

(No Model.)

M. G. BROOKS. Dec'd.

2 Sheets—Sheet 1.

L. A. BROOKS, Administratrix.
TIRE SETTING MACHINE.

No. 600,117.

Patented Mar. 1, 1898.

Fig. 1.

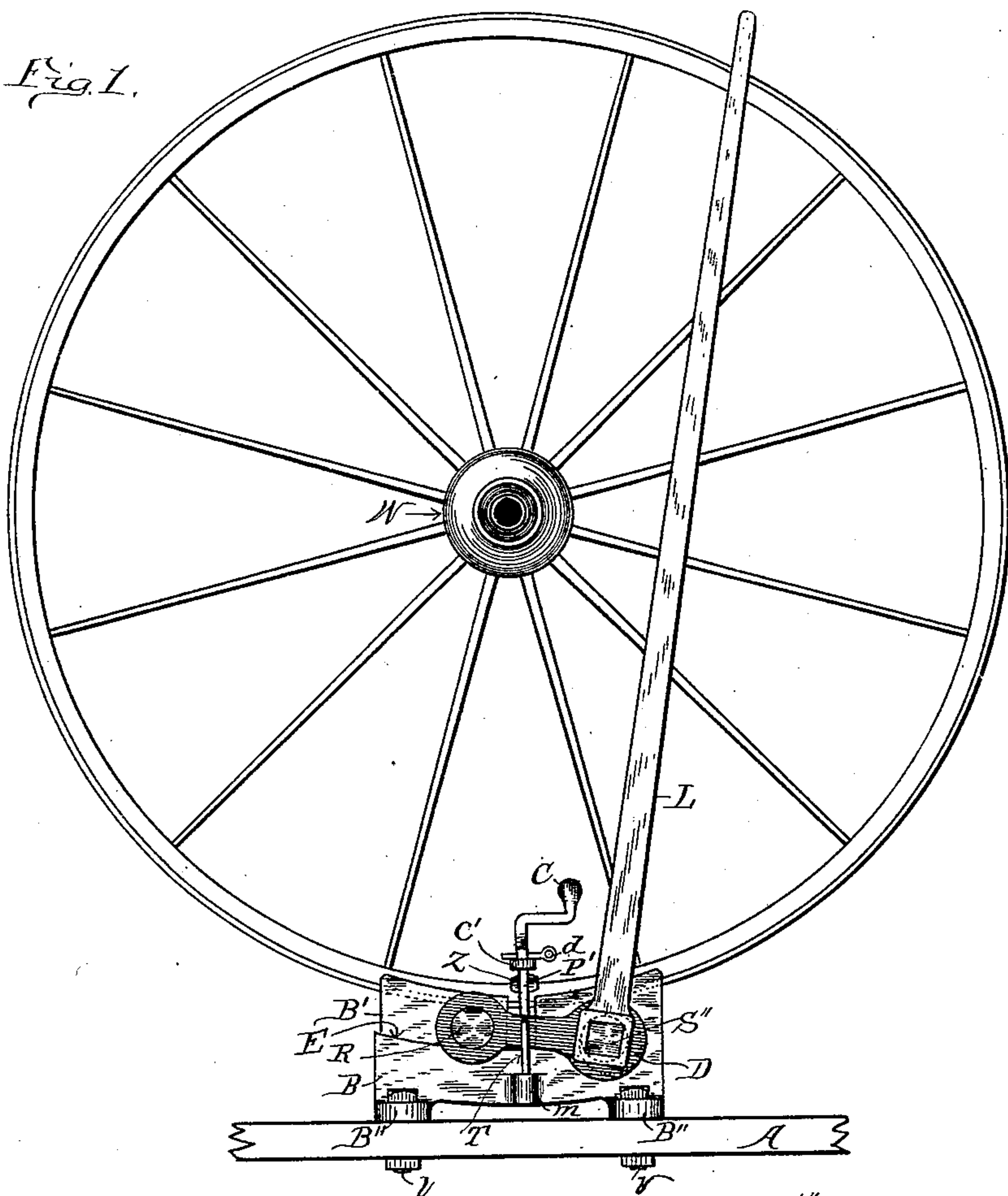
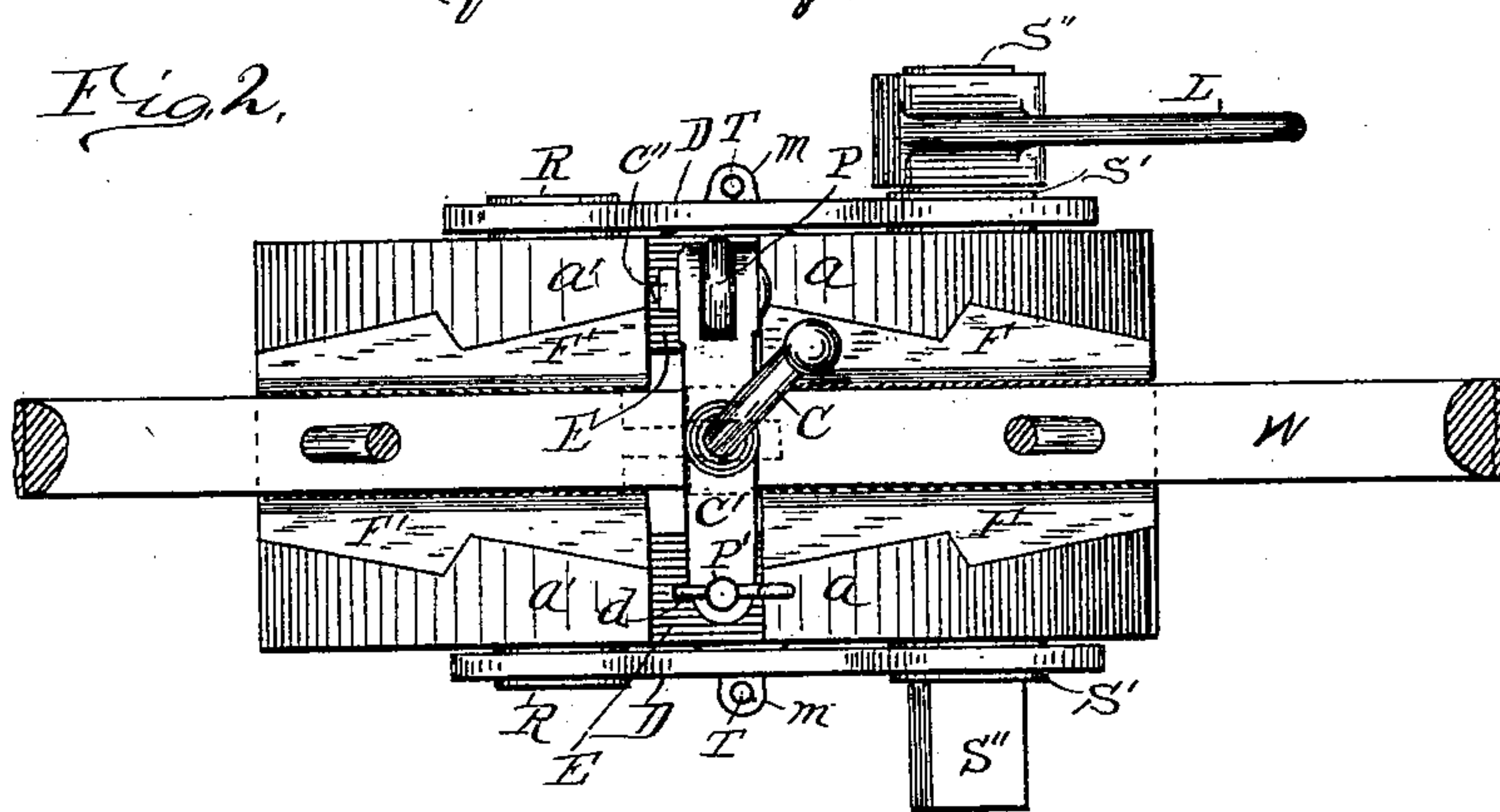


