

No. 797,832.

PATENTED AUG. 22, 1905.

H. E. & H. Z. YOUTZ.
LAND ROLLER.

APPLICATION FILED SEPT. 15, 1904.

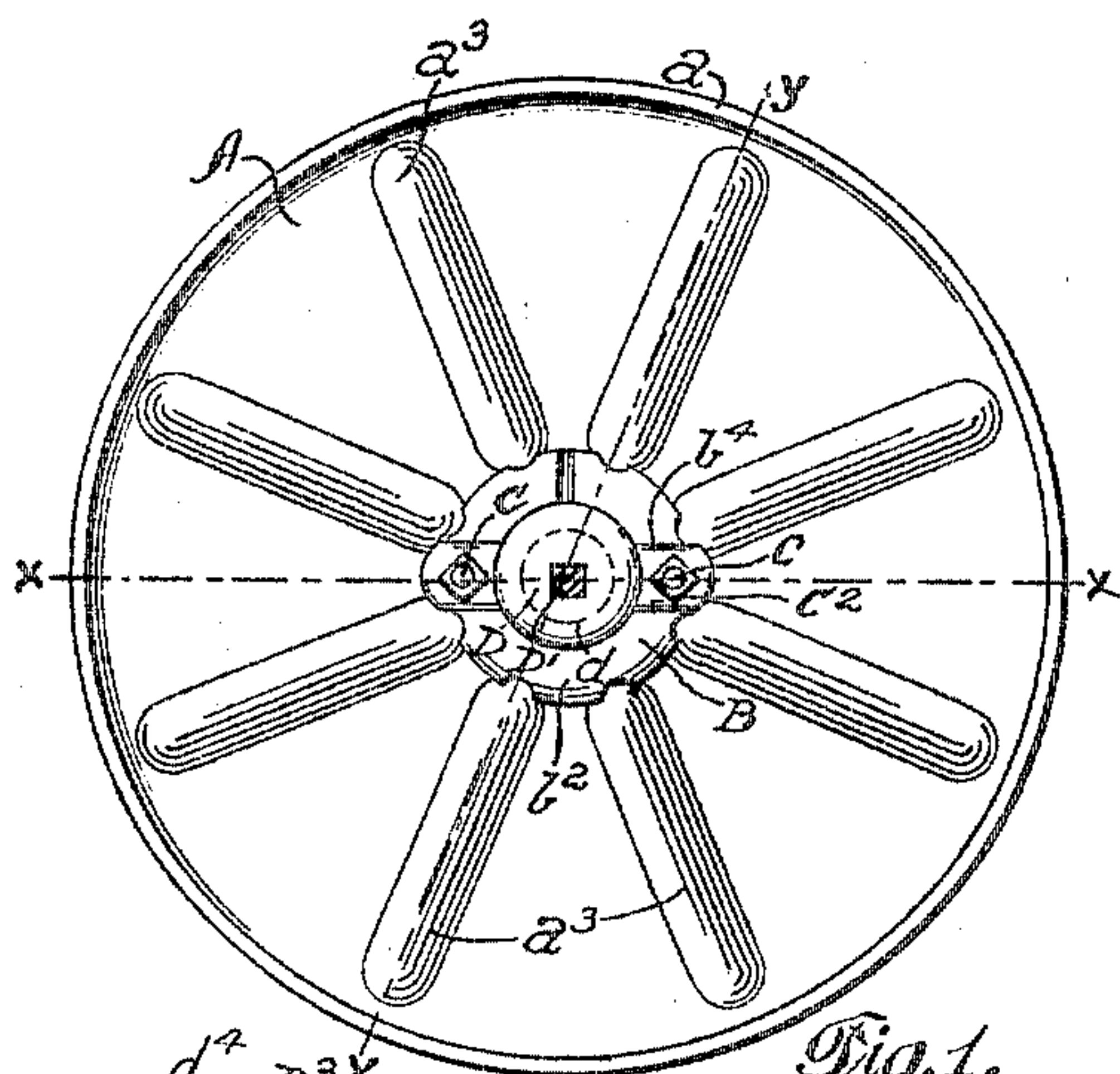


Fig. 1.

