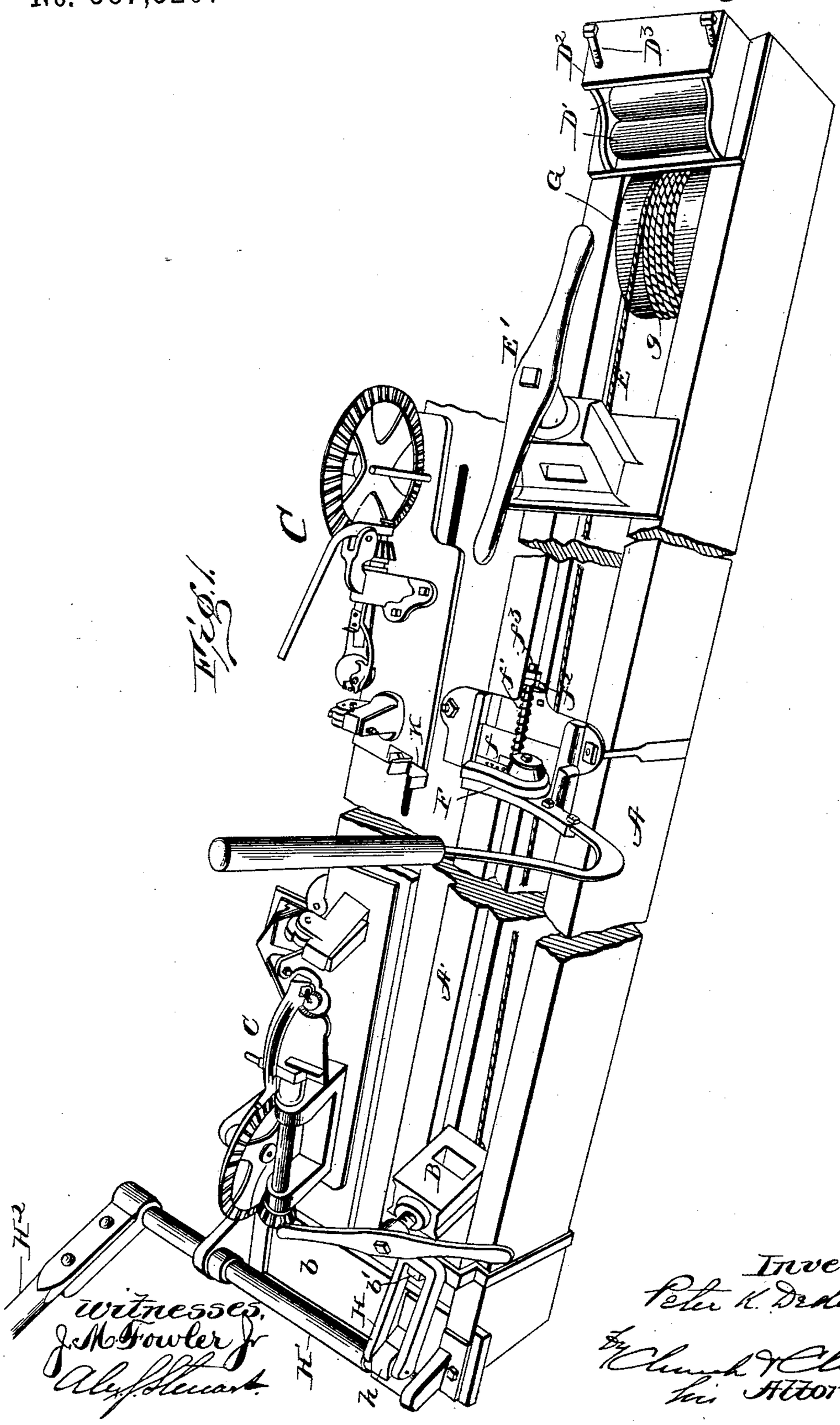
(No Model.) 2 Sheets—Sheet 1.

