(No Model.)

E. S. ORMSBY.

NIPPER HEAD FOR SPINNING MACHINES.

No. 342,032. Patented May 18, 1886.

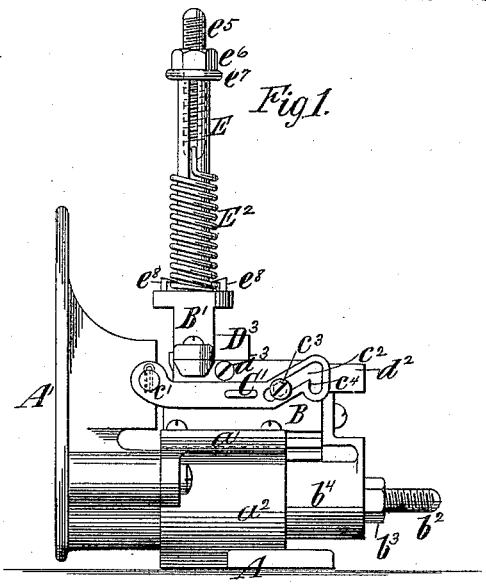

Fig. 1.

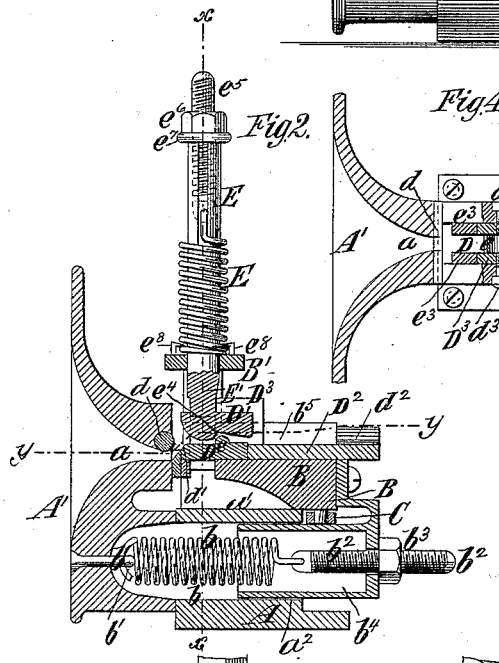

Fig. 2.

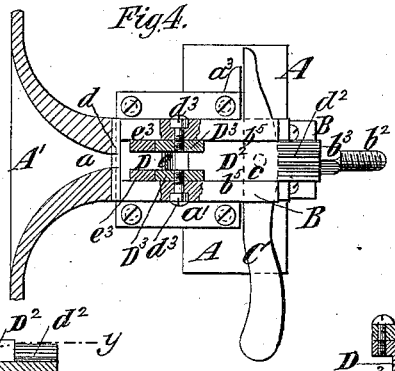

Fig. 4.

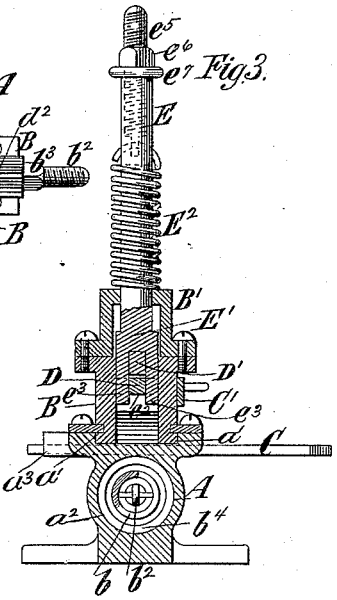

Fig. 3.

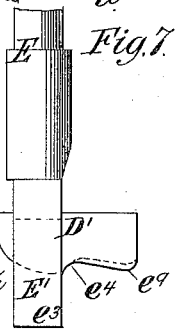

Fig. 7.

