

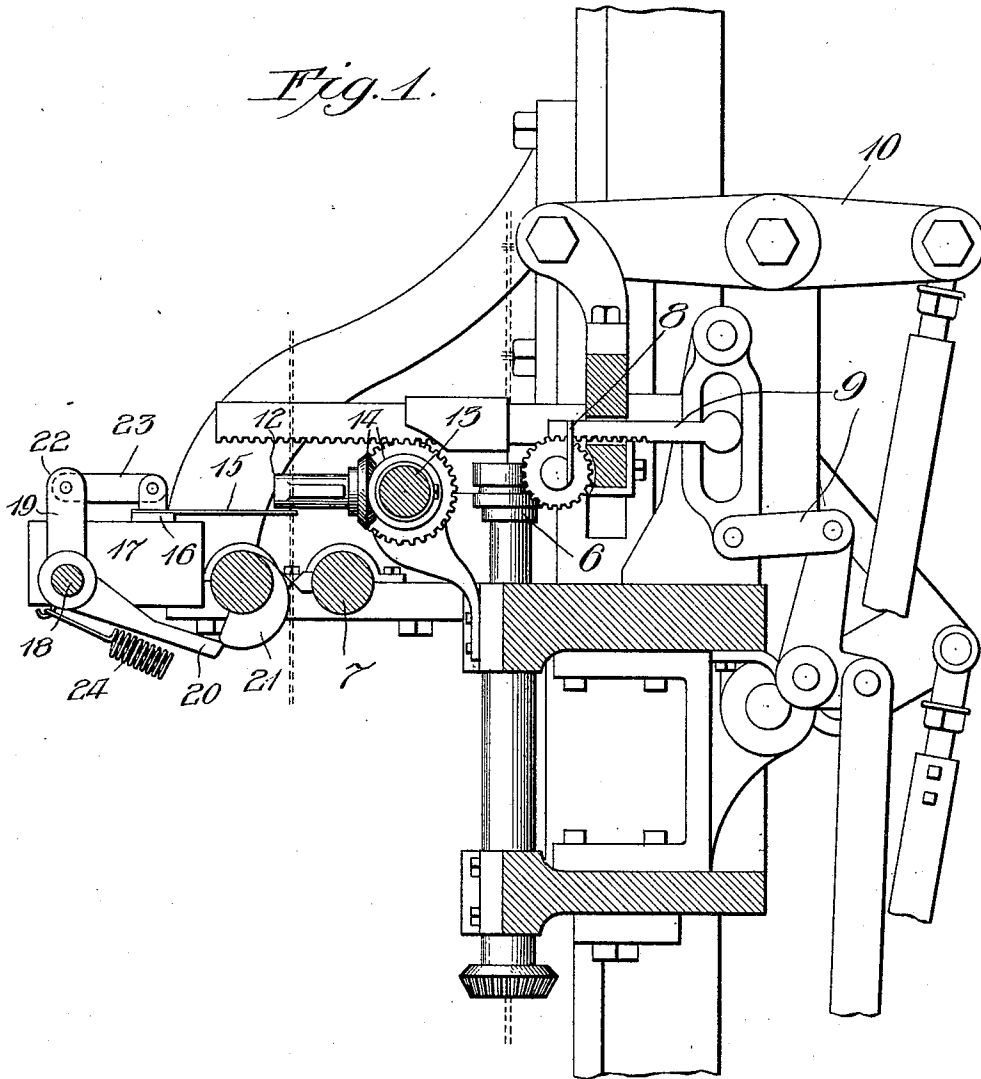
W. J. VAIL.
WIRE FENCE MACHINE.

APPLICATION FILED JULY 24, 1911.

1,008,222.

Patented Nov. 7, 1911.

