(No Model.)

R. A. GIBSON.

MACHINE FOR BENDING HOOPS FOR RIMS, &c.

No. 597,463. Patented Jan. 18, 1898.

Fig. 1.

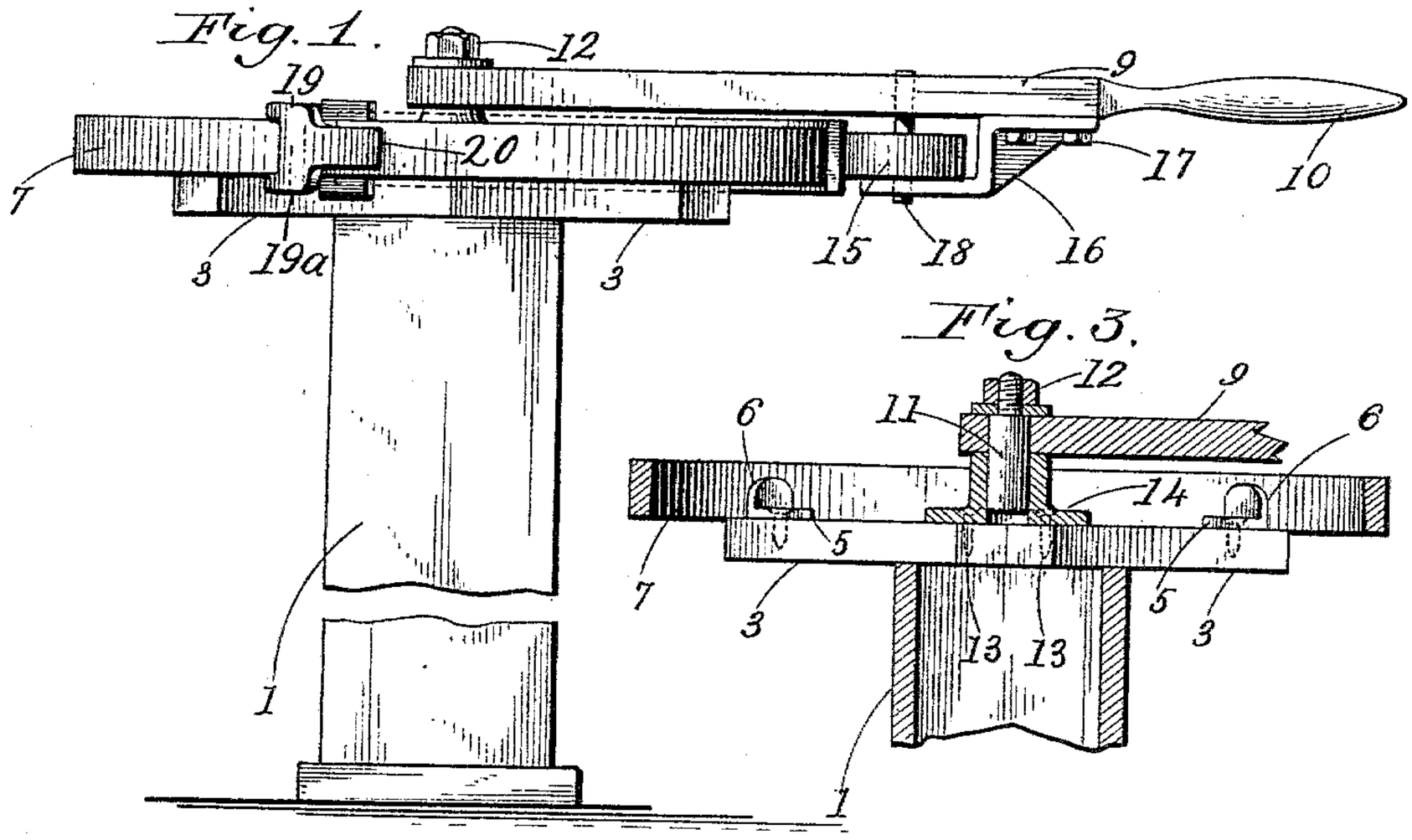

Fig. 3.

Fig. 2.

