No. 704,953. Patented July 15, 1902.

H. R. AULD.

RUBBER TIRE SETTER.

(Application filed Oct. 16, 1901.)

(No Model.)

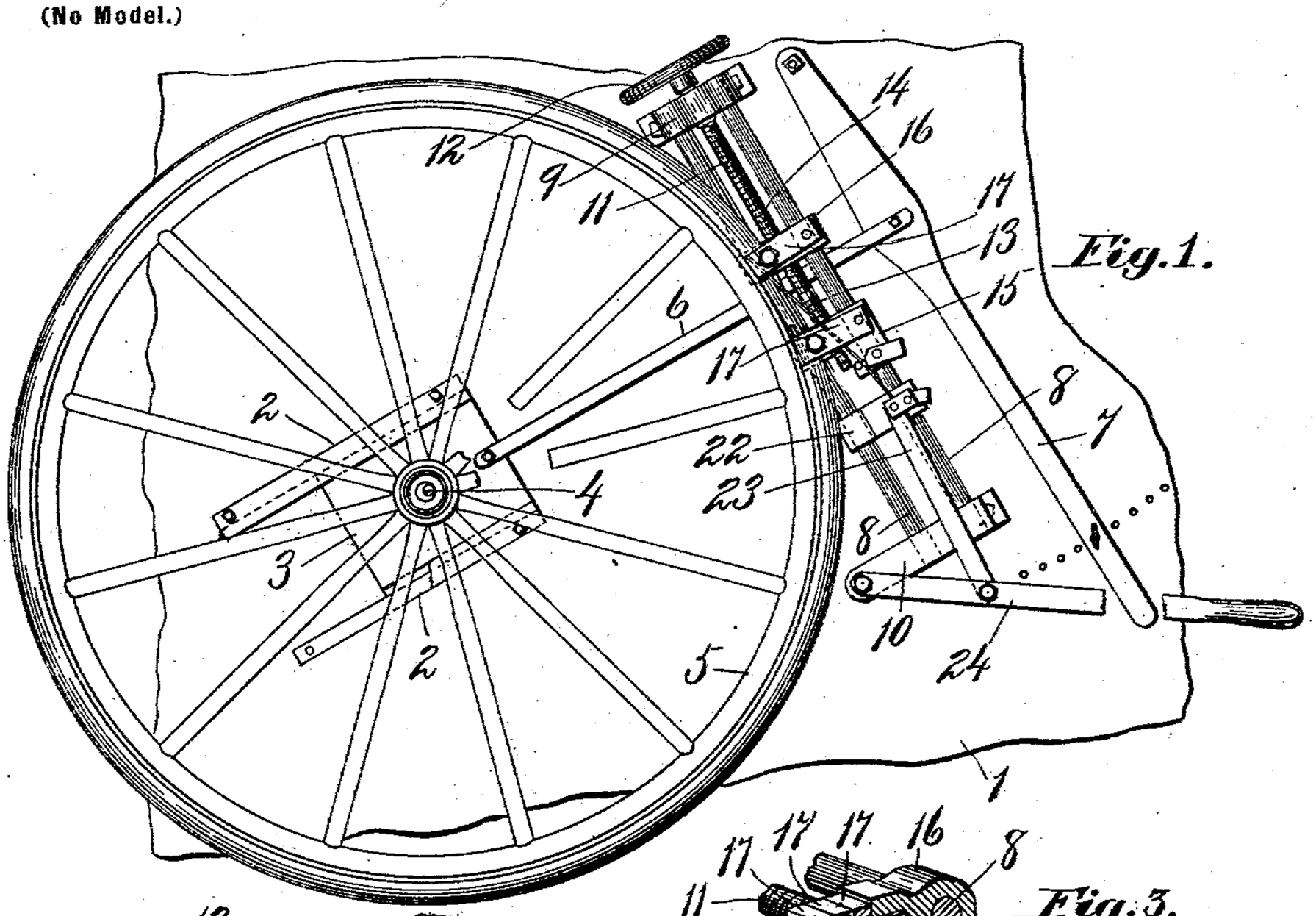

Fig. 1.