3 SHEETS—SHEET 1.



Witnesses:

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Inventor:

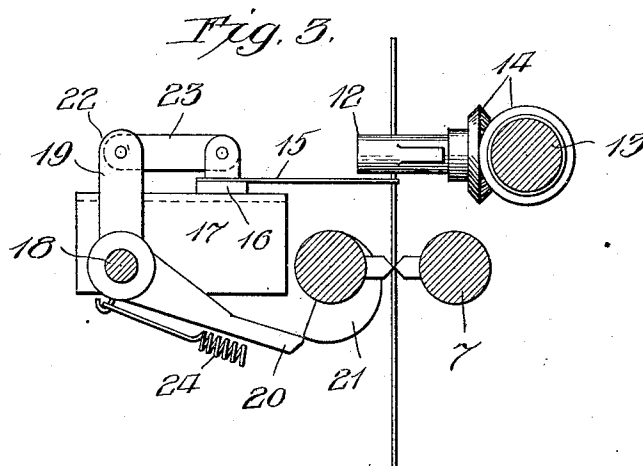
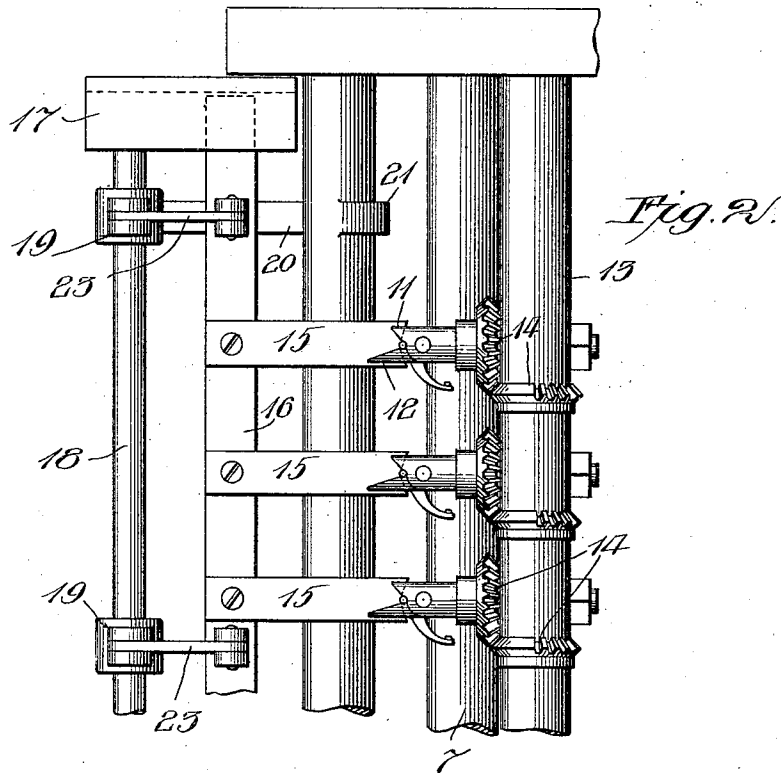
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3 SHEETS—SHEET 2.

