No. 738,387. PATENTED SEPT. 8, 1903.

S. S. WITHINGTON.

WIRE CLAMPING DEVICE.

APPLICATION FILED AUG. 20, 1902.

NO MODEL.

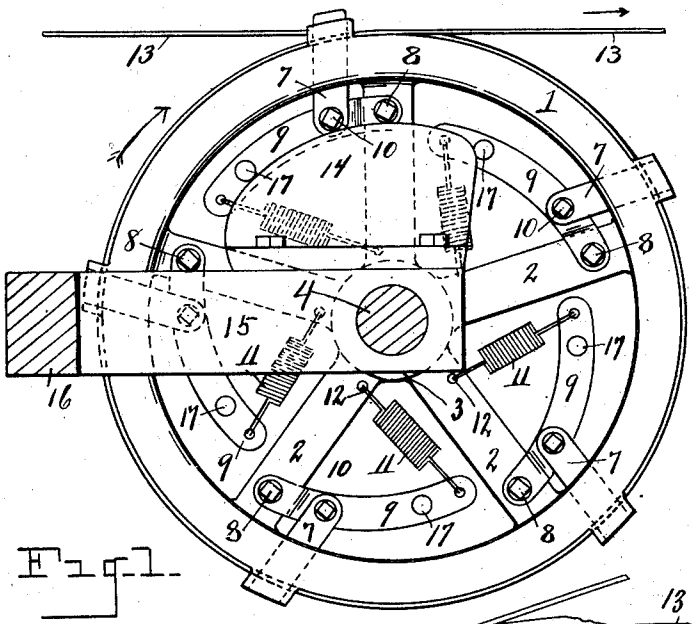


Fig. 1.

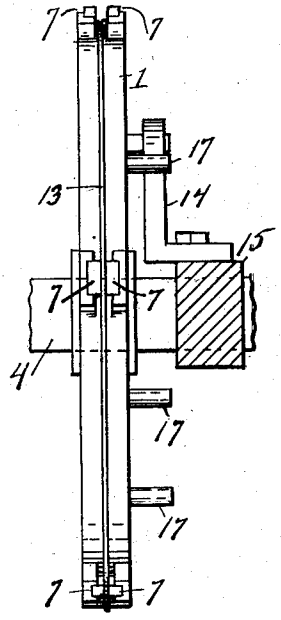


Fig. 2.

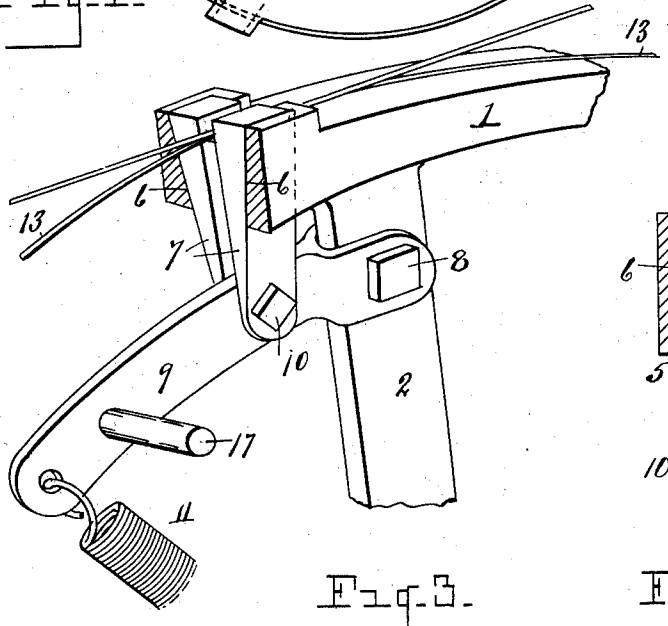


Fig. 3.

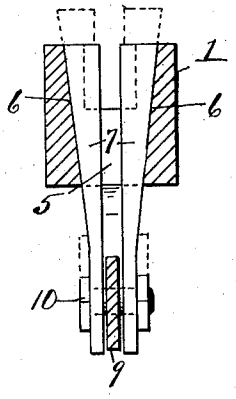


Fig. 4.

WITNESSES.

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No. 738,387. Patented September 8, 1903.

UNITED STATES PATENT OFFICE.

SHERMAN S. WITHINGTON, OF ADRIAN, MICHIGAN.

WIRE-CLAMPING DEVICE.

SPECIFICATION forming part of Letters Patent No. 738,387, dated September 8, 1903.

Application filed August 20, 1902. Serial No. 120,334. (No model.)

To all whom it may concern:

Be it known that I, SHERMAN S. WITHINGTON, a citizen of the United States, residing at Adrian, in the county of Lenawee, State of Michigan, have invented a new and useful Improvement in Wire-Clamping 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 characters of reference marked thereon, which form a part of this specification.

This invention relates to a wire-clamping device; and it consists in the construction and arrangement of parts hereinafter more fully set forth.

The object of the invention is to provide efficient means for clamping a wire so as to prevent the slipping thereof when subject to longitudinal strain, more expressly adapted for use in connection with the manufacture of wire fences, the arrangement being such as to firmly clamp the wire and automatically release it as it pays off of the clamping device into the fence-weaving machine.

The above object is obtained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation of a clamping-wheel embodying my invention, the axle upon which the wheel is mounted appearing in section. Fig. 2 is an edge view of said wheel, the arm supporting the stationary cam being shown in transverse section. Fig. 3 is a fragmentary view in perspective, showing the clamping-wedges in the periphery of the wheel and the spring-actuated lever for operating them. Fig. 4 is a transverse section through the rim of the wheel and through said lever, the wedges appearing in elevation and their movement being illustrated by dotted lines.