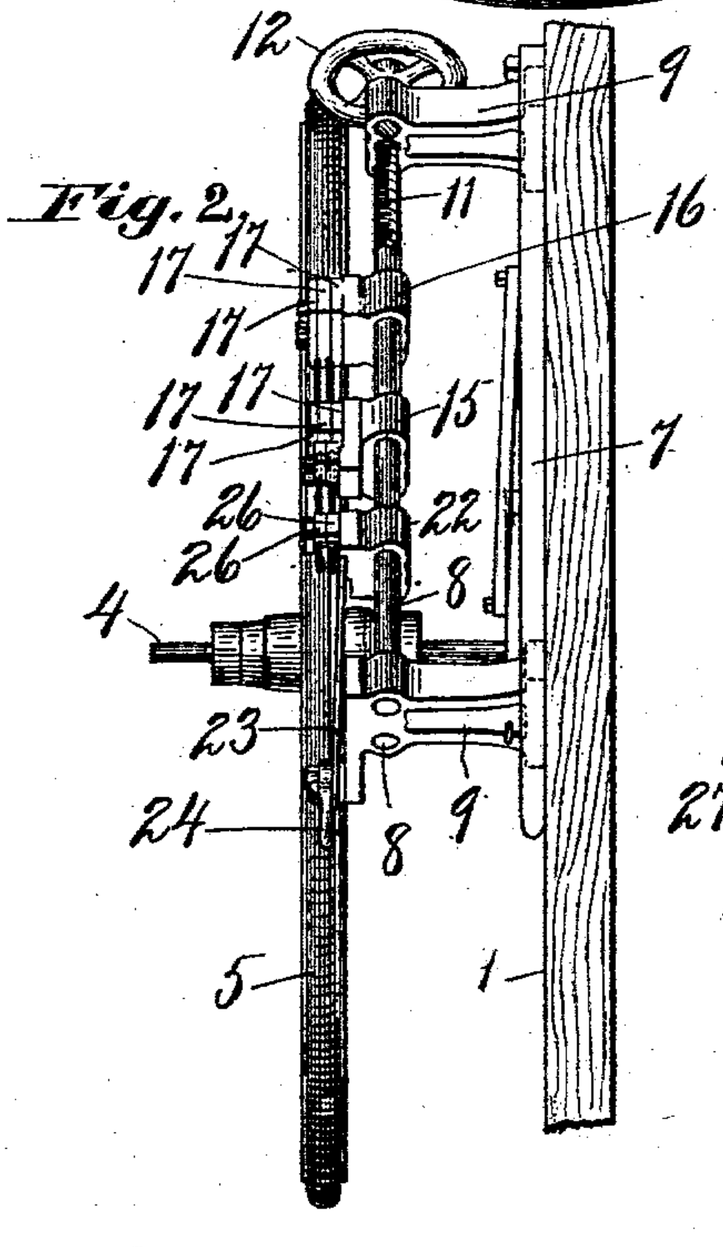

Fig. 2.

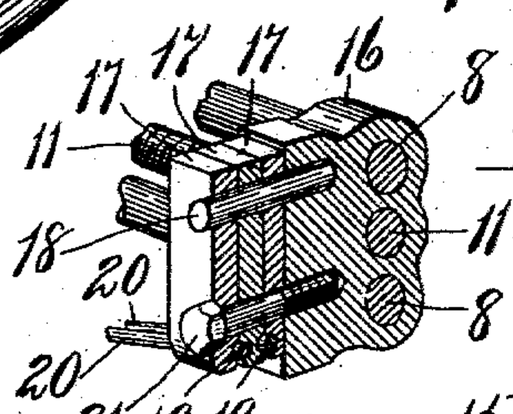

Fig. 3.

