(No Model.) 2 Sheets—Sheet 1.

H. U. PALMER.

HOOP MAKING MACHINE.

No. 546,052. Patented Sept. 10, 1895.

Fig. 2.

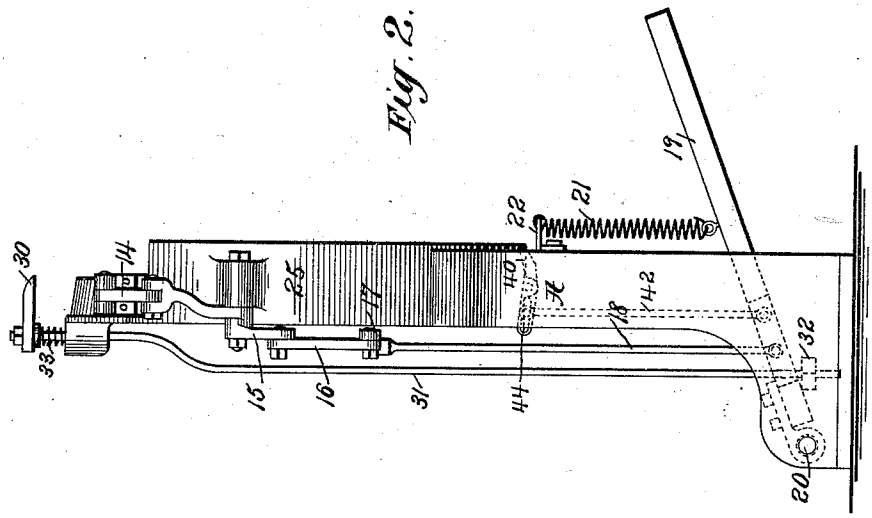


Fig. 3.

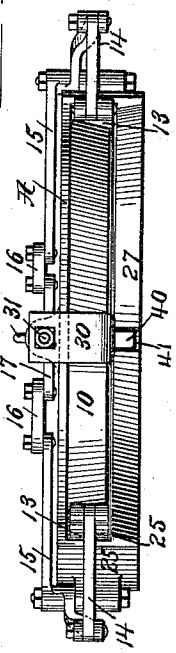
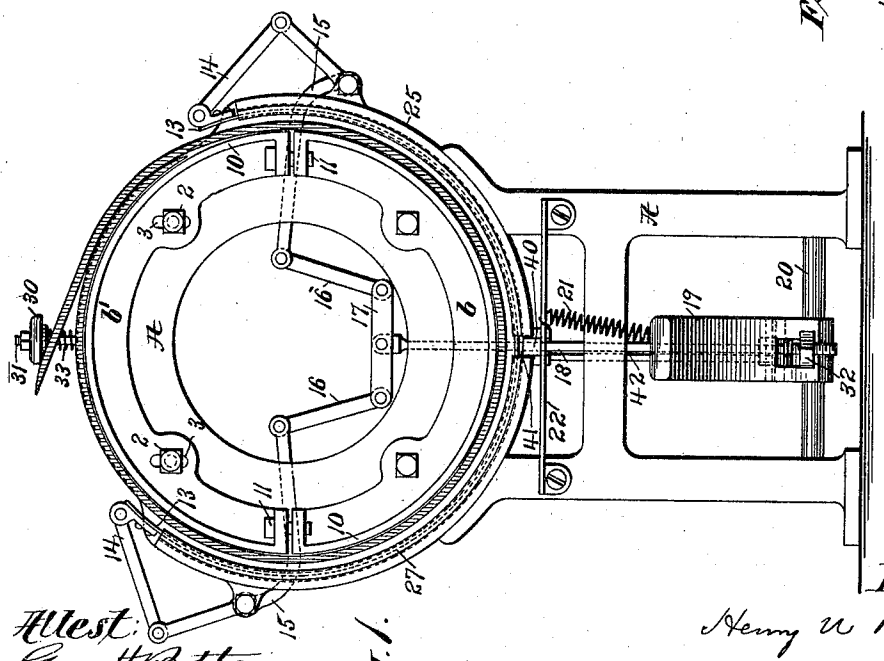


Fig. 1.



