No. 672,104. Patented Apr. 16, 1901.

H. A. PALMER.

APPARATUS FOR SETTING RUBBER TIRES.

(Application filed Nov. 22, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

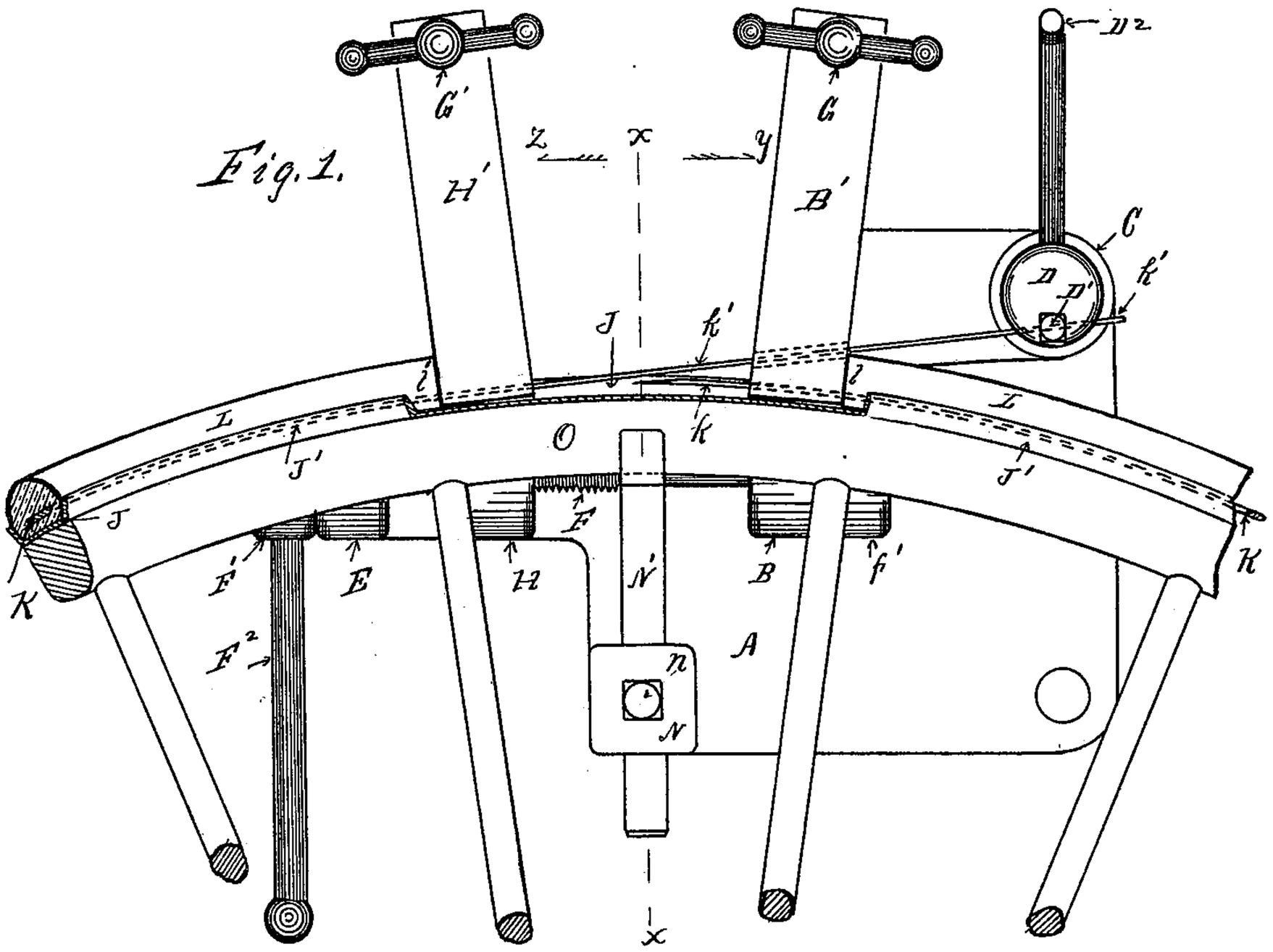

Fig 2

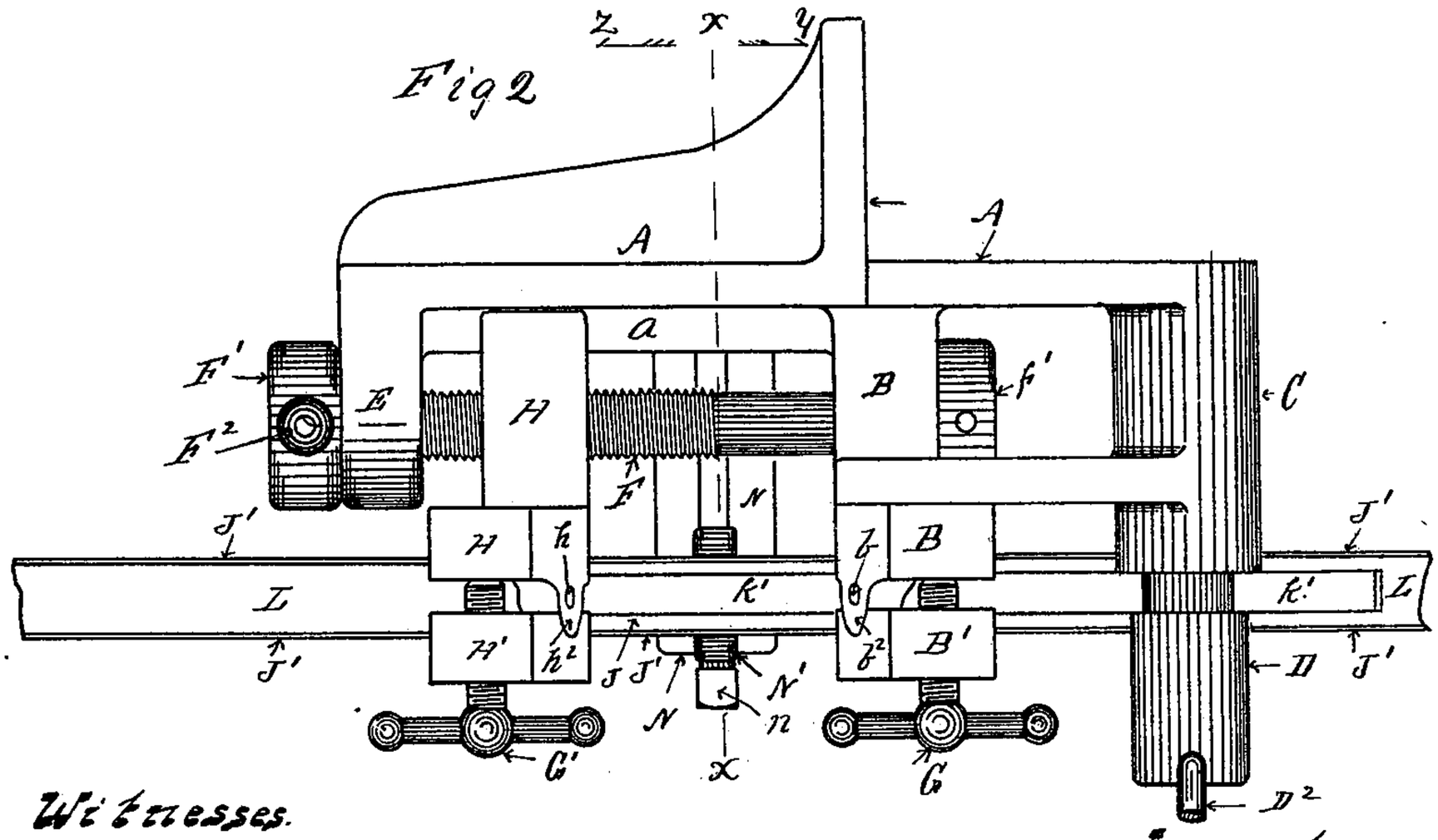

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Fig. 3.