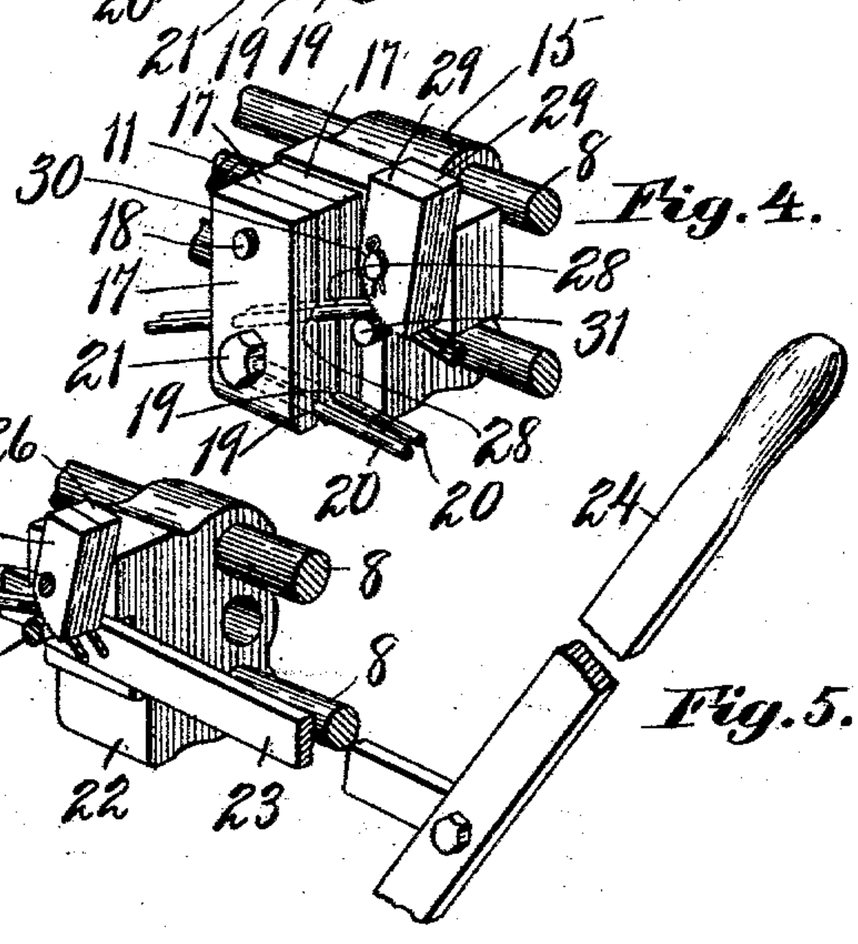

Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

HUGH R. AULD, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, OF ONE-HALF TO JOHN J. McGLINCHY, OF CHELSEA, MASSACHUSETTS.

RUBBER-TIRE SETTER.

SPECIFICATION forming part of Letters Patent No. 704,953, dated July 15, 1902.

Application filed October 16, 1901. Serial No. 78,847. (No model.)

To all whom it may concern:

Be it known that I, HUGH R. AULD, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Rubber-Tire Setters, of which the following is a specification.

This invention relates to apparatus for setting wired rubber tires to vehicle-wheels—that is, for tightening the bands or wires which hold the tire to the wheel-rim preparatory to uniting the ends of said wires.

The invention has for its objects to provide an inexpensive, durable, and quick-operating article of this class, to provide means for bringing the wires or bands of the tire when the latter is provided with a plurality of such wires or bands to the same tension preparatory to the simultaneous final tightening of the wires, and to provide an improved means for quickly adjusting the wheel toward or from the wire-tightening devices.

Of the accompanying drawings, Figure 1 represents a front elevation of a tire-setter constructed according to my invention. Fig. 2 represents an edge view thereof. Figs. 3, 4, and 5 represent sectional perspective views of the three clamping-heads in the machine.

The same reference characters indicate the same parts in all the figures.

In the drawings, 1 is a support, such as the wall of a room or building, and on this wall are located inclined guides 2 2, in which is mounted a slide 3, having a spindle 4, which enters the hub of and supports the vehicle-wheel 5. Said slide is moved by connection through a link 6 with a pivoted hand-lever 7, whereby the wheel may be quickly adjusted to bring its rim into proper relation with the wire-tightening devices hereinafter described.

