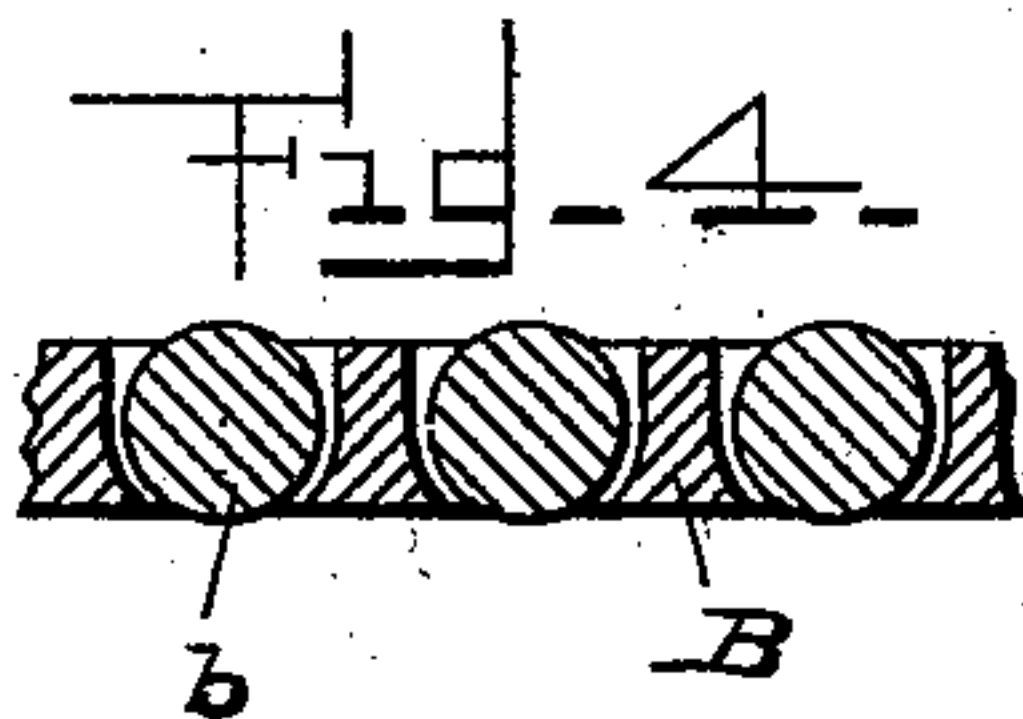
