

(No Model.)

J. F. YOUTZ.
LAND ROLLER.

No. 524,536.

Patented Aug. 14, 1894.

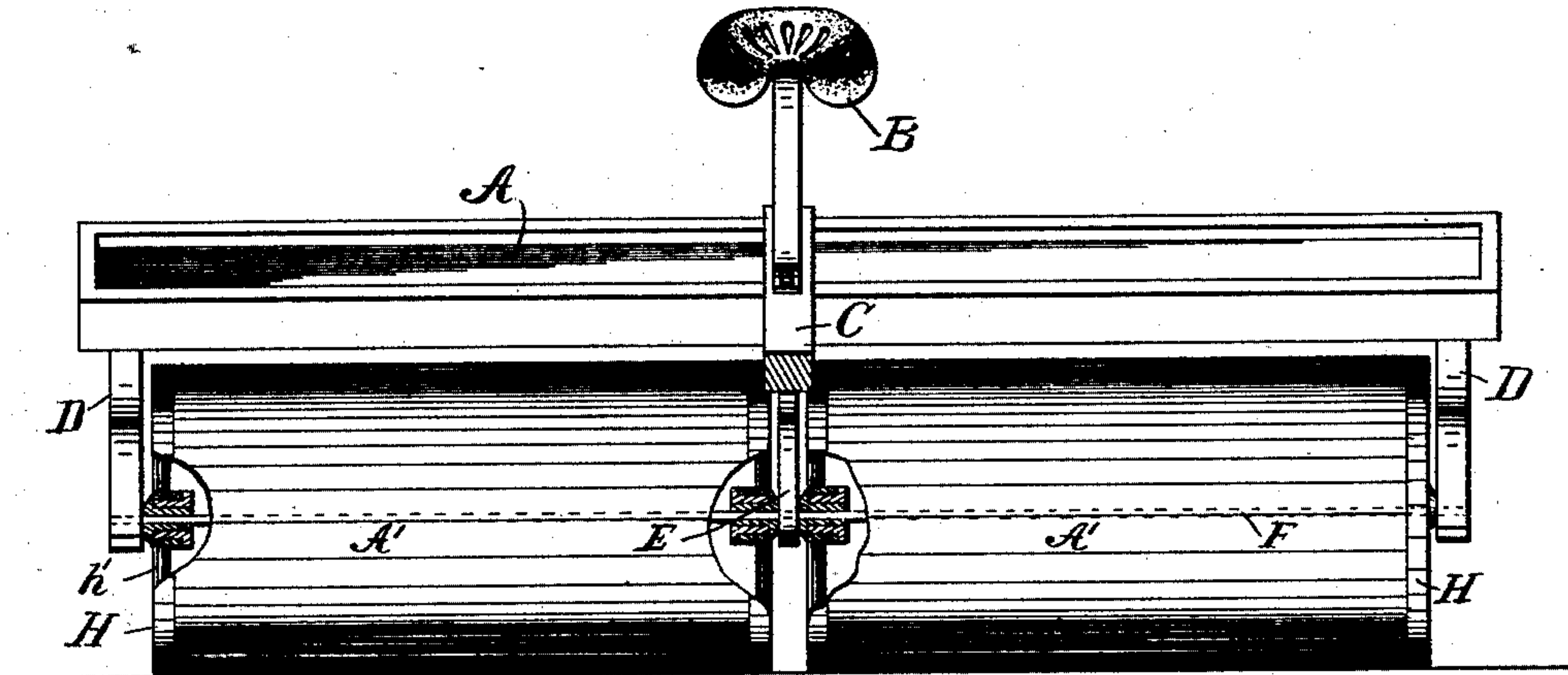


FIG. 1

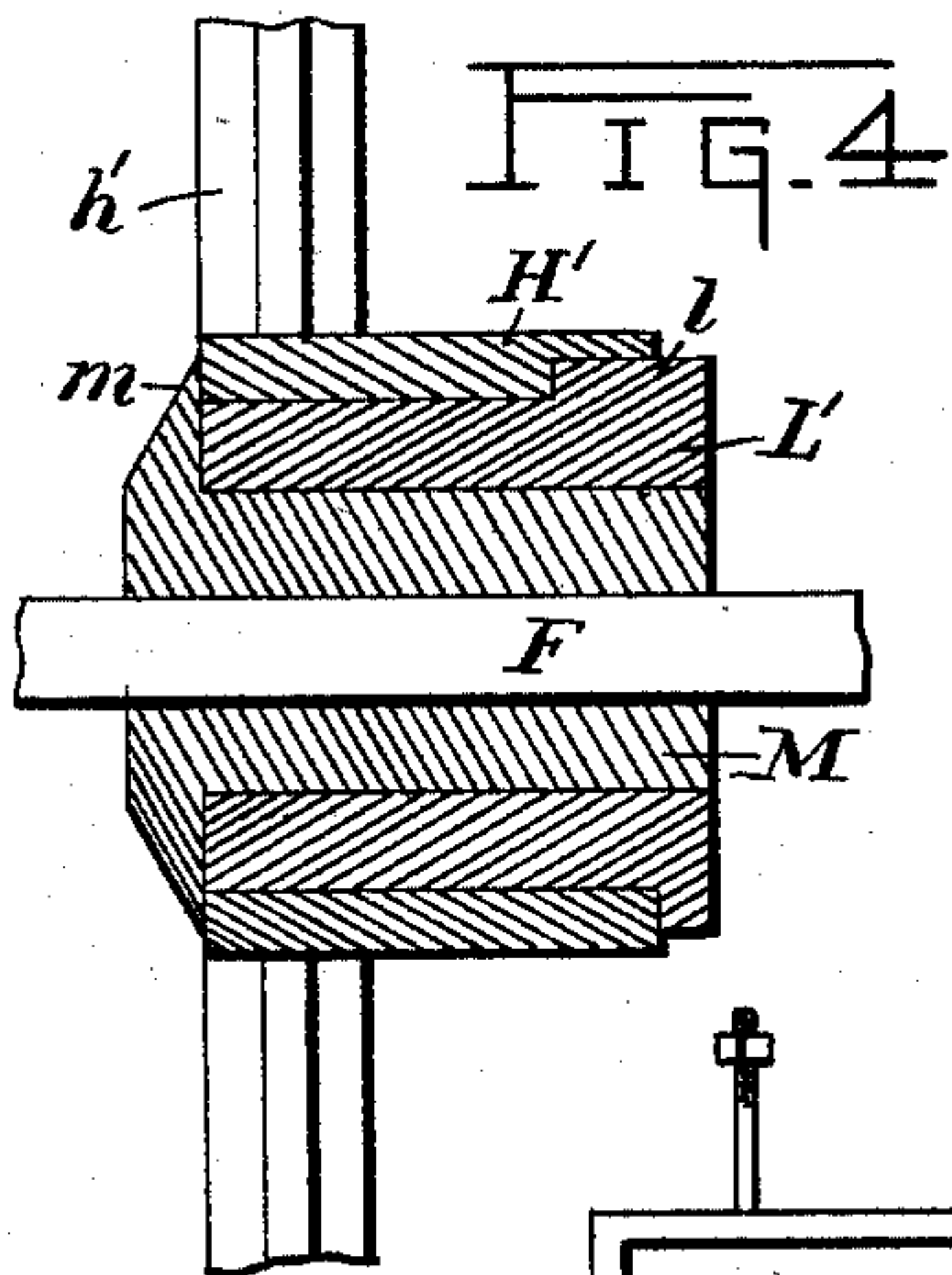


FIG. 4

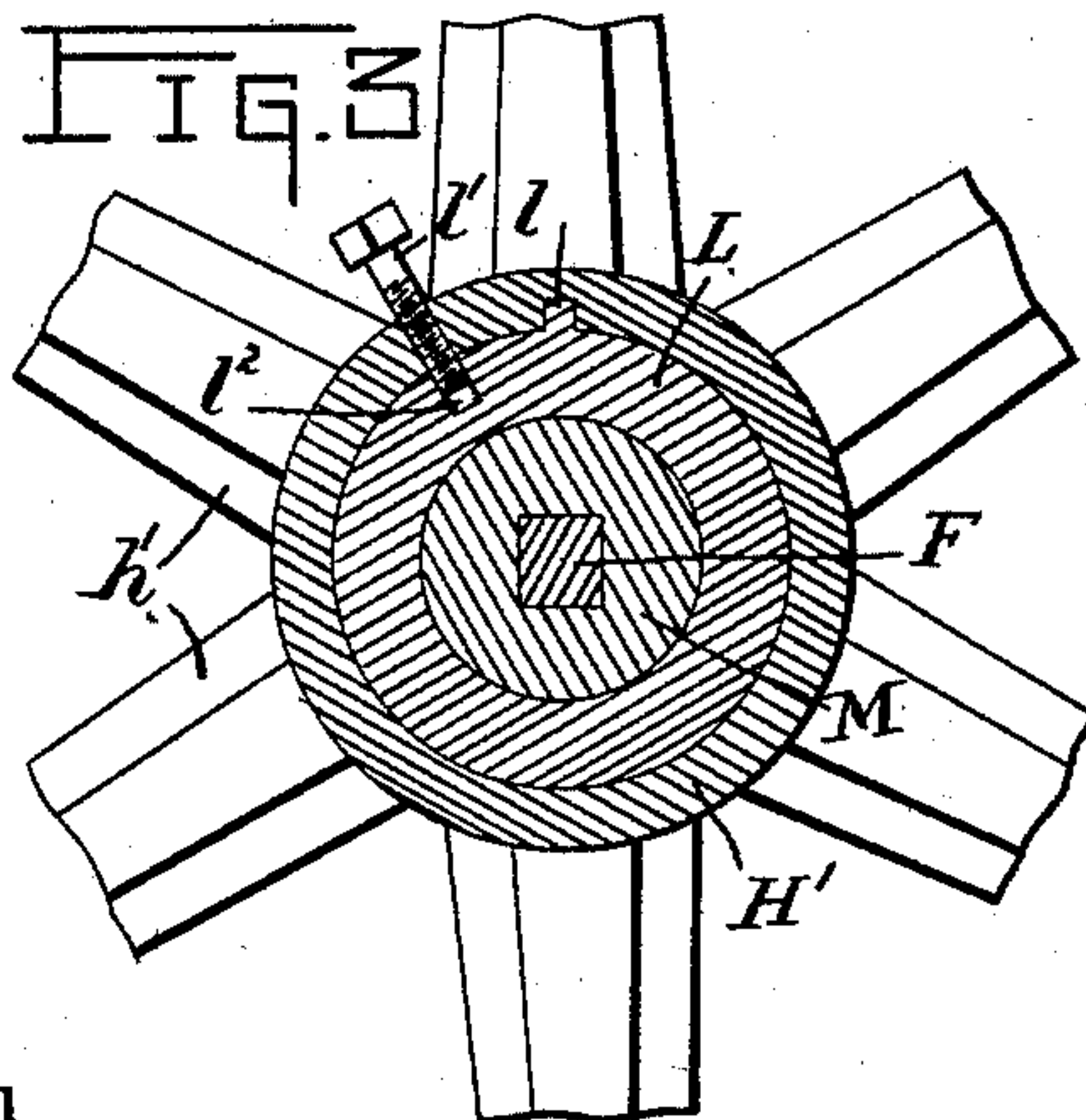


FIG. 3

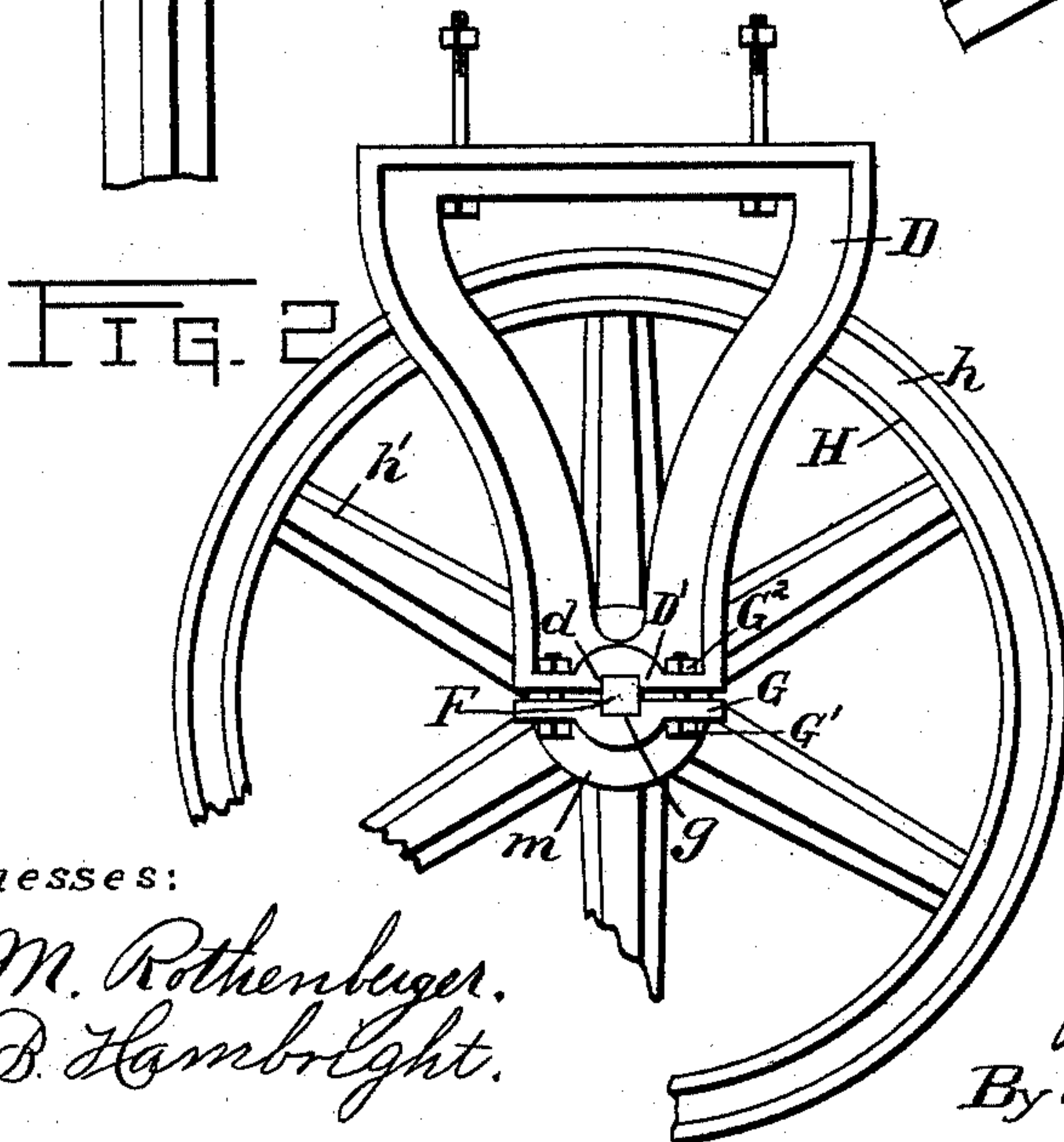


FIG. 2

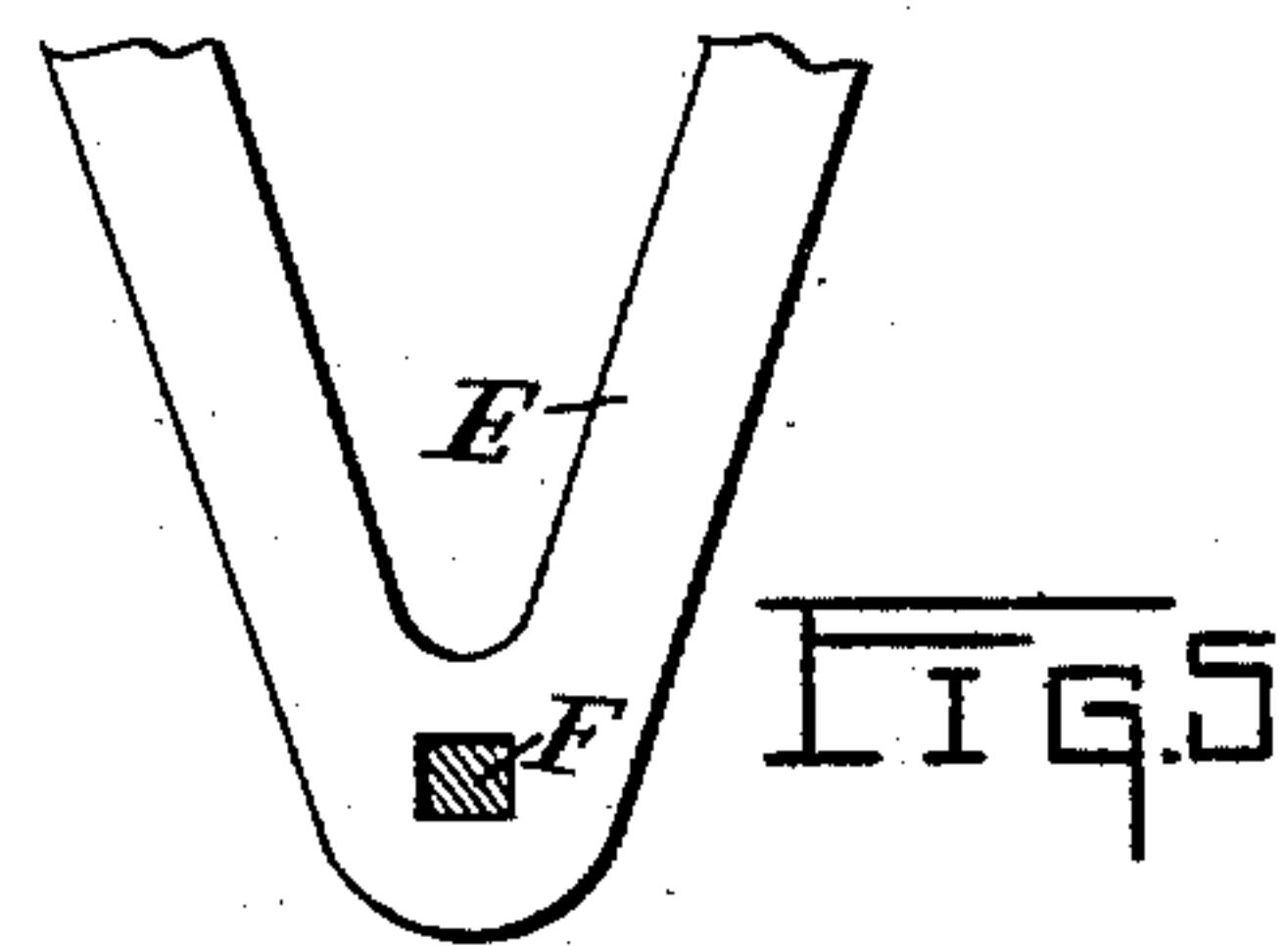


FIG. 5

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UNITED STATES PATENT OFFICE.

JAMES F. YOUTZ, OF MOUNTVILLE, PENNSYLVANIA.

LAND-ROLLER.

SPECIFICATION forming part of Letters Patent No. 524,536, dated August 14, 1894.

Application filed January 31, 1894. Serial No. 498,605. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. YOUTZ, a citizen of the United States, residing in Mountville, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Land-Rollers, of which the following is a specification.

This invention relates to improvements in that class of rollers used for crushing clods of ground thrown up in plowing; and the objects of the invention are, first, to prevent the wearing of the axle openings through the heads of the rollers; and second, to permit the members of the roller to be taken apart for transportation or storage more easily than those now in use. I accomplish these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a land-roller embodying my invention, portions of the rollers being cut away to show the connections between the same and the axle-bar. Fig. 2 is an end view of a roller-head and one of the outside hangers. Fig. 3 is a transverse section of one of the connections between the axle-box of a roller-head and the axle-bar, and Fig. 4 a longitudinal section of the same. Fig. 5 is a side view of the lower end of the central hanger.

Similar letters indicate like parts throughout the several views.

Referring to the details of the drawings, A indicates the frame of the roller, comprising a single member, as shown in Fig. 1.

B is the seat for the driver, and G the tongue of the roller.