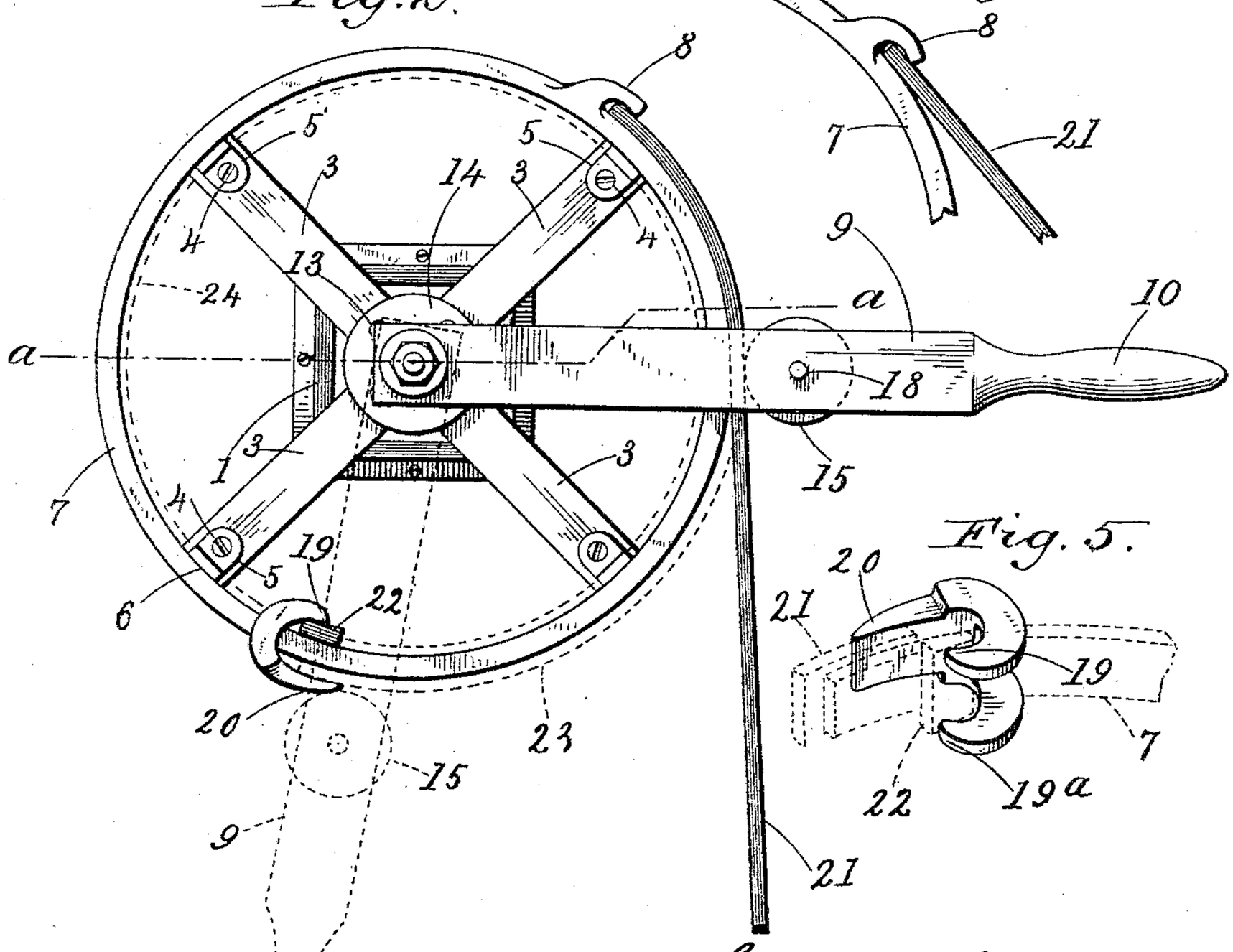

Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR BENDING HOOPS FOR RIMS, &c.

SPECIFICATION forming part of Letters Patent No. 597,463, dated January 18, 1898.

Application filed November 29, 1895. Renewed June 14, 1897. Serial No. 640,759. (No model.)

To all whom it may concern:

Be it known that I, ROBERT A. GIBSON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Machines for Bending Hoops for Rims or other Purposes, of which the following is a specification.

My invention relates to an improved means for bending hoops for bicycle-rims, mud-guards, or other purposes, and it will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of the machine complete. Fig. 2 is a top plan view of the machine, showing a hoop or rim in position thereon partly bent. Fig. 3 represents a vertical section on or about line *a a*, Fig. 2. Fig. 4 is a plan view showing a portion of the rim of the machine and the means for securing the end of the hoop preparatory to bending it. Fig. 5 represents an enlarged detached perspective view of the clamping-claw for holding the hoop or rim when bent or formed.

Referring to the details of the machine, 1 represents a pedestal or support upon which the machine rests. The base of this support is rigidly secured to the floor. The object in thus securing it is to hold the machine in a rigid position while using it, as will more clearly appear when describing its operation. On the top of the support are secured in the ordinary way by screws four arms 3, radiating from the center outward, and on the end of each one of said arms is secured by a bolt 4 a bracket 5, having its nearly-vertical face 6 inclined slightly inward toward the center from the bottom upward, so as to receive and hold in a horizontal position an iron ring 7, also made correspondingly tapering on the inside, adapting it to fit closely thereon and still be easily removable therefrom. By this construction the ring 7 may be easily and quickly put in its position on the machine, so that it will remain rigidly secure while in operation, and from which position it can be instantly loosened and removed by means of a light tap of a hammer at its under side. This iron ring 7 is provided on its periphery with a hook-shaped portion 8, preferably made integral with it; but it may be made separate and put on, if required. The object of the hook portion 8 is to provide a convenient means to receive and hold the end of the hoop or mud-guard while being bent, substantially as shown in Figs. 2 and 4.