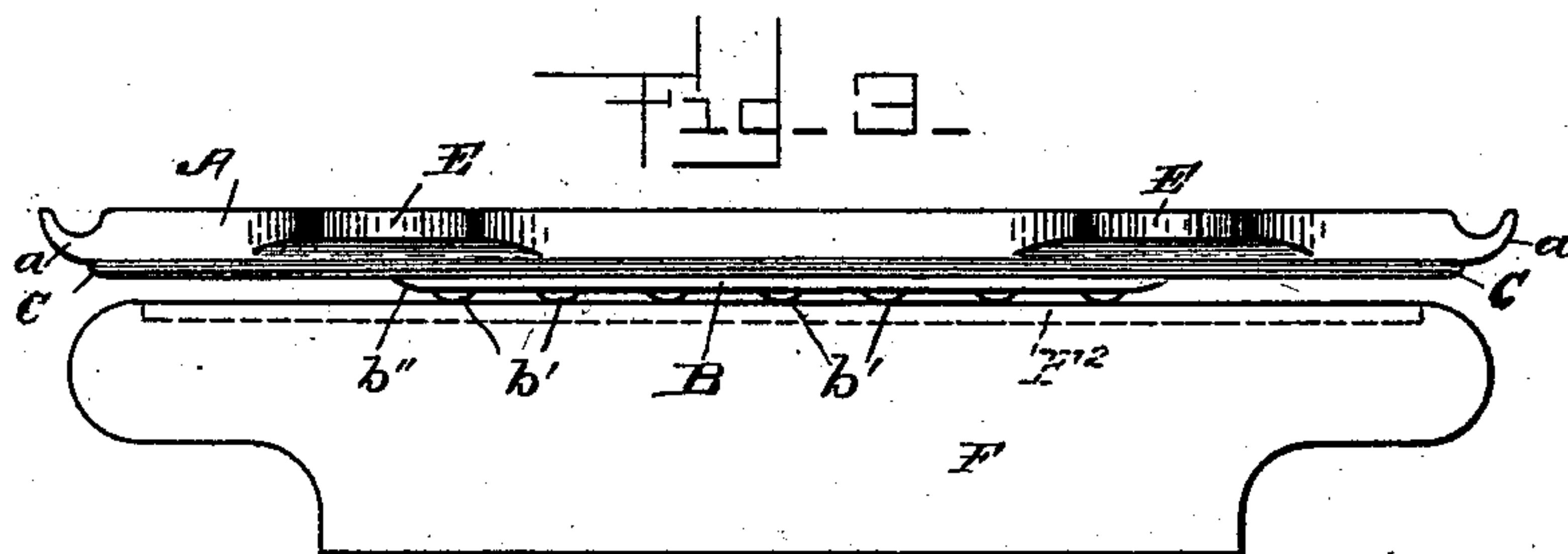
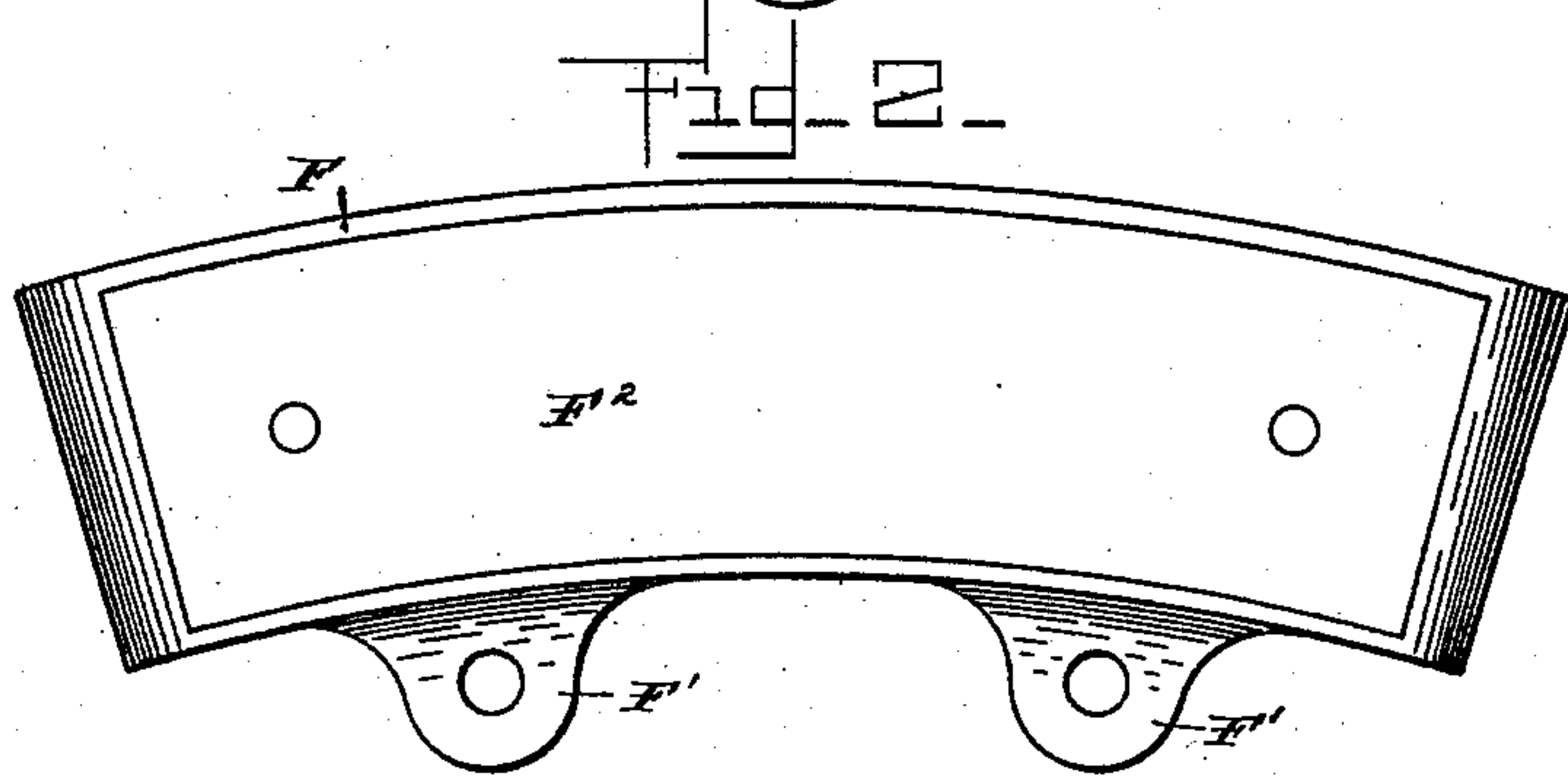