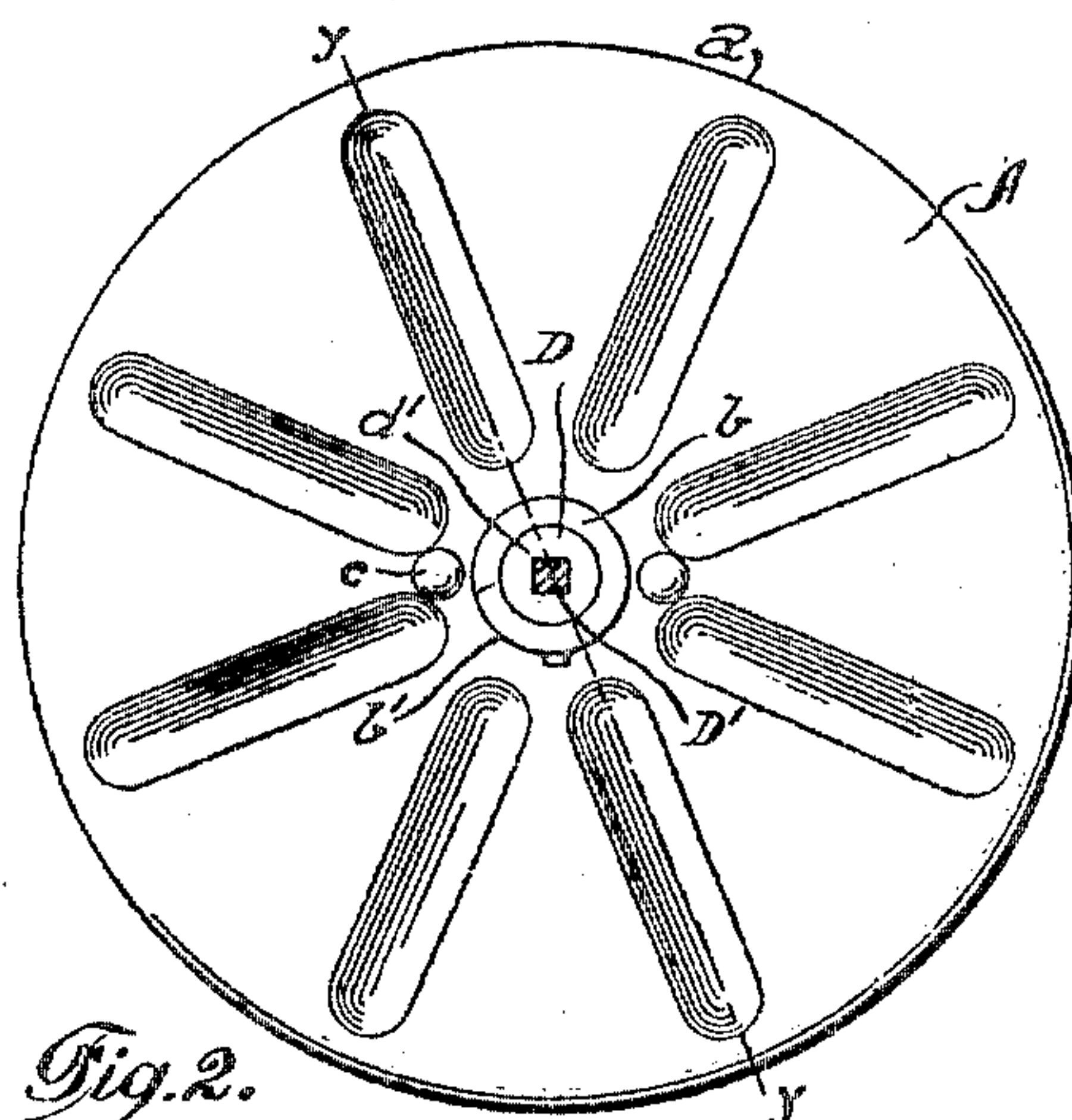


Fig. 2.

