

(No Model.)

W. E. HOLMES.  
LIFE SAVING DEVICE OR FENDER.

No. 495,632.

Patented Apr. 18, 1893.

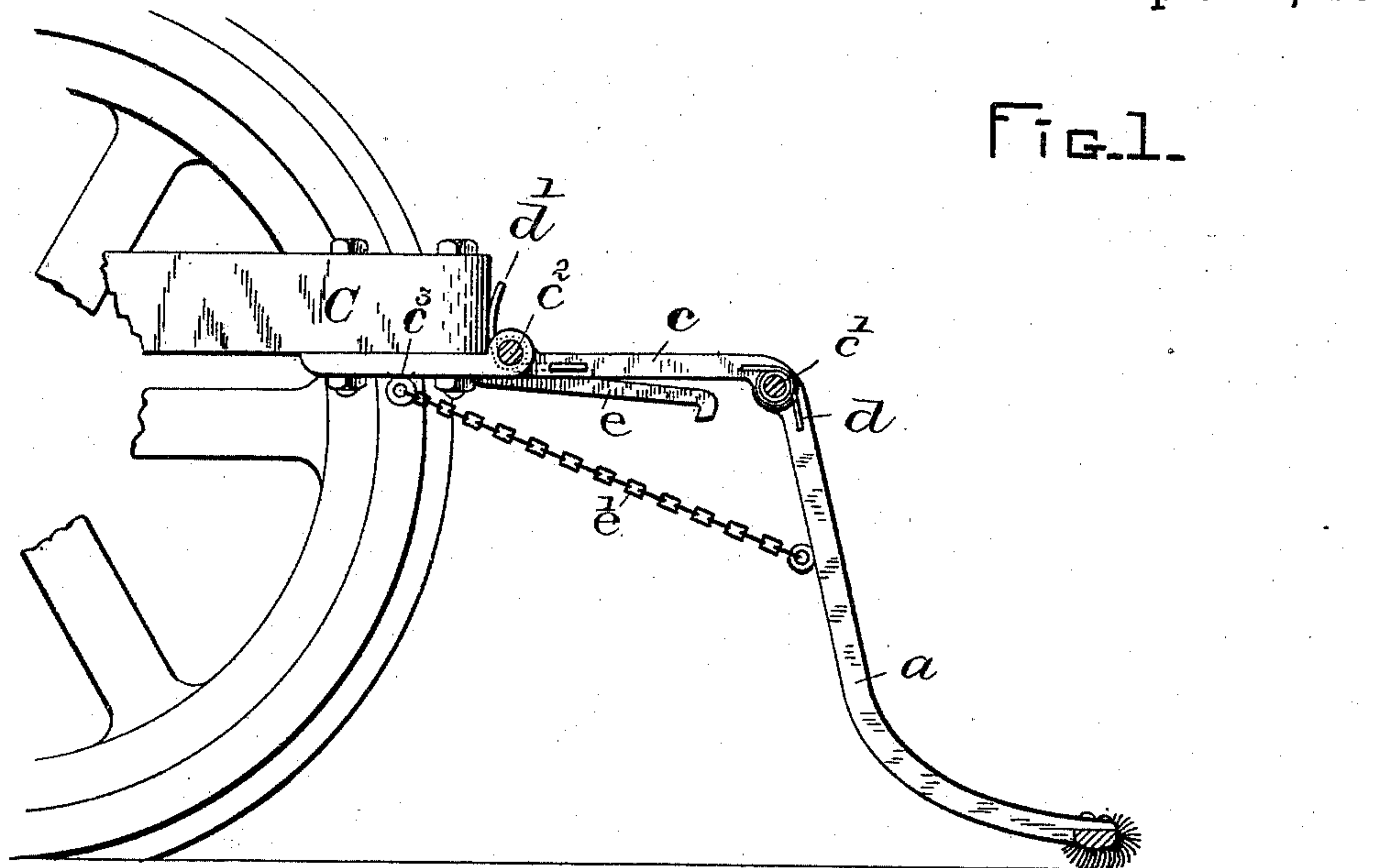


FIG. 1.

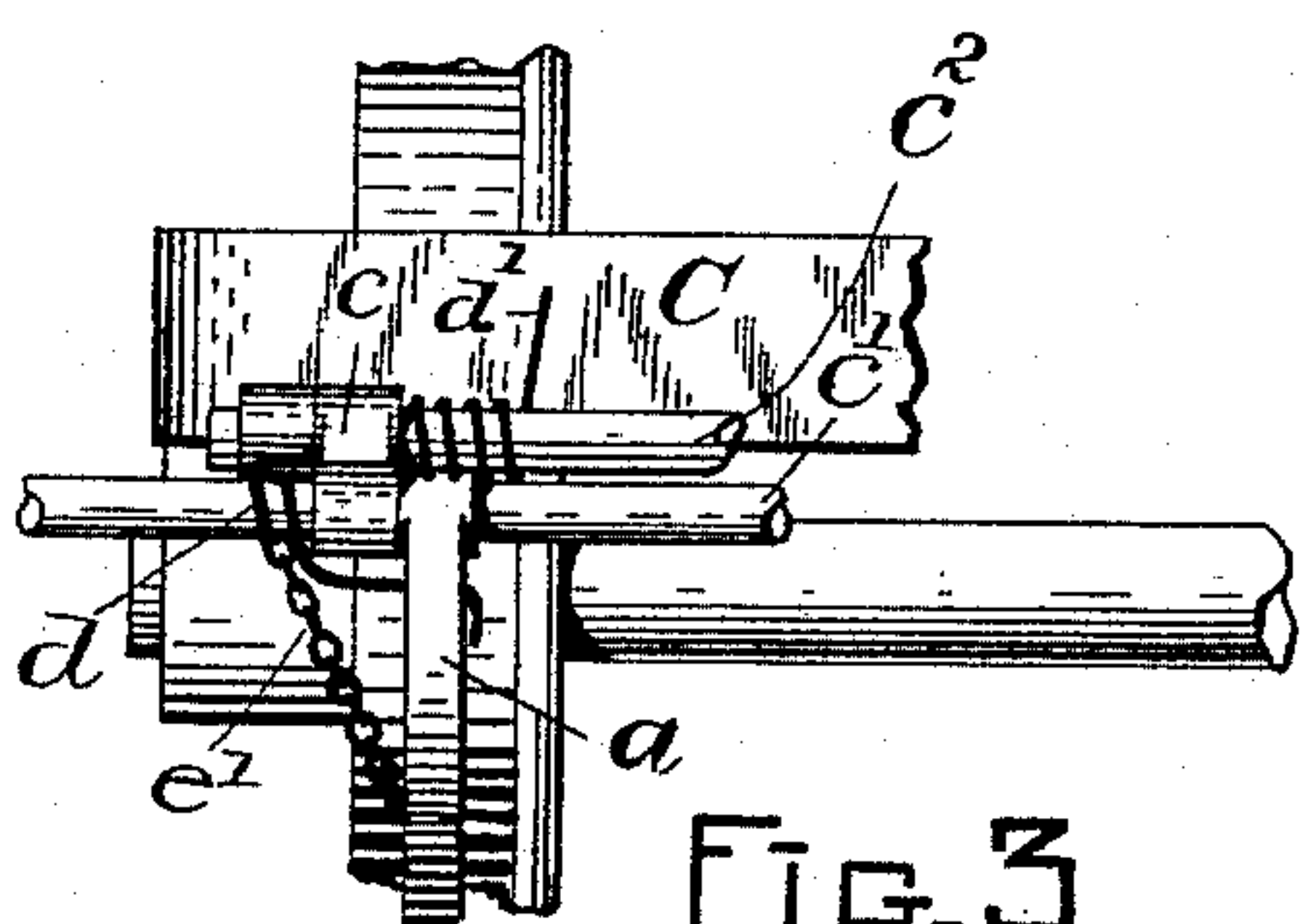


FIG. 3.

