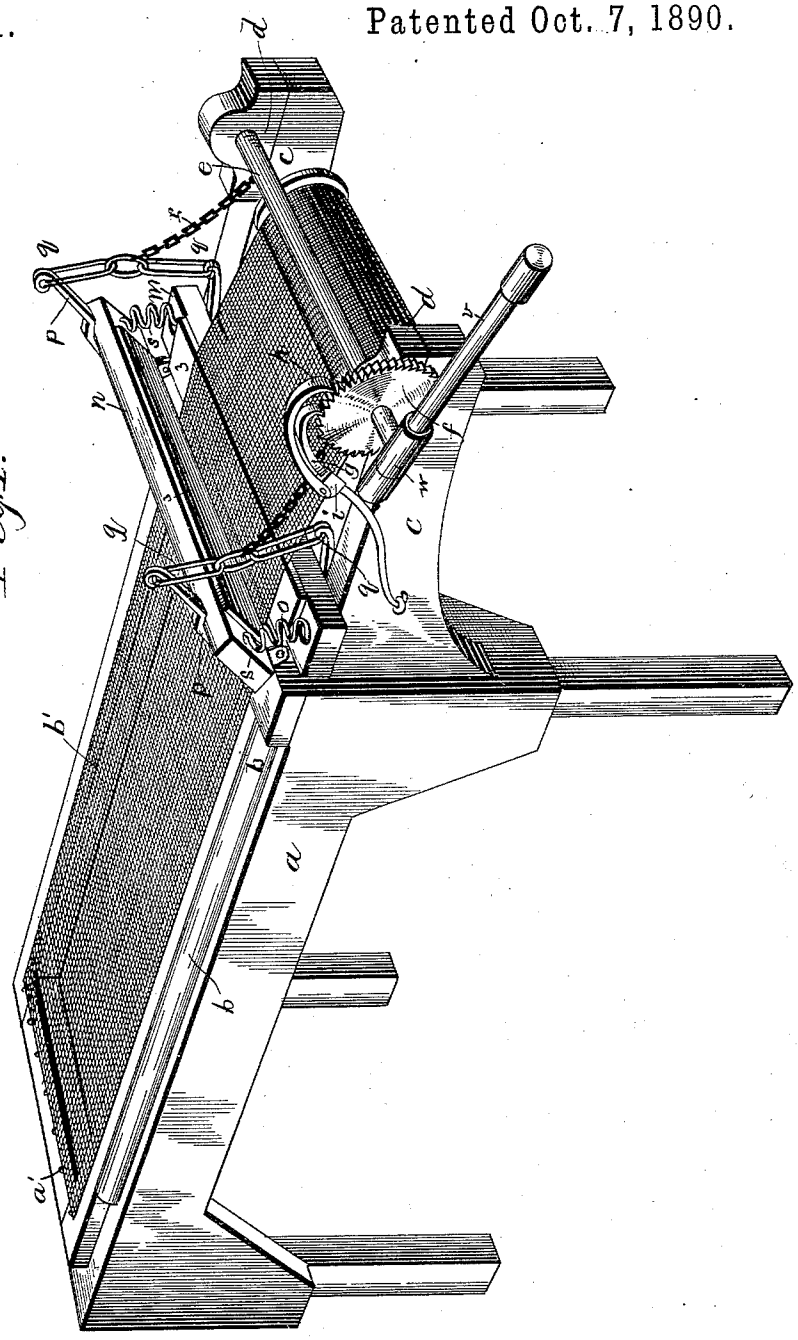
(No Model.) 2 Sheets—Sheet 1.

J. L. ULSH.

MACHINE FOR STRETCHING SCREEN WIRE.

