No. 638,538. Patented Dec. 5, 1899.

G. W. WILLIAMS.

WIRE STAY MAKING DEVICE.

(Application filed June 29, 1899.)

(No Model.) 2 Sheets—Sheet 1.

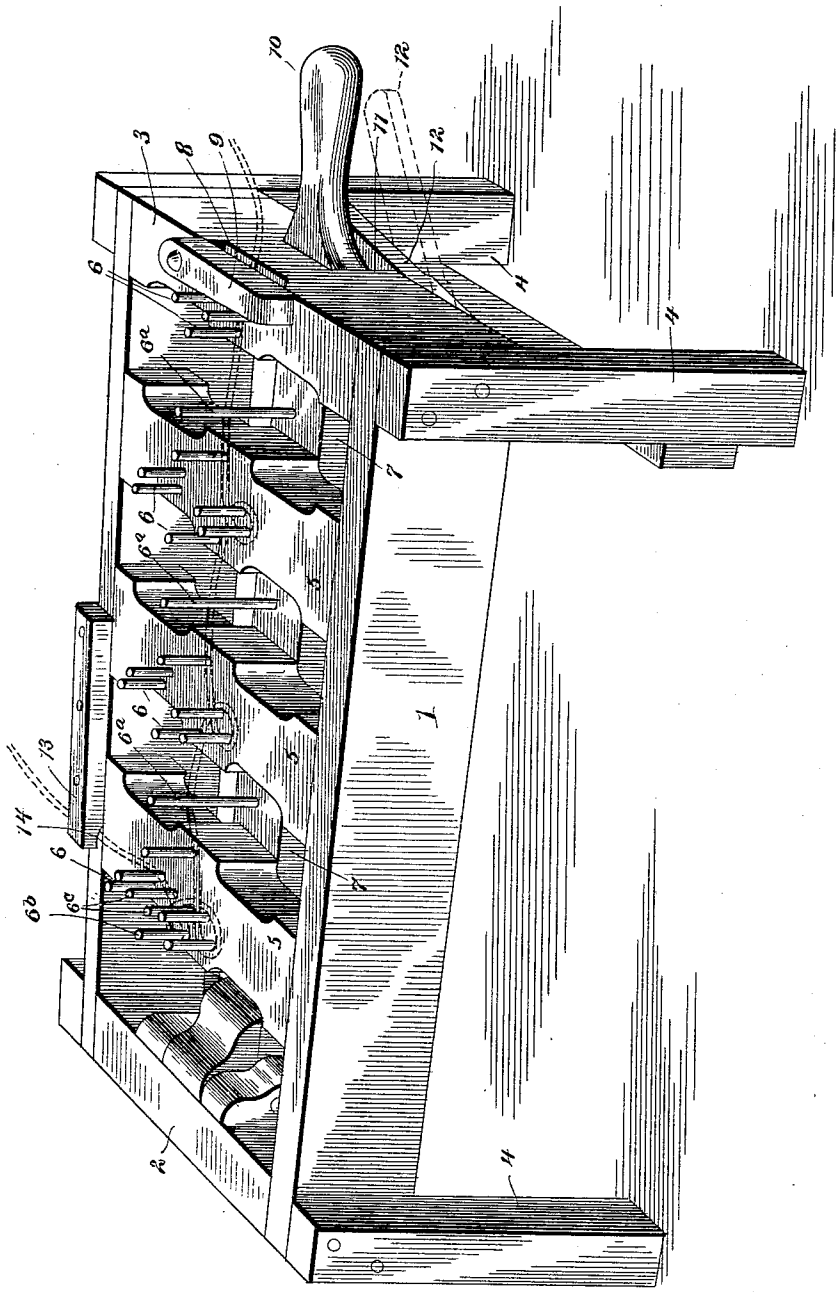


Fig. 1.

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Fig. 4.

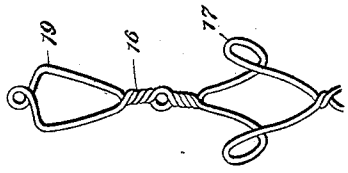


Fig. 3.

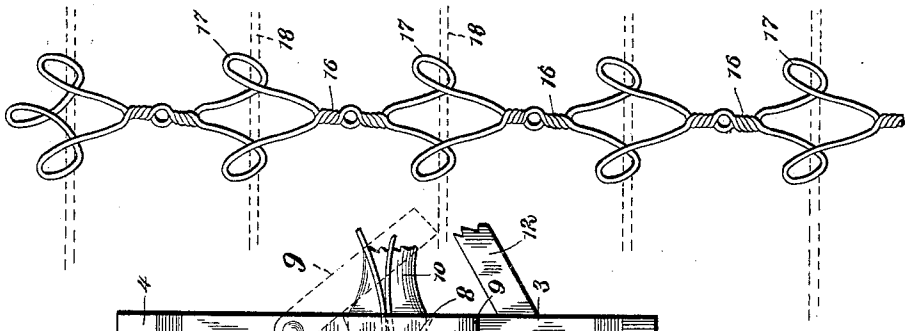


Fig. 2.