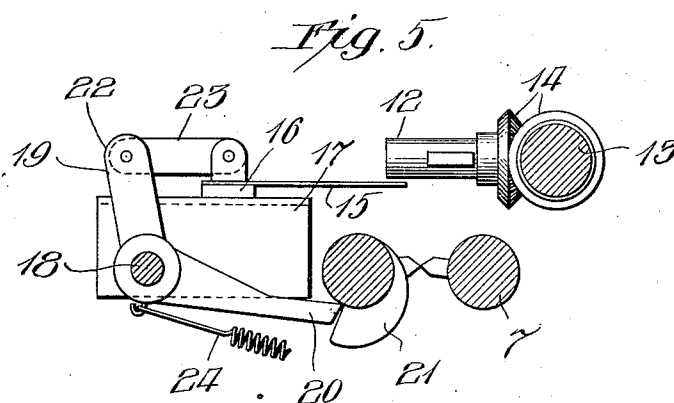
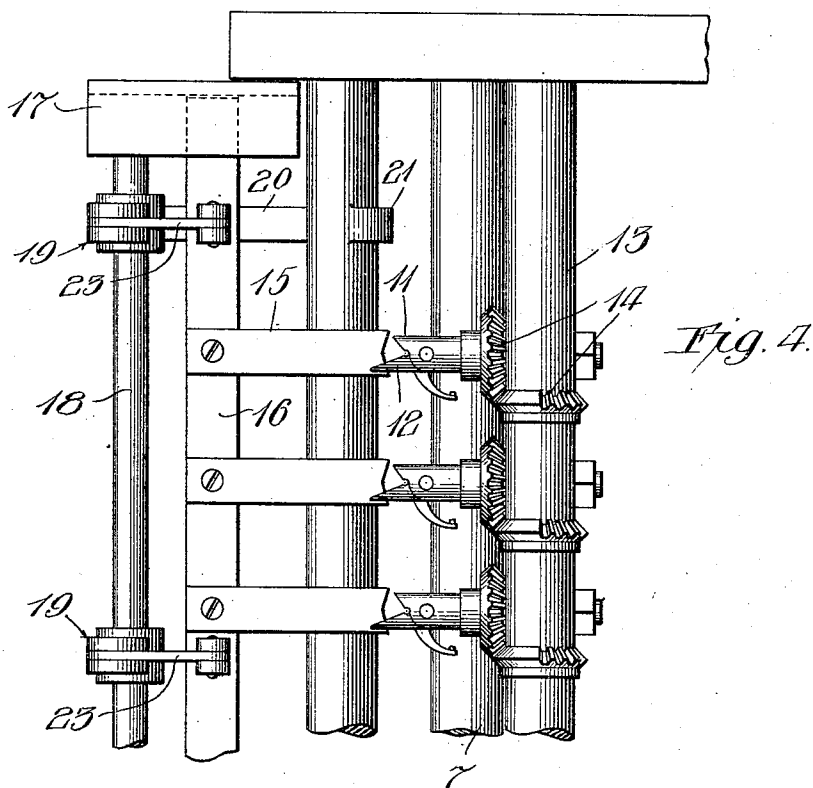


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APPLICATION FILED JULY 24, 1911.

3 SHEETS—SHEET 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

WALTER J. VAIL, OF CHICAGO, ILLINOIS, ASSIGNOR TO GRAND CROSSING TACK COMPANY, OF GRAND CROSSING, ILLINOIS, A CORPORATION OF ILLINOIS.

WIRE-FENCE MACHINE.

1,008,222.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed July 24, 1911. Serial No. 640,290.

To all whom it may concern:

Be it known that I, WALTER J. VAIL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wire-Fence Machines, of which the following is a specification.

The present invention relates to an attachment adapted to be applied to a machine for making square mesh fences from cut stay wires, and is more especially adapted or intended for use in conjunction with that type of machine employing a wrist motion carrier for conveying the stay wire from the cutter to the coiler, such type of machine being shown and described in Patent No. 923,778, issued to Joseph M. Denning on June 1, 1909.

The objects of the present invention are, to provide a vibrating finger which will act automatically to force the stay wire into firm engagement with the jaws of the mechanism which carries the stay wires from the cutter to the coilers; to so arrange the parts as to enable this forcing mechanism to be actuated by the mechanism operating the cutters; to provide means for gradually bringing the member into operative engagement with the stay wire and for effecting a quick release of it from such engagement, which movements are in conformity with the movements of the other operative parts of the machine, so that there is no interference between said parts and no resistance offered to the delivery of the stay wires; and to provide tension mechanism for automatically moving said forcing mechanism in one direction. And a further object of the invention is in the provision of companion rails or blocks which serve as a mounting for the shaft forming a portion of the forcing mechanism and also serve as a member for guiding the mechanism in its movements.

