

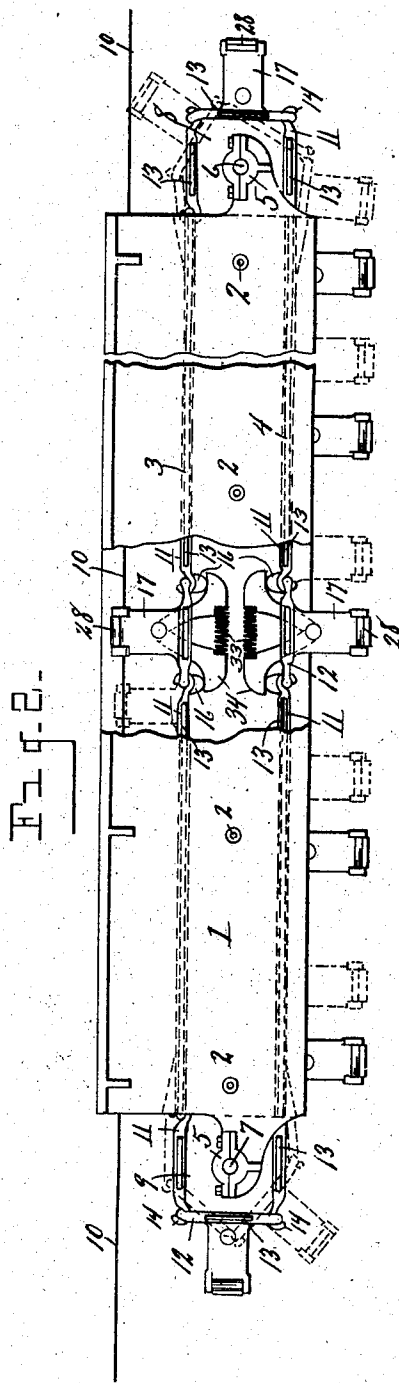
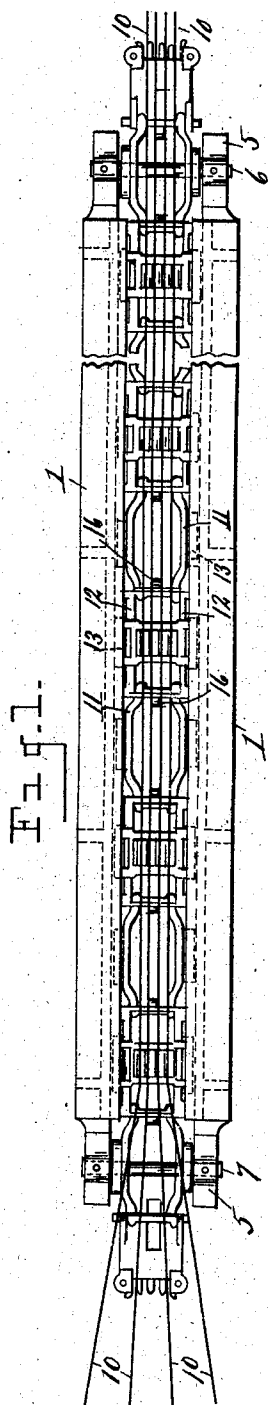
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PATENTED DEC. 25, 1906.

J. W. SNEDEKER.
WIRE TENSION AND MEASURING DEVICE.

APPLICATION FILED FEB. 25, 1905.

