(No Model.)

J. JONES.

TIRE SETTING APPARATUS.

No. 301,371. Patented July 1, 1884.

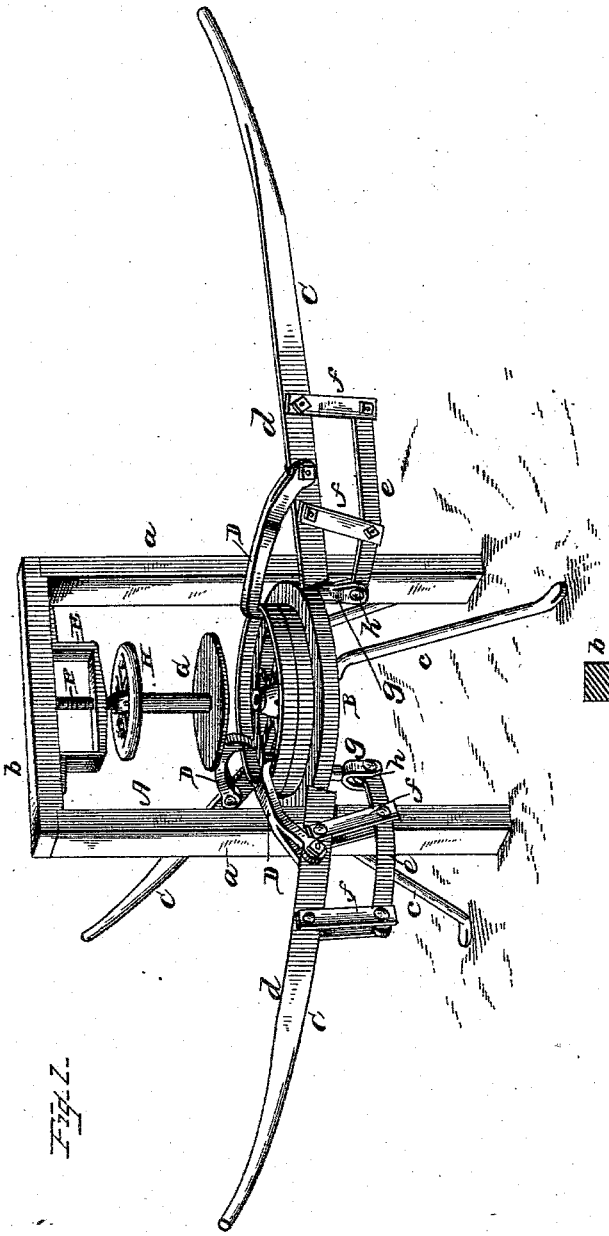

Fig. 1.

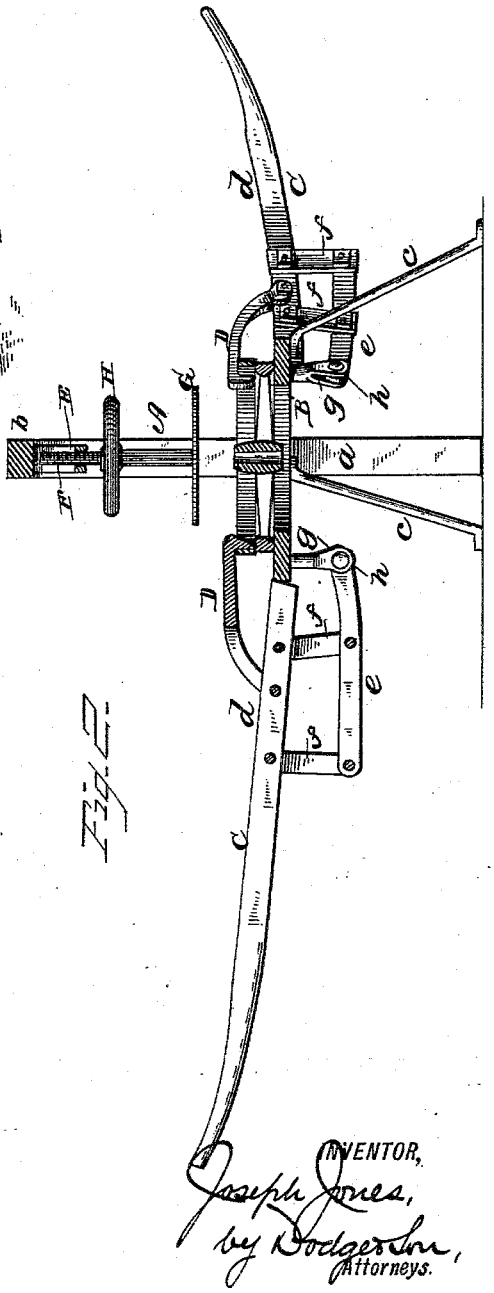

Fig. 2.

WITNESSES.

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JOSEPH JONES, OF SPRINGFIELD, OHIO.

TIRE-SETTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 301,371, dated July 1, 1884.

Application filed November 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH JONES, of Springfield, in the county of Clark and State of Ohio, have invented certain Improvements in Tire-Setters, of which the following is a specification.

This invention relates to apparatus for setting tires on wheels, and for producing, modifying, or removing the "dish," as required.

The invention consists in an annular bed to support the felly, a series of levers of peculiar construction jointed or pivoted thereto at regular intervals, and provided with hooks or claws to engage over the tire, and a central disk above the table or bed, provided with an elevating and depressing screw, by which it may be made to bear with any desired pressure upon the hub of a wheel upon said bed, whether the disk be used with or independently of the levers.

