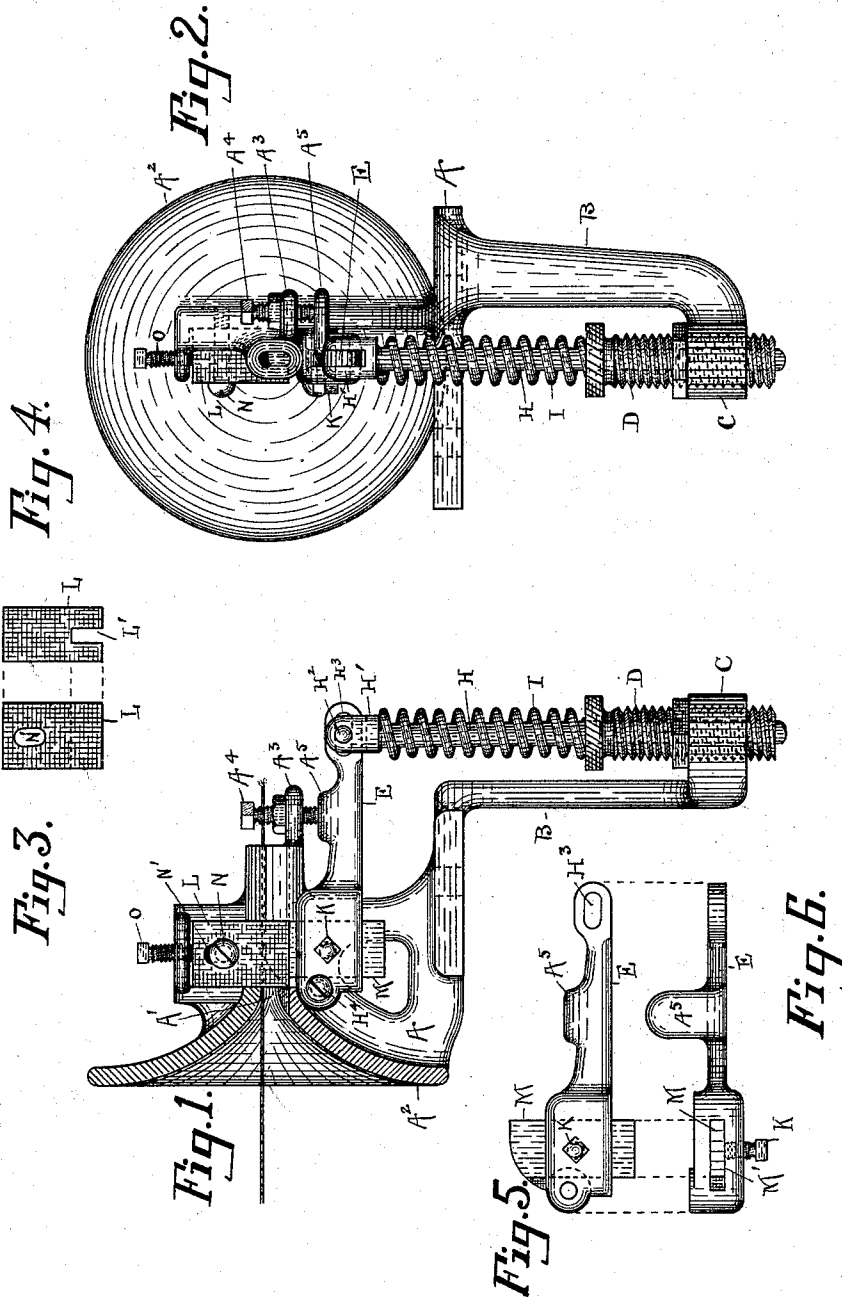


F. G. BECKER.
NIPPER FOR TWINE MACHINES.

No. 535,344.

Patented Mar. 12, 1895.



Witnesses
A. Keithley.
C. Johnson.

Inventor
Frederick G. Becker.
By his Attorney L. M. Thurston.