A removable bending-arm 9, made, preferably, of hard wood, is provided with a handle 10 and at its opposite end with a round iron pivotal pin 11, secured at right angles thereto by a nut 12. On the top of the radiating arm 3 is rigidly secured by screws 13 (see Fig. 3) a socketed plate 14, the socket being exactly central and adapted to receive the pin 11 of the arm 9, whereby said arm 9 may instantly and easily be removed by lifting it up and thereby withdrawing its pivotal pin 11 from its socket in the central plate 14. (See Fig. 3.) A friction-roller 15 is also secured to the arm 9 by means of the bracket 16, rigidly fastened to the under side of the arm by bolts 17 and a pivotal pin 18.

The object of the arm 9 and its several parts will appear farther on.

A clamping-claw, consisting of the two wedge-claws 19 19ª and a holding-claw 20, constructed of cast metal in one integral piece, is used for securing the free end of the bar or hoop 21 when the bend is complete. The clamping-claws 19 and 19ª are sufficiently far apart to allow the device to be put on over the iron forming-ring 7 by moving the said claws inward, each passing over said ring, substantially as shown in Fig. 2, and when securing the end of a bent hoop or half-hoop a wedge 22 is put in between the claws 19 and 19ª and the inner side of the forming-ring 7. It will be noticed that this removable clamping-claw is not limited to any particular position on the ring 7, but is designed to be put at the end of a strip or hoop 21 of any length adapted to be bent on said ring. The office of its wedge-shaped portion 20 is not only to hold the end of the hoop, but to provide the means whereby the roller 15 on the arm 9 can force the extreme end of the hoop closely to the ring 7 and at the same time force the claws 19 and 19ª away from the inner side of the ring 7, and thereby leave room for the wedge 22 to be driven in place, substantially as shown in Fig. 2.

The operation of the device is as follows:

The strip or bar of wood to be bent is steamed in the usual way and the end slipped in under the hook 8. (See Fig. 2.) The arm 9 is then put in place by inserting its pivotal pin 11 in the central socket, so that the roller 15 comes on the outside of the strip to be bent, the strip 21 having been bent slightly around the ring 7 to allow said roller to pass over said strip. By now taking hold of the handle 10 the arm is easily drawn around the ring 7, its pin 11 turning in its pivotal center or socket and thereby bending strip 21, substantially as shown by the dotted lines 23 in Fig. 2. When the roller 15 reaches nearly to the end of the strip 21, the clamping-claws are moved forward until the holding-claw 20 (which is made in the form of a wedge) passes over the end of said strip. The arm 9 is then pulled still farther around until the roller passes on to the claw 20, and thereby forces the claws 19 and 19ª inward as far as possible. The wedge 22 is then forced in between said claws 19 and 19ª and the ring 7, thereby holding the hoop or mud-guard rigidly in position against the ring 7. The arm 9 is now taken off and the ring 7 removed from the machine with the hoop on it, as shown in Fig. 2, and put away to dry. Another strip is then put on to be bent and the operation repeated.

In the drawings I have shown four of the arms 3; but the number may be more or less, if required, and in place of the brackets 5 a continuous ring may be used to hold the ring 7, substantially as shown by the dotted lines 24 in Fig. 2.

I claim as my invention—

1. In a machine for bending wooden strips for rims or mud-guards, the combination with a supporting-frame, of a central socketed portion mounted thereon having a series of radial arms, and a holding-bracket having an inwardly-inclined face mounted at the end of each radial arm, for receiving and holding a bending-ring, a removable bending-ring having its inner sides tapering, adapting it to fit on said brackets, a hook portion secured to the periphery of said ring, a removable forming-arm having a pin 11, adapted to fit the central socketed portion and carrying a forming-roller and a removable clamping-claw and wedge, for the purposes described.

2. In a machine for bending wooden strips, the combination with a bending-ring mounted removably, on the supporting-frame, of a removable clamping device consisting of the clamping-claws 19 19ª and wedge-shaped piece 20, all formed in one integral piece for the purposes described.

3. In a machine for bending wooden strips, the combination with a bending-ring mounted removably, on the supporting-frame, of a removable clamping device consisting of the clamping-claws 19 19ª and wedge-shaped piece 20, all formed in one integral piece, and a removable wedge 22, for receiving and holding the end of the bent hoop or mud-guard, substantially as described.

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