In the accompanying drawings, Figure 1 represents a perspective view of my improved machine or apparatus; Fig. 2, a vertical central sectional view of the same.

The present invention is designed, primarily, to supersede the common mode of setting tires merely by the aid of hand-tongs, which plan is at once uncertain and difficult of application, requiring skill and familiarity with the work, and often involving considerable injury of the felly where such skill or care is lacking. With this purpose in view I construct the apparatus in the following manner, referring again to the drawings for illustration of the parts described.

A indicates a strong wooden frame, consisting of two uprights, *a a*, and a top cross-piece, *b*, firmly joined together in any convenient manner. At a suitable height within said frame or between the posts *a a* is placed a horizontal annular bed or table, B, of metal, usually about five or six inches in width all around, and of a diameter suited to receive and support wheels of all ordinary sizes, though it is of course obvious that different machines may be provided to accommodate different-sized wheels where the variation is great. One machine will ordinarily answer all requirements, however. The bed or table B is sustained by the posts or uprights *a a*, and also by legs *c c*, or in any other convenient manner.

C C C indicate levers, of which I preferably use three, as shown, arranged radially and equidistant from each other about the table. These levers C are each composed of two parts, *d* and *e*, connected by links *f*, as shown, so that one part may move longitudinally in relation to the other. The member *d* is made long and fashioned into a hand-lever, as indicated, while the member *e* is shorter, extends slightly beyond the inner end of hand-section *d*, and has said projecting end jointed to an eye or lug, *g*, at the lower side of the bed or table, B, as shown. The joint *h* forms a pivot or center of motion about which the lever C, as a whole, may be raised or lowered, and the links *f* permit the hand-section *d* to be moved longitudinally in or out toward or away from the bed or table. Each lever C is furnished with a hook or claw, D, forked at one end to straddle the lever, and pivoted thereto advisably at a point between the links *f*, as shown. These hooks or claws serve to engage over the tire and to draw it both outward and downward over the felly of a wheel placed upon the bed or table, as will be readily understood from the drawings. By reason of the endwise movement of the hand-pieces *d* of the levers C, and the consequent endwise movement of said sections and the hooks they carry, the hooks and levers may be instantly adjusted to suit wheels and tires of different diameters. In fact, they will automatically adjust themselves thereto, thus giving the machine a wide range of use. The levers permit a great amount of force to be applied when necessary, yet may be operated with as slight force as desired; but in any case the power is applied in the proper direction with the utmost certainty and ease.

In applying tires to wheels it is often found necessary to give them a greater amount of dish or depression at the center than is found in them when handed over to the smith for the application of the tire, or to lessen the dish, or in some cases to remove the dish entirely. This, to be done effectually and to remain permanently done, must be done at the time the tire is applied, in order that the tire may be shrunk on with the wheel in the desired shape, and thus made to bind and hold it in such shape. I therefore provide at the top of the frame A a metal yoke, E, having

a central threaded hole to receive a vertical screw-stem, F, which carries at its lower end a broad, flat disk, G, and at a convenient height above the disk a hand-wheel, H, by which the screw may be rotated to cause the raising or lowering of the disk. The wheel being sustained by the bed or table B beneath its felly, but unsupported at its center, may be given any required degree of dish by forcing down the disk upon the hub of the wheel through the turning of the screw, the disk being advisably held firmly against the hub during the application and until after the shrinking of the tire upon the felly.

If it be desired to lessen or remove the dish of a wheel, the raised center is placed uppermost and the pressure applied as before.

I am aware that a lever provided with a hook to engage over the tire and to draw the latter down upon the felly of a wheel is not new in and of itself; but I am not aware that any one has ever before constructed the levers in the manner herein described, or arranged them or other parts to operate as herein set forth.

I am further aware that a tire-setting device has been provided with a central screw-stem or spindle to pass through the hub of the wheel, and with nuts to bear against the ends of the hub to produce the desired dish and retain the same during the cooling of the tire. This I do not claim. My plan differs from the above in that the disk bears only against one end of the hub; that the spindle does not pass through the hub, and that it is not necessary to first remove a nut before the wheel can be removed, or to adjust two nuts in order to regulate the dish.

Having thus described my invention, what I claim is—

1. In a tire-setting machine, in combination with a supporting-bed having an open center, a series of radial levers, each provided with a hook or claw projecting inward over the bed and pivoted to said bed, substantially as shown and described.

2. In a tire-setting machine, in combination with a supporting-bed, B, having an open center, radial levers C, consisting of parallel parts *d* and *e*, connected by links, one of said parts being pivoted to the bed, substantially as explained, and hooks D, applied to said levers and projecting inward over the bed, as and for the purpose explained.

3. In a tire-setting machine, in combination with an annular supporting-bed, a central screw-stem wholly above the same, provided with a disk at its lower end, adapted to be forced downward toward the open center of the bed, substantially as set forth.

4. The herein-described apparatus for producing the proper dish of and applying tires to wheels, consisting of frame A, annular bed B, compound levers C, jointed or pivoted to said bed and provided with hooks D, yoke E, screw-stem F, and disk G, and hand-wheel H, applied to said screw-stem, all substantially as shown and described.

JOSEPH JONES.

Witnesses:
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