No. 437,951. Patented Oct. 7, 1890.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

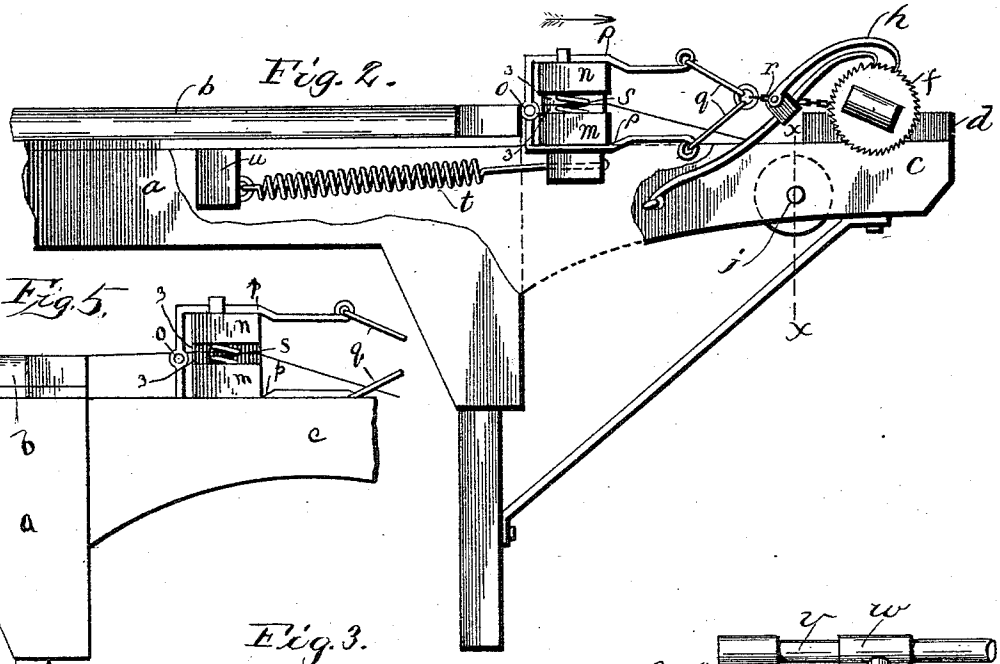


Fig. 5.

Fig. 3.

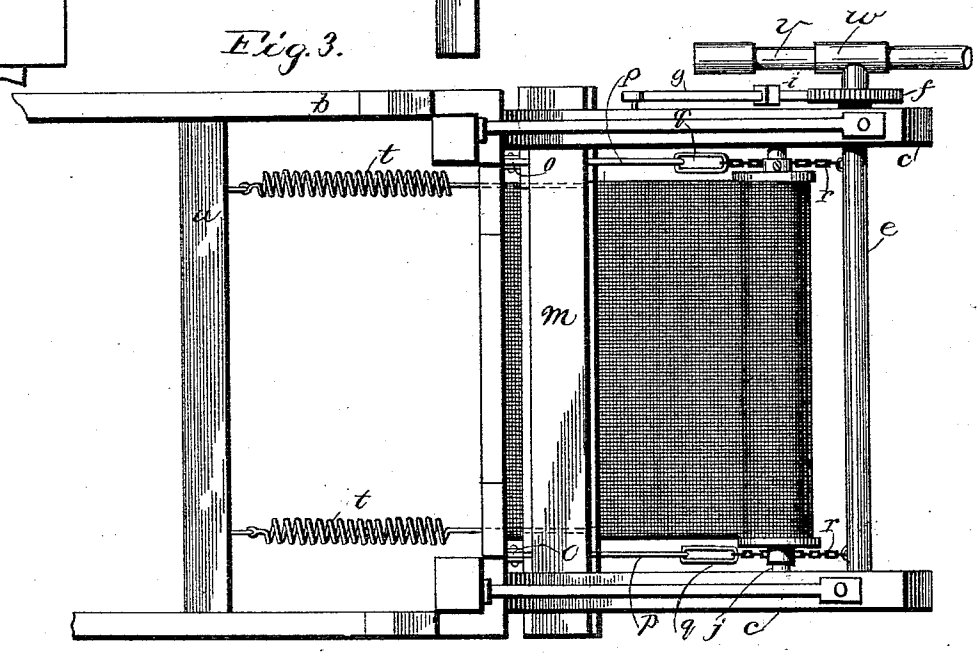
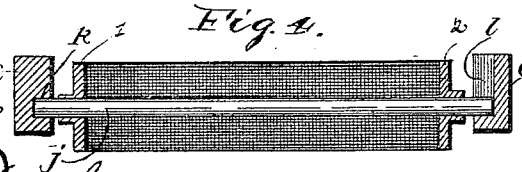


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN L. ULSH, OF WABASH, INDIANA.

MACHINE FOR STRETCHING SCREEN-WIRE.

