

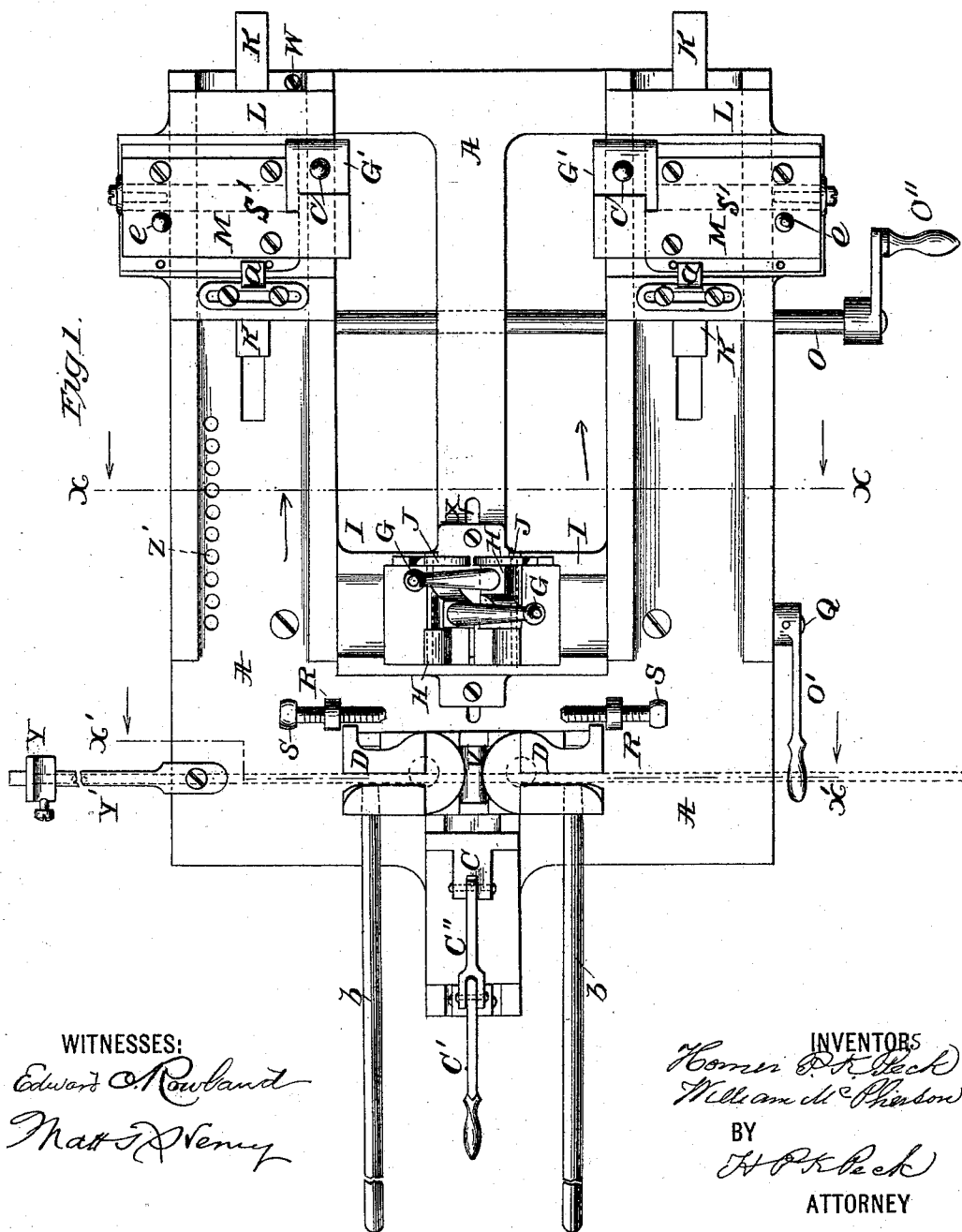
(No Model.)

4 Sheets—Sheet 1.

H. P. K. PECK & W. McPHERSON.
MACHINE FOR MAKING METAL TIMBER HANGERS.

No. 498,960.

Patented June 6, 1893.



(No Model.)