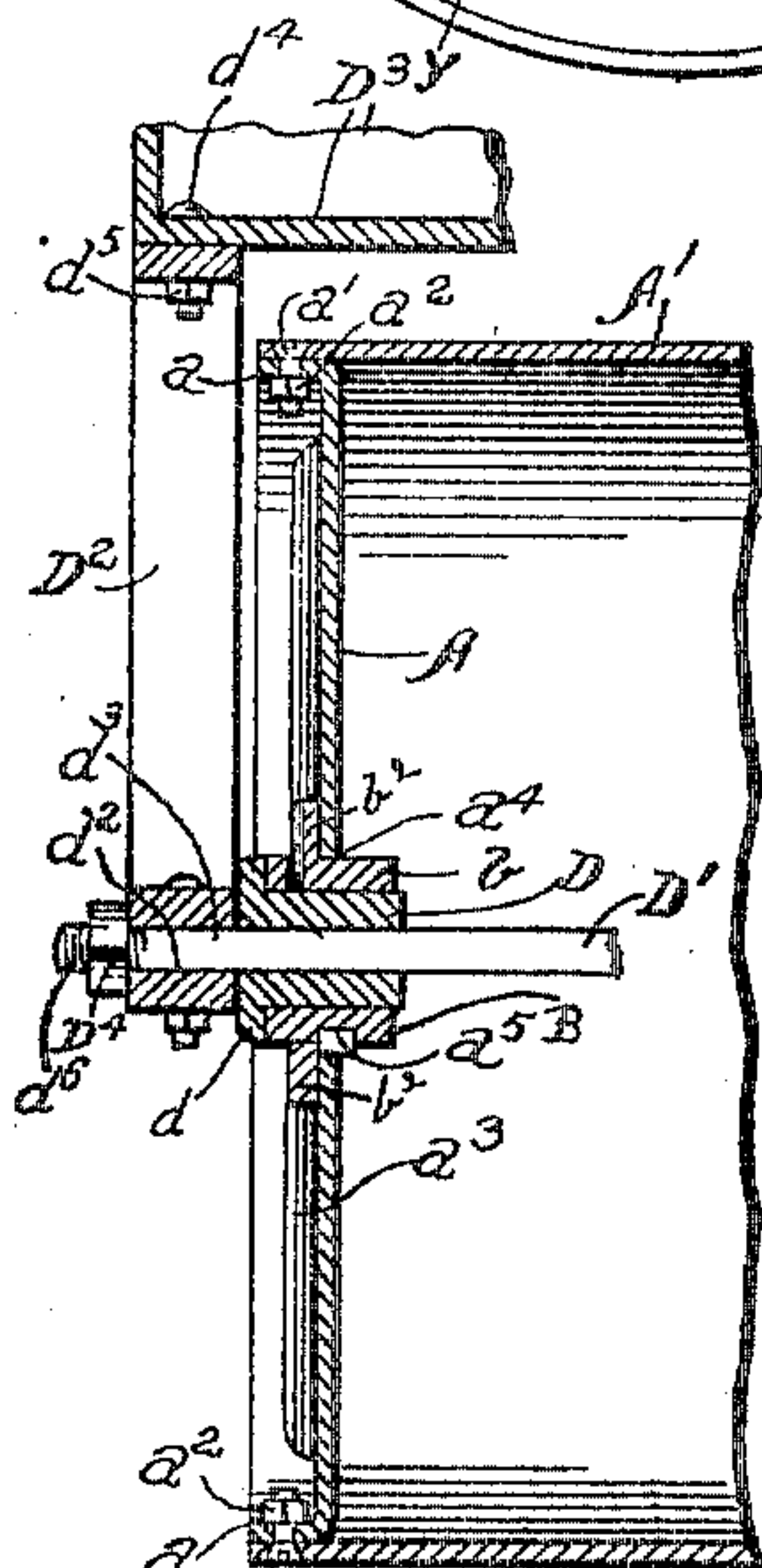


Fig. 3.