3 SHEETS—SHEET 1.



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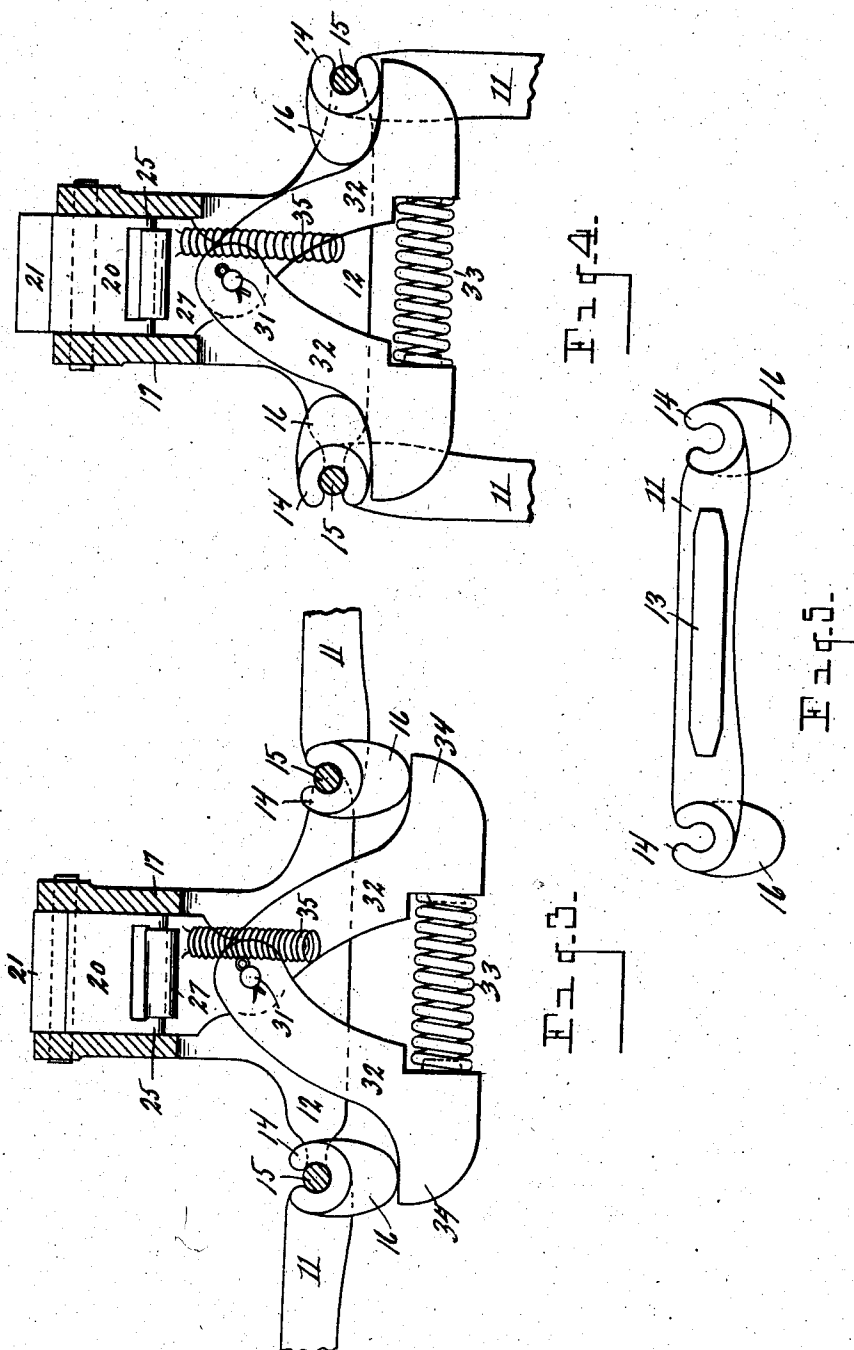
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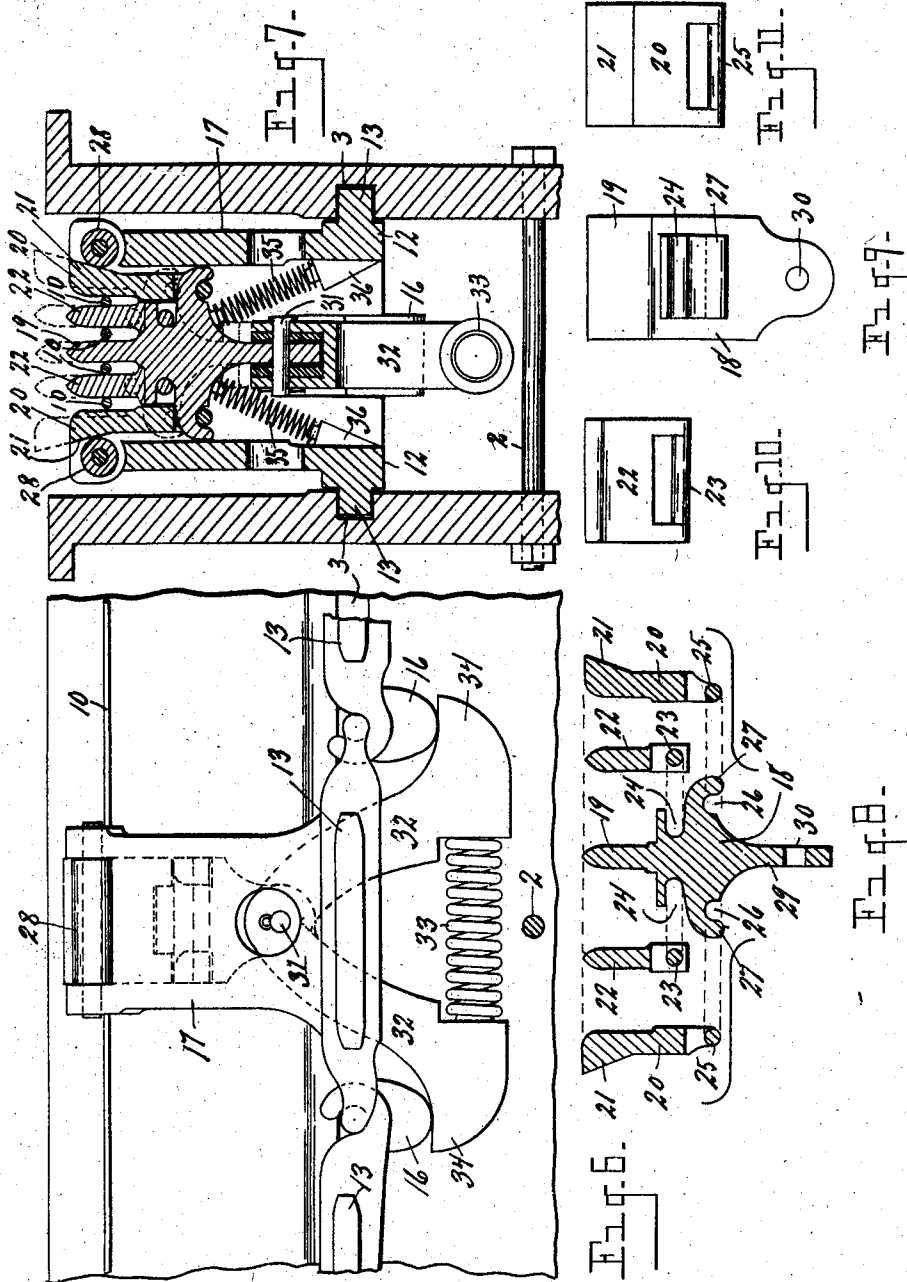
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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WIRE TENSION AND MEASURING DEVICE.