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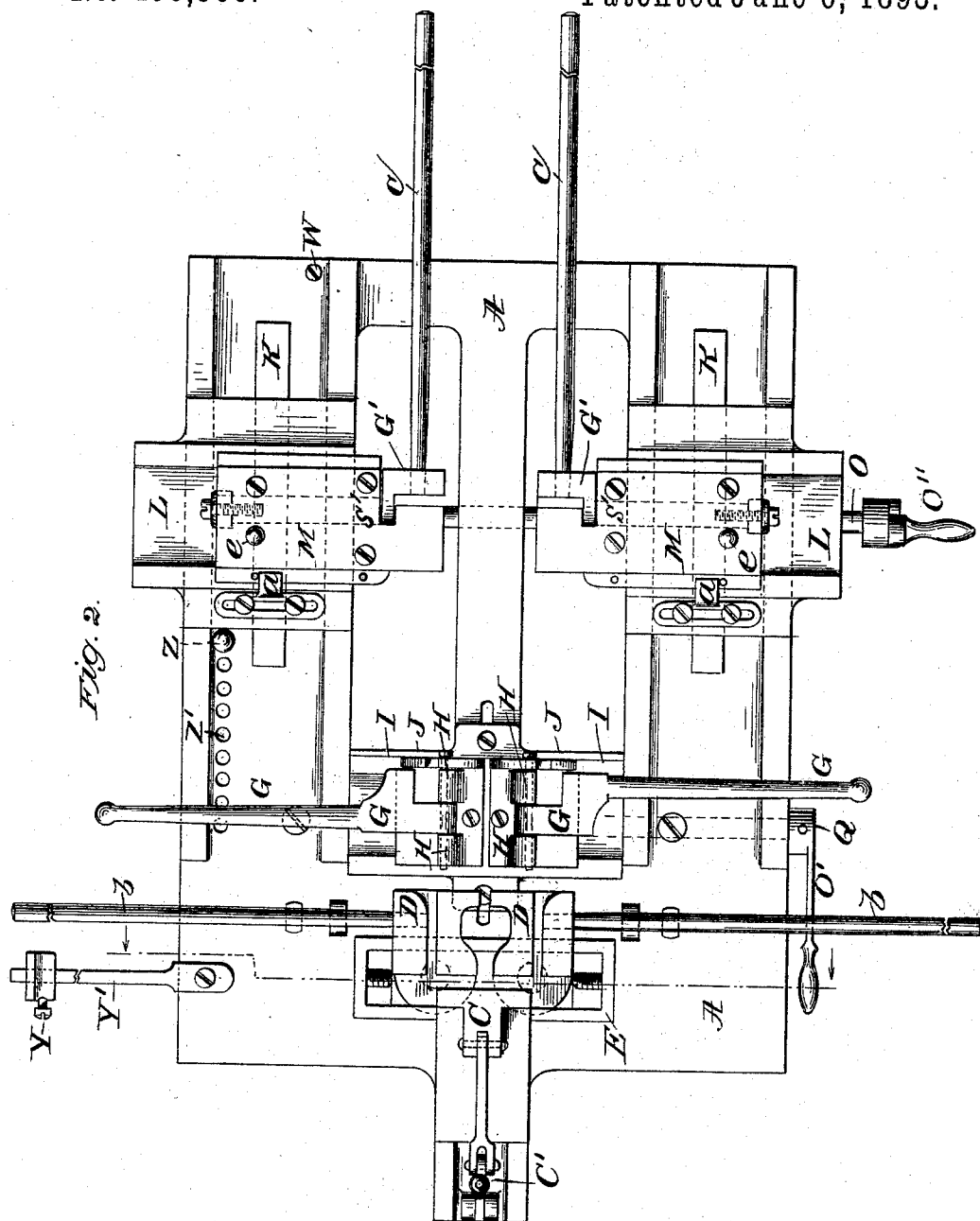


Fig. 2.