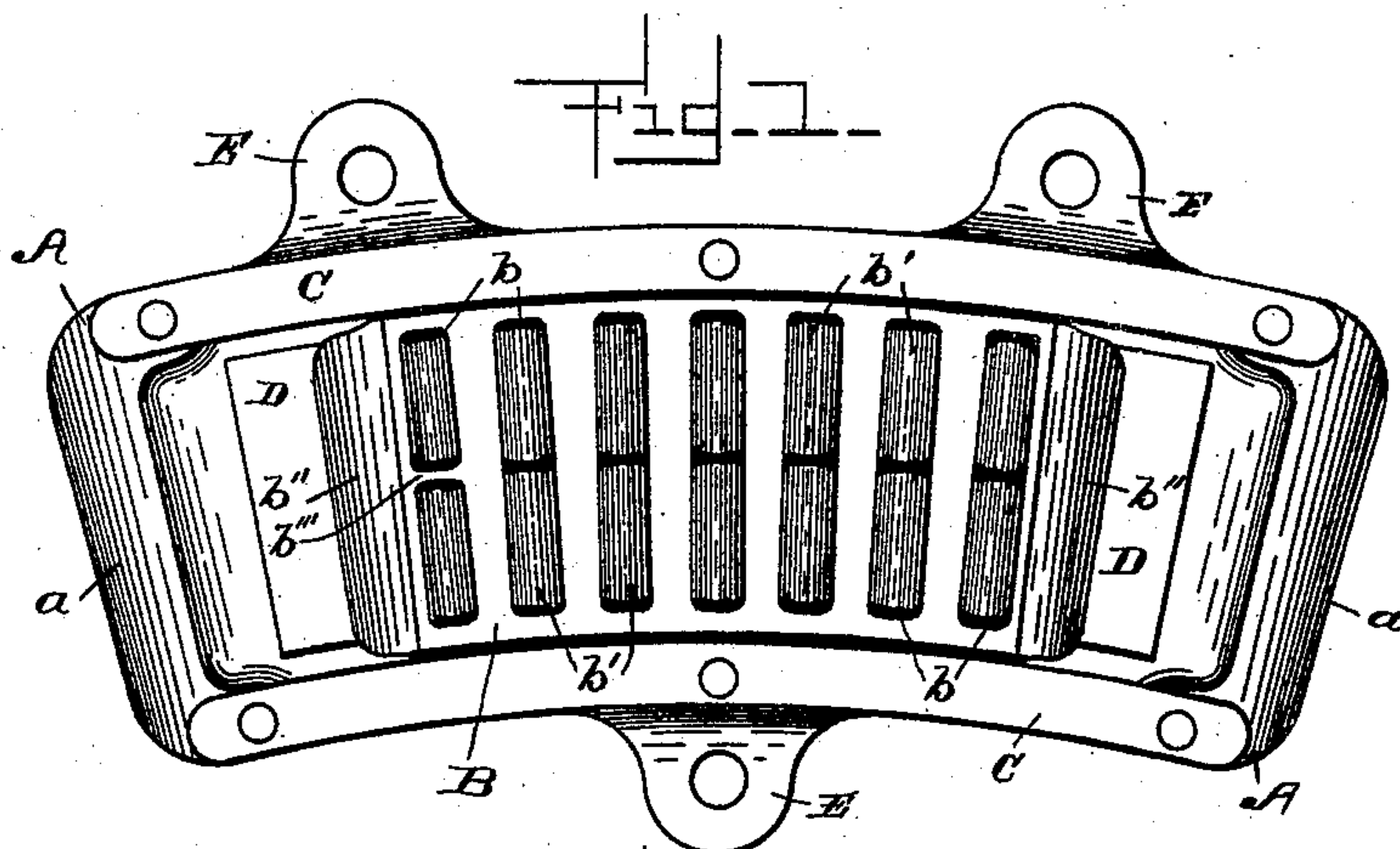