No. 839,219.

Specification of Letters Patent.

Patented Dec. 25, 1906.

Application filed February 25, 1905. Serial No. 247,272.

To all whom it may concern:

Be it known that I, JAMES W. SNEDEKER, a citizen of the United States, residing at Adrian, in the county of Lenawee, State of Michigan, have invented certain new and useful Improvements in Wire Tension and Measuring Devices; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to a wire tension and feeding device more expressly designed for use in connection with the manufacture of wire fabric or fencing; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The object of the invention is to provide a device of the character described in which the arrangement is such as to maintain an even tension upon all of the strands of wire which are drawn or fed into the fabric-machine and to clamp each of said wires so as to prevent longitudinal slippage, provision being made for automatically clamping and releasing the strands of wire as they enter into and pass from the device and for maintaining a continuous and uniform movement of the clamping heads or members as the wires are drawn into the fabric-machine.

The above object is attained by the structure illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a device involving my invention. Fig. 2 is a side elevation, parts being broken away. Fig. 3 is a view of one of the clamping-heads, partly in section, showing the position of the parts when the wires are clamped between the jaws. Fig. 4 is a similar view showing the jaws relaxed. Fig. 5 is an elevation of one of the links of the endless carrier. Fig. 6 is a fragmentary view in elevation of one of the clamping-heads while passing through the longitudinal casing in which said heads travel. Fig. 7 is a transverse section through one of the clamping-heads and the upper part of the embracing casing, the lower portion of the casing be-

ing broken away. Fig. 8 is a sectional view of the fixed and hinged jaws of the clamping-head disassembled. Fig. 9 is a side elevation of the central jaw. Fig. 10 is an elevation of one of the inner hinged jaws. Fig. 11 is an elevation of one of the outer hinged jaws.

