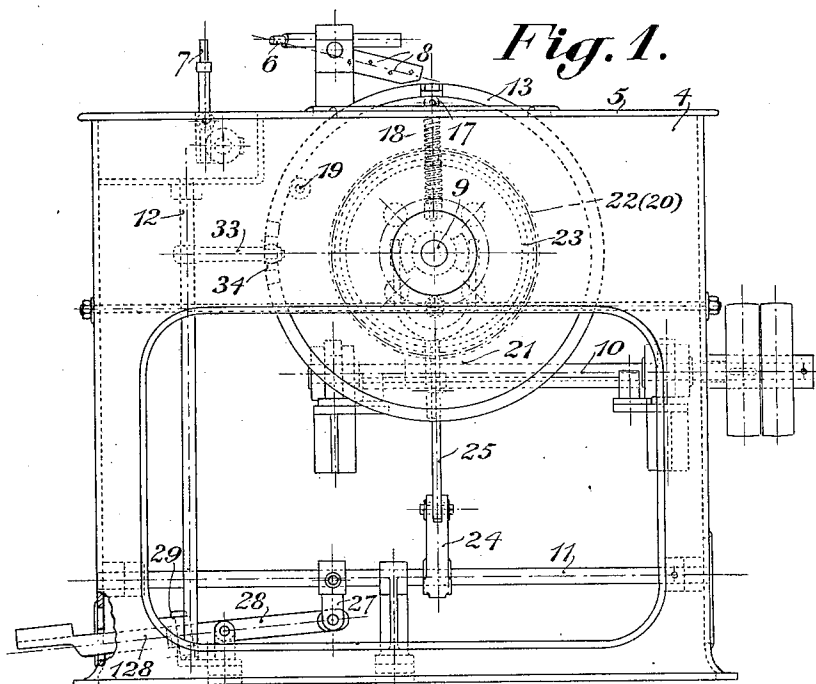
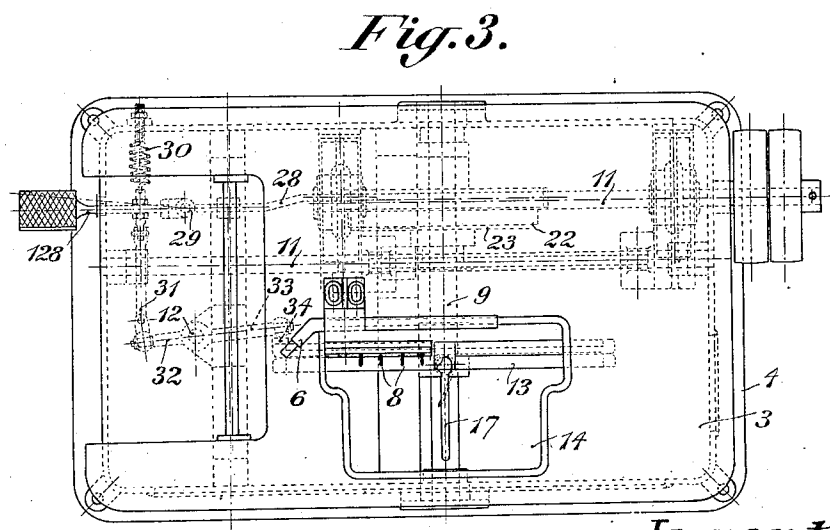


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APPLICATION FILED JULY 16, 1919.

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Patented July 5, 1921.

2 SHEETS—SHEET 1.



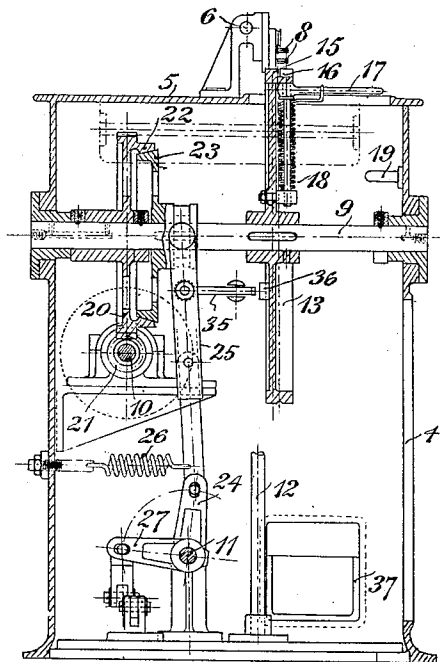
Inventor
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Fig. 2.