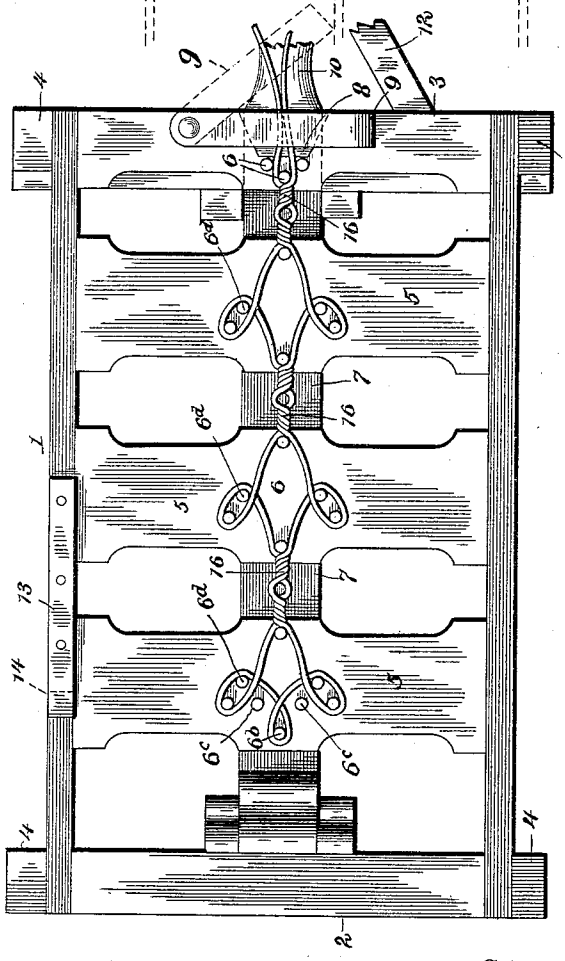
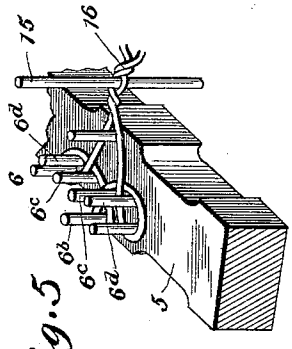


Fig. 5



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UNITED STATES PATENT OFFICE.

GEORGE W. WILLIAMS, OF HUMANSVILLE, MISSOURI.

WIRE-STAY-MAKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 638,538, dated December 5, 1899.

Application filed June 29, 1899. Serial No. 722,238. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. WILLIAMS, a citizen of the United States, residing at Humansville, in the county of Polk and State of Missouri, have invented a new and useful Wire-Stay-Making Machine, of which the following is a specification.

My invention relates to wire-stay-making machines, and has for its object to provide a simple and efficient construction and arrangement of parts whereby a wire stay may be crimped or formed preparatory to its application to the runners of a wire fence, said stay being of looped-wire construction and being provided at intervals corresponding with those between the runners of the proposed fence with means for engaging said runners.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims, it being understood that the improvement is susceptible of various changes in the form, proportion, size, and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a stay-bench constructed in accordance with my invention. Fig. 2 is a plan view of the same, showing the completed stay in place thereon. Figs. 3 and 4 are detail views of portions of stays constructed upon the improved bench. Fig. 5 is a detail view of a portion of the apparatus, showing a twisting-lever engaged with one of the intermediate eyes of the stay in the course of constructing the same.

Similar reference characters indicate corresponding parts in all the figures of the drawings.

The apparatus embodying my invention includes a bench having a frame consisting of side beams 1 and head and foot end beams 2 and 3, together with suitable supports or legs 4. Connecting the side beams are transverse rest-bars 5, each of which is provided with a plurality of fixed forming-pins or main-stay-forming elements 6, arranged in relative positions to suit the formation of the stay which is to be constructed thereon, and pivotally mounted at one end upon the head end bar 2 is a lever 7, carrying a plurality of movable forming-pins or auxiliary-stay-forming elements 6^a, which are located in the intervals between the transverse rest-bars 5; also, the foot end bar 3 carries pins 6 for forming the lower end of the stay, and near its outer side the upper surface of said foot end bar is slightly channeled or cut away to form a seat 8, spanned by a movable clamp or button 9, pivoted to the end bar and adapted to be turned to one side to allow the insertion or removal of the extremities of the blank from which the stay is formed; also, the free end of the lever or movable pin-support 7 is constructed to form a grip 10, and when the lever is elevated it fits in a notch 11 in the lower edge of the foot end bar, where it is adapted to be held by a lock 12, consisting of a pivotal button; also, at an intermediate point upon one of the side bars, preferably that which is remote from the operator when the machine is in use, is a wire clamp or holder 13, which in the construction illustrated consists of a block or strip having one end reduced to form a wire seat 14.