WITNESSES:

Edward Rowland.
Thos Henry

INVENTORS

Horner P. K. Peck
William McPherson

BY

H. P. K. Peck

ATTORNEY

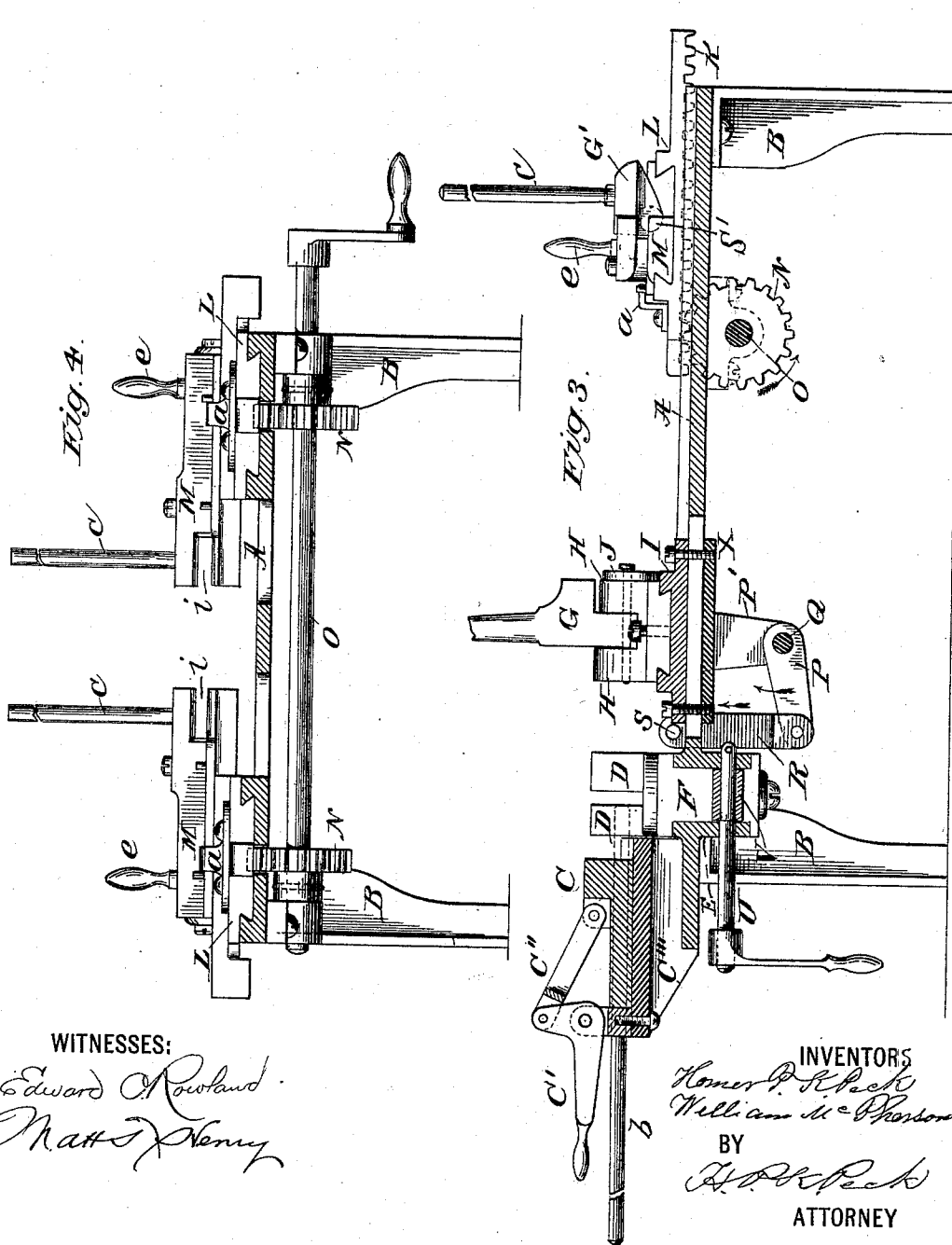
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WITNESSES:

Edward Rowland
Mathew Henry

INVENTORS

Homer P. K. Peck
William McPherson

BY

H. P. K. Peck

ATTORNEY

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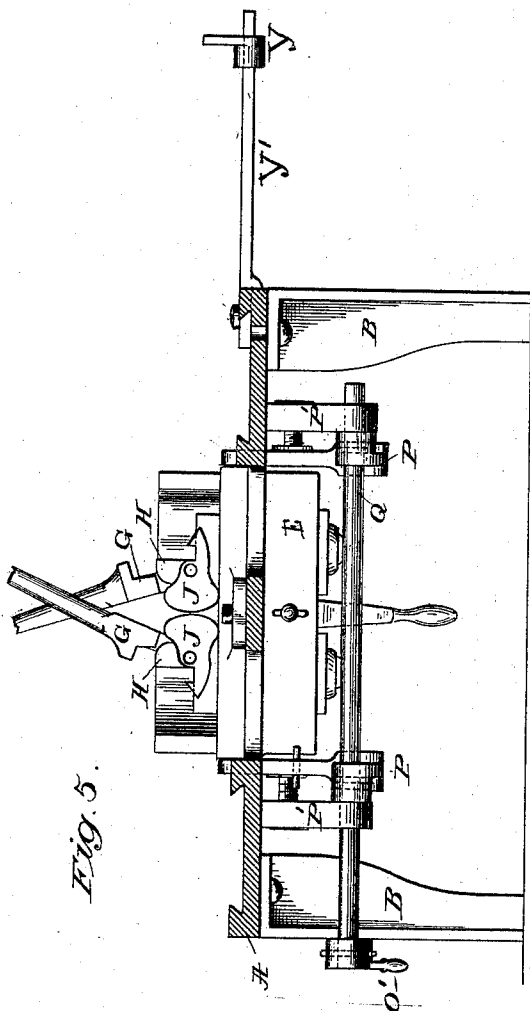


Fig. 5.

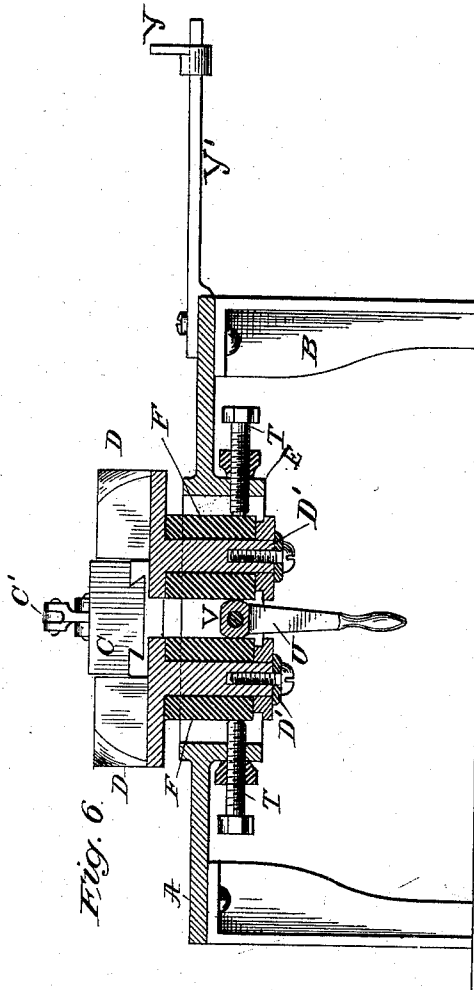
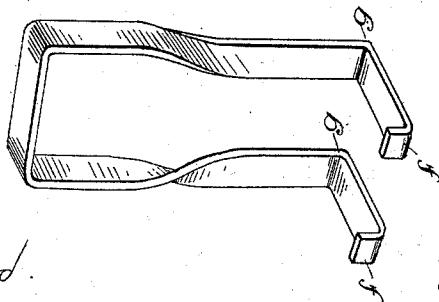


Fig. 6.

Fig. 7.



WITNESSES:

Edward Rowland.
Mathew J. Perry.

INVENTORS
Honor P. K. Peck
William McPherson

BY
H. P. K. Peck
ATTORNEY

UNITED STATES PATENT OFFICE.

HOMER P. K. PECK AND WILLIAM MCPHERSON, OF NEW YORK, N. Y.,
ASSIGNORS TO WILLIAM H. JACKSON & CO.