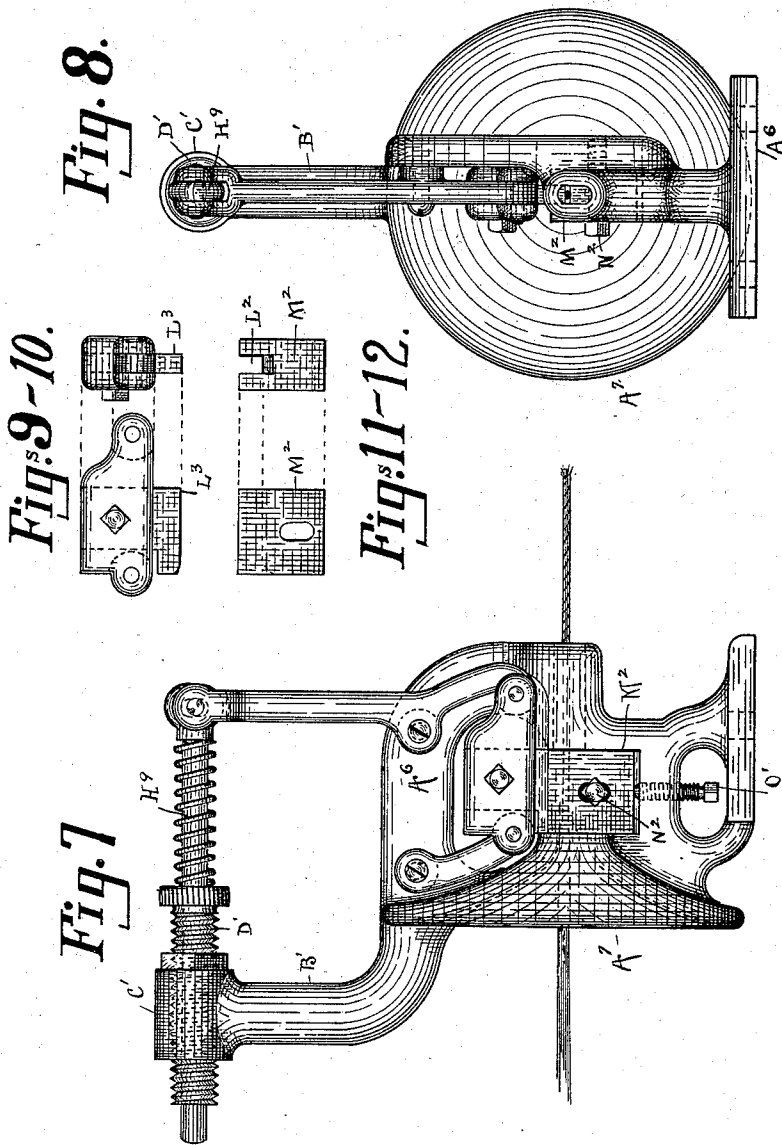
(No Model.)

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UNITED STATES PATENT OFFICE.

FREDERICK G. BECKER, OF PEORIA, ILLINOIS.

NIPPER FOR TWINE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 535,344, dated March 12, 1895.

Application filed June 16, 1894. Serial No. 614,821. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK G. BECKER, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Nippers for Twine-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in twine making machines.

The object of the invention is to improve on and simplify the nipping devices ordinarily used on twine making machines.

The nipper of a twine machine usually consists of a device through which the fibers of hemp or other material pass before they are twisted into twine. By giving the nipper greater or less tension, the amount or number of fibers entering the machine is brought under control, so that the diameter of the finished twine is regulated at will. The devices used for this purpose have been of imperfect construction and complicated and a great deal of trouble and expense in using and keeping in repair. The nippers now in use lack the capacity of adjustment to change them from spinning coarse to very fine twine, which is with them almost impossible to do without changing their construction for each particular purpose, and they also cause trouble by being easily choked up, causing the twine to break. In consequence of the breaking of the twine, the machine must be stopped to make the necessary repairs which causes the waste of time and waste of hemp. Another great disadvantage heretofore met with has been the great expense of repairing the nipper or replacing a portion of it after having been worn by the continuous passage of the twine through it.

By the use of the device hereinafter described the disadvantages above enumerated are entirely overcome.

In the drawings presented herewith, Figure 1 is a side elevation of the nipping attachment in part section and removed from the twine machine. Fig. 2 is a rear elevation of the same. Fig. 3 is a side view of an upper nipper jaw. Fig. 4 is an end view of the same. Fig. 5 is a side elevation of an arm or lever

showing a lower nipper jaw held therein. Fig. 6 is a plan view of the same. Fig. 7 is a side elevation of a modified form of my invention. Fig. 8 is a rear view of the same. Fig. 9 is a side view of a jaw holder showing an upper nipper jaw held therein. Fig. 10 is an end view of the same. Fig. 11 is a side view of a lower jaw; and Fig. 12 is an end view of the same.

In Figs. 1 and 2, A represents the nipper frame with a depending vertical arm B made therewith, the lower portion of which terminates in a head C having a threaded aperture to engage a vertical thread bar D which being vertical is parallel with the said arm. A plunger H passes through the thread bar and carries an open coil spring I. The free end of the said plunger is provided with a head H' which engages by a pin H², a slot H³ in the end of a lever E whose opposite extremity is pivoted to the frame A by the screw H⁴. A lug A³ made integral with a portion of the frame A carries a set screw A⁴ whose point projects below the said lug A³ and is adapted to bear against a lip or lug A⁵ on the lever E and serves to limit the upward movement of the said lever.