In operation a wire-blank of the proper length for forming a stay is engaged at its center with the head-pin 6^b, and after engaging one arm of the blank or one side of the loop thereof in the clamp 13, as indicated in dotted lines in Fig. 1, the other arm or side thereof is formed around the pins 6 and 6^a, as indicated in dotted lines in said figure, the extremity thereof being engaged by the clamp 9. Subsequently the other arm or side of the blank is disengaged from the clamp 13 and is correspondingly formed around the pins, and its extremity in turn is engaged with the clamp 9. Having reached this point in the formation of the stay, the movable pin-support 7 is released by turning the button 12 to the dotted position indicated in Fig. 1, and the said support is lowered, as indicated in Fig. 5, to withdraw the movable pins 6^a from the central eyes of the wire-blank, and a twisting-lever 15 is engaged with said eyes and is turned in a plane between two adjacent transverse rests 5 to twist the adjacent portions of the sides or arms of the blanks between the adjacent fixed pins 6 to provide the oppositely-twisted portions 16, as shown in Fig. 2. Displacement of the sides or arms of the stay-

blank during this twisting operation, which is performed for each eye of the blank, is prevented by the frictional contact of the stay-wire with the pins and also, terminally, by the engagement of the clamp 9 with the extremities of the blank. Having completed the twisting operation, the stay may be disengaged by turning the clamp 9 to the dotted position shown in Fig. 2.

From the above description it will be seen that the construction is simple and that by varying the relative positions of the fixed forming-pins stays of different configurations may be formed thereon. For instance, in the drawings I have illustrated auxiliary forming-pins 6^c, arranged upon that transverse rest-bar which is adjacent to the head end bar 2 of the frame, and by employing these pins instead of the adjacent side pins, which are arranged upon obliquely-disposed lines, a stay having a head end, as shown in Fig. 4, may be formed. These lateral pins 6^d, Fig. 2, form side loops 17, which are adapted in practice to be coiled around the fence-stays 18 (indicated in dotted lines in Fig. 3) to fasten the stay to the runners; but when a stay having a smooth upper end (or one wherein there is no upward projection beyond the uppermost runner of the fence) is to be constructed the auxiliary pins 6^c are employed to provide the configuration shown in Fig. 4 at 19, this portion 19 being adapted to be coiled around the uppermost runner to fasten the top of the stay. It will be understood, however, that I do not desire to be limited to any specific relative arrangement of the forming-pins, as they may be varied to provide for the construction of stays which differ widely in configuration without departing from the spirit of my invention.

An important feature of the construction resides in the fact that after the sides or arms of the blank have been engaged with the forming-pin, the subsequent twisting of the intermediate portions, which primarily are engaged with the movable forming-pins 6^a, draws the portions of the blank between said twists with a tension which insures the formation of regular geometrical figures, and the parts of the stay retain these positions after removal from the bench.

Having described my invention, what I claim is—

1. A stay-forming bench having fixed forming-pins around which a stay-wire may be formed, and movable forming-pins arranged at intervals, and also adapted for engagement by the stay-wire, and capable of withdrawal from such engagement to release the stay, substantially as specified.

2. A stay-forming bench having spaced rests and fixed forming-pins carried thereby, and intermediate forming-pins movably arranged in the intervals between said rest-bars, substantially as specified.

3. A stay-forming bench having spaced rest-bars carrying stationary forming-pins, and a movable support provided with movable forming-pins arranged in the intervals between said rest-bars, substantially as specified.

4. A stay-forming bench having spaced pin-carrying rest-bars, a pivotal support mounted for swinging movement toward and from the plane of the rest-bars, and carrying movable forming-pins for arrangement in the intervals between said rest-bars, and means for securing said movable pin-support in its operative position, substantially as specified.

5. A stay-forming bench having a frame, transverse spaced rest-bars, stationary forming-pins carried by said bars, a lever pivotally mounted at one end to the frame, movable forming-pins carried by said lever and arranged in the intervals between said rest-bars, and a lock for securing the lever in its operative position, substantially as specified.

6. A stay-forming bench having a frame, transverse spaced rest-bars, stationary forming-pins carried by said rest-bars, a movable pin-support mounted for adjustment toward and from the plane of the rest-bars and provided with forming-pins for arrangement in the intervals between the rest-bars, means for holding said movable pin-support in its operative position, and a wire-clamp carried by the frame for holding one side of the blank during the engagement of the other side with the forming-pins, substantially as specified.

7. A stay-forming bench having a frame, transverse spaced pin-supporting rest-bars, a movable pin-support having forming-pins arranged in the intervals between said rest-bars, means for holding said pin-support in its operative position, and a terminal blank-engaging clamp mounted upon the frame adjacent to one end for engaging the extremities of the stay-blank, substantially as specified.

8. A stay-forming bench having fixed main-stay-forming elements, around which a stay-wire may be formed, and movable auxiliary-stay-forming elements also adapted for engagement by the stay-wire, and capable of withdrawal from operative relation with the main-stay-forming elements to release a completed stay, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE W. WILLIAMS.

Witnesses:
J. D. ELLIOT,
J. B. MARTIN.