Witnesses:
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Arthur L. Kent

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Attys

(No Model.) 2 Sheets—Sheet 2.

H. U. PALMER.

HOOP MAKING MACHINE.

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Fig. 5.

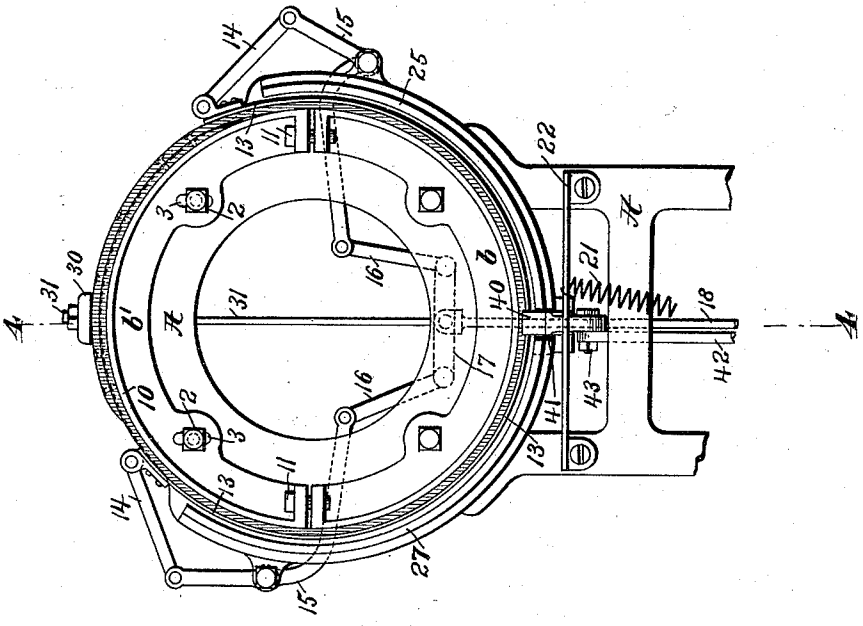
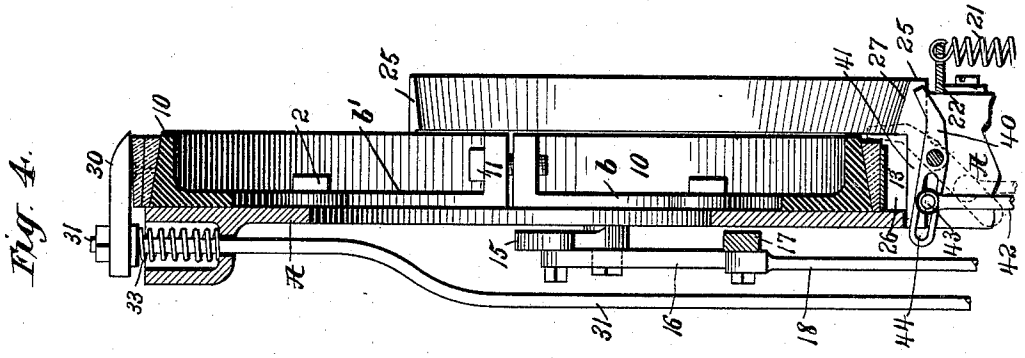


Fig. 4.



Attest:
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Inventor:
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UNITED STATES PATENT OFFICE.

HENRY U. PALMER, OF BROOKLYN, NEW YORK.

HOOP-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 546,052, dated September 10, 1895.

Application filed June 29, 1894. Serial No. 516,059. (No model.)

To all whom it may concern:

Be it known that I, HENRY U. PALMER, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Hoop-Making Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to machines for making hoops by bending the strip into form and securing the ends together; and the invention further relates to machines of the class named which are especially adapted for making "patent hoops"—that is, hoops which are made from a strip which is thicker in cross-section at one edge than at the other, to form a hoop having an inclined inner face.