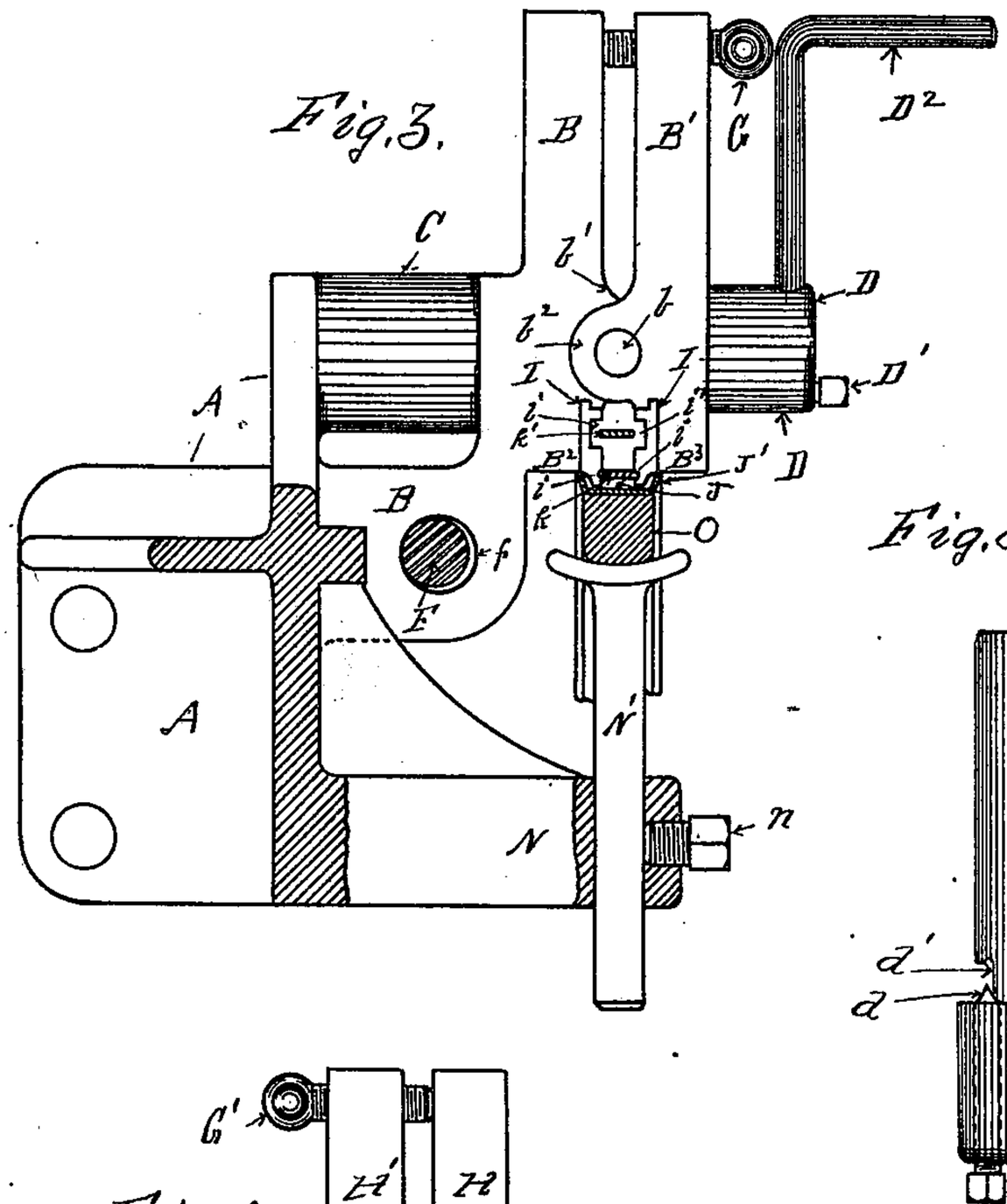


Fig. 5.