Referring to the characters of reference, 1 designates the opposed sides of a guideway through which the clamping-heads are carried, said sides being bolted together, as at 2, and having in their inner faces opposed horizontal channels 3 and 4. (Shown by dotted lines in Fig. 2.) Journaled in suitable boxes 5 at the ends of said guideway are the transverse shafts 6 and 7, respectively, upon which are mounted the quadrangular rollers 8 and 9, over which passes the endless carrier to which are fixed the clamping-heads, between whose jaws the wire strands 10 are clamped.

The endless carrier comprises a chain, the links 11 and the blocks 12 of which are provided on their opposite sides with the laterally-projecting ribs 13, which travel in the channels 3 and 4 in the sides of the guideway and maintain said chain or carrier properly in position during its passage through said way. The links 11 of the chain are provided with the partially-closed eyes 14, (more clearly shown in Fig. 5,) that embrace and are journaled on the transverse pins 15 at the ends of the blocks. Formed upon the ends of the links are the cam-shaped lugs 16, for purposes hereinafter explained. Mounted upon or formed integral with each of the blocks of the chain is a housing 17, in which are located the movable jaws comprising the clamping-head, consisting of a central jaw member 18, having the rigid jaw 19, the outer jaw members 20, each having an inclined outer face 21, and the inner or interposed jaw members 22. The inner jaws 22 are movably connected to the central jaw member by means of their transverse pins 23, which lie in the recesses 24 in the opposite sides of said member, so that their inner faces will stand approximately parallel with the fixed jaw 19, while the outer jaws are hinged or movably secured to the central member by means of their transverse pins 25, which engage in the recesses 26 in the under

face of the curved wings 27 of said central member. Journalled at the upper end of the housing 17, on opposite sides thereof, are the antifriction-rollers 28, with which the beveled faces 21 of the outer jaws 20 are adapted to engage when the clamping-head is in position in said housing. Depending from the central jaw member 18 is a stem 29, having an aperture 30 therethrough adapted to receive a journal-pin 31. Pivotaly mounted upon said pin and embracing said stem are the diverging arms 32, whose lower ends are normally held apart by the interposed spring 33, so that the outwardly-curved ends 34 will always lie in contact with the cam-lugs on the links of the chain. The clamping-head comprising the central and movable side jaws is vertically movable in the housing 17 and is maintained in its normal position by the compressible springs 35, which engage the under side of the jaw member 18 on each side of the center and are supported at their lower ends upon brackets 36, formed upon the opposite inner sides of the blocks of the chain.

It will be noted that when the links and the blocks of the chain are extended in a horizontal plane, as shown in Figs. 3 and 6, the cam-lugs 16 will engage the arms 32 and retract the clamping-head, thereby causing the beveled faces 21 of the outer jaws 20 to engage the antifriction-rollers 28, thereby moving said jaws inwardly and clamping the wire strands 10 between the opposed faces of the inner jaws and the central jaw 19, the movable feature of the outer and inner jaws permitting an equal pressure to be applied to all of the strands of wire and compensating for any variation in the diameter of said strands, insuring application to each of sufficient pressure to prevent the slipping or drawing of the strands through said jaws.

The actuation of the clamping-jaws to cause them to clamp and release the wire strands at the proper time through the operation of the cam-lugs upon the diverging arms connected with the central member of the clamping-head is accomplished by the travel of the endless chain or carrier through the guideway in the following manner: As the clamping-heads enter the initial end of the guideway in their forward travel therethrough, which is the right-hand end, as shown in Figs. 1 and 2, the clamping-jaws are protruding and open, owing to the fact that the links of the chain are engaging the flat faces of the quadrangular roller 8 and are standing nearly at right angles to the block of the chain carrying the clamping-head at the time the jaws of said head are caused to engage the wires 10, as shown by dotted lines in Fig. 2, in which position the cam-lugs 16, as shown in Fig. 4, extend inwardly and lie with their low sides in contact with the arms 32. As the chain enters the guideway its links

and blocks are caused to assume a horizontal position, as shown in Fig. 3, whereby the cam-lugs are turned so as to throw their high points against the curved ends 34 of the arms 32, thereby drawing inwardly or downwardly upon said arms and retracting the clamping-head within the casing 17, causing the jaws of said head to firmly clamp the strands of wire lying between them through the engagement of the inclined outer faces of the jaws 20 with the antifriction-rollers 28, as before described, in which position said jaws remain while the endless chain or carrier is passing the entire length of the upper portion of the guideway. As each block of the chain or carrier is provided with a clamping-head, it will be seen that there are a number of said heads in engagement with the wire strands at all times, whereby the slipping of the strands through the jaws of the head is obviated and the uniform feeding thereof into the fabric-machine is assured, maintaining an unvarying tension upon the strands and preventing the possibility of any one of the strands becoming slack.