(No Model.)

M. G. HUBBARD.
ANTIFRICTION DEVICE FOR CAR TRUCKS.

No. 533,900.

Patented Feb. 12, 1895.



Witnesses =

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UNITED STATES PATENT OFFICE.

MOSES G. HUBBARD, OF CHICAGO, ILLINOIS.

ANTIFRICTION DEVICE FOR CAR-TRUCKS.

SPECIFICATION forming part of Letters Patent No. 533,900, dated February 12, 1895.

Application filed July 25, 1893. Serial No. 481,386. (No model.)

To all whom it may concern:

Be it known that I, MOSES G. HUBBARD, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented a certain new and useful Anti-friction Device for Car-Trucks, which is fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to a device to be used in connection with the trucks of railway cars and street cars, and other carriages in which the wheels are carried by a frame swiveled and adapted to turn beneath, or relatively to, the car body.

My invention is particularly applicable to railway and street-cars and its object is to reduce to a minimum the friction between the truck and car body when the truck swivels or turns, in rounding curves.

My invention consists of a suitable frame, or casing, and an inclosed and sliding carrier or housing in combination with one or more series of rollers, each series arranged in the arc of a circle and the corresponding rollers of each series being arranged end to end as, and for the purpose, hereinafter described and claimed.

In the accompanying drawings:—Figure 1. represents a bottom view of the upper roller member of my invention; Fig. 2., a plan view of the lower member thereof, and Fig. 3. is a side elevation of both members in operative relation. Fig. 4 is an enlarged sectional view, showing the rolls and the side bars hollowed out or concaved to receive said rolls.

"A." represents a recessed, or dished, frame made of malleable iron. Said frame is formed in the arc of a circle whose center is the pivot or swiveling center of the truck, in connection with which the device is intended to operate. Within this curved frame "A" is located a carrier "B," formed on the same curves as the casing frame "A" but made shorter and adapted to slide within the frame "A," from end to end thereof. The carrier "B" is formed with elongated slots, *b. b.*, for the reception of a series of steel rolls, *b'. b'.*, as shown. The two edges of each slot, in which these rolls are located, are parallel to each other and have their adjacent edges, or faces, rounded out to form pockets in which the

rolls turn, while preventing said rolls from escaping or falling out.

In the drawings I have shown two independent series of rolls, both arranged in the arc of a circle and with the corresponding rolls of each series lying end to end, and abutting. It is sometimes, however, found desirable to put a web *b³* across between the ends of the rolls, as shown at the left-hand side of Fig. 1., said web dividing the elongated slots, described, into two separate slots, or pockets, thus always keeping the rolls separate and apart.

The ends, *b''.*, of the sliding carrier are beveled off, as indicated, for preventing the ends of said frames from striking against the ends of the lower bearing when, from any cause, it is moved beyond the lower members of the bearing hereinafter described. The ends of the frame "A" are also beveled in sled-runner form, as shown at "*a.*" for a corresponding purpose. Malleable iron strips, C. C., riveted to the frame "A," retain the sliding carrier "B" in place, preventing its escape therefrom and at the same time permitting the carrier "B" to move freely from end to end within the casing frame.

"D" indicates a piece of flat sheet steel lying in the bottom of the recess in frame "A," in which the carrier "B" slides forming a hard and smooth rolling surface upon which the rolls *b'* travel.

The upper member of my anti-friction device, just described, is formed with perforated ears "E. E.," at suitable points, whereby it is bolted to the car body, or its transom, or other convenient point.

"F" designates the lower member of my anti-friction device and consists of a curved bed, or casting, formed substantially in the arc of a circle corresponding with that on which the upper member is formed. The height of this lower member is governed by the special requirements of the car and truck to which it is to be applied, and it is secured to the truck bolster, or other suitable part of the truck, by bolts passing through the perforated ears "F'. F'." shown. The upper, or working, face of this member is recessed, as indicated in dotted lines in Fig. 3., and a piece of flat, sheet steel *F²* is fitted in said recess and secured therein by means of rivets or

screws, or in any suitable or well known manner. Thus the rolls, *b' b'*, have hard, smooth beds, or rolling surfaces, both above and below them, whereby friction is reduced to a minimum and the parts are effectually prevented from wear.

It will be apparent that, with this anti-friction device introduced between the car body and trucks, the trucks are free to turn curves easily and without resistance, thereby imparting to the car better riding qualities and effecting a great saving of wear upon the wheel flanges and rails.

The advantage of employing two short, journalless rolls in each slot, or pocket, is that such rolls will never break, and it will be apparent also that with two separate rolls one may travel faster or slower than the other to conform to the different diameters of the circles in which they move.

Having thus described my invention, I claim as new—

1. An anti-friction device for facilitating the curving of trucks, consisting of a recessed frame, or casing, adapted to receive and containing and embracing a carrier adapted to slide within and relatively to said recessed frame and formed with slots, or pockets, for the reception of and in combination with several series of cylindrical rolls, arranged, each, in the arc of a circle, and in the same horizontal plane one series outside and beyond the other, substantially as described.

2. An anti-friction device for facilitating the curving of trucks, consisting of a recessed frame, or casing, a movable and sliding carrier working within said casing and formed with elongated slots, the side edges, or walls, of which are hollowed out, or concaved, to receive and in combination with a series of cylindrical rolls arranged radially in the arc of a circle, for the purpose described.

3. An anti-friction device for facilitating the curving of trucks, consisting of a recessed frame, or casing, a separate and independent traveling carrier having a sliding connection with said recessed frame and composed of side and end bars and transverse connecting bars, or webs, uniting said side bars, thereby forming a series of separate and independent pockets for and in combination with a corresponding series of rolls, confined by and working within the pockets of said carrier, substantially as described and shown.

4. In an anti-friction device for car trucks, the combination of a series of journalless rollers, all arranged in the same horizontal plane with a skeleton carrier and recessed frame in which it slides, substantially as described.

5. In an anti-friction device for car trucks, an outer recessed frame, or casing, in combination with and embracing a traveling roll carrier composed of two side-bars and two end bars and an intermediate cross bar for and between each two rolls, said cross bars extending across and connecting the side bars and being hollowed out, or concaved, on their adjacent faces whereby the rolls are held in place, vertically, and strength imparted to the said carrier, substantially as described.

6. In an anti-friction device for car trucks, the combination of a series of journalless rollers, arranged in the same horizontal plane with the slotted and traveling carrier in which the said rolls are mounted, substantially as described.

In testimony whereof I have hereunto set my hand this 21st day of July, 1893.

MOSES G. HUBBARD.

Witnesses:

EDGAR AYRES,
REXFORD M. SMITH.