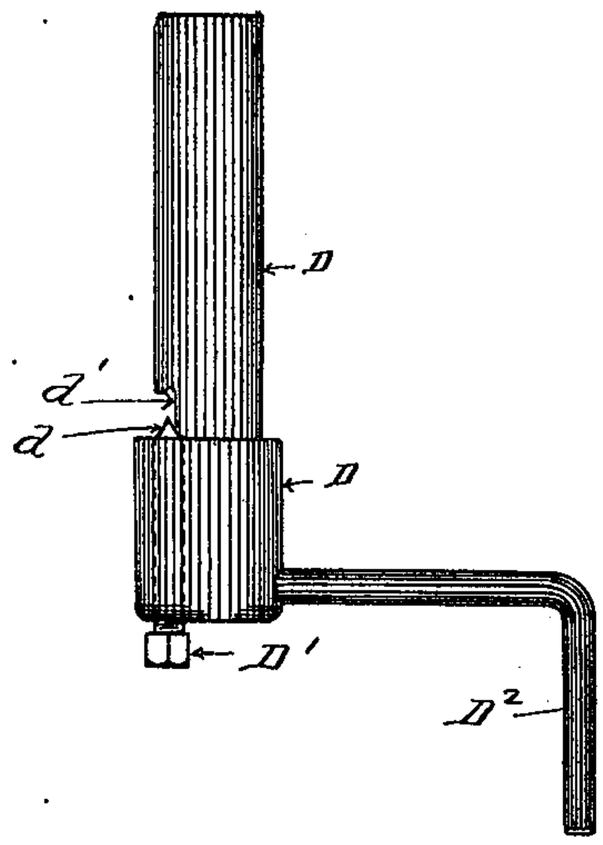
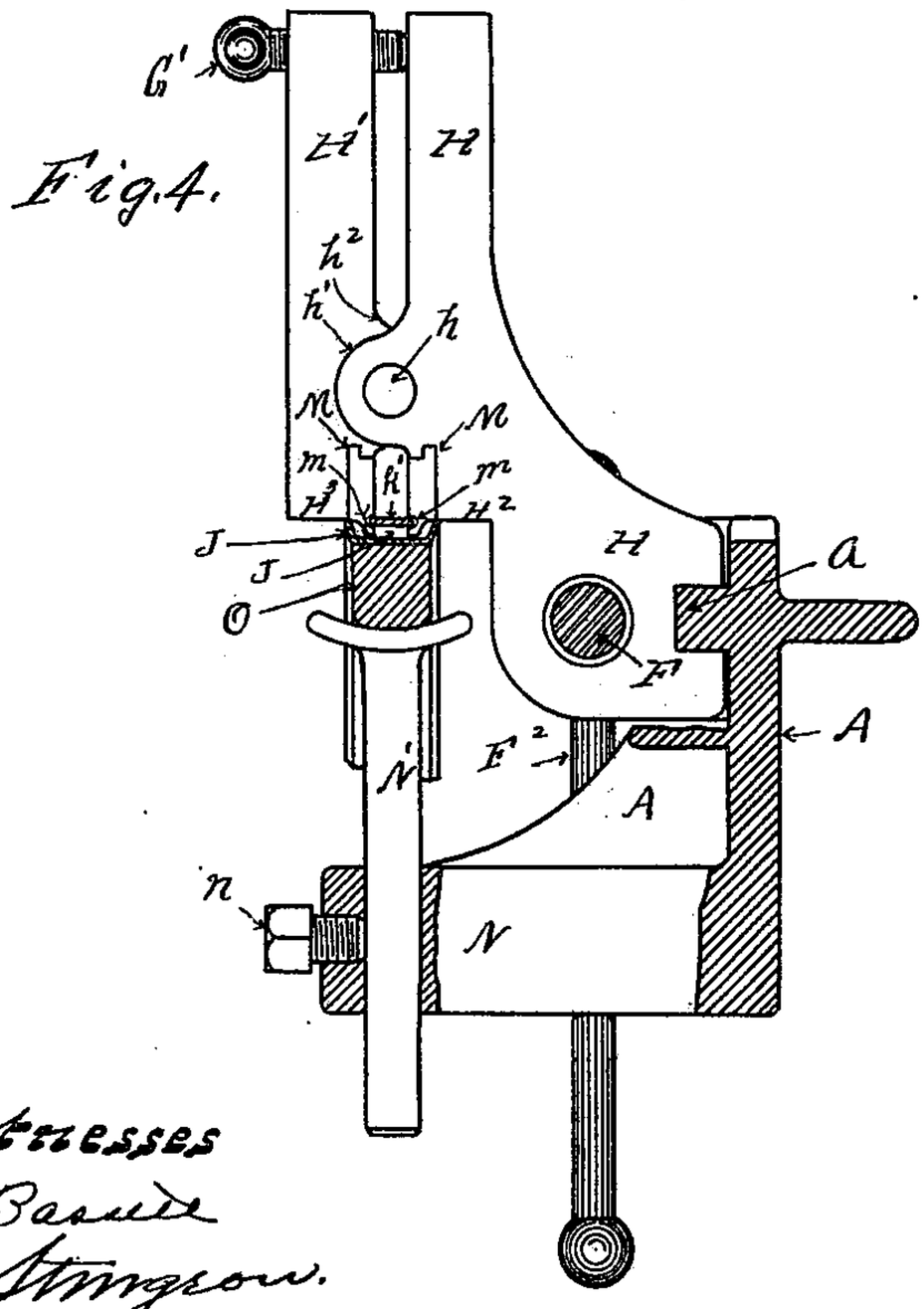


Fig. 4.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR SETTING RUBBER TIRES.