The release of the clamping-jaws from the wire strands at the tail or discharge end of the guideway is accomplished by the passage of the links and blocks of the chain or carrier over the rear quadrangular roller 9, which as soon as the links of the chain begin to form around it causes the cam-lugs to release the arms 32, when the springs 35 will force the clamping-jaws outwardly in the housing, thereby allowing them to separate and free the strands of wire between them, said wires continuing into the fabric-machine and said clamping-heads passing around the rear roller and returning to the initial end of the guideway along the under side thereof, as clearly shown in Fig. 2. The wires 10 are drawn into the fabric-machine through the operation of said machine in making up the fabric, and the endless carrier with its clamping-heads is given its movement through the engagement of the jaws of said head with said moving strands of wire.

While I have shown what I deem the preferred means for actuating the clamping-jaws to cause them to alternately engage and release the strands of wire, other means may be employed to accomplish the automatic operation of clamping and releasing the wires without departing from the spirit of my invention.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device for the purpose set forth, comprising a horizontally-traveling carrier, clamping-jaws adapted to confine the strands of wire mounted in said carrier to travel therewith and reciprocate therein, means engaging the jaw members actuated by the movement of the carrier for automatically bring-

ing the jaws together upon the wires and automatically separating the jaws to allow the wires to pass therefrom.

2. In a device for the purpose set forth, the combination of the carrier traveling in substantially a straight plane, movable clamping-jaws mounted to reciprocate in said carrier adapted to engage the strands of wire, there being upon the carrier movable members adapted to engage and actuate said jaws to bring them together upon the strands of wire and to separate them to release said strands.

3. A device for the purpose set forth, comprising an endless traveling conveyer composed of jointed members, clamping-heads mounted upon said members, jaws in said heads traveling therewith and movable independently thereof, said jaws being adapted to engage the strands of wire, and means separate from the jaws actuated by the relative movement of said jointed members for operating said jaws to clamp and release the wires.

4. In a device for the purpose set forth, the combination of an endless carrier, comprising jointed members, a series of clamping-heads mounted upon the members of said carrier, movable clamping-jaws in said heads adapted to engage the strands of wire, arms connected with said jaws for actuating them, and cams on the jointed members engaging said arms and operated by the movement of said members upon their joints to actuate said arms and operate said jaws.

5. In a device for the purpose set forth, the combination of an endless conveyer comprising jointed members, a guide for said conveyer, polygonal rollers over which said conveyer passes, whereby the members are caused to move upon their joints, movable clamping-jaws adapted to engage the strands of wire, said jaws being mounted upon the members of said conveyer, and means for ac-

tuating said jaws operated by the movement of the jointed members of the conveyer in passing onto and off of said rollers.

6. In a device for the purpose set forth, the combination with the endless conveyer comprising jointed members, of a guide for directing said conveyer and maintaining it in position, clamping-heads mounted upon the members of said conveyer, jaws that are both reciprocatory and laterally movable mounted in said heads, actuating-arms connected with said jaws to reciprocate them, and means for actuating said arms at predetermined intervals.

7. A device for the purpose set forth, comprising an endless traveling conveyer, a guide for directing the movement of said conveyer, a plurality of clamping-heads mounted upon and traveling with said conveyer, movable jaws within said heads, and means separate from said jaws actuated by the movement of said conveyer at its entrance into and passage from said guide for operating said jaws to successively clamp and release the wires at predetermined intervals.

8. A device for the purpose set forth, comprising an endless chain or carrier, a guide in which said carrier is directed, a plurality of clamping-heads upon the members of said chain or carrier, reciprocatory and laterally-movable jaws mounted in said head, the outer of said jaws having beveled faces, there being in said heads antifriction-rollers adapted to engage the beveled faces of said jaws, and means for reciprocating said jaws in said heads to cause said beveled faces to successively engage with and recede from said rollers.

In testimony whereof I sign this specification in the presence of two witnesses.

JAMES W. SNEDEKER.

Witnesses:

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