Referring to the characters of reference, 1 designates the rim of a wheel supported by suitable spokes 2, radiating from a hub 3, journaled upon a shaft 4. In practice there may be as many of these clamping-wheels employed as the nature of the work requires. In fence-building there will be a gang of these clamping-wheels, one for each longitudinal wire of the fence. It will only be necessary, however, to describe one of said wheels, as they will all be alike in construction and operation.

Formed diametrically through the rim of the wheel are a number of openings 5, (see Fig. 4,) having opposed inclined walls 6. Seated in said openings are the opposed wedges 7, whose inner faces are straight, but whose outer faces are inclined to coincide with the inclined walls of the opening in which said wedges are seated. Pivoted at 8 to the spokes 2 of the wheel are the levers 9, which are embraced by the lower ends of the wedges 7 and to which said wedges are pivoted by transverse bolt 10. Attached to the outer end of each of the levers 9 is a strong coiled spring 11, whose lower end is attached at 12 to the spoke on which the lever is pivoted. The tension of the spring is exerted upon the lever to normally draw the wedges downwardly through the inclined opening in the rim of the wheel, thereby crowding their inner faces together and clamping the strand 13 of the wire, which lies between them. There are a sufficient number of clamping-wedges employed to firmly grip the wire, which lies between their adjacent faces and passes around the periphery of the wheel, so that any slipping of said wire as it is drawn from the wheel is obviated. It will be observed that the wire is fed onto the wheel between the series of wedges, passes once around the wheel's periphery, and leads therefrom into the machine, (not shown,) in which it is to be made up into fencing or other articles. The tension of the spring 11 is exerted to normally hold the wedges in contact with anything lying between their faces. It is therefore necessary to provide means for automatically releasing each set of the wedges at the point where the wire after passing around the wheel leads therefrom, so as to prevent the wire being wound continuously around the wheel. This automatic release of the wedges is accomplished as the wheel revolves by means of a fixed cam 14, supported upon a suitable arm 15, projecting inwardly from a bar 16, that crosses the face of the wheel. This cam is so positioned that in the revolution of the wheel the pin 17, projecting laterally from each of the levers 9, will engage and ride upwardly upon the high

side of the cam, thereby swinging said lever upon its pivot and raising the wedges, so as to free the wire which lies between them, as shown by the dotted lines in Fig. 4, affording room between the clamping-faces of the wedges for one of the strands to pass therefrom and the other strand to drop therein at the point where said strands are caused to cross in the revolution of the wheel and as shown in Fig. 1. After the strand of the wire which is fed into the work is free from the wedge the pin 17 of the lever will drop from the high point of the cam and allow the spring to draw the wedges forcibly into the inclined opening 5 in the rim of the wheel and set the wedges upon the strand between their faces in a manner to firmly clamp it against slipping. There may be as many of the clamping-wedges employed as desired, and it is obvious that all of them are firmly engaging the wire which passes around the wheel's periphery excepting the set which is released by the cam at the point where the wires cross in paying from the wheel and winding thereon. It will be observed that each set of wedges when arriving at the proper point in the rotation of the wheel are released by the action of the cam, so as to free the wire, and are successively locked onto the wire after passing the cam by the action of their respective springs and that the operation of each set of wedges is independent.

While I have shown and described two wedges as comprising each clamping set, it is evident that but one wedge may be employed and the wire clamped between its face and the wall of the aperture in which the wedge is seated. By employing two wedges, however, greater lateral movement can be obtained, requiring a shorter throw of the actuating-lever.

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

1. In a wire-clamping device, the combination of a rotary agent, jaws movable diametrically of and mounted in said agent adapted to clamp the wire between their opposed faces, and means for automatically actuating said jaws to release the wire therefrom.

2. In a wire-clamping device, the combination of a rotary agent, a movable wedge seated in said agent, adapted to clamp a wire between its vertical face and an adjacent part, and means of actuating said wedge to draw it into contact with the wire when moved in one direction, and to release the wire when moved in the opposite direction.

3. A wire-clamping device comprising a rotary agent, a reciprocatory wedge seated in said agent and adapted to clamp a wire, a lever pivoted to said wedge, a spring engaging the free end of said lever, and means for automatically moving the lever against the action of said spring.

4. A wire-clamping device, comprising a rotary agent, upon which the wire is adapted to wind, movable wedges seated in said agent adapted to receive the wire between their opposed faces, means for actuating the wedges to clamp the wire, and means of moving the wedges to release the wire therefrom.

5. A wire-clamping device comprising a rotary agent, around which the wire is adapted to wind, opposed wedges seated in said agent adapted to clamp the wire between their faces, a lever pivoted to said wedges, a spring attached to the end of said lever, and means of actuating the lever against the action of said spring.

6. In a wire-clamping device, the combination of a rotary agent, movable clamping-jaws seated in said agent between which a wire is adapted to pass, each of said clamping-jaws having independent means for clamping a wire between them, and means common to all of said jaws for actuating them to release the wire at a predetermined point in the rotation of said agent.

7. In a wire-clamping device, the combination of a rotary agent, movable clamping-wedges in said agent, adapted to clamp a wire between their faces, a lever pivoted to said wedges, a spring attached to each of said levers, a fixed cam, and a projection on each of the levers adapted to engage said cam.

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

SHERMAN S. WITHINGTON.

Witnesses:
E. S. WHEELER,
C. E. DAVIS.