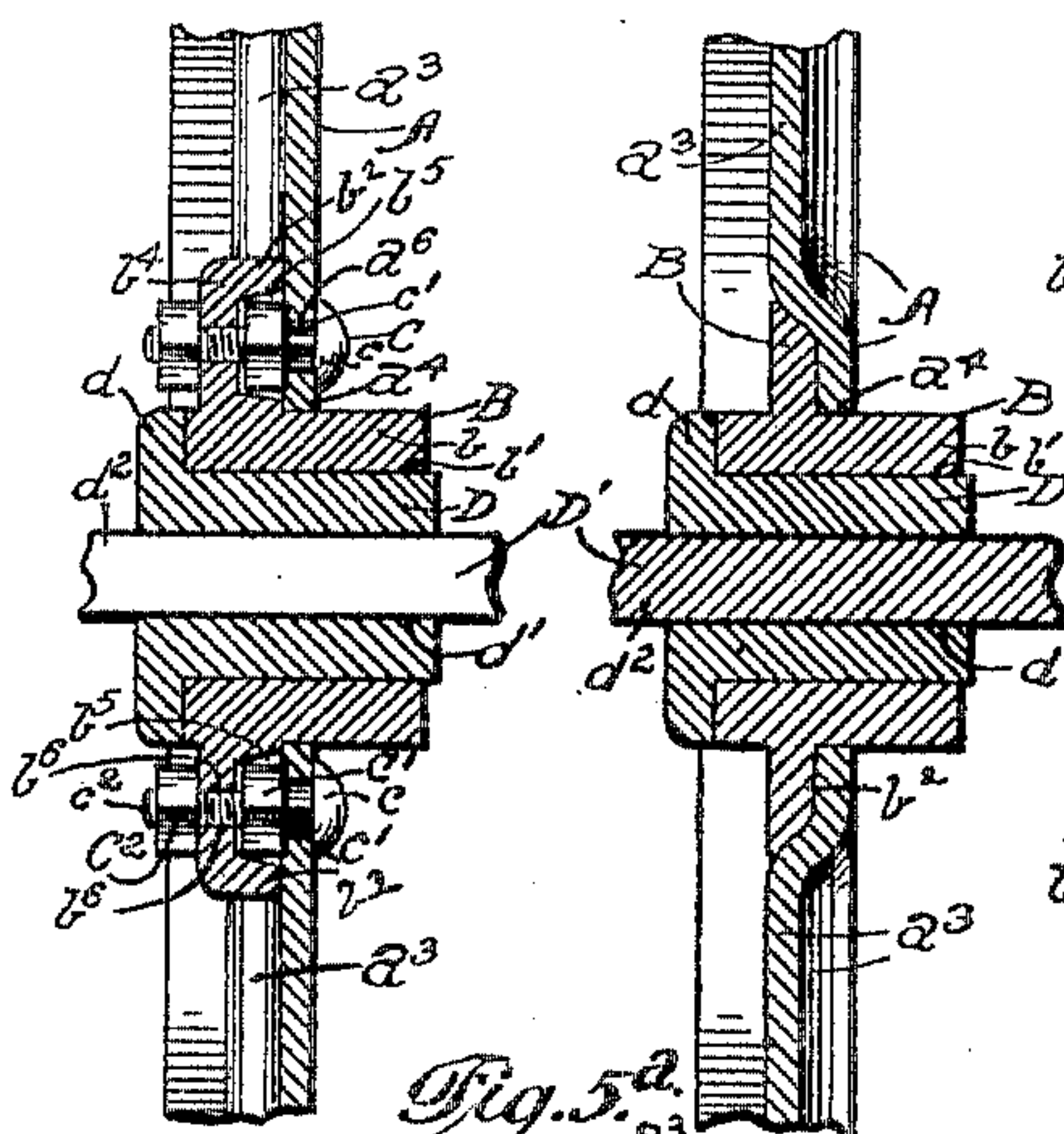


Fig. 4.

Fig. 5a.

Fig. 5.

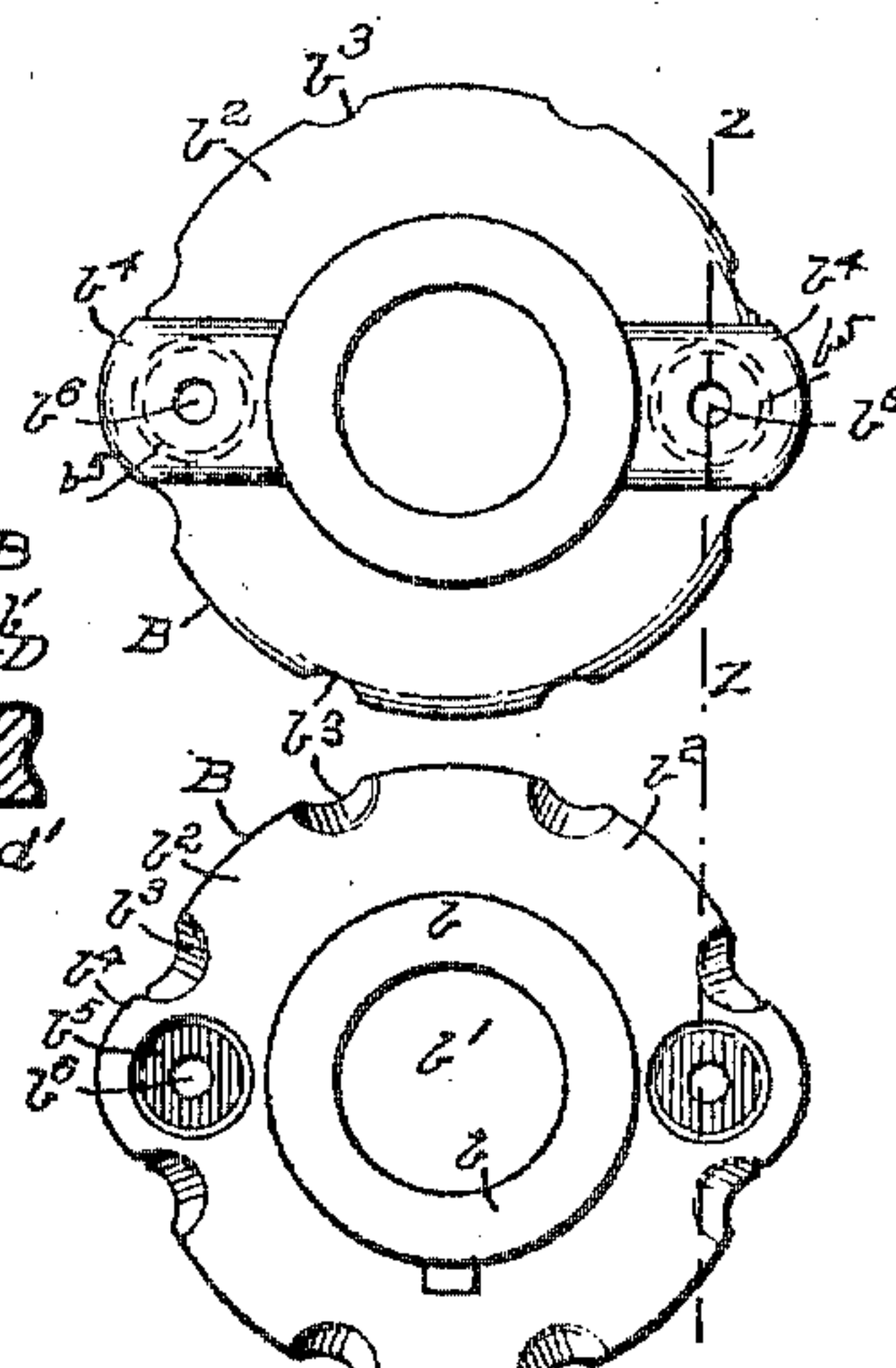


Fig. 6.