P. K. DEDERICK.

STRAIGHTENING AND CUTTING ATTACHMENT FOR BALE BAND MACHINES.

No. 587,520. Patented Aug. 3, 1897.



Witnesses.
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Alex. Stewart

Inventor:
Peter K. Dederick
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his Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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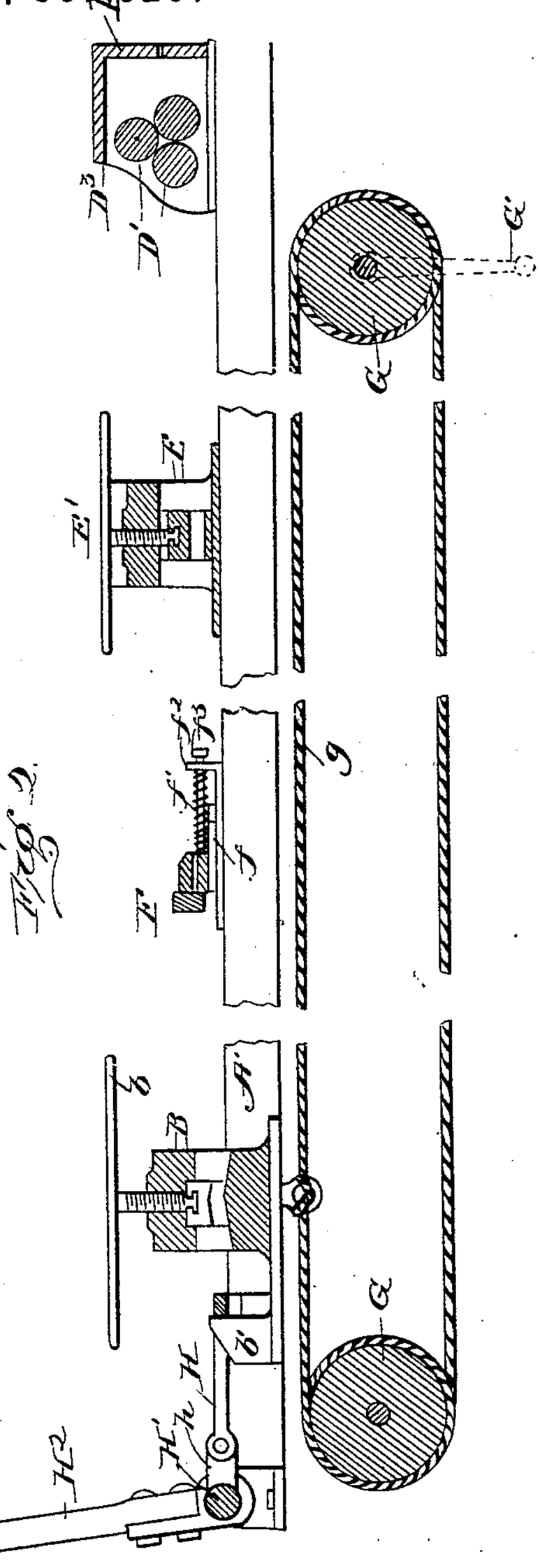

Fig. 2.

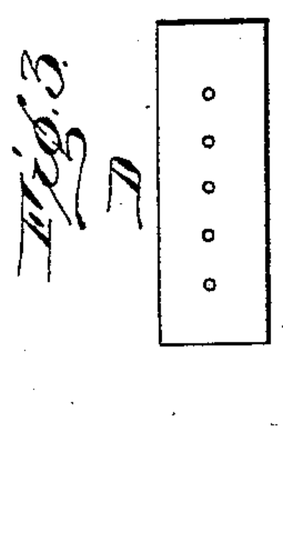

Fig. 3.

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UNITED STATES PATENT OFFICE.

PETER K. DEDERICK, OF LOUDONVILLE, NEW YORK.

STRAIGHTENING AND CUTTING ATTACHMENT FOR BALE-BAND MACHINES.