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UNITED STATES PATENT OFFICE.

MARIUS METHILTUS SÖRENSEN, OF VALLERÖD, NEAR RUNGSTED, DENMARK.

MACHINE FOR STRAIGHTENING WIRE.

1,383,576.

Specification of Letters Patent.

Patented July 5, 1921.

Application filed July 16, 1919. Serial No. 311,306.

To all whom it may concern:

Be it known that I, MARIUS METHILTUS SÖRENSEN, a subject of the King of Denmark, residing at Valleröd, near Kungsted, Isle of Sealand, in the Kingdom of Denmark, have invented certain new and useful Improvements in Machine for Straightening Wire, of which the following is a specification.

This invention refers to a machine for straightening out wire that, after having been put to some use or other, is more or less sharply bent and consists of long or short pieces. The invention is specially intended for the pieces of wire, generally steel wire, which have been used for lasting according to the method covered by United States Patent 1224229, and which, after the sole has been put on, it is advantageous to remove, in order to avoid the presence of foreign elements in the foot-gear, and in order to use it again for lasting-purposes.

A diagram of one form of construction is shown, by way of example, on the drawing in Figures 1, 2, and 3, which are respectively: a side-view, a vertical section, and a plan.

The machine as shown consists in a box-shaped frame 4, with a top-plate 5, provided with pins 6 and 7 for securing the last in two different positions, and with a suitable wire-straightening member, which is shown as a number of wire-guiding pins 8 disposed in series and forming a wire-straightening course. The pins 6 and 7, which fit into the hole in the ridge of the last, are so located relative to the wire-straightening course that the direction of the latter, when the last is placed on the pin 6, corresponds to the best stretching direction for the lasting wire of the front part of the boot; and when the last is placed on the pin 7, it corresponds to the best stretching direction for the lasting-wire of the counter of the boot. One of the pins, *e. g.* the pin 7, as appears in Fig. 1, can be disposed, so as to be capable of being turned down, in order not to be a hindrance for the placing of the last on the other pin.

In the frame there are journaled horizontal shafts 9, 10, and 11, and a vertical shaft 12. The shaft 9 carries a tension-wheel 13, whose upper part projects through an opening 14 in the top-plate 5. This wheel lies on a plane with the wire-straightening course and is tangent to it, as shown in Fig. 1. Close to this point of tangency the wheel 13,

when it assumes the shown normal position, is provided with a wire clamp consisting of a stationary surface 15 and a cam surface 16 on a movable arm 17 actuated by a spring 18, so that the clamp is normally closed. In the course of the arm 17, when the latter is carried around on the turning of the wheel, there is on the wall of the frame 4 a pin 19, which can only be passed by the arm by this one turning against the spring actuation, whereby the clamp is opened. This takes place in the shown example after about three-fourths of the revolution.

The shaft 9 furthermore carries a freely turnable worm-wheel 20 which meshes with a worm 21 on the shaft 10, and which can be coupled to the shaft 9 by means of a friction coupling 22. The shiftable part 23 of the latter can be moved on the shaft 11 by means of an arm 24 and a fork-lever 25 actuated in the pulling-direction by a spring 26. The shaft 11 is, by means of an arm 27, connected with a pedal-lever 28, which is passed out through an angular opening in the wall of the frame, and on which there is a joint 29, which permits the outer end 128 of the lever to execute a horizontal swinging motion. When the pedal is pressed down, thereby making the coupling 22 active, a spring 30 will pull the end 128 of the lever over into the horizontal lower part of said angular opening, thus causing the lever to be held automatically in the position corresponding to engaged coupling. The end 128 of the lever is, by means of a rod 31, connected with an arm 32 on the vertical shaft 12, which, with another arm 33, lies in contact with the tension-wheel 13, thus describing a circular orbit on said tension-wheel while it makes one revolution from the position shown in Fig. 1. At the end of this orbit there is a projection 34 on the wheel 13, which causes the arm 33 and thereby also the shaft 12 and the arm 32 to turn, whereby the end 128 of the lever is automatically pulled out of the horizontal part of the angular opening. Then the coupling 22, 23 will be disengaged through the action of the spring 26, and the tension wheel will stop in the shown position, where it can be held fast in some suitable manner. In the shown example, a pin 35 on the fork 25 will enter into a hole in the wheel at 36.