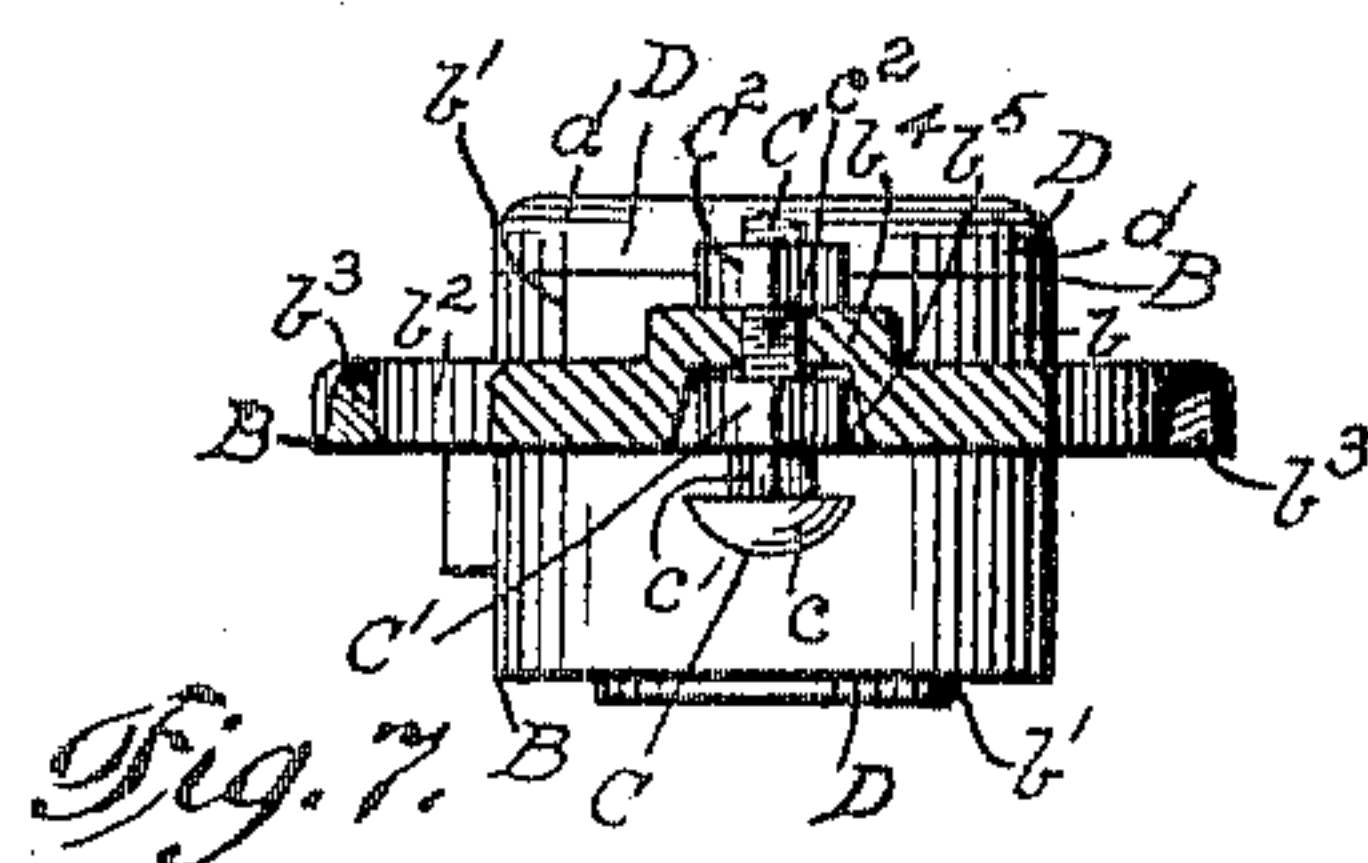


Fig. 7.