SPECIFICATION forming part of Letters Patent No. 587,520, dated August 3, 1897.

Application filed March 5, 1897. Serial No. 626,124. (No model.)

To all whom it may concern:

Be it known that I, PETER K. DEDERICK, of Loudonville, in the county of Albany and State of New York, have invented certain new and useful Improvements in Bale-Band Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in machines employed in the manufacture of bale-bands of wire or similar material which comes in coils and in long lengths; and the invention has for its object to prepare the bands for being operated upon by the devices which form the ties thereon and is adapted for use in conjunction with such devices, whereby the speed and ease with which the bands may be completed are enhanced.

The invention consists in certain novel details of construction and combinations and arrangements of parts, all as will be now described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a perspective view looking down on a machine embodying my present invention. Fig. 2 is a diagrammatic detail illustrating the drawing and straining mechanism. Fig. 3 is a detail of one of the separating-plates at the entering end of the machine.

Like letters of reference in the several figures indicate the same parts.

The frame of the machine, or "bed," as it might more properly be called, (lettered A in the accompanying drawings,) is of a length greater than the length of the band to be formed, and it is provided with slideways A′, upon which travels a head B, having clamping-jaws operated by a screw and handle *b* for grasping the ends of the wires and drawing them along the bed. Beyond the point of travel of the head B the bed carries the mechanism for operating on the wire, and at one side it also preferably carries the tie-forming mechanism, (lettered C.) The latter is of any preferred form, although I have shown a mechanism corresponding to that shown in my Patent No. 562,123, granted June 16, 1896, and adapted to form a loop at one end and a hook or cross-head at the opposite end. At the entrance end of the machine a guide-plate D, Fig. 3, is provided, through which a number of strands of wire are passed from the reels or other holders for supporting the wire in bulk. Immediately in front of the plate D a series of straightening-rolls D′ are mounted in a frame D^2 and provided with screws D^3, whereby the position of the rolls may be adjusted to vary the tension on the wires as occasion demands. From these straightening and tension rolls the wires pass through a fixed clamp E, having a handle and screw E′ for clamping the wires and holding them rigidly against longitudinal movement, and thence the wires pass through a cutter F, to be presently described in detail, and thence through the drawing-head B, before referred to, and by which they are adapted to be drawn through the straightening-rolls and clamp E by a mechanism located within the frame or body of the machine and adapted to be operated by the attendant as follows:

At each end of the bed a drum or spool G is journaled, and over these spools a flexible rope or connection *g* is wound, a number of turns of the flexible connection being preferably made around each spool, whereby the power for moving the flexible connection may be applied through one of the spools by means of a crank-handle G′, preferably located near the entering end of the bed for convenience in manipulation. The head B is fixed to the flexible connection at an intermediate point, so as to be moved thereby and so as to move the flexible connection and rotate the drums when the head itself is shifted, as by the attendant placing his hand thereon and walking to the opposite end of the machine.

The head B on its forward side is provided with a hook *b*′, having an inclined front side and adapted to pass under a link H, pivotally connected with a crank-arm *h* on a shaft H′, mounted at one end of the bed or frame and adapted to be rotated or oscillated by means of a long handle or lever H^2, the arrangement being such that when the link H is in engagement with the hook a partial rotation of the shaft by means of the lever will

draw the head forward with great power to straighten and give the wire a permanent set.