Fig. 2.



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Fig. 3.

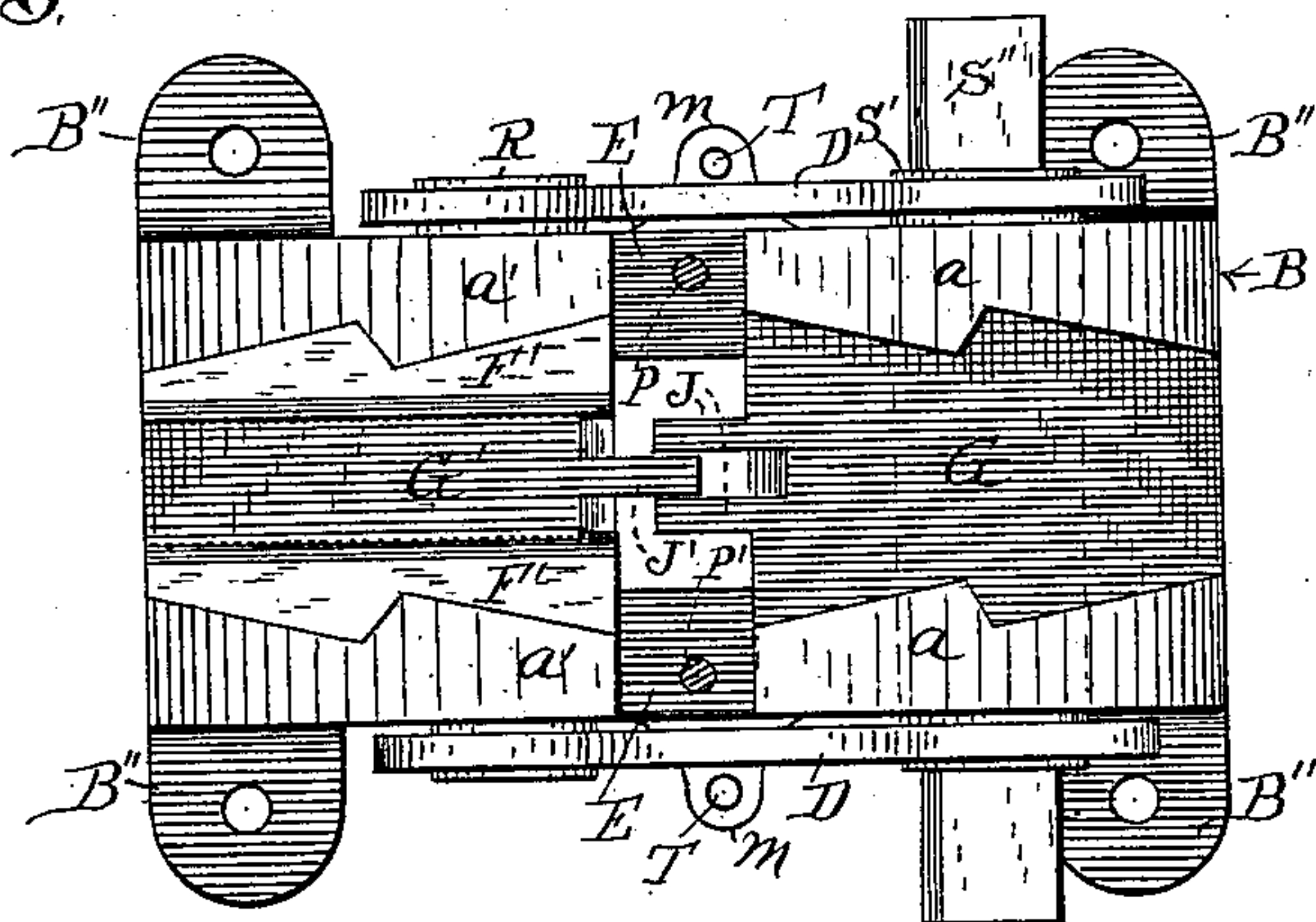


Fig. 7.

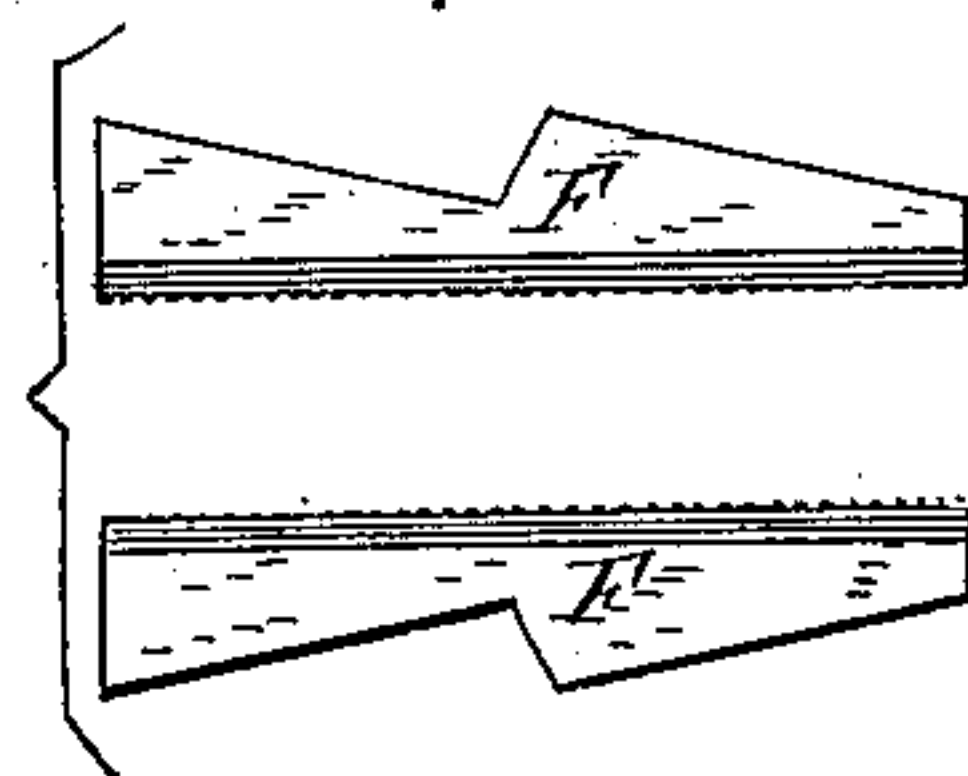


Fig. 8.