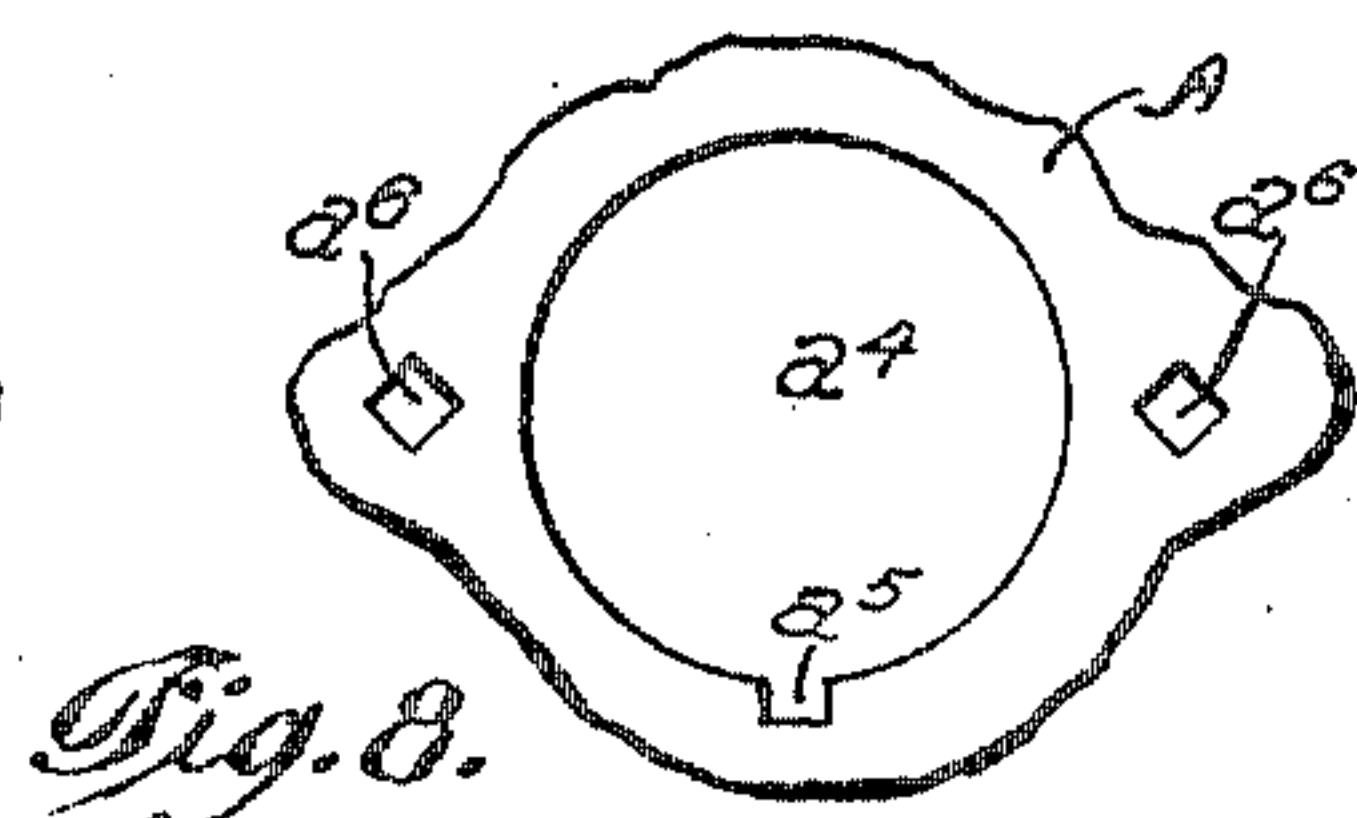


Fig. 8.

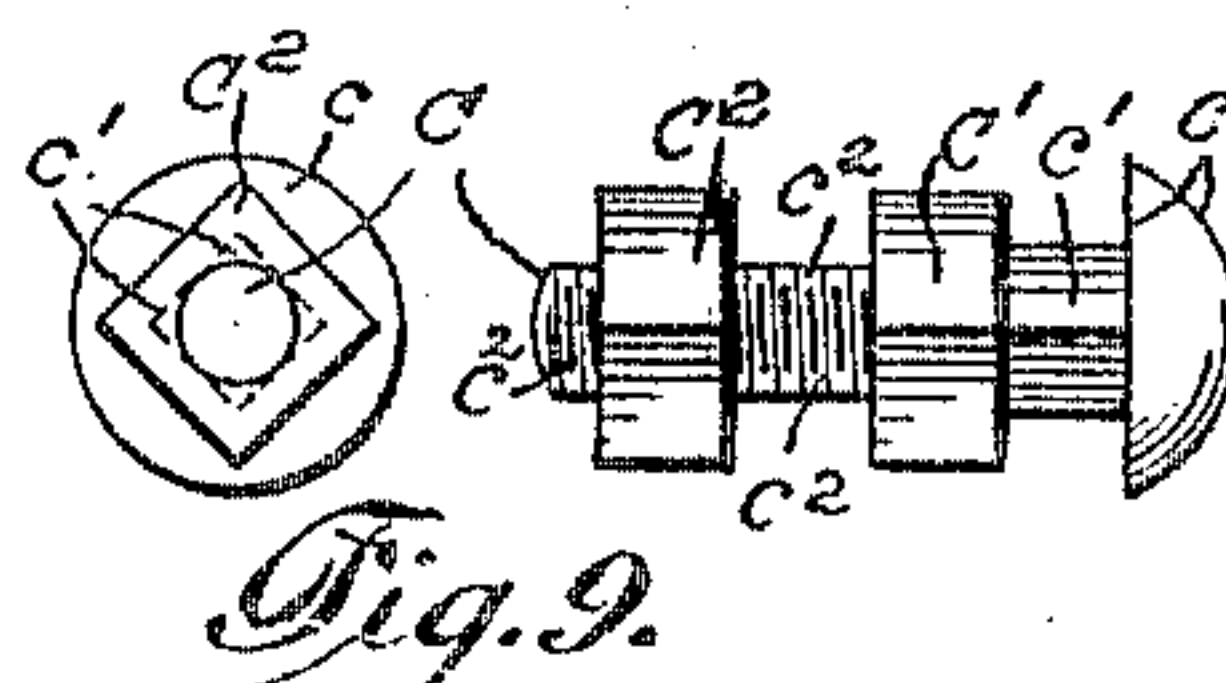


Fig. 9.