In operation, the wires having been threaded through the straightening-rolls, the fixed clamp E and the cutter C are clamped by the movable clamp or head B. Then the attendant by rotating the crank G′ draws all the wires forward until the hook *b′* and link H engage, when he clamps the wires by means of the clamp E and, proceeding to the opposite end of the machine, draws down on the lever H^2 and strains and sets the wires in their straightened position, as before mentioned. Then releasing the wires from the head B he may form the hooks or tie ends by means of the machine C at that end of the machine. Then proceeding to the opposite end of the machine he severs the wires by means of the cutter and proceeds to form the tie ends thereon by means of the machine C at that end. The head B is then brought back either by the attendant placing his hand thereon and drawing it back or by rotating the crank G′ until it is in position to again clamp the ends of the wires, when the same operation may be proceeded with. Under ordinary circumstances the wires then would have to be advanced in order that they may project beyond the cutter, and in order to render this operation automatic and to enable the simple bringing of the head B back to cause the wires to project into its clamp I mount the cutter on a movable base and hold it forward by spring-pressure. Thus when the head B is brought back into contact with the cutter it will rotate, and the wires projecting therethrough will enter the clamp in the head B in position to be grasped by turning the handle *b*. In the preferred construction the cutter F is mounted in slideways *f*, secured rigidly to the body of the machine, and said cutter is held in its advanced position by a spring *f′*, bearing against its rear face and against a lug f^2 on the base *f*, a bolt f^3 being provided to maintain the parts in their proper position of adjustment. With such an arrangement the impact of the head B against the front of the cutter will force it back, as will be readily understood, when the attendant may clamp the wires in the head B and, releasing the fixed clamp E, the parts are in position for another operation of drawing and straightening the wires.

I prefer to construct the machine for operating upon five wires at once, thereby enabling the attendant to produce five bands at each operation, which may be kept straight and in a single bunch ready for the market, and in order to facilitate the handling of the five wires I may provide the holders K on the bed of the machine between the slideways and tie-forming mechanism, as shown clearly in Fig. 1, in which holders the bands may be kept until the tie ends are formed on all.

Having thus described my invention, what I claim as new is—

1. In an apparatus of the character described, the combination with the bed having slideways thereon, a clamp-head traveling on said slideways, and a fixed clamp through which the wires pass to the traveling head, of a driving mechanism for moving the traveling head along said slideways, and an independent straining mechanism coöperating with the traveling head when at the extreme of its movement to straighten and set the wires; substantially as described.

2. In a machine of the character described, the combination with the bed having the slideways thereon, the fixed clamp, and the traveling head and clamp mounted on said slideways with means for moving the same, of a movable cutter located between the fixed and movable clamps, whereby said cutter may be moved to present the ends of the wire to the movable clamp; substantially as described.

3. In a machine of the character described, the combination with the bed having the slideways thereon, the fixed clamp, and the movable clamp or head mounted on said slideways, of the movable cutter located between said clamps, a guide on said cutter for maintaining the wires in their relative positions, and a spring for holding the cutter advanced whereby said cutter may be moved back to present the ends of the wire to the movable head; substantially as described.

4. In a machine of the character described, the combination with the bed having the slideways thereon, the straightening-rolls at one end of said bed, and the straining mechanism at the opposite end thereof, of fixed and movable clamps intermediate the straightening-rolls and straining mechanism, and a movable cutter between the clamps; substantially as described.

5. In a machine of the character described, the combination with the winding drums or spools and the flexible connection carried by said drums, of the movable head or clamp connected with said flexible connection, a fixed head or clamp, a straining mechanism coöperating with the movable head or clamp, and a cutter interposed between the heads or clamps; substantially as described.

6. In a machine of the character described, the combination with the bed, the drums or spools journaled therein, the flexible connection wound on said drums or spools, the fixed clamp or head, and the movable clamp or head connected with said flexible connection and moved thereby, of a hook on the movable head, a transverse straining-shaft having a crank-arm thereon, and a link jointed to said crank-arm and adapted to coöperate with the hook on the movable head to move the head and strain the wire held thereby; substantially as described.

7. A cutter for wire-straining machines, consisting of the base having the slideway therein, the cutter proper mounted in said

slideway, and the spring for maintaining said cutter at one end of the slideway; substantially as described.

8. In a cutter for wire-straining machines, the combination with the base having the slideway therein, of the cutter proper mounted in said slideway and having the series of guiding-apertures therethrough, and the spring for holding the cutter at one end of the slideway; substantially as described.

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Witnesses:
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