The object of the invention is to produce an improved machine of the class named which shall facilitate the bending of the hoops, form them very exactly to the required size, and hold them when so bent while the overlapping ends are being fastened together; and to this end the invention consists in various constructions, arrangements and combinations of parts, as will be hereinafter fully described, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, which show a machine embodying the various features of the invention in preferred forms, in which—

Figure 1 is a front elevation of the machine. Fig. 2 is a side elevation. Fig. 3 is a plan of the upper part of the machine. Fig. 4 is a section on the line 4 of Fig. 5. Fig. 5 is a front elevation showing the position of the moving parts after the treadle has been depressed.

Referring to the drawings, secured to the main frame A is a barrel or form 10, the periphery of which where the machine is to be used for patent hoops is beveled to conform to the bevel-face of the hoops, as shown. The form is preferably made adjustable as by being made in two parts, as shown, the two parts being adjustably fastened together by screws 11, and the lower half *b* being bolted to the frame A and the upper half *b'* being secured to the frame by bolts 2, which pass through slots 3, thus allowing of an adjustment of the half *b'* toward and away from the half *b* to vary the size of the form.

Extending part way around the form 10 is a strap 13, which is preferably a sheet-metal band. To each end of the strap 13 is pivoted a link 14, the other end of which is pivoted to one arm of a lever 15, the other ends of said levers being connected by links 16 to a cross-piece 17, carried by the actuating-rod 18, the lower end of which rod is pivoted to an operating-lever, which is preferably a treadle 19, hung on a shaft 20 at the rear of the machine. The parts are held in normal position by a spring which is preferably a spiral spring 21, secured to the rod 18 and to a cross-piece 22 on the frame A, as shown. By the above construction, if the treadle 19 be depressed the strap 13 will be drawn tightly about the form 10, and when the treadle is released the parts will be returned to their normal positions by the spring 21, the strap 13 being moved away from the form 10 to the position shown in Fig. 1.

For convenience in placing the hoops in position around the form 10 an annular flange 25 is provided, extending forward of and part way around the form 10 to form a guide for the hoops, and the flange is preferably recessed, as shown at 26, to provide a pocket for the strap 13 when said strap is in its normal position, and preferably has a beveled inner face 27.

To clamp the overlapped ends of the hoop against the form 10, I provide a clamp 30, carried by a rod 31, the lower end of which rod passes through the treadle 19 and is screw-threaded to receive a nut 32. A spring, preferably a spiral spring 33, is provided which tends to draw the clamp and rod upward. By this construction, when the treadle 19 is depressed it will engage the nut 32 on the rod 31, and the clamp 30 will be thereby carried down against the overlapped ends of the hoop, securely clamping them together against the form 10, and when the treadle 19 is released the spring 33 will carry the clamp away from the frame 10. The movement of the clamp is regulated by adjusting the nut 32 on the rod 31.

To insure the hoops being formed accurately to the required size, it is necessary that

they be placed in proper position around the form—that is, close against the frame A in the construction shown. To aid in thus properly placing the hoops in position without the exercise of undue care on the part of the operator, I provide a lever 40, which as the treadle is depressed and the clamping-strap 13 is tightened bears against the outer edge of the hoop, which has been placed in position around the form, and forces it into its proper position against the frame A. This lever 40 may be pivoted to swing in a slot 41 in the guide-flange 25, and its rear arm is connected by a rod 42 to the treadle 19, so that as the treadle is depressed the lever 40 will be thrown. The rod 42 is preferably connected to a stud 43 adjustable in a slot 44 in the rear arm of the lever, to provide for regulating the throw of the lever. In practice, the parts being in the position shown in Fig. 1 and the form being adjusted to the desired size, a hoop is inserted around the form 10 inside of the band 13, the ends being overlapped and the overlapping end being passed under the clamping-piece 30, as shown in Fig. 1. The treadle 19 being then depressed, the hoop will be forced back into position against the frame A by the lever 40 and the outer arms of the lever 15 will be moved upward and inward, thereby, through the links 14, drawing on the ends of the strap 13, by which the hoop is pressed tightly against the form 10, as shown in Fig. 5, and at the same time the clamp 30 is carried downward and the nut 32, being properly adjusted clamps the overlapped ends of the hoop tightly against the form 10 just as the strap 13 has drawn the hoop tightly around the form. The overlapped ends are then tacked together, after which, the treadle being released, the strap 13, clamp 30, and lever 40 will be returned to their normal positions by the spring 21, thereby releasing the hoop, which may then be readily drawn off from the form, ready to be used. It will thus be seen that the hoops may be formed quickly and conveniently and very exactly to the desired size.