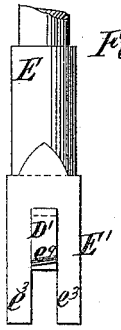

Fig. 8.

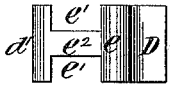

Fig. 5.

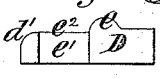

Fig. 6.

Witnesses.
Emil Hatter
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E. S. Ormsby
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UNITED STATES PATENT OFFICE.

ELISHA S. ORMSBY, OF BROOKLYN, NEW YORK.

NIPPER-HEAD FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 342,032, dated May 18, 1886.

Application filed July 18, 1885. Serial No. 171,922. (No model.)

To all whom it may concern:

Be it known that I, ELISHA S. ORMSBY, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Nipper-Head for Spinning-Machines, of which the following is a specification.

My invention is applicable to nippers or nipper-heads which are commonly employed in the machine known as the "jenny," used for spinning rope-yarns and certain kinds of twine. In such machines the nipper or nipper-head is mounted upon a regulating-lever which controls the speed of the chain of gill-pins which deliver the sliver to be spun.

The invention relates to a nipper-head of the kind shown and described in my United States Letters Patent No. 286,727, dated October 16, 1883, and in which are comprised in a single nipper-head two nippers placed one in advance of the other, devices for holding one of the members or jaws of the first nipper with a yielding pressure against movement in a direction lengthwise of the sliver, and devices for holding one of the members or jaws of the second nipper with a yielding pressure against movement in a direction transverse to the length of the sliver.

Spinning-jennies provided with nippers are now largely used for spinning harvester-twine, which is employed in connection with the binding attachments of reaping-machines, and when such twine is made with the nipper ordinarily used, the ends of the fiber are apt to be stripped up or backward as it passes through the binding attachment of the reaping-machine, and to form such an accumulation of fiber on the binder-twine as to stop the twine from passing freely through the binder, thus entailing the necessity of severing the twine in order to remove such accumulation of fiber.

One object of my invention is to provide a nipper or nipper-head which will turn in the back ends of the fibers, and so prevent them from being stripped up or out in the binder.

Another object of the invention is to provide for the easy renewal at small cost of the working parts of the nippers; and another object of the invention is to steady the yarn as it passes from the nipper and prevent it from vibrating.

The invention consists in novel details of construction and combinations of parts, which are hereinafter described, and pointed out in the claims, and by which the desired objects are attained.

In the accompanying drawings, Figure 1 is a side elevation of a nipper-head embodying my invention. Fig. 2 is a central longitudinal section through the same, certain parts being shown in elevation. Fig. 3 is a transverse vertical section upon the plane of the dotted line *x x*, Fig. 2. Fig. 4 is a horizontal section upon the plane of the dotted line *y y*, Fig. 2. Figs. 5 and 6 are respectively a plan and a side view upon a larger scale of the lower member or jaw of the second nipper detached from the other parts; and Figs. 7 and 8 are elevations in planes at right angles to each other and upon a larger scale of the upper member of the second nipper detached from other parts.

Similar letters of reference designate corresponding parts in all the figures.

The nipper-head comprises two principal parts, namely: the stock-piece or body A, which is to be secured to the upper end of the regulating-lever, (not here shown,) and which comprises a trumpet or bell mouth, A′, through the throat *a* of which sliver passes, as best shown in Fig. 2, and the slide or sliding carriage B, which is fitted to a slideway, *a′*, formed in the stock A, and is free to slide in a direction toward and from the throat *a* of the trumpet-mouth. As here represented, the slide B is, unless otherwise acted upon, moved inward toward the throat *a* of the trumpet-mouth by means of the spring *b*, which is secured at its one end, *b′*, in the stock-piece A, and has connected at its other end a screw, b^2, provided with a nut, b^3, by turning which the tension of the spring may be adjusted. As here represented, the slide B has connected rigidly with it a cylindric hollow projection, b^4, which enters a corresponding socket or cavity, a^2, in the stock-piece A, and the spring *b* is thereby concealed from view and protected.