The invention further consists in the features of construction and in the combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a view partly in section of a portion of the wire fence machine shown and described in Patent No. 923,778 heretofore referred to, and showing the attachment of the present invention in operative position with respect to the wire

fence machine mechanism of said patent; 55 Fig. 2 is a detail plan view of the attachment of the present invention, showing it in the position it assumes when forcing the stay wires into engagement with the jaws of the delivery mechanism; Fig. 3 is an end view of the parts in the position shown in Fig. 2; Fig. 4 is a view similar to Fig. 2, showing the fingers of the attachment withdrawn from operative or forcing position; and Fig. 5 is an end view of the parts shown in Fig. 4. 65

As heretofore stated, the attachment of the present invention is more especially designed and adapted for use with a machine employing a delivery mechanism for the stay wires, which is provided with a jaw for carrying the stay wires from the cutter to the coiler. It sometimes happens in machines of this nature that after the stay wires have been fed into position to be cut they become more or less bowed, and hence the jaws of the delivery mechanism do not obtain a firm grip thereupon, thus failing to deliver the cut stay to the coiling mechanism and consequently making an imperfect fence. 75 80

It is the primary object of the appliance of the present invention to provide an auxiliary means which will force or crowd these cut stay wires into the grip of the jaws of the delivery mechanism, so that no matter what their configuration may be after the severing operation, they are always forced into position where the jaws of the delivery mechanism can obtain a firm grip thereupon, and hence a delivery of the stay wires at each operation of the machine is assured. 85 90

The wire fence mechanism to which the present appliance is shown as applied is fully disclosed in aforesaid Patent No. 923,778, and a detailed description is not, therefore, deemed necessary at this time. It might be briefly stated, however, that the fence mechanism comprises a coiler mechanism 6 driven from a suitable source of power, a cutter mechanism 7 for severing the stay wires, a clamping finger 8 for holding the stay wires into engagement with the coiler head of the coiler mechanism, link and rack mechanism 9 for actuating said finger, and a walking-beam 10 for moving the coiling mechanism and fingers upward in accordance with the upward movement of 105

the work. The principle of operation of said parts will be clearly understood by reference to said Letters Patent No. 923,778.

The device also comprises a series of delivery mechanism 11, each of which has, as fully described in the Letters Patent above referred to, a wrist motion movement, and which mechanism is used for conveying the severed stay wire from the cutters into proper position with respect to the coilers. These delivery mechanisms are provided with jaws 12 for clamping the cut stay wires, and said mechanisms are mounted upon an oscillating shaft 13, the wrist motion being imparted to them by means of a series of gears 14. It is understood that wherever a single set of mechanisms is referred to, a plurality of mechanisms may be employed which would be similar to the single set described.

All of the mechanisms above mentioned are described and claimed in the aforesaid Patent No. 923,778 and are not claimed by me as a portion of my present invention.

My invention resides in the auxiliary mechanism for forcing the stay wires into engagement with the jaws 12; and such mechanism comprises a series of fingers 15, a single finger being provided for each delivery mechanism, and coiler and cutter mechanisms. The fingers are mounted upon a plate or bar 16, which travels within guideways formed in blocks 17 positioned upon opposite sides of the machine.

As will be seen in Fig. 1, the attachment of the present invention lies just to the front of the cutter mechanism. Mounted within the blocks 17 is a shaft 18, which is provided upon each end with crank arms 19, only one arm being illustrated. These crank arms have one end 20 adapted to engage with a cam 21, which is mounted upon one of the shafts carrying the cutting mechanism. There is, of course, a cam for each crank arm, although only one cam is shown in the drawings. The other end 22 of the crank arm is connected by means of a link 23 to the plate 16; and secured to the crank arm is a tension member 24 secured in any suitable manner, which acts to automatically return the attachment to normal position. As will be noted, the cam 21 has its periphery gradually increasing in distance from the center of the shaft to which it is attached. This is to move the fingers 15 up to their acting position with a gradual movement. And it will be further noted that the cam terminates abruptly. This configuration is provided so that after the completion of the forcing action which moves the stay section into engagement with the jaws of the delivery mechanism, the fingers and bars will be suddenly drawn back and returned to normal position, so as to quickly move the forcing mechanism

out of a position where it would interfere with the deliverance of the stay wire.