The wire-tightening mechanism comprises the following devices:

8 8 are a pair of parallel rectilinear guide-rods mounted in brackets 9 10, fixed to the wall. Journaled in the bracket 9, between and parallel to the rods 8 8, is a shaft 11, having a hand-wheel 12 to rotate it and formed with right and left hand screw-threads 13 14, which engage correspondingly-threaded middle holes in two sliding blocks 15 16, said blocks thus constituting nuts and having end holes occupied by the guide-rods. On the blocks are the grippers to hold the wires, as presently described. Some of the advantages of this construction are that the strain of the blocks is entirely borne by the right and left threads on the screw-shaft and not by the bearing of said shaft. The ends of the wires approach in straight lines and are in the best position to be joined when they meet. Since the movement of approach is imparted to both blocks, the movement of each is less of a departure from the arc of the wheel than would be the case if the whole movement were imparted to one block. The mechanism is simple, light, and very compact.

Each of the sliding blocks 15 16 is provided with a compound clamp or gripper composed of three plates 17 17, strung on a pin 18 and suitably grooved complementally at 19 19 to receive and grip a pair of parallel wires 20 20 in the tire. Clamping pressure is simultaneously applied to the plates by means of a bolt 21.

22 is an auxiliary sliding block mounted on the guide-rods 8 8 and operated by connection through a link 23 with a pivoted hand-lever 24. This block has a fixed pin 25, coacting with a pair of automatic gripping-dogs 26 26, pivoted on a pin 27 and having serrated eccentric gripping-faces, as shown. The ends of the wires which are clamped by the gripping-plates on the block 16 also pass freely through enlarged channels 28 28 in the plates on the block 15 and are engaged by the clamping-dogs 26 26 on the block 22.

Two clamping-dogs 29 29, similar to the dogs 26, are pivoted to a pin 30 on the block 15 and coöperate with a pin 31 to clamp and hold the wires 20.

The operation of the wire-tightener is as follows: Portions of the wires are bared at each end of the tire by forcing back the rubber and placing it under compression, and the gripping-plates 17 17 on the blocks 15 16 are attached to the respective ends, said blocks being considerably separated. The clamps on blocks 16 may be loosened and block 22 and its clamps 26 26 moved outwardly by lever 24 to effect a preliminary tightening of the wires. The principal office of said block

22 and its clamps and operating devices, however, is to place the wires under the same tension when one is looser than the other, preparatory to the final tightening. To effect this, the clamping-plates 17 on block 16 are loosened, and the gripping-dogs 29 29 on block 15 are used as checks to hold the wires. One of the dogs 26 on block 22 is then engaged with the looser wire, the other dog 26 being loosened from the other wire, and the block 22 is retracted to bring the loose wire up to its proper tension. The loose wire is held in check in the position to which it is moved by one of the dogs 29, the other dog 29 having the other wire in check, after which the plates 17 on block 16 are tightened, and the screw-shaft 11 is operated to tighten both wires simultaneously. The ends of the wires are cut off to the proper length and united by brazing, welding, or in other suitable manner. The weight of the block 22 and its attached operating parts may be imposed upon the long ends of the wires in order to hold said ends of the wires in tension when they are being severed and scarfed with a file.

I claim—

1. A rubber-tire setter comprising a pair of guide-bars, two clamps guided and movable along said guide-bars to draw together the ends of the band or wire of the tire, means to move said clamps toward and from each other, an auxiliary clamp independently movable along said guide-bars to tighten said wire, and operating means to so move the said auxiliary clamp.

2. A rubber-tire setter comprising means to hold by one end a plurality of tire-wires, means to draw on the opposite ends of said wires, and a plurality of automatically-acting check-clamps adapted to hold the drawn ends of the individual wires independently of the drawing device.

3. A rubber-tire setter comprising a clamping device to secure the ends of a plurality of bands or wires of the tire, a compound clamping device movable toward and from the first said clamping device and consisting of a plurality of individual clamps provided with means for simultaneously adjusting them to grip the bands or wires, an independently-movable band or wire tightening device, and a plurality of independent automatic cam-clamps adapted to check the bands or wires.

In testimony whereof I have affixed my signature in presence of two witnesses.

H. R. AULD.

Witnesses:
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