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UNITED STATES PATENT OFFICE.

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LAND-ROLLER.

No. 797,832.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed September 15, 1904. Serial No. 224,537.

To all whom it may concern:

Be it known that we, HARRY E. YOUTZ and HARVEY Z. YOUTZ, citizens of the United States, residing at Mountville, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Land-Rollers; and we 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.

This invention relates to improvements in a land-roller of that class which is set forth in Patent No. 524,536, dated August 14, 1894, granted to James F. Youtz, and it may be considered as extending the scope of said invention; but our present invention relates more particularly to the construction of the roller-head as well as to the formation of its hub and the mounting of the sleeve or thimble therein.

The object of the invention is to so construct the roller-head and the hub that the latter may be securely mounted at the center of the former, preventing all shearing therebetween, and in which provision is made to conveniently and expeditiously remove worn-out parts therefrom and replace them with new ones.

The elements of the invention will severally and at large appear in the following description, and they will be separately and combinedly pointed out or set forth in the appended claims.

The purposes of the invention are attained by the mechanism, devices, and means illustrated in the accompanying drawings, with similar reference characters to designate like parts throughout the several views, in which—

Figure 1 is an outside elevation of the left-hand end roller-head embodying the elements of the invention; Fig. 2, an inside elevation of the same head; Fig. 3, a longitudinal central vertical section of the left-hand portion of the roller, showing the end-supporting hanger with a portion of the roller-frame in place; Fig. 4, an enlarged section of the central portion of Fig. 1, the section being taken on the line $x x$ and vertically placed; Fig. 5, a similar section to Fig. 4, but taken on the line $y y$ and similarly placed; Fig. 5^a, a completed and direct elevation of the lower end of the corrugated portion of Fig. 5; Fig. 6, a direct and inverted plan of the hub or bush-

ing plate as it appears when detached from Fig. 1 and enlarged; Fig. 7, a direct sectional elevation of the hub-bushing, with the retaining-key, the securing-bolt, and the sleeve or thimble in place; Fig. 8, a direct and enlarged plan of the central portion of the head, showing the bushing-aperture with the key-seat therein and the angular bolt-orifices in the sides thereof; and Fig. 9, an enlarged side elevation and a direct plan of the securing-bolt with the nuts thereon as they appear when detached from Fig. 4.

In the drawings, A designates the left-hand end roller-head, being a circular disk of the required dimensions, preferably punched from approved sheet-steel, the disk having an outwardly-turned peripheral rim or flange a , to the outer surface of which is secured the left-hand end of the cylindrical roller-drum A' , as by bolts a' passed therethrough with nuts a'' on their threaded ends. In the body of the disk, on the outer surface thereof, are raised radial corrugations a^3 in the semblance of spokes, imparting strength thereto. At the center of the disk is a circular aperture a^4 , to be engaged by the cylindrical part of the hub-plate or bushing yet to be described. In the peripheral edge of said aperture is an angular recess or notch a^5 for the seating of a key attached to said cylindrical part, preventing it from rotating or turning, while on the diametrical line at the required distances from the center thereof, through the body of the disk, are formed angular orifices $a^6 a^6$, through which bolts yet to be described serve to secure said bushing or hub plate in place.

Applied to the outer surface of the disk, at the center thereof, is a hub-plate or bushing B, with a tubular portion b engaging through said aperture a^4 , said tubular portion having an axial bore b' for seating the sleeve or thimble, to be hereinafter mentioned. At the required point around the convex surface of said tubular portion, integral therewith, is a circular plate or ring-flange b^2 of the required dimensions to engage against the adjacent surface of the disk and having in the peripheral edge thereof under-surface recesses b^3 , to be engaged by the inner ends of the disk-corrugations a^3 when it is placed in position thereon, preventing all shearing motion or rotation, while in the outer surface of said tubular portion at the required point and longitudinally disposed is seated a key to engage in the

angular notch a^5 of the disk, aiding in preventing said shearing rotation. At diametrically opposite points of the ring-flange b^2 , between the adjacent pairs of the edge recesses b^3 and projecting outwardly from the tubular portion b , are formed upwardly-thickened portions b^4 , having in their under surfaces nut-housing recesses b^5 , in which nuts, to be hereinafter mentioned, serve to secure the bushing-securing bolts to the body of the disk, while at the center of recesses through the top walls of said thickened portions are formed orifices b^6 for the passage therethrough of the threaded portions of said bolts.