MACHINE FOR MAKING METAL TIMBER-HANGERS.

SPECIFICATION forming part of Letters Patent No. 498,960, dated June 6, 1893.

Application filed June 14, 1892. Serial No. 436,729. (No model.)

To all whom it may concern:

Be it known that we, HOMER P. K. PECK and WILLIAM MCPHERSON, citizens of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Machines for Making Metal Timber-Hangers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 represents a plan or top view of the machine having its parts adjusted ready for the first operation, and exhibits in dotted lines a blank or bar of iron to be formed into a timber hanger inserted in place. Fig. 2 is a similar view showing the parts in the positions they will occupy after the first and second bending, and the twisting of the blank has been effected. Fig. 3 represents a longitudinal vertical central section of the machine as shown in Fig. 1. Fig. 4 represents a transverse vertical section taken at line X, X, of Fig. 1, and exhibits the shaft and gearing to actuate the carriages. Fig. 5 is a transverse vertical section taken also at line X, X, of Fig. 1, and exhibits the twisting mechanism and stop-shaft which actuates the stop mechanism. Fig. 6, represents a transverse vertical section taken at line X' of Fig. 1, and shows the first pair of bending jaws and their adjusting mechanism. Fig. 7 represents a perspective view of a timber hanger.

Our invention contains new devices and combinations of mechanism which confer the greatest utility, being easily operated by hand without the aid of skilled labor, and embraces improvements on the machine for which Letters Patent were granted to said William McPherson, dated September 28, 1886, No. 349,946, in which slotted twisting rollers or dies were employed, and a yoke or clamp was described to hold the blank after it was bent into staple-shape, during the twisting operation. Instead of the slotted twisting rollers we employ peculiarly formed hinged levers operated by a downward movement to effect the twisting of the hanger; and instead of a removable yoke or clamp to hold the bar or blank during the twisting operation, we employ oscillating radial hinged arms connected to

slides carrying set screws, attached to a rock-shaft arranged below the table, and actuated by a hand lever or treadle.

The principal operating parts of our machine are made in pairs and so constructed and combined in the machine that they may be readily adjusted to and from each other as occasion may require for making timber hangers of different sizes or dimensions. In this machine a forming block or die against which the blank is first bent into staple-shape is dispensed with, and oscillating jaws eccentrically journaled serve this purpose, as well as to make the first bends of the blank or bar.

In the accompanying drawings "A" denotes the bed plate or table; "B" the legs; "C" the blank holder; "D" the first pair of bending jaws; "F" the adjustable boxes in which jaws "D" are journaled; "E" the casing below the table in which the boxes "F" are adjusted by screws "T;" "G" twisting levers; "G'" second pair of bending jaws; "H" hinge lugs and abutments of twisting levers; "I" guideway for adjusting twisting levers and their hinge lugs and abutments; "J" self-acting weighted catches to hold the bent blank against the abutments "H;" "K" racks attached to the under side of the longitudinal carriages "L;" "M" transverse carriages carrying second pair of bending jaws "G'" having their guideways on carriages "L;" "N" gear wheels on crank shaft "O," for actuating carriages "L," and "M," through racks "K;" "P," arms attached to rock-shaft "Q" and connected with slides or links "R" for actuating stop-screws "S" working in slides "R;" "P'" hangers supporting rock-shaft "Q;" "U" shaft and handle for actuating cam-block "V," to release the finished timber hanger from the jaws "D;" "X" stay-bar for adjusting by screws working in slot the twisting levers and their hinge and abutments lengthwise of the machine; "Y" gage on gage bar Y'; "Z" removable pin to be set in holes Z' to limit movement of carriages "L;" "a" adjustable stops for limiting movement of transverse carriages "M," which carry the second pair of bending jaws and their levers "c;" "e" handles for sliding carriages "M;" "W" stud to stop the outward movement of carriages "L." The centers of

the journals D' coincide with the point or place of the corners or angles formed by the bend made by the first pair of bending jaws "D," which arrangement avoids stretching the bar or blank.