The operation is as follows: Assuming the parts to be in the position where the end 20 of the crank arm 19 has just come into engagement with the surface of the cam 21, as the cutter mechanism is rotated, the lower end of the crank arm is gradually depressed by reason of the configuration of the periphery of the cam and its contact therewith, and this lowering of the end 20 of the crank arm throws the end 22 of the crank arm forward, moving the plate 16 and the fingers 15 forward through the medium of the link connection between the crank arm and the plate or bar 16. Such advancing movement continues until the parts reach the position shown in Fig. 3. In this position, the fingers 15 have been advanced to their fullest extent and have moved the stay wires into proper engagement with the jaws 12. Immediately after this operation has been performed, the end 20 leaves the cam surface and drops into the position shown in Fig. 5. This retracts the fingers 15 into the position shown in Fig. 5 and leaves the stay wire free to be delivered to the coiler. The arm 20 will travel against the periphery of the shaft to which the cam 21 is attached until it comes again into engagement with the cam surface. It will thus be seen that there will be a period during which the fingers 15 are entirely inactive. This, of course, is necessary in order to give the delivery mechanism time to perform its delivery operation and start back to normal position. Of course, before the parts have fully returned to normal position, the fingers will again start on their advancing operation, but the movements are so timed that there will be no interference between the parts so as to impede a proper progress of the stay wire or of the feeding operation of the stay wire. The tension member 24 also serves to maintain the acting end 20 in constant engagement with the periphery of the cam 21 and the periphery of the shaft.

I claim:

1. In a wire fence machine, the combination of means for feeding and cutting stay wires, coiler mechanism, mechanism for feeding said cut stays to the coiler mechanism, said latter mechanism including a jaw to receive said stays, vibrating means for forcing said stays into said jaw, and means operatively connected for actuating said forcing means in timed relation to the other mechanism, substantially as described.

2. In a wire fence machine, the combination of means for feeding and cutting stay wires, coiler mechanism, mechanism for feeding said cut stays to the coiler mechanism, said latter mechanism including a jaw to receive said stays, a slidable bar, a finger car-

ried by said bar, and means, operatively connected for vibrating said bar, whereby said finger engages the stay wire and forces it into engagement with said jaw, substantially as described.

5 3. In a wire fence machine, the combination of means for feeding and cutting stay wires, coiler mechanism, mechanism for feeding said cut stays to the coiler mechanism, said latter mechanism including a jaw to receive said stays, vibrating means for forcing said stays into said jaw, means operatively connected for actuating said forcing means in timed relation to the other mechanism, and tension mechanism for moving said forcing means in one direction, substantially as described.

10 4. In a wire fence machine, the combination of means for feeding and cutting stay wires, coiler mechanism, mechanism for feeding said cut stays to the coiler mechanism, said latter mechanism including a jaw to receive said stays, a slidable bar, a finger carried by said bar, means operatively connected for vibrating said bar, whereby said finger engages the stay wire and forces it into engagement with said jaw, and tension mechanism for moving said slidable bar in one direction, substantially as described.

15 5. In a wire fence machine, the combination of means for feeding and cutting stay wires, coiler mechanism, means for delivering said cut stays to the coiler mechanism, said latter means including a jaw to receive said stays, a cam operatively connected, a slidable bar, a finger carried by said bar, and

a connection between said cam and bar, whereby the movements of said cam vibrate said finger to force the stay wire into engagement with said jaw, substantially as described. 40

6. In a wire fence machine, the combination of means for feeding and cutting stay wires, coiler mechanism, means for delivering said cut stays to the coiler mechanism, said latter means including a jaw to receive said stays, a cam operatively connected, a slidable bar, a finger carried by said bar, a connection between said cam and bar, whereby the movements of said cam vibrate said finger to force the stay wire into engagement with said jaw, and tension mechanism for moving said bar in one direction, substantially as described. 50

7. In a wire fence machine, the combination of means for feeding and cutting the stay wires, coiler mechanism, mechanism for feeding said cut stays to the coiler mechanism, including a jaw to receive said stays, a slidable bar, a finger on said bar, a block in which said bar slides, a shaft mounted in said block, a crank arm on said shaft, a cam for actuating said crank arm, and a connection between said crank arm and bar, the movement of the cam actuating said crank arm to vibrate said bar and force the stay wire into engagement with said jaw, substantially as described. 55 60 65

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Witnesses:

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