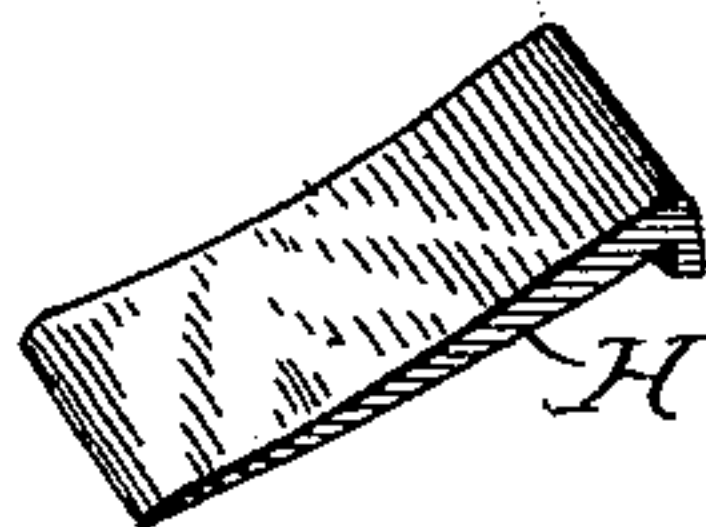


Fig. 4.

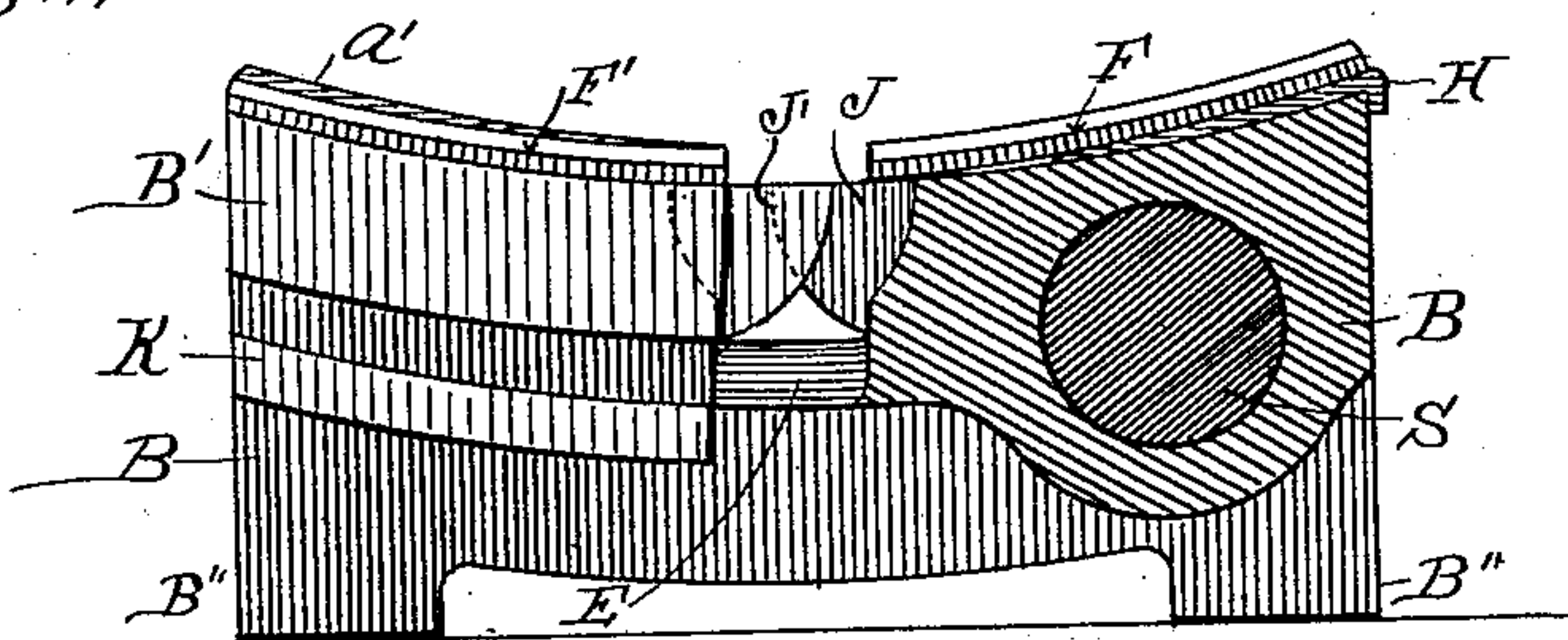


Fig. 5.