The machine having been adjusted as shown in Fig. 1, and the blank or bar of heated iron of the desired thickness and width placed in the slots in the jaws "D," as shown in dotted lines in said figure, the lever C' of holder C will be thrust forward to support the blank and prevent it from becoming curved while bending; the levers "b" will then be moved around one-fourth of a circle bending the blank to the staple-shape and forcing its legs or branches against the hinge lugs or abutments "H," where it will be caught and held by the weighted catches "J."

Before the twisting operation the rock-shaft Q, will be actuated by its handle O' which will thrust the slides or links "R" up with their set screws, and the latter will come in close proximity to the jaws "D," and serve to hold them and the bent blank and stop them while the twisting is being effected. The levers "G" formed with curved faces and a ledge will then be pulled downward, the ledges serving to prevent the bar or its branches from rising upward during the twisting operation, which the levers "G" perform in their downward movement of one-fourth of a circle; this latter movement will depress the catches "J" and release their hold on the bar and the extremities of the staple-shaped and twisted bar will lie flatwise, and the rock-shaft will then be actuated by depressing its handle O' which will cause the stop-screws to descend to the table below the lower plane of the jaws "D," so that when they are returned to their first position, as in Fig. 1, they will not come in contact with said screws or the slides "R" in which they are inserted adjustably.

The next step of the operation will be the movement of the carriages "M" toward each other by means of handles "e" to the extent limited by adjustable stops "a," which movement will carry jaws G' into line with the ends of the bent and twisted bar of metal, so that by the movement of the carriages through the action of shaft O, racks K, and gear wheels N, the ends of the bar will be received between the hinged and fixed second bending jaws and the position of the stop-pin "Z" in one of the holes Z', will stop the progress of the carriages "L" and "M" at the proper point to permit the action of jaws G', to form the terminal bends at the ends of the bar as shown at "f," in Fig. 7, and when this bend is made by forcing the levers "b" down, they will be directly raised up with the movable jaws to which they are connected, and then the stop-pin "Z" will be removed and inserted in another of the holes Z' at a proper point to allow the carriages to travel a distance equal to the distance between the angles at "f" (Fig. 7) and those at "g" of the same figure;

and when the carriages arrive at the last mentioned limit the movable jaws G' will be again depressed and make the third bends at "g," and after raising jaws G' again, carriages "M" will be drawn outwardly by their handles "e," out of the way of the finished timber hanger, and the twisting levers "G," having been also raised to their vertical positions, the blank-holder "C" will be drawn back by its lever C' when the finished product may be raised and removed from the machine without hindrance. If during the time of forming the timber hanger it has contracted in cooling the cam-block V between the bending jaws "D" may be turned by lever "U," which will loosen the article so as to permit its easy withdrawal from the machine. The faces of the twisting levers are curved to prevent undue friction on the bar, and project laterally and are provided with ledges to assure their proper effective hold on the iron bar when forming the quarter twist of it. Similar curves are formed on the outer half of each bending jaw "D" for the purpose of preventing undue strain of the blank at the place where the bend is made.

The mechanism described for adjusting the carriages, and the pair of bending jaws "D," and also the twisting mechanism for each twisting lever, toward and from each other to a uniform extent enables the machine to be used for making timber hangers of different dimensions without substituting several sets of parts to perform the functions. Provision is also made to adjust the twisting mechanism by means of the longitudinal slot in the table, and the holding-bar "X" and its screws, so that the twist given to the timber hanger may be at any desired distance from the first bends made by the jaws "D." It should be observed that the hinged parts of the second pair of bending jaws G', have their journals or hinge pivots in suitable boxing extending through the carriages "M" indicated in dotted lines S' in Figs. 1 and 2 and in sectional Fig. 3, and that the center of these journals coincide with the points at which bends "f" and "g" are formed. Also that one of each pair of these jaws G' is fixed and is a part of their respective carriages "M." It will be apparent that when the bending jaws "D" are adjusted at a greater distance from each other, as when timber hangers of larger dimensions are to be made, the cam-block "V" may be removed and another of larger size may be substituted.

The adjustable stops "a" enable the extent of the movement of carriages "M," which carry jaws G', to be changed to correspond with adjustments of jaws "D," and twisting levers "G," for making timber hangers of different sizes and proportions.