For the purpose of securing the bushing to the disk, bolts C C are applied thereto, and to this end said bolts have flat-surfaced heads c engaging against the inside surface of the disk, and from the flat surfaces of said heads project angular portions c' , fitting into and engaging through the angular orifices a^6 of the disk, and the bolts from said angular portions forward are provided with screw-threads c^2 , while nuts C' C', screwed home thereon, serve to securely affix said bolts in place, with the recesses b^5 housing said nuts when the bushing-plate B is placed in position on the disk or roller-head and the forward ends of the screw-threaded portions of the bolts passed through the orifices b^6 of the thickened flange portions b^4 , with nuts C² C² screwed home thereon, serve to securely affix said bushing-plate to the roller-head, and from which it may be readily removed by simply unscrewing and taking off the nuts C².

Within the axial bore b' of the tubular portion b of the hub or bushing plate B is seated a sleeve or thimble D, having at its forward end a surrounding ring-flange d of the required dimensions to engage against the outer-end edge of said tubular portion, said sleeve having lengthwise through its body in the axis thereof an angular aperture or opening d' , through which is passed a closely-fitting axle-bar or roller-shaft D', extending throughout the length of the roller and having outer ends, like its left-head end d^2 , closely engaging the angular opening d^3 , formed in the lower end bars of the hanger D², with its upper end secured to the under surface of the base-plate of the roller-frame D³, as by bolts d^4 passed therethrough, with nuts d^5 screwed home on their threaded ends, while a nut D⁴ on the threaded end d^6 of the shaft and firmly screwed home against the hanger serves to securely bind the hanger and sleeve together, holding the sleeve rigidly in position, the right-hand end of the shaft having been similarly treated but oppositely disposed.

It will here be remarked that with the construction of the hub or bushing plate B with the mounting thereof on and securing it to the roller-head A by means of bolts C, all as hereinbefore described, determine or conclude the elements of the present invention,

for the sleeve D, with the shaft D', the hanger D², and the mounting thereof onto the roller-frame D³, being all as described or set forth in the patent to James F. Youtz, hereinbefore mentioned, are not claimed as elements in this, but are used only to complete the construction.

The invention having thus been ascertained and described and the manner in which its functions are performed fully shown and set forth, what is considered new, and desired to be secured by Letters Patent, is—

1. In a land-roller having a cylindrical drum the combination with said drum of a roller-head A comprising a circular disk having at the peripheral edge thereof the outwardly-turned ring-flange a fitting into the ends of said drum, with the screw-bolts, a' therethrough and the nuts a^2 on the threaded ends of the bolts, and having in its outer surface the struck-up radial corrugations a^3 , with the circular aperture a^4 at its center and the key-seat a^5 in the edge of the aperture, with the angular orifices a^6 , all substantially as described and for the purpose hereinbefore set forth.

2. In a land-roller having the cylindrical drum A' the combination with the head A composed of a circular disk having the ring-flange a fitted into the ends of said drum and with the bolts and nuts a' a^2 removably secured, said disk having the radial outer-surface corrugations a^3 with the central aperture a^4 , and having the angular inner edge notch a^5 , with the oppositely-arranged angular orifices a^6 in the body of the disk adjacent to said aperture, of the hub or bushing-plate B with the tubular portion b in engagement with said aperture a^4 and the key in the convex surface thereof in engagement with the said notch a^5 , said tubular portion having the axial journal-bore b' , with the surrounding flange-plate b^2 in engagement with the outer surface of said disk, and having the under-surface edge recesses b^3 in engagement with the inner ends of said radial corrugations, a^3 , with the oppositely-arranged outer-surface thickened projections b^4 with the under-surface nut-housing recesses b^5 , having the central orifices b^6 through the top walls of said thickened projections, all substantially as described and for the purpose hereinbefore set forth.

3. In a land-roller having a cylindrical drum with the head A as described secured into the ends thereof, the combination with said head having the central aperture a^4 with the angular notch a^5 in its edge and the angular notches a^6 in the body of the head adjacent to said aperture, of the bolts C having heads c , the angular portions c' , and the screw-threaded stems c^2 , said bolts passed through said orifices, with their heads in close contact with the inner surface of said roller-head, their angular portions in engagement with the orifices and with nuts on said threaded

stems and screwed home onto the outer surface of the roller-head, and the hub-plate B as described applied to said outer surface, with the tubular portion b thereof in said central aperture a^4 , its key seated in said angular notch, a^5 , with the surrounding ring-flange b^2 having the under surface-edge recesses b^3 engaging the inner ends of the radial corrugations a^3 said flange having the opposite side upwardly-projecting thickened portions b^4 , with the under-surface nut-housing recesses b^5 engaged by said nuts C' and the central top orifices b^6 engaged by the outer ends of the

screw-threaded portions c^2 of the bolts, with the nuts C^2 thereon and screwed home onto the tops of said thickened portions, all substantially as described and for the purpose hereinbefore set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

HARRY E. YOUTZ.
HARVEY Z. YOUTZ.

Witnesses:

FRED. P. MENTZER,
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