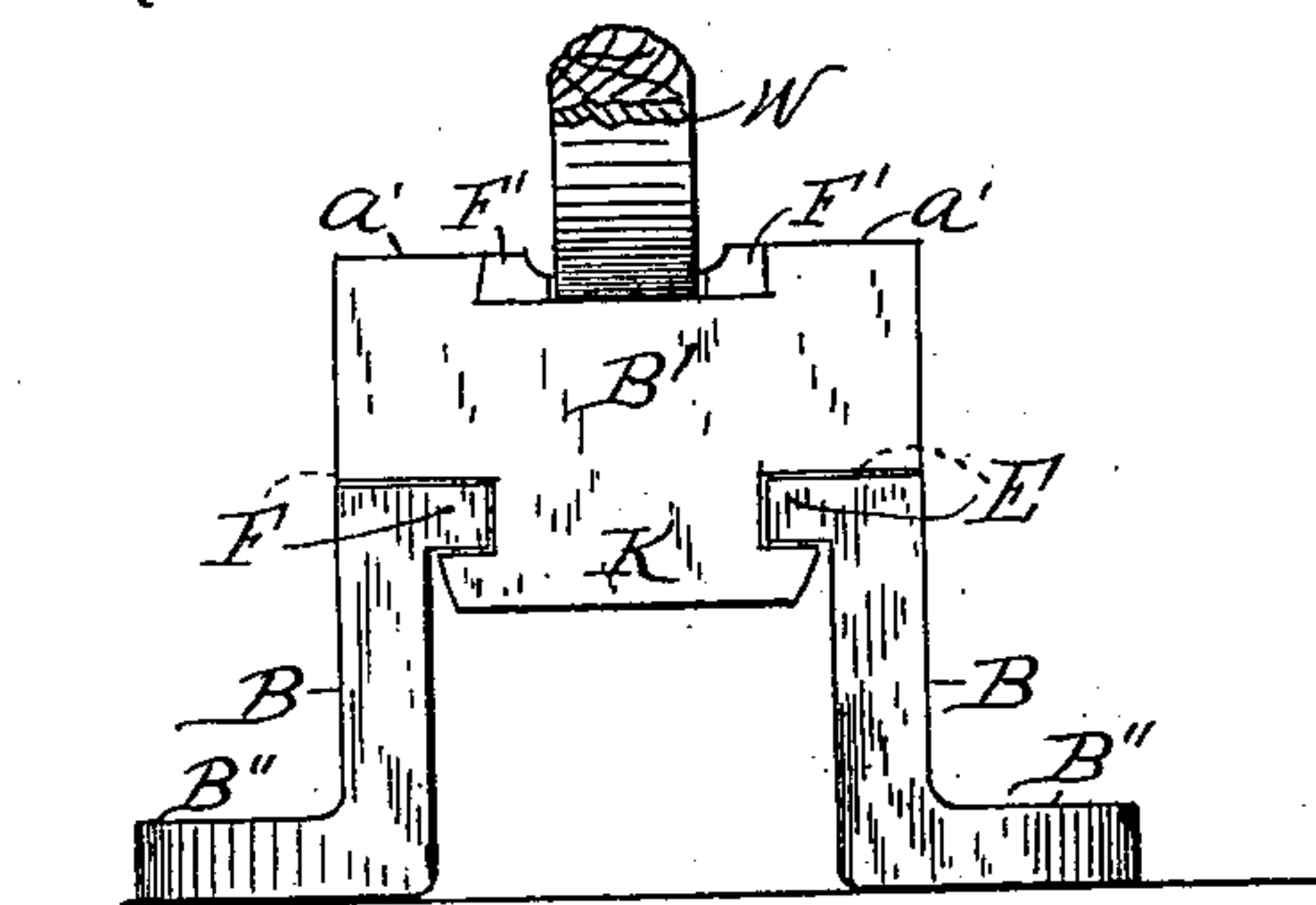


Fig. 6.