When it is desired to draw back the slide or sliding carriage B for the purpose of introducing the sliver through the nipper, it may be done by means of the lever C, which is fulcrumed at *c*, and one end of which forms a han-

dle to be grasped by the hand, while its other end bears against a projection, a^3, on the stock-piece A. By operating the lever C the slide or sliding carriage B may be drawn back and there held by a stop of any suitable character.

In Fig. 1 I have represented a lever-like stop, C′, which is pivoted at c', and which has at the other end an angular slot, c^2, engaging with a screw or projection, c^3, on the slide or carriage B. This slot c^2 is constructed so as to form a shoulder, c^4, and when the slide or carriage B has been retracted or drawn back by the lever C to a sufficient distance the pivoted stop c' may be raised, so as to obtrude the shoulder c^4 in the way of the screw or stud c^3, and the slide B will then be held in its retracted position until the stop C′ is pushed down to free its shoulder c^4 from the screw or stud c^3.

The first nipper comprises a member or jaw, d, which may consist of a cylindric piece or block inserted transversely thereinto, and which is fixed relatively to the throat a in the trumpet-mouth, and this first nipper also comprises a jaw, d', which is fixed on the slide or carriage B, but which is adjusted by the sliding movement of said carriage relatively to the fixed nipper or jaw d. The slide B is recessed or channeled at its top, as shown at b^5, and therein is fitted a block, D, the form of which is best shown in Figs. 5 and 6, but also in Figs. 2 and 4. The front end, d', of this block forms the member of the first nipper, which is movable in a direction lengthwise of the sliver, and upon the upper surface of the block D is a transverse rounded or convex swell or rib, e, which forms the fixed member of the second nipper. The block D is notched at each side at e', to form a portion, e^2, of reduced width, as best shown in Figs. 5 and 6.

E designates an upright spindle or cylindric plunger, which works through and is guided in the bridge-piece B′, secured to the top of the slide B, and the lower end, E′, of which is bifurcated or forked so as to straddle the portion e^2 of the block D, which is of reduced width, the two arms e^3 of the forked or bifurcated spindle E being received in the notches e', as shown in Fig. 4, but also in Fig. 3.

In the fork or bifurcated portion E′ of the upright spindle or plunger E is fixed a block or piece, D′, of metal, which constitutes the member of the second nipper, which is fitted to move or yield upward and downward relatively to the fixed member D e of the second nipper. The plate or piece D′ is about the same width as the reduced portion e^2 of the block D, and the lower edge has a concave seat or portion, e^4, which will fit the concave swell or rib e, as best shown in Fig. 2, and will act in conjunction with the rib or swell e upon the sliver. The swell or rib e projects beyond the portions of the face of the block D which are on opposite sides thereof, and the concave seat e^4 is depressed inward of the portions of the face of the block D′. When the faces of the two members or jaws are of the form described, they deflect the sliver slightly from its straight line of travel, and so have a very firm hold thereon.

The upright spindle or plunger E is hollow or cylindric in its upper portion, so as to receive an adjusting-screw, e^5, to which is fitted a nut, e^6, and a washer, e^7, and this spindle or plunger E is surrounded by a spring, E^2, the lower end of which is secured by hooks e^8, or otherwise, fast to the bridge-piece B′, and the upper end of which is connected with the adjusting-screw e^5.

The plunger E is slotted to provide for the attachment of the upper end of the spring E^2, which is outside the plunger, to the screw e^5, which is within the plunger. It will therefore be seen that as the lower end of the spring is fast, its upper end acts to draw the washer and nut e^6 e^7 tightly down upon the spindle or plunger E, and thereby presses the movable member of the second nipper, D′, downward upon the swell or rib e on the block D, which constitutes the fixed member of such second nipper.