SPECIFICATION forming part of Letters Patent No. 437,951, dated October 7, 1890.

Application filed February 3, 1890. Serial No. 339,011. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. ULSH, of the city of Wabash, in the county of Wabash and State of Indiana, have invented certain new and useful Improvements in Machines for Stretching Screen-Wire; 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in machines for stretching screen-wire; and the invention consists in certain novel features of construction and in combinations of parts, more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a perspective of the machine, the clamping jaws or plates being swung apart to allow the screen-wire to pass between the same. Fig. 2 is a side elevation, a portion being broken away and the machine shown in the act of stretching the screen. Fig. 3 is a bottom plan of a portion of the machine. Fig. 4 is a section in the plane of line x x, Fig. 2. Fig. 5 is a side elevation of a portion of the machine, showing the sliding clamp drawn a distance out upon the ways as in the act of stretching the wire screen.

In the drawings, the reference-letter a indicates a suitably-supported table or platform, upon which the frame a', to receive the screen-wire b', is placed. This table is provided with side and end cleats or strips b, against which the frame rests, and which hold the same in position while the screen is being stretched and secured thereon. A pair of parallel horizontal arms c c, of a suitable length, are rigidly and strongly secured to and extend from opposite sides of one end of the table. These arms are so constructed as to form stationary tracks or ways. Upon the upper sides of their outer ends these arms are provided with a pair of strong bearings d d, in which a horizontal windlass or stretcher-shaft e is journaled to extend between said arms. Upon one end this shaft is provided with a ratchet-wheel f. A vertically-swinging pawl g is pivoted at one end to the track-arm on that side, so that its toothed end will engage the ratchet-wheel and allow the free rotation of the stretcher-shaft in one direction and normally hold it against rotation in the opposite direction. An auxiliary pawl, hook, or tooth h is pivoted at one end to the upper side of sliding sleeve i on the shank of the main pawl, and from thence extends along the top edge of the main pawl and curves down, so as to engage the teeth of the ratchet-wheel a distance in advance of the main pawl. By this construction of double pawl the stretcher-shaft can be stopped and held at almost any point, for if the main pawl will not catch and hold a tooth at the point desired the auxiliary pawl can be slipped up until it engages a tooth, and the strain on the same will lock the sleeve i and prevent it from slipping on the main-pawl shank. The strain of the auxiliary pawl, when in use on its sleeve i, is at an angle to the main-pawl shank, and not longitudinal thereof, and hence the sleeve i remains stationary. A horizontal shaft j is removably mounted in said track-arms near their outer ends and in a horizontal plane below that of the stretcher-shaft. This shaft is provided with a stationary disk or washer 1 at one end and a removable washer 2 at the other end, and is of such a small diameter that it can pass directly through a roll of wire screen as it comes from the manufactory, and thus avoid the unrolling and re-rolling usually required in other machines. As is evident, this shaft is adapted to be removed and the roll of wire screen placed thereon with the washers on the shaft bearing against opposite sides of the roll and holding the same straight and steadily thereon. The shaft can be easily removed, as one of its bearings consists of a horizontal aperture k in one track-arm, while the other bearing is the bottom of a vertical slot l, open at the top, so that the shaft can be lifted from or dropped into the same.

The stretching-shaft is connected with and operates the wire-screen clamp. This sliding clamp consists of a pair of corresponding jaws or clamping-plates m n, resting on and extending between the track-arms c c' of the table. The lower jaw m is formed at its ends to fit and easily slide on said arms to-

ward or from the stretching-shaft, and the upper similar jaw *n* rests on said lower jaw, and is hinged to swing up or down upon the same by means of the hinges *o* at the front sides of the two bars, the hinges preferably consisting of bars *p*, secured to the upper and lower sides, respectively, of the opposite ends of the two jaws, having their front ends bent down and up, respectively, and pivoted together, and their opposite or rear ends extended toward the stretching-shaft and provided with eyes loosely confining links *q*, and the two pairs of links at opposite ends of the clamp are connected to the ends of the chains or strong flexible connections *r r*, secured and adapted to be wound on said stretching-shaft *e*.