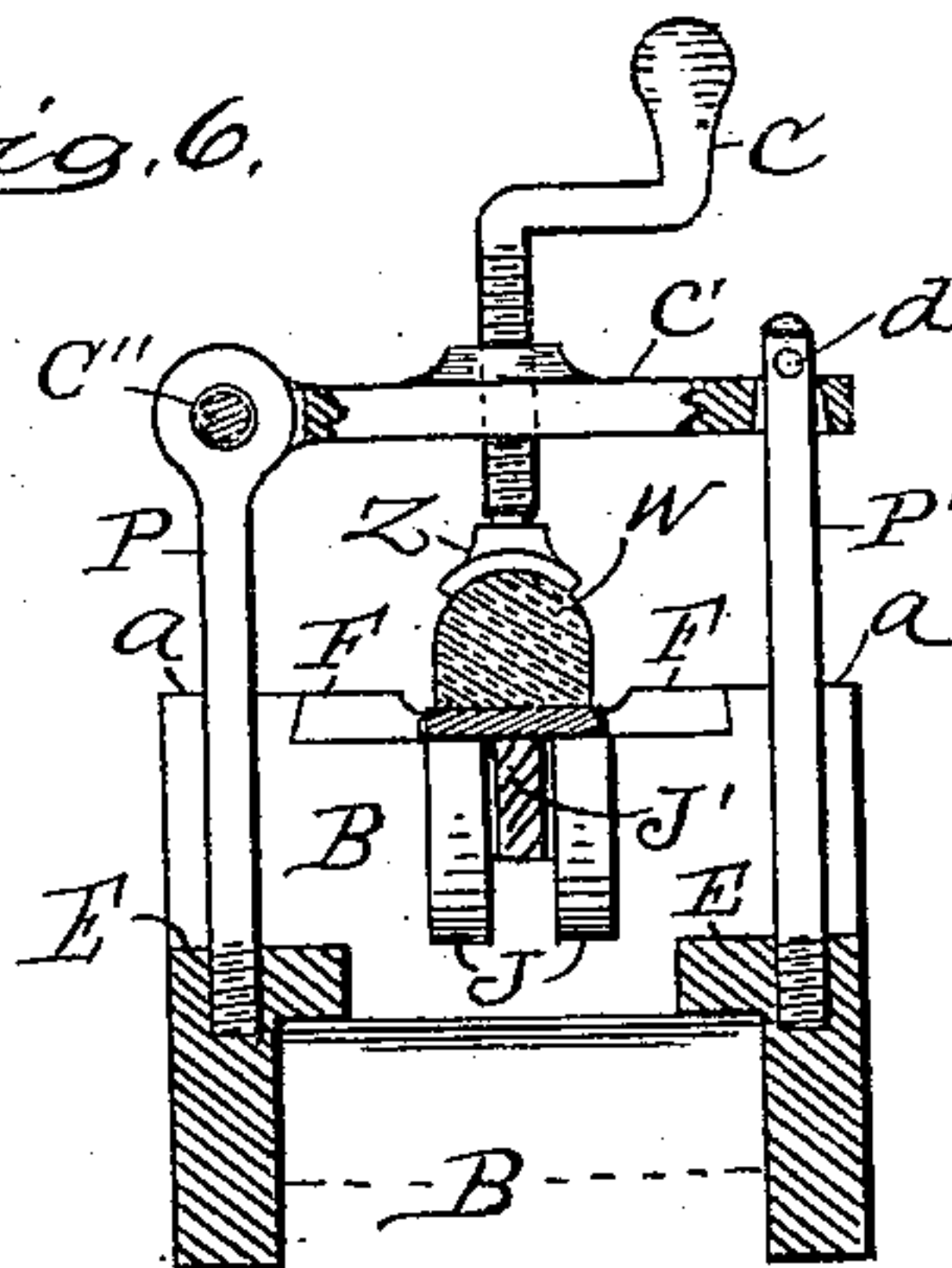
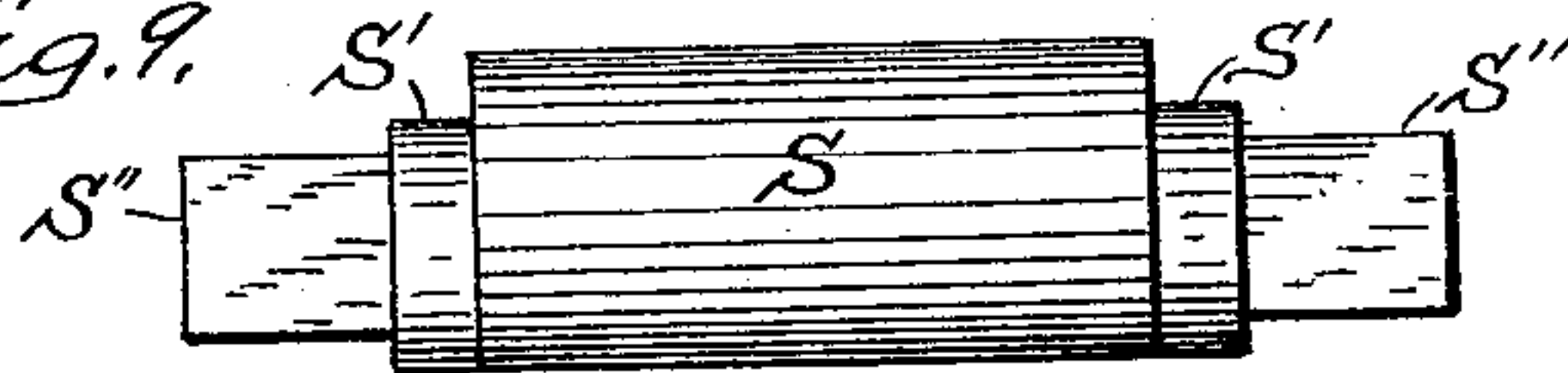