In rear of the block D there is secured, in the channel or recess b^5 in the slide B, a second block or plate, D^2, which has at its extreme rearward end a V-shaped channel or groove, d^2, which serves to steady the yarn or twine as it passes to the flier, and prevents that portion of the yarn or sliver which is at the nipper from lateral vibration. The pieces or blocks D D^2 are of a width to fit snugly in the recess or channel b^5 in the slide B, and the block or piece D is held down therein by means of two cheek-pieces, D^3, which are secured by screws d^3 to the opposite sides of the recess or channel b^5, and the lower edges of which fit over the projection or rib e on the block D and serve to hold said block down in its place. The plate or block D′ projects rearward between the cheek pieces or blocks D^3, and is guided both in its upward and downward movement, and these cheek pieces or blocks D^3 may be considered as a part of the fixed member of the second nipper, although they are made separate therefrom for convenience in manufacture.

The rear end portion of the block or piece D′, constituting the movable member or jaw of the second nipper, may be beveled from one side to the other, as shown clearly at e^9 in Fig. 8, in order to insure a better twisting action on the sliver as it leaves the jaws or members of the second nipper.

The two plates or blocks D D′, which constitute the jaws of the second nipper, may be made of chilled cast-iron, their faces being finished by casting them upon or in a chill. They will be finished in the operation of casting sufficiently to enable them to serve their purpose, and as their surfaces will be very hard they will wear away very slowly. When the members or jaws D D′ become so worn as to unfit them for further use, they may be readily removed and renewed at a small cost, and in renewing the piece or block D it will

be observed that I also renew the movable member d' of the first nipper, which is formed by said piece or block D.

It is advantageous to have the lower member, D, of the second nipper formed with a convex rib or transverse projection, *e*, and the upper member, D′, of the second nipper formed with a corresponding notched or concaved seat, e^4, because by the action of the members or jaws the ends of the fibers which are contained in the sliver will be tucked in and will be prevented from stripping out in the binder through which the twine is afterward passed.

Although I have only shown this construction of the nipper members or jaws D D′ in connection with the first nipper, one of the members or jaws of which is adapted to yield lengthwise of the fiber, I desire to cover the construction of the nipper members or jaws D D′ whether they are employed in connection with the first nipper or not.

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

1. The combination, with a member or jaw having upon its face a rib or swell extending transverse to the line of travel of the sliver and projecting beyond the portions of the face on opposite sides thereof, of a movable member or jaw having in its head a concave notch depressed inward of the portions on opposite sides thereof and corresponding to the rib or swell, substantially as herein described.

2. The combination, with a member or jaw having upon its face a convex rib or swell extending transversely to the length of the sliver and having forward of said rib or swell a portion of reduced width, of a bifurcated or forked spindle or plunger straddling the portion of reduced width in such member or jaw, and having in the upper part of its fork or bifurcation a plate or block, D′, the lower edge of which has a concave seat or notch, e^4, acting in conjunction with said convex rib or swell, substantially as herein described.

3. The combination, with the stock-piece and trumpet-mouth, of the nipper-head and the fixed member or jaw *d* secured therein, of the slide B and the spring for impelling it toward the throat of the trumpet-mouth, a block or piece, D, secured in said slide, and the front end portion, d', of which forms the movable member of the first nipper and which has a rib or projection forming the fixed member of the second nipper, the bifurcated or forked spindle or plunger E, and the plate or piece D′ secured therein and forming the yielding member of the second nipper, substantially as herein described.

4. The combination, with the slide B, recessed or channeled at b^5 in its top, and the block or piece D, secured in said recess or channel and having a transverse rib or swell, *e*, of the forked or bifurcated spindle or plunger E, straddling the piece D and carrying the block or piece D′, which forms the yielding member or jaw of the nipper, and cheek-pieces D^2, secured to the walls of the recess or channel b^5 to hold the piece or block D in place therein, substantially as herein described.

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