In using the machine the last carrying the footgear whose lasting-wire is to be removed is placed on the pin 6 or 7. One of the free

wire-ends is passed between the pins 8 as shown in Fig. 1 and secured in the clamp 15, 16. By pressing the pedal, the pin 35 is disengaged from the hole 36, the coupling 22, 23 is put into action, and the tension wheel will start moving around thus causing the wire, at a suitable speed, to be pulled out of the footgear, through the straightening-course, and to be wound up on the wheel, free from kinks and crooked places. The periphery of the wheel is greater than the length of the lasting thread, and thus the wire will be straightened in the course of part of one revolution of the wheel. The inner end of the wire is free when it has passed the guide-pins 8, and its outer end will be free when the arm 17 of the wire-clamp passes the pin 19. The wire can then freely fall from the wheel and be caught in a box, basket, or other receptacle 37. The wheel 13 will continue and complete its entire revolution without requiring any special operation or attention. The operator can meantime place the last on the other pin or lay it aside and put another last into position with the end of the wire passed between the guide-pins 8, so that, when the wheel stops of its own accord, he can immediately secure the end of the wire in the clamp 15, 16 and again start the wheel.

Even though this machine is especially intended for pulling out and straightening lasting-wire, it is obvious that the machine can be used for straightening or pulling out wire in other branches of manufacture. The shown details are not essential to the nature of the invention and may be modified in many different ways.

I claim:—

1. Machine for straightening out pieces of wire, consisting of a straightening member, a rotating tension member, a means for securing the wire on the latter member, and means for automatically stopping the tension member after each revolution.

2. Machine for straightening pieces of wire, consisting of a straightening member, a rotating tension member, a means for securing the wire on the latter member, a driving member, a coupling between the tension member and the driving member, a lever for engaging this coupling, means for holding said lever in the position corresponding to engaged coupling, means for releasing the lever, and means for automatically stopping the tension member when the lever is released.

3. Machine for straightening pieces of wire, consisting of a straightening member,

a rotating tension member, a wire-securing means on the latter member, a driving member, a coupling between the tension member and the driving member, a lever for engaging this coupling, means for holding said lever, and means for releasing the lever after one revolution of the tension member.

4. Machine for straightening pieces of wire consisting of a frame, a straightening member on the frame, a rotatable shaft, a tension member on the shaft, means for securing the wire on the tension member, a driving member, a coupling including a member loose on the shaft and engaged with the driving member and a member slidably and non-rotatably mounted on the shaft, a pivoted forked lever embracing the slidable member, a spring for holding said slidable member in a disengaged position, a foot lever operably engaged with the fork lever for moving the slidable member into engagement with the loose member and means for holding the foot lever in the position corresponding to the engaged position of the coupling.

5. Machine for straightening pieces of wire consisting of a frame, a straightening member on the frame, a rotatable tension member, means for securing the wire on the tension member, a driving member, a two-part coupling between the driving member and the tension member, a forked lever embracing one part of the coupling, a spring co-acting with the forked member for holding the coupling in a disengaged position, a foot lever operably connected with the forked member for moving the coupling into engaged position and having a laterally swingable section, a vertical shaft, an arm on the vertical shaft, a connection between the arm and the swingable lever section, a spring between the swingable lever section and the arm for holding the lever in the position corresponding to the engaged coupling and for holding the arm in contact with the tension member, a projection on the tension member for engaging and swinging the arm whereby to release the coupling at each revolution of the tension member, a socket member on the tension member and an arm on the forked lever for engaging the socket subsequent to the release of the coupling for holding the tension member stationary.

In testimony whereof I affix my signature in the presence of two witnesses.

MARIUS METHILTUS SÖRENSEN.

Witnesses:

E. WEIESKON,
N. KURT JENSEN.