Each pair of links *q* is secured to the chain at that end of the stretching-shaft. Hence when the shaft is rotated in a direction to wind the chains thereon the bars *p* will draw the two jaws *m n* tightly together. The links *q*, carried by the bars *p* of the upper jaw, are so constructed that they can be released from the connecting-chains to allow the said jaw to be swung up from the lower jaw. These two jaws are yieldingly held apart by means of the coil-springs *s s*, interposed between the ends of the jaws and secured to one jaw and loosely bearing against the other. These jaws are faced with rubber cloth 3, or the like, to grasp and hold the wire screen and prevent it slipping between the jaws. One or more heavy retractive coil-springs *t* are secured at their outer ends to a stationary cross-piece *u* beneath the table, and at their opposite ends are connected with said lower jaw of the clamp to yieldingly hold the clamp at the inner ends of the track-arms.

In operation the door, window, or other frame *a'* is placed on the table, and then the roll-wire screen is placed on the shaft therefor and in position between the track-arms, the two jaws of the clamp are swung apart and the end of the screen passed between the same and firmly secured to the outer end of the frame. The jaws are then swung together and their rods *p* are secured to the connecting-chains. The stretcher-shaft is then turned by means of the sliding transverse bar *v*, confined in the transverse sleeve *w*, rigidly mounted on the same end of the stretcher-shaft with the ratchet-wheel, and the connections wound thereon, thereby pulling the clamp on the track toward the stretcher-shaft, (against the tension of the springs *t t*,) thereby stretching and straightening the screen upon the frame. When the screen is sufficiently stretched upon the frame, it is secured thereon and the clamp-jaws swung apart and the pawl released, and the springs *t t* will return the parts to their normal positions.

It is evident that various changes might be made in the form and arrangements of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the exact construction herein set forth.

What I claim is—

1. The combination, with the operating-table having the track-arms extending from one end, adapted to carry the roll of screen, of a sliding clamp on said arms, composed of jaws to grasp and hold the screen, and a windlass or stretcher-shaft mounted at the outer ends of said arms and connected with said clamp to operate the same to stretch the screen, substantially as described.

2. The combination, with the operating-table having track-arms extending therefrom, of the sliding clamp on said arms, one or more springs to yieldingly hold the clamp in its normal position, and a windlass-shaft connected with said clamp to draw the same against the tension of said spring to stretch the screen, substantially as described.

3. The combination of the flat operating-table, upon which the frame to receive the screen rests, the cleat or stop at one end of the table, against which said frame bears when the screen is being stretched, a pair of track-arms from the same end of the table, the spring-clamp movable on said arms to grasp and stretch the screen, and the windlass-shaft to operate the same, substantially as described.

4. The combination of the table, the track-arms, the removable shaft to hold the roll of screen, the sliding spring-clamp between which the screen passes, and the windlass-shaft operatively connected therewith, substantially as described.

5. The track-arms and windlass-shaft carried thereby, in combination with the clamp mounted to slide on said arms and composed of two similar jaws hinged together and provided with expansive springs to hold them apart, and arms rigidly secured to and extending from each jaw toward said shaft and connected therewith by flexible connections, for the purpose set forth.

6. In a machine for stretching wire screen, the combination of the operating-table having the parallel horizontal track-arms extending from one end, the sliding clamp on said arms, composed of two jaws hinged together and faced with flexible or elastic material to grasp the screen, the windlass-shaft carried by said arms and connected with said clamp to move the same and close the jaws thereof, and the wire-screen spool or reel carried by said arms, substantially as described.

7. In a machine for stretching screen-wire, the combination of the operating-table having a pair of horizontal track-arms from one end, the sliding clamp mounted on said arms and composed of two jaws hinged together, the windlass-shaft mounted at the outer ends of said shaft, the arms extending from each jaw in the direction of said shaft, and a connection from each pair of arms to the shaft, whereby the shaft moves the clamp and

simultaneously draws the jaws thereof together, substantially as described.

8. The combination, with the windlass-shaft having a ratchet-wheel rigidly mounted thereon, of a swinging pawl secured to the support for said shaft and bearing on the upper edge of the wheel, and a sliding sleeve on the pawl-shank carrying an auxiliary pawl-finger to engage the teeth of said wheel, as and for the purpose set forth.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

JOHN L. ULSH.

Witnesses:
WARREN BIGLER,
JOHN H. BICKEN.