Fig. 9.



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UNITED STATES PATENT OFFICE.

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TIRE-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 600,117, dated March 1, 1898.

Application filed July 5, 1894. Serial No. 516,523. (No model.)

To all whom it may concern:

Be it known that I, MILTON G. BROOKS, a citizen of the United States of America, residing at Longton, in the county of Elk and State of Kansas, have invented certain new and useful Improvements in Tire-Setting Machines, of which the following is a specification, reference being had therein to the accompanying drawings, and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a side elevation of the tire-setter represented with the rim of a wheel placed therein as when in service. Fig. 2 is a top view thereof showing the wheel in section. Fig. 3 is a similar view, omitting the wheel and wheel-clamping device and having a portion of the tire-gripping keys removed. Fig. 4 is a vertical longitudinal section of the portion of the machine and a side view of the sliding head thereof. Fig. 5 is an end elevation of the machine. Fig. 6 is a vertical cross-section of the same adjacent the center thereof. Fig. 7 is a detailed view of a pair of the tire-gripping keys of the machine. Fig. 8 is a detailed perspective of the wedge-plate for adjusting the seat of said keys, and Fig. 9 is a detailed side view of the cross-eccentric of the machine.

This invention relates to certain improvements in a hand-operating machine or device for setting wagon-tires without removing the tire from the wheel; and it consists of certain construction and arrangement of parts, which improvements are fully set forth and explained in the following specification and pointed out in the claims.

Referring to the drawings, B represents the body or body-frame of the machine, having formed therewith feet B' for securing it to a floor or bench, as shown at A in Fig. 1, by means of bolts V, as shown. Said body-frame is further provided with one end portion raised and shaped to form a horizontally-curved surface, G (see Fig. 3,) with correspondingly-curved sides *a a*, thus forming what I have termed the "fixed head" of the machine; also, said body-frame is provided with the horizontal benches E, one at either side, upon which is placed the sliding head B', which has a depending longitudinal cross-head K, which

underreaches the shoulders of said benches, as shown in Fig. 5, which cross-head maintains said head B' upon said bench so that it may slide longitudinally; also, said sliding head is made with a horizontally-curved surface G' of the same curved plane as that shown at G of the fixed head and with correspondingly-curved sides *a' a'*. The end of said stationary or fixed head is provided with two brackets J, arranged facing said sliding head, and said sliding head is provided with one of said brackets J', arranged to operate between said brackets J, which brackets are of a common surface plane with that of said heads, as shown in Figs. 3 and 4, and for the purpose of providing a support at the place between said heads.

S is a cross-shaft placed through a cross-bearing of the body-frame adjacent one end thereof, as shown in section in Fig. 4, which shaft is made at each end with an eccentric section S' and with a square section S'', extending centrally from said eccentric, as shown in Fig. 9, and links, as shown at D, are placed with one end on said eccentrics and the other end on said extending lugs R of the sliding head B', so that by rotating said cross-shaft said links will be operated by said eccentrics to draw said sliding head toward said fixed head, or vice versa, and as a means of turning said shaft the wrench-levers L are employed by placing them on said square sections S'' of said shaft, as represented in Figs. 1 and 2, which are grasped by operators who apply power bodily thereto to attain the desired movement. One or two of said wrench-levers may be employed with one or two operators, as the work to be done may demand. As a means of retaining said links D on the said eccentrics and lugs the body-frame is provided with side extending lugs M, which have set in them upright pins or posts T, one adjacent the outer side of each link, which prevents the removal of said links prior to the removal of said pins T.