The lever E is shown clearly in Figs. 5 and 6 and carries a vertical nipper jaw M in the slot M' and the jaw is held within the slot by means of the set screw K. The upper end of the jaw is rounded on one corner as shown and this rounded edge or end engages an upper jaw L secured to the machine frame A by a screw N. This jaw L is slotted at N' to allow of a vertical movement on said screw N and the adjustment thereof is secured by the use of the vertical set screw O entering a portion of the frame A from above and bearing upon the top of the said jaw L. The said jaw L is slotted as at L' in its under edge to receive the thrust of the lower jaw M.

The bottom of the slot L' in the jaw L is flush with the upper surface of the opening A' of the disk A² of the frame A and the rounded portion of said opening A' forms a smooth guide for the twine, and the upper edge of the jaw M being rounded gives a perfectly smooth entrance for the fibers.

As the jaw L is worn into by the continuous passage of the fibers, the set screw O serves to gradually lower the jaw into line with the

opening A', while the lower jaw keeps a constant pressure upon the fibers by reason of the spring I.

An advantage of the device herein described is the ease of adjustment of the tension device when it is desired to nip the strands of material in order to retard their progress so that with a bulk of material through the jaws, any diameter of twine may be made. When the diameter of twine is decreased, the length of the finished twine made from a given bulk of material is much greater than that made of a like amount of a greater diameter.

In this nipper all disadvantages in other machines are overcome and the advantages which it itself possesses are numerous.

In repairing the jaws after they have been cut into by the constant friction of the twine, it is only necessary to remove them from the machine and place them upon an emery or other stone and true them up ready for use again without expense and much time.

In Figs. 7, 8, 9, 10, 11 and 12 a modified form of my invention is shown, and in which the frame is again shown at A⁶, the guide disk at A⁷, the lower jaw at M² adjusted by the screw O' and secured to the frame work by the screw N². In this form the lower jaw has the slot L² and is secured to the frame as described above, but occupies the position below the opening A' with the said slot L² at the top. The upper jaw L³ is carried in a holder similar to that described for Figs. 1 and 2. The upper extremity of the lever to which the upper jaw is secured is pivoted to the end of the horizontal plunger H⁹ which is carried in the thread bar D' in the head C' on the vertical arm B'. The operation of this form is nearly the same as the first described form except that the upper jaw gives to the unevenness of the fibers instead of the lower jaw as before described.

In the use of these devices, more twine may be made and of a better quality and no hemp is lost as in the old forms of nippers.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a nipper for twine machines, of an upper and a lower jaw, one of which is adjustably secured on the nipper frame for vertical adjustment, a spring actuated lever carrying the second jaw pivoted to the machine said lever being capable of vertical movement, the wearing surface of the adjustable jaw being in line with the upper surface of the opening in the disk or trumpet substantially as set forth.

2. The combination, in a nipper attachment for twine machines of an upper and a lower jaw, one of said jaws being adjustably secured to the nipper frame for vertical adjustment, a channel cut in said jaw substantially as set forth, the bottom of said channel being

in line with the upper surface of the opening in the disk or trumpet, to a lever carrying the second jaw, said jaw being pivotally mounted on the machine frame the said jaw adapted to engage the said adjustable jaw substantially as set forth and for the purposes described.

3. In a nipper for twine making machines, the combination of an upper and a lower jaw, one of said jaws being adjustably secured to the machine frame and provided with a channel for the passage of twine, the bottom of said channel being in line with the upper surface of the opening in the disk or trumpet, a spring actuated lever pivoted to the machine and carrying the second jaw, the said jaw being adapted to enter said channel in the adjustable jaw substantially in the manner and for the purposes set forth.

4. In a nipper for twine machines, the combination of the frame A, the disk or trumpet A², a jaw provided with a channel cut therein, said jaw being secured to the machine and provided with means for vertical adjustment thereon, the bottom of said channel being in line with the upper surface of the opening through said disk, a second jaw designed to enter the channel in said adjustable jaw, a lever pivoted on the machine and carrying the said second jaw, a plunger pivoted to the lever, a coil spring surrounding said plunger, a thread bar mounted in the machine frame and inclosing the said plunger and a jam nut mounted on said thread bar all substantially as set forth and described.

5. In a nipper for twine machines, the combination of the nipper frame A with the disk A² made integral therewith and having the central opening A', an upper vertical jaw I adjustably mounted on the frame A and provided with a slot L' said slot being on a line with the opening A', and means for the vertical adjustment of said jaw, a lever E pivoted to the frame of the nipper below the jaw L, a lower jaw M mounted in said lever E and adapted to enter the slot L' of the said jaw I, a screw A⁴ mounted in the frame A to engage said lever E to limit its upward movement, a depending arm B forming a portion of the frame A, and having the head C, a vertical thread bar D adjustable in said head C, a vertical plunger H having sliding bearing in said vertical thread bar a coil spring I, actuating said plunger D, the upper free end of said plunger H having pivotal connection with the outer free end of the lever E substantially as and for the purposes set forth and described.

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

FREDERICK G. BECKER.

Witnesses:

GEORGE F. NEYER,
ROBERT E. WELKER.