SPECIFICATION forming part of Letters Patent No. 672,104, dated April 16, 1901.

Application filed November 22, 1900. Serial No. 37,343. (No model.)

To all whom it may concern:

Be it known that I, HARRY A. PALMER, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Setting Rubber Tires; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to improvements in apparatus for setting rubber tires; and it consists, substantially, in the mechanism hereinafter set forth and described, and illustrated in the accompanying drawings, in which—

Figure 1 is a front view in elevation of an apparatus for setting rubber tires embodying my invention. Fig. 2 is a top or plan view of the same. Fig. 3 is a vertical section of the same on the line $x\ x$ in Figs. 1 and 2 looking in the direction of the arrow y. Fig. 4 is a vertical section of the same on the line $x\ x$ in Figs. 1 and 2 looking in the direction of the arrow z. Fig. 5 is a detail view of one of the parts of the mechanism of my apparatus.

In the drawings thus illustrating my invention, A is the framework of the apparatus, adapted to be bolted to a suitable support. On the front of this frame A there is a fixed jaw B, preferably inclined outward from perpendicular, and at the right of this fixed jaw B there is a sleeve C, in which a removable shaft D (see Fig. 5) rotates. On the front of this frame A, at the left-hand end thereof, there is a forwardly-projecting lug E, which operates as a bearing for one end of a screw F, the opposite end of this screw F being mounted in a bearing f in the lower part of the jaw B, and on the end of the screw F there is secured a collar f', outside of the jaw B, so that the screw F is secured from longitudinal movement by the head F′ thereon operating against the outside of the lug E and the collar f' operating against the outside of the jaw B. Through the head F′ of the screw there is a bar F^2 for operating the screw. On the front of the frame A there is also a horizontal rib a, which extends from the lug E to the jaw B, and on the rib a there is mounted a movable jaw H, through which the screw F passes and by means of which a jaw H can be moved horizontally to and fro on the rib a.

Hinged to the jaw B there is a jaw B′ by means of a pin b passing through ears b' b^2 on said jaws, and through the arm forming the upper end of the jaw B′ there is a hand-screw G, the point of which contacts with the arm forming the upper end of the jaw B, so that when the screw G is turned so as to move these arms of the jaws B B′ apart the lower ends B^2 B^3 of the jaws close together. In the lower ends B^2 and B^3 of these jaws are removable faces I I, in the faces of which are cut grooves i and slots i'. These faces I I extend downward below the lower ends of the jaws far enough to enter the channel J in the metal tire J′ and firmly clamp the end k of the band K in the rubber tire L in the grooves $i\ i$ in the faces I I, while the opposite end k' of the band K passes freely through the slots i' to the shaft D, to which it is secured by means of the point d of a set-screw D operating in a slot d' in said shaft, so that when the shaft D is turned by means of the crank D^2 thereon the end k' of the band K can be wound up on the shaft D until the tire L is drawn down into the channel J in the metal tire J′ to any tension desired. The jaw H is preferably inclined from a perpendicular outward in the opposite direction from the inclination of the jaws B B′ and has hinged thereto a movable jaw H by means of a pin h, passing through ears h' h^2 thereon, and through the arm forming the upper end of the jaw H′ there is a hand-screw G′, the point of which contacts with the arm forming the upper end of the jaw H, so that when the screw G′ is turned so as to move the arms of the jaws H H′ apart the lower ends H^2 and H^3 of the jaws close together. In the lower ends H^2 and H^3 of these jaws I secure removable faces M M, in the faces of which are cut grooves $m\ m$. The faces M M extend down below the lower ends of the jaws far enough to enter the channel J of the metal tire J′ and firmly clamp the end k' of the band K in the rubber tire L in the grooves $m\ m$ in the parts M M when the

band K is drawn up to the tension desired and hold it firmly until the ends *k* and *k'* of the band K are joined.