The roller is divided into two sections, A', connected with the frame A, as is usual. A hanger D is secured to the under side of each end of frame A, and a hanger E to the under side of the center of said frame. A rectangular axle-bar, F, passes entirely through both sections of the roller and through an opening in hanger E, corresponding in size and shape with said axle-bar. The axle-bar also engages and is supported by hangers D. The upright members of each of these hangers are connected at their lower ends by a cross-plate D', having in the under edge thereof a rectangular recess *d*. A clamping plate or bar G is secured to the under side of bar D' by bolts G' and nuts G², and has a re-

cess *g* in its upper edge corresponding in shape and size and registering with the recess *d* in cross-plate D'. The ends of axle-bar F engage recesses *d* and *g* and are clamped therein by the tightening of plate G on plate D' by said bolts and nuts. The ends of roller-sections A' are engaged by heads H comprising annular rims *h*, spokes *h'*, and hubs H'. The bore of each hub is lined with a removable chilled bushing L having an annular opening extending longitudinally through it. Bushing L is prevented from revolving in hub H' by a feather *l*, formed thereon and engaging a corresponding recess in said hub. To prevent longitudinal movement of the bushing in the hub, a set-screw, *l'*, passes through a threaded aperture in said hub and engages an opening, *l''*, in the bushing, as shown in Fig. 3. A thimble M, having a longitudinal opening corresponding therewith, embraces the axle and engages the annular opening in the bushing L. On one end of each of these thimbles there is formed a collar *m*, which bears against the adjacent end of the bushing with which it is engaged covering all the joints formed by the parts within the hub and preventing the access of dirt thereto.

The hub of each of the heads H is connected with the axle-bar by a bushing and collar, as described; the outer faces of the collars at the ends of the axle-bar bearing against the inner faces of hangers D and those of the collars engaging the bushings at the inner ends of the rollers bearing against opposite faces of the central hanger E.

As will be understood, the wear caused by the revolution of the rollers is on the contacting surfaces of the bushings L and thimbles M and does not affect the openings through the heads H. When the bushing and thimble become so much worn as to prevent the efficient working of the parts either one or both can readily be replaced. With my construction the detaching and reassembling of the parts for any purpose, can be accomplished easily and expeditiously. The use of an axle-bar extending entirely through both sections of the roller also gives strength and desirably increased rigidity to the parts. If desirable, the roller sections may be braced between the ends by annular bearing plates

having spokes centering in a hub with a rectangular opening similar to that through hanger E and engaged by the axle-bar.

As shown and described, the axle-bar is square in cross-section; but I do not restrict myself to such form, as a bar of any angular cross-section that will prevent it from revolving in its bearing, may be used.

I do not restrict myself to the details of construction herein shown and described, as it is obvious that many alterations may be made therein without departing from the principle of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a land-roller, the combination, with a hanger having an angular opening through it, of an axle-bar having a cross-section similar in shape to said opening, a roller-head, a bushing inserted in the hub of the roller-head, connections between said hub and the bushing preventing rotary and longitudinal movement of the bushing in the head, a thimble formed separately from the adjacent parts and fitting over the axle within an annular opening through the bushing, and a collar or flange formed on the outer end of the thimble and covering the joints between the parts embraced by the hub, substantially as and for the purpose specified.

2. In a land-roller, the combination, with a hanger having an angular opening through it, of an axle-bar having a cross-section similar in shape to said opening, a roller head, a

bushing inserted in the hub of the roller-head and having a feather formed longitudinally thereon and engaging a corresponding recess in said hub, a set screw passing through an aperture in the hub of the hanger and engaging an opening in the bushing, and a thimble fitting over the axle-bar and engaging an annular opening through the bushing, substantially as and for the purpose specified.

3. In a land roller, the combination, with a roller divided into sections, of a hanger located between each pair of sections and having an angularly shaped opening through it, hangers at the outer ends of the end rollers having angular recesses in the bottoms thereof, clamping-plates attached to said outer hangers and having angular recesses located opposite the recesses in said hangers, an angular axle-bar engaging said hanger openings and recesses, roller-heads on the ends of the rollers, bushings inserted in the hubs of the roller-heads and having feathers formed longitudinally thereon and engaging corresponding recesses in said hubs, set screws passing through apertures in the hubs of the hangers and engaging openings in the bushings, and thimbles fitting over the axle-bar and engaging annular openings through the bushings, substantially as and for the purpose specified.

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Witnesses:

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