It will be understood that the invention may be used in making hoops other than the so-called "patent hoops," and when so used the periphery of the form will preferably not be beveled.

Various changes in the construction and arrangement of the parts as shown will suggest themselves to those skilled in the art, and such modifications are to be considered within the invention as claimed.

By the term "clamp" as used in the claims is meant a member adapted to press the overlapping ends of the hoop together against the form between the ends of the strap and to hold them in position while they are being secured together by means other than said member.

What is claimed is—

1. The combination in a hoop making machine, of a form, a clamping strap extending part way around the form, a clamp constructed and arranged to press the overlapping ends of the hoop together against the form between the ends of the clamping strap and to hold them in position while they are being secured together, and an operating lever and connections for actuating both said clamping strap and said clamp, substantially as described.

2. The combination with a form, of a clamping strap, and a guide flange exterior to and extending forward of the form, substantially as described.

3. The combination with a form, of a clamping strap, and a guide flange exterior to and extending forward of the form and recessed to form a pocket for said strap when it is in its normal position, substantially as described.

4. The combination with a form, of a clamping strap extending part way around the form, a guide flange exterior to and extending forward of the form, a clamp adapted to act in connection with the form between the ends of the strap, and means for tightening said strap and for actuating said clamp, substantially as described.

5. The combination with an adjustable form, of a clamping strap extending part way around the form, a guide flange exterior to and extending forward of the form, a clamp adapted to act in connection with the form between the ends of the strap, and means for tightening said strap and for actuating said clamp, substantially as described.

6. The combination with a form having a beveled periphery, of a clamping strap extending part way around the form, a clamp adapted to act in connection with the form between the ends of the clamping strap, a lever for forcing the hoops into proper position, and an operating lever and connections for actuating said clamping strap, clamp, and lever for forcing the hoops into position, substantially as described.

7. The combination with a form, of a clamping strap extending part way around the form, levers 15 connected to the ends of the clamping strap by links 14, a clamp adapted to act in connection with the form between the ends of the clamping strap, an operating lever, and connections between the operating lever and said levers 15 and said clamp, substantially as described.

8. The combination with a form, of a strap 13, levers 15 connected to the ends of the strap 13 by links 14, and means for throwing said levers, substantially as described.

9. The combination with a form, of a strap 13, levers 15 connected to the ends of the strap by links 14, treadle 19, connecting rod 18, links connecting said levers with said rod, and means for returning the parts to normal position, substantially as described.

10. The combination with a form, of a strap 13, levers 15 connected to the ends of the strap 13, rod 18 by which said levers are thrown, clamp 30 carried by a rod 31, treadle 19 by which said rods 18 and 31 are actuated,

and means for returning said parts to normal position, substantially as described.

11. The combination with a form, of a strap 13, levers 15 connected to the ends of the strap by links 14, clamp 30, lever 40, treadle 19 by which the levers 15, clamp 30, and lever 40 are actuated, and means for returning said parts to normal position, substantially as described.

12. The combination with a form having a beveled periphery, of a strap 13, and lever 40 for forcing the hoops into proper position, substantially as described.

13. The combination with form 10, of strap 13, means for tightening said strap about the form, and flange 25 having a beveled guiding face 27 and recess 26, substantially as described.

14. The combination with adjustable form 10, of strap 13, clamp 30 and guide flange 25 extending part way around the form to guide the hoops into position about the form, substantially as described.

15. The combination with form 10, of strap 13, clamp 30, and guide flange 25 extending part way around the form to guide the hoops into position about the form, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HENRY U. PALMER.

Witnesses:
T. F. KEHOE,
ARTHUR L. KENT.