On the lower part of the frame A there is a central horizontal arm N, projecting outward under the jaws B B' and H H', and in the outer end of this arm N, in line with the lower ends of said jaws, there is a vertically-movable support N', which may be secured in any position by means of a set-screw *n*, so that when a wheel O is placed upon the support N' it can be raised up until the faces I I and M M of the jaws enter the channel J in the metal tire J' thereon, and are secured by the set-screw *n* in that position, as illustrated in Figs. 1, 3, and 4.

In operation the wheel O is placed upon the support N' and raised up until the faces I I and M M of the jaws B B' H H' enter the channel J in the metal tire J'. The end *k* of the band K projecting from the end *l* of the rubber tire L is then firmly clamped in the grooves *i i* of the jaws B B', with the end *l* of the rubber tire L abutting against the outside of the jaws B B'. The rubber tire L is then passed around the channel J in the metal tire J' and the projecting end *k'* of the band K passed through the grooves *m m* in the jaws H H' and on through the slots *i' i'* in the jaws B B' and into the slot *d'* in the shaft D, where it is secured by the set-screw D'. Then by turning the crank D^2 the end *k'* of the band K is wound around the shaft D until the proper tension thereon is secured to firmly seat the rubber tire L in the channel J of the metal tire J', the end *l'* of the rubber tire L meanwhile abutting against the outside of the jaws H H' is held back. When the desired tension on the band K is secured, the jaws H H' are closed, so as to firmly clamp and hold the end *k'* of the band K in position. The end *k'* of the band K is then cut off and the movable jaws H H' adjusted toward or from the jaws B B', as desired, by means of the screw F, and the end *k'* of the band K is then secured to the end *k* thereof by brazing them together or in any other convenient manner.

In the drawings and in the description hereinbefore given I have shown and described my apparatus as adapted to operate to secure rubber tires having a single retaining-band; but it is obvious that a change in the removable faces I I and M M of the jaws B B' and H H' will enable me to operate the apparatus to secure rubber tires having two retaining bands or wires with equal facility, the feature of having the faces I I and M M of the jaws removable being primarily for the purpose of adapting the jaws to the different kinds of tire-fastenings in common use.

Having thus described my invention, so as to enable others to construct and use the same, I do not desire to confine myself to the exact form and arrangement of parts shown and described, as it is obvious that many modifications can be made therein without departing from the spirit of my invention.

Therefore what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an apparatus for setting rubber tires, the combination of a frame, a stationary jaw so secured to said frame that the jaw projects above and from the side thereof, a loose jaw pivoted to said stationary jaw, a movable jaw mounted on a rib on said frame and projecting upward and laterally therefrom and adapted to be moved toward and away from the stationary jaw, a loose jaw hinged to said movable jaw, a screw mounted in said frame below the lower ends of said jaws and adapted to actuate the movable jaw, a vertically-movable wheel-rim support adapted to engage and support a wheel-rim under said jaws, and a rotary shaft mounted in said frame for tightening up the tire-retaining wires, substantially as and for the purpose set forth.

2. In an apparatus for setting rubber tires, the combination of a frame, a stationary jaw secured to said frame by means of a lateral projection extending downward below the lower end of the jaw, a movable jaw secured to said frame by means of a lateral projection extending downward below the lower end of the jaw and engaging a horizontal rib on the frame, a horizontal screw mounted in said frame so as to pass through the lateral and downwardly-projecting extension on said movable jaw, loose jaws pivoted to said stationary and movable jaws, screws in the upper ends thereof for operating said loose jaws, a rotary shaft mounted in said frame and provided with clamp mechanism, and a crank on said shaft, substantially as and for the purpose set forth.

3. In an apparatus for setting rubber tires, the combination of a frame, stationary and movable clamping-jaws thereon, with an adjustable wheel-rim support mounted on said frame so as as to engage a wheel-rim and support it under said fixed and movable jaws, substantially as and for the purpose set forth.

4. In an apparatus for setting rubber tires, the combination, of a frame, stationary and movable clamping-jaws thereon extending entirely above the top of the frame, and a screw mounted in said frame so as to engage said movable jaw at a point below the top of the frame, substantially as set forth.

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

HARRY A. PALMER.

Witnesses:
H. M. STURGEON,
JAS. REED CRAIG.