P and P' are posts fixed in benches E, one post in each bench adjacent the fixed head of the machine, the post P being made with an eye at its upper end which has jointed therewith the forked end of a cross clamp-arm C' by means of a bolt or cross-pin C'',

which clamp-arm is made with a hole through its opposite end so arranged that when the arm is brought to a horizontal position the upper end of the part P' will protrude through
 5 said arm hole, and a cross-pin *d* is placed through a hole of said post above said arm end to prevent said arm end rising at certain times; but when said pin is removed said arm may be turned up off of said post and back
 10 to clear the space between said two posts P and P'.

C is a cranked screw turned through a correspondingly-threaded hole in the clamp-arm C' and has swiveled on its lower end a
 15 foot-piece Z. The face sides *a* and *a'* of said heads are respectively made with their bearings or contact-faces at an angle longitudinally of the machine, as shown, and the tire-gripping keys F and F', which are respectively
 20 placed upon the surfaces G and G' of the machine-heads, are provided with correspondingly-shaped edges adapted to register with said head sides, as shown, the opposite edges of said keys being reduced in width, as shown
 25 in Figs. 5 and 6, and serrated or roughened along said edges, as represented in Figs. 2, 3, 4, and 7.

In setting a tire the clamp-arm C' is first turned back. The wheel is then placed jointly
 30 upon the faces, G and G' of the machine-heads, which brings the wheel-tire between the serrated or gripping edges of the keys F and F', when said keys by being given a longitudinal movement ride in toward and against the tire,
 35 caused by reason of their angling bearings. The clamp-arm C' is then brought over and secured over post P', and the screw C turned down to bring the foot Z to bear firmly against the rim of the wheel W, after which the op-
 40 erating-lever L is grasped and operated, or two of said levers may be operated jointly to draw the sliding head, as before described, which movement, by reason of the angling bearing of the said tire-gripping keys, causes
 45 said keys to be wedged and gripped hard against the edges of the tire to firmly hold, so that continued movement causes the section of tire between the two heads to be upset, and thus shorten the circumference of the
 50 tire, hence accomplishing what is termed "setting the tire," the wood rim of the wheel and the brackets J and J' of the machine-heads preventing the buckling of the tire during such operation. When a tire is thus set,
 55 a reverse movement of the lever L will reverse the head B' and thereby release the grip of the keys F and F' from the edges of the tire.

The curve of surfaces G and G' of the two heads of the machine is made to register with
 60 that of the rear or larger wheels of a wagon, so that the serrated edges of the keys F and F' will register evenly with the edges of the wheel-tire, (see the left side in Fig. 4 and dotted lines in Fig. 1,) and when smaller wheels, as the front
 65 wheels of a wagon, are operated upon to set their tires wedge-blocks or plates H are em-

ployed by placing them under the outer ends of the said grip-keys to raise the outer end and thus change their curvature so they will more evenly grip the edges of the tire of such
 70 small wheels, as represented at the right in Fig. 4.

Having thus described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is as follows: 75

1. In the tire-setting machine described, the combination with the gripping-heads thereof provided with the sides *a*, and *a'*, having their engaging faces made respectively
 80 with the two-part or double inclines, and the gripping-keys F and F', provided with the serrated or roughened gripping parallel edges, the two-part or double inclines, respectively adapted to register with said inclines sub-
 85 stantially as set forth.

2. The combination of the stationary gripping-head, provided with the double inclined sides, the double inclined tire-gripping keys, and mounted on the bench-frame as shown; the sliding gripping-head provided with cor-
 90 respondingly-inclined sides, with the inclined tire-gripping keys, the side extending lugs, and mounted on said bench-frame; the cross-shaft boxed in said frame, provided with the eccentric, and the square lever-shank at each
 95 end, the links placed connecting said eccentrics with said sliding-head side lugs; the lever, or levers, for operating said eccentric-shaft; and the tire and felly holding clamp attached to said frame, substantially as set
 100 forth.

3. In the tire-setting machine described, the combination with the gripping-heads, provided with sides *a* and *a'*, having their engaging faces made respectively with the two-
 105 part or double inclines, the gripping-keys F and F', provided with the serrated or roughened gripping parallel edges, and with the two-part or double inclines respectively adapted to register with said inclines, and the wedge-
 110 block H.

4. The combination of a stationary gripping-head, provided with the double inclined sides, the bracket J, the double inclined tire-grip-
 115 ping keys mounted on the bench-frame as shown, the sliding gripping-head provided with correspondingly-inclined sides, the brackets J', their inclined tire-gripping keys, with the side extending lugs, and mounted on
 120 said bench-frame; the wedge-block H, the cross-shaft boxed in said frame and provided with the eccentric, and the square lever-shank at each end, the links connecting said eccentrics with said sliding-head side lugs, the lever or levers for operating said eccentric-
 125 shafts, and the tire and felly holding clamps attached to said frames.

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Witnesses:

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