The crank O'', for operating the carriages, and the lever O' for moving screw slides "R," are arranged at the front side of the machine and they act through their connecting mechanism to operate respectively the carriages

"L" and "M" and the stop-slides "R" and their screws "S" to a like degree at each side of the table, and one attendant is thereby enabled to perform this work with facility.

5 To retain the movable parts of jaws "G'" in their position when raised to the place as shown in Fig. 1, the levers "e" may be bent inwardly and terminated with iron balls, which will counterbalance their weight and
10 tendency to turn downward when not forced down, in forming bends as described and for a like purpose of retaining the lever O', and preventing its gravity from depressing the slides "R" and their set screws "S" before
15 the attendant forces it to drop the screws out of contact with jaws "D" (which they hold while the bar is being twisted), a spring-brake or friction-pad may be used to act against the rock-shaft "Q" to counteract the gravity of
20 said lever, which otherwise might carry down the stop screws "S." After the blank or bar has been bent into staple or "U" shape, and its legs have been twisted one quarter of a circle by levers "G," its ends lying flatwise will
25 be in line respectively with, and be received through, the open spaces "i" between the jaws "G'" in position for the second bends at "f," and after the movable jaws "G'" are again raised up and the carriages have been
30 moved the proper distance inwardly, the legs still remaining between jaws G', the movable or hinged jaws, (parts thereof,) will be again forced down by their levers and will form the third bends "g" as heretofore generally explained.

35 The movable jaws of each of the second pair of bending jaws are journaled in boxes extending laterally through carriages "M" and move on the arc of a circle around centers coinciding with the place of the angles
40 formed by them in bending the timber hanger branches to form the terminal or second bends and the final bends at "f" and "g," Fig. 7.

45 Having fully described our invention, we claim and desire to secure by Letters Patent—

1. The combination in a timber hanger machine provided with downwardly acting twisting levers, of self acting weighted catches to
50 hold the blank for the action of said levers, and hinge lugs "H" to serve as abutments, as set forth.

2. In a timber hanger machine, a guide-way and screws for adjusting the twisting levers, abutments "H," and catches "J," toward and
55 from each other, in combination with the first pair of adjustable bending jaws "D," and the

second pair of bending jaws G', also adjustable by means of their carriages "M;" for varying the dimensions of timber hangers to
60 be made as specified.

3. In a timber hanger machine, the bending jaws "D" twisting levers "G," and bending jaws G', in combination with the blank holder "C," carriages "L" and "M," and the shafts
65 "O" and "Q," and their connections respectively for operating the carriages and the stop-screws "S," as set forth.

4. In a machine for forming timber hangers, the combination with a table and blank
70 holder, of the eccentrically pivoted slotted bending jaws D D and their operating levers, substantially as described.

5. In a machine for forming timber hangers, the combination of the holder C having
75 lever C', the slotted and eccentrically pivoted bending jaws D D having levers b b, the abutments H H, and the twisting levers G G hinged in said abutments, substantially as described.

6. In a machine for forming timber hang-
80 ers, the combination of the movable holder C, the slotted and eccentrically pivoted bending jaws D D, the abutments H H, the twisting levers G G, and the rock shaft O provided with slides R R carrying set screws to serve
85 as stops for the bending jaws while the twisting levers are operated, substantially as described.

7. In a machine for forming timber hangers, the combination of the movable holder
90 C, the first bending jaws D D, the abutments H H, the twisting levers G G, the carriages L L and M M, and the second bending jaws G' G' adjustable through said carriages, substantially as described.

8. In a machine for forming timber hang-
95 ers, the combination of the movable holder C, the slotted and eccentrically pivoted bending jaws D D, and the loosening cam block V located between said jaws and provided with
100 a lever U, substantially as described.

9. In a machine for forming timber hangers, the combination of the holder C, the slot-
ted eccentrically pivoted bending jaws D D, the twisting levers G G having projecting lips
105 or ledges, and the abutments H H in which said levers are pivoted, substantially as described.

June 13, 1892.

HOMER P. K. PECK.
WILLIAM MCPHERSON.

Witnesses:

HERBERT W. HEYER,
MATT T. HENRY.