

(No Model.)

W. WIGGINS.
SAFETY APPLIANCE FOR STREET CARS.

No. 570,888.

Patented Nov. 3, 1896.

Fig. 1.

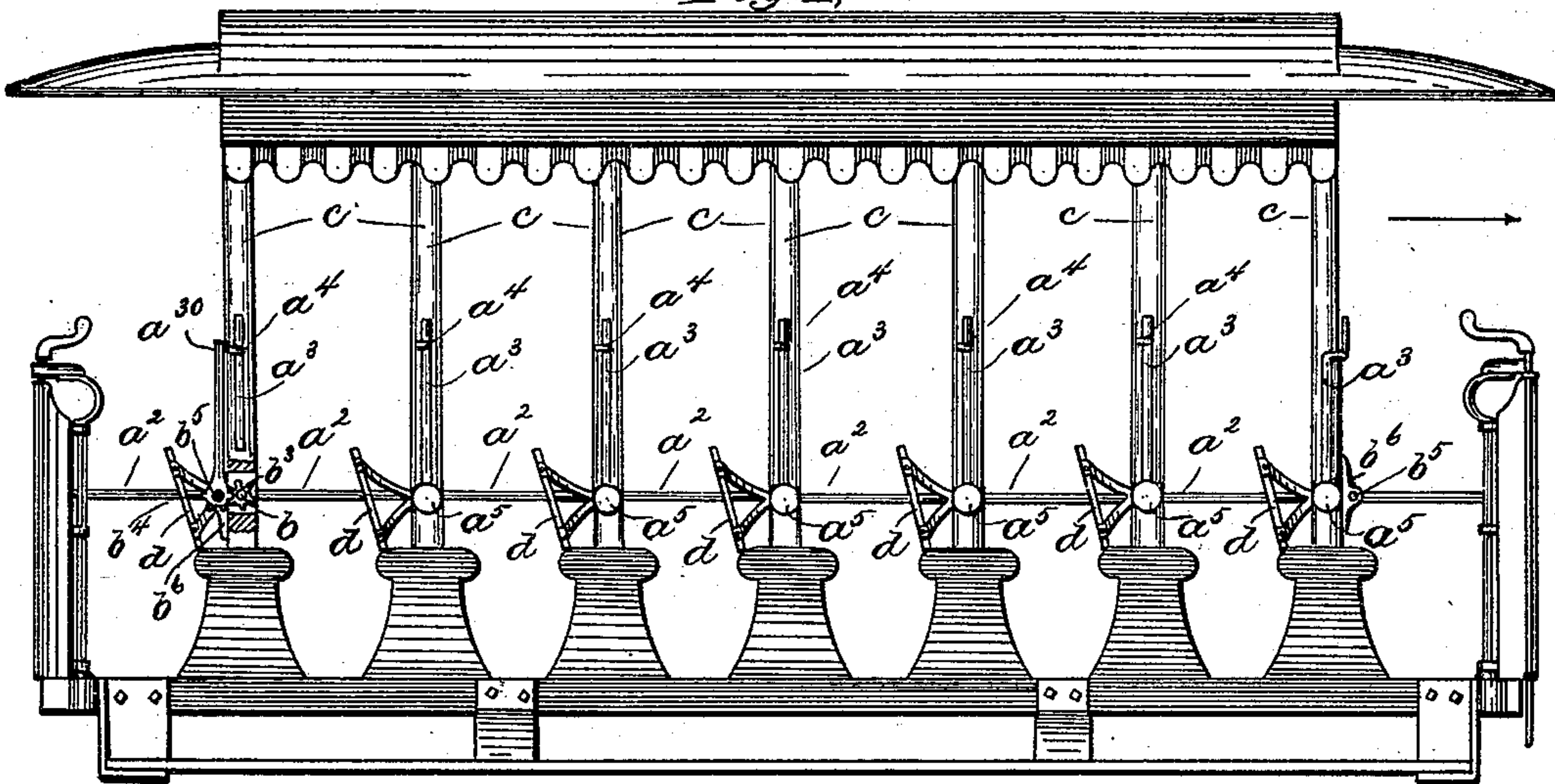


Fig. 2.

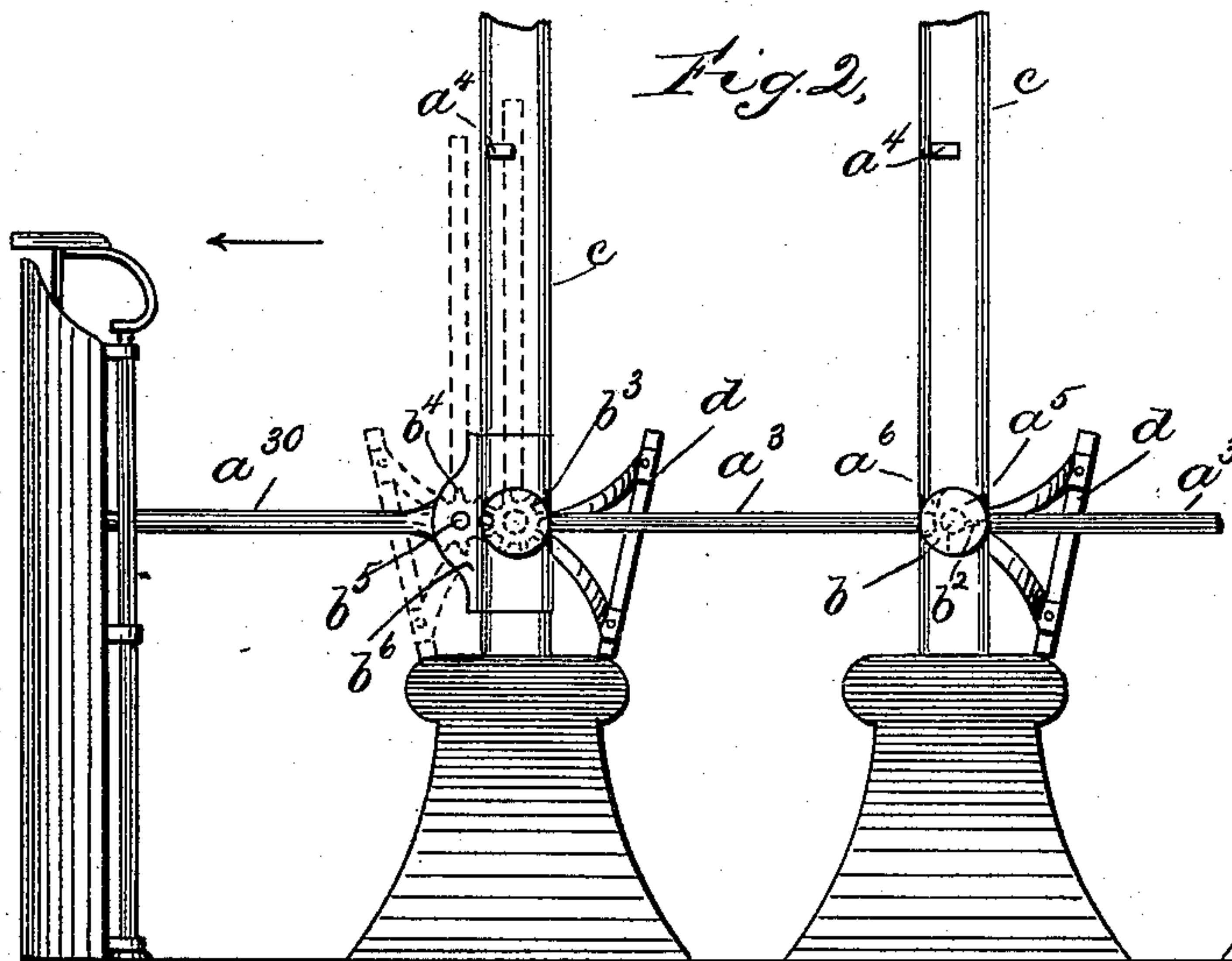


Fig. 3.

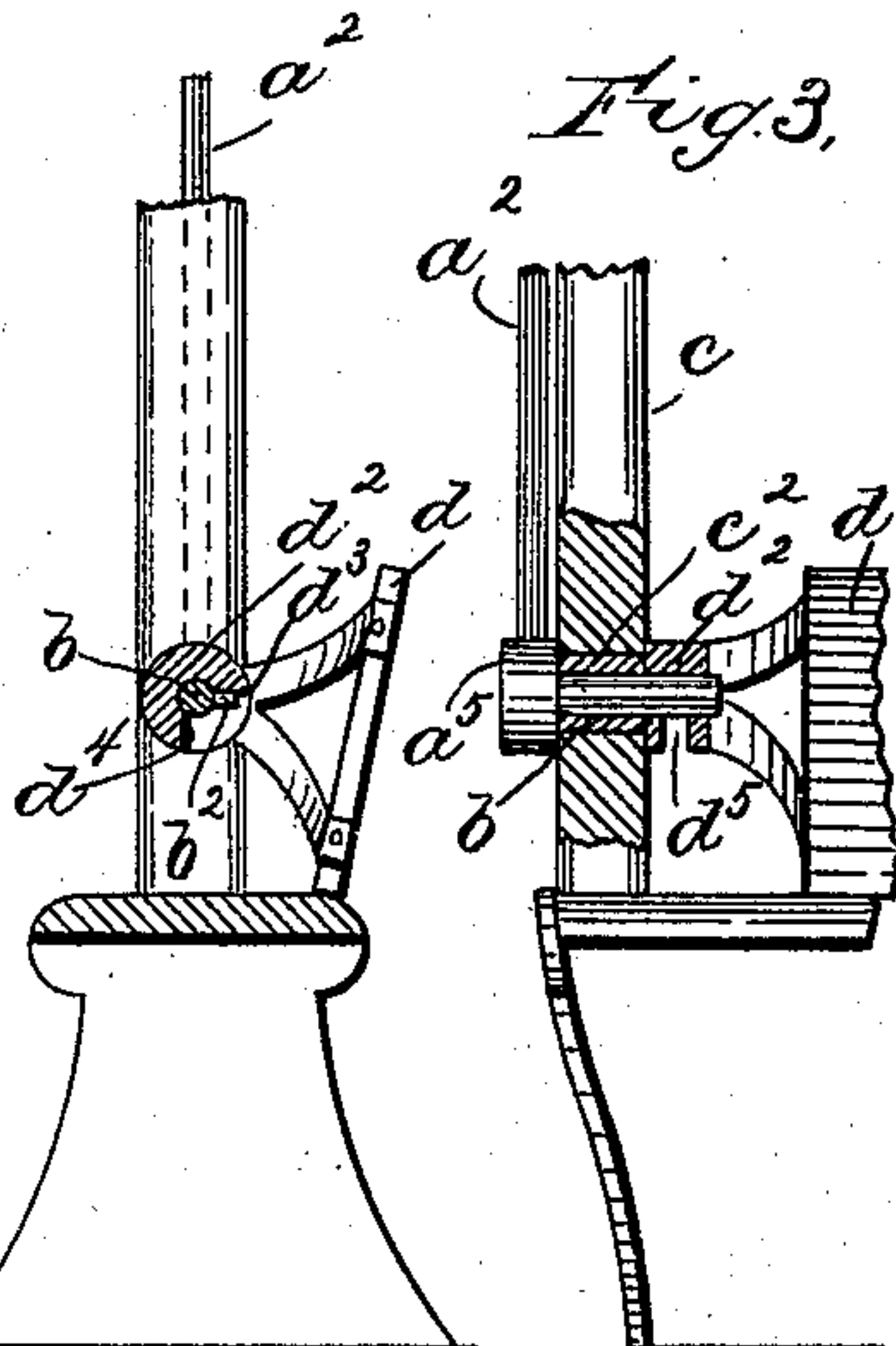


Fig. 4.

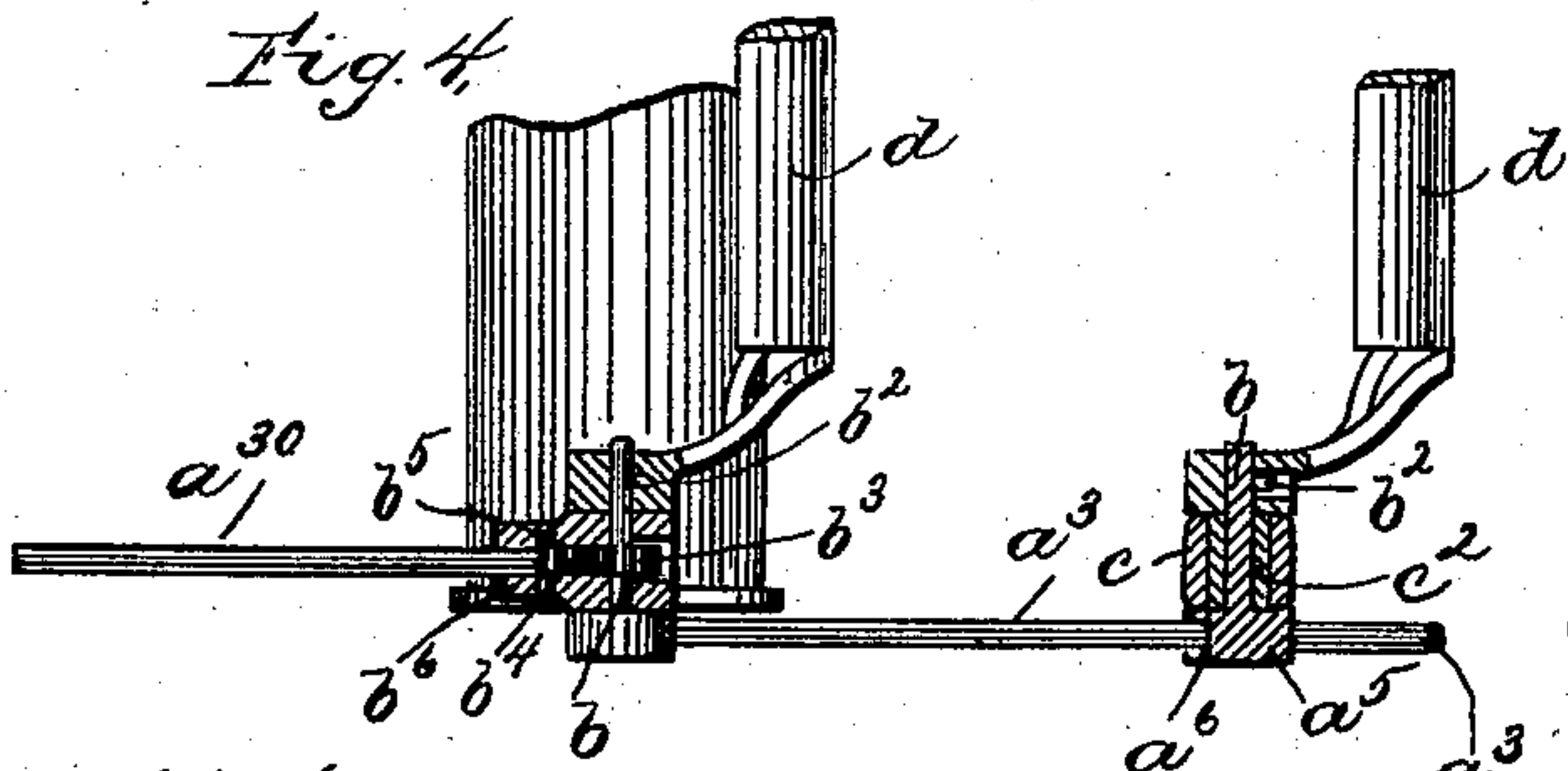
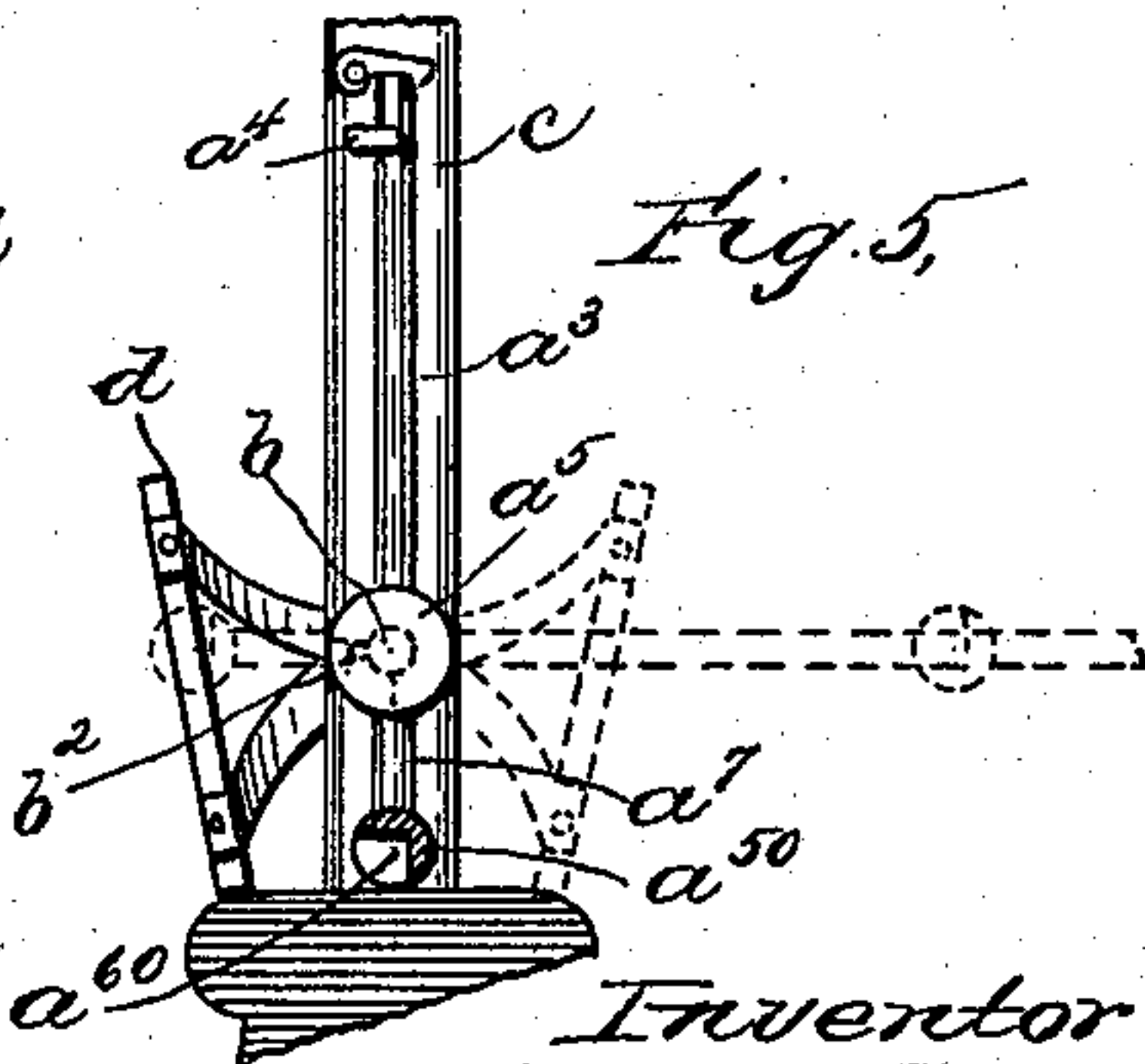


Fig. 5.



Witnesses
Jas. J. Maloney
J. J. Livmore

Inventor,
William Wiggins
by J. P. Livmore
Att'y.

UNITED STATES PATENT OFFICE.

WILLIAM WIGGINS, OF BROCKTON, MASSACHUSETTS.

SAFETY APPLIANCE FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 570,888, dated November 3, 1896.

Application filed January 16, 1895. Serial No. 535,137. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WIGGINS, of Brockton, county of Plymouth, State of Massachusetts, have invented an Improvement in Safety Appliances for Street-Cars, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 The present invention relates to safety devices or gates for open street-cars of that class in which a series of gate-bars are provided on each side of the car and adapted, respectively, to extend from the end of a seat to the end of the seat adjacent thereto, the said gates being operated, that is, opened or closed, by the action of shifting the seats when the direction of the car is reversed.

20 The present invention consists in novel features of construction, the gates consisting of a series of bars each of which is pivotally supported at right angles to its length in one of the seat-posts, concentric with the bearing on which the seat-back is adapted to turn, the said gate-bars also being provided with means whereby adjacent bars are interlocked when closed to form a practically continuous bar extending from one end of the car to the other, thus effectually closing the passage to and from the car on whichever side may be desired.

35 The gates are opened by being moved from a horizontal position to a vertical position parallel with the seat-posts, and this is accomplished by providing suitable engaging portions between the pivotal support of the gate-bar and the bearing of the seat-back, the said engaging portions being so arranged on opposite sides of the car that the reversal of the seat-back will open the gate on one side and close that on the other.

45 Figure 1 is a side elevation of an open street-car, showing the safety devices embodying the present invention applied thereto. Fig. 2 is a similar view of a portion thereof, somewhat enlarged and partly in section, illustrating certain details of construction. Fig. 3 is a front elevation of one seat and a portion of the post or upright belonging thereto, partly broken away and shown in section. Fig. 4 is a horizontal section at one of the seat-posts,

and Fig. 5 is a modification to be hereinafter referred to.

Referring to Fig. 1, in which the car is supposed to be going from left to right, the gates a^2 , which may consist of bars at the farther side of the car, are all in their horizontal position, extending from the post of one seat to that of the next, and in the case of the front and the rear seats from the posts thereof to the dasher. (It is assumed, of course, that the car runs on the right-hand track, as usual, so that the left-hand side of the car is the side to be protected.) The gate-bars a^3 on the other hand, *i. e.*, those at the right-hand side of the car, are shown as standing upright at the sides of the posts, this being the most convenient position, as well as the position to which they may most easily be moved in cooperation with the seats.

70 The gate-bars, as shown, Figs. 2, 3, and 4, are provided with pivot-spindles b , mounted in bearings c^2 in the posts c , while the backs d of the seats are provided with bearings d^2 , concentric with the said pivots and preferably mounted directly thereon, so that when the seats are reversed, that is, the backs turned over from one side of the seat to the other, the said backs are turned upon the said pivots as a bearing. In order that the gate-bars may coöperate with said backs, it is necessary that they should be caused to make substantially a quarter-turn in their bearings, while the backs make substantially a half-turn, it being obvious, however, that other proportions might be equally well provided for. To accomplish this end, the bearings d^2 are provided with shoulders d^3 and d^4 , (see rear seat shown in Fig. 2,) between which extend projections or pins b^2 , secured to the pivots b and adapted to be engaged by said shoulders, as clearly shown in Figs. 2 and 3. These shoulders may be provided in any suitable manner, preferably by forming a recess d^5 in the hubs d^2 . Thus, referring to Fig. 2, it will be seen that if the back of the seat is turned on its pivot to reverse the seat the shoulder d^3 will leave the pin and after the back is about half-way over the shoulder d^4 will come in contact with said pin and tend to lift it from the horizontal position shown to a substantially vertical position, thus cor-

respondingly shifting the position of the bar. When the gate-bar has reached the proper position, it comes in contact with a stop or bracket a^4 upon the post, which prevents its further movement in the same direction, while the shoulder d^4 still engaging with the pin will resist its movement in the opposite direction. In other words, the movement of the gate-bar is resisted on the one hand by the stop and on the other by the weight of the back of the seat.

If desired, a latch may be provided in addition to the stop, as illustrated in Fig. 5, thus positively holding the bar until manually released; but this is obviously not essential. When the seat is again reversed, the opposite effect is produced, the first part of the movement of the back bringing the shoulder d^3 into engagement with the pin, which is moved thereby to carry the bar back to its horizontal position. The shoulders on the bearings at the opposite ends of the seats are set at such an angle to those already described as to produce just the reverse effect on their respective gates—that is to say, the actuating means are so arranged that while the gate-bars on one side are being lifted or opened those on the other side are being lowered or closed. The lower ends of the bars are preferably enlarged or provided with hubs a^5 , having, as shown in Fig. 4, slots a^6 , adapted to receive the end of the adjacent bar, so that all of the bars interlock and form an unbroken bar extending the entire length of the car.

If desired, the gate-bars may be counterpoised in any suitable way—for example, as shown in the modification Fig. 5, in which extensions a^7 are provided below the pivotal supports, having weights or enlargements a^{50} at the ends thereof, with slots a^{60} therein to receive the ends of the adjacent bars.

Referring to Fig. 1, it is obvious that when all the bars a^3 (therein shown as in their open position) are closed, each one having been swung to the right on its pivot until it has reached a horizontal position, there will be one space still unclosed, namely, that between the dasher at the left-hand end of the car and the seat adjacent thereto. At the opposite end of the car and upon the opposite side there will be a similar space when the seats are reversed. In order to provide means for closing these spaces, coöperating with the remainder of the bars, there is mounted upon the pivot b of the bar a^3 at the left of Fig. 1 a spur-gear b^3 , (best shown in Fig. 4,) said gear being adapted to mesh with a similar gear b^4 , pivoted at b^5 in suitable lugs or supports b^6 and extended into or connected with a bar a^{30} , which by the action of the said gears is raised or lowered simultaneously with the adjacent bar a^3 .

The outer end of the bar extending from the seat-posts to the dasher may be supported when the bar is in its horizontal position in

any suitable way, as by a bracket or projection connected to the dasher, but not herein shown, since it is obvious that the construction thereof will depend largely upon the car which is to be equipped with the apparatus, and is merely a matter of mechanical detail forming no essential feature of the invention. As shown in Fig. 1, however, the bar a^3 at the right-hand end of the car is curved at its upper end, so as to bring the end thereof within the outer edge of the dasher, which is usually narrower than the seats.

I claim—

1. The combination with a gate-bar pivotally supported at right angles to its length in the post or upright of an open car, of a seat-back having a bearing concentric with the pivot-spindle of said gate-bar, and a pin or projection from said pivot-spindle adapted to be engaged by shoulders formed in said bearing, when said seat-back is turned to reverse the seat, as set forth.

2. The combination with the gate-bar mounted on a spindle at right angles to its length in a bearing in the post or upright of an open car, of a seat-back having a bearing on said spindle, a recess in said seat-bearing forming shoulders therein, and a pin extending from said spindle into the space between said shoulders, as and for the purpose described.

3. A safety appliance for open cars comprising a series of gate-bars pivotally supported opposite the ends of the seats, and adapted to be moved from a horizontal to a vertical position or vice versa, substantially as described, and means for interlocking the ends of adjacent gate-bars when in their horizontal position to form practically a continuous gate-bar the whole length of the car, substantially as described.

4. The combination with a bar for closing the space between the end seat of an open car and the seat next adjacent, and connecting mechanism substantially as described between the movable or reversible portion of said seat and said bar for moving said bar from a substantially upright position parallel to the said seat-post, to a substantially horizontal position in which it extends from said seat-post to the seat-post of the adjacent seat, of a supplemental bar connected by a spur-gear with said first-named bar and thus adapted to be moved from a substantially upright position parallel to the seat-post to a substantially horizontal position in which it extends from said seat-post to the dasher of the car, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM WIGGINS.

Witnesses:

M. E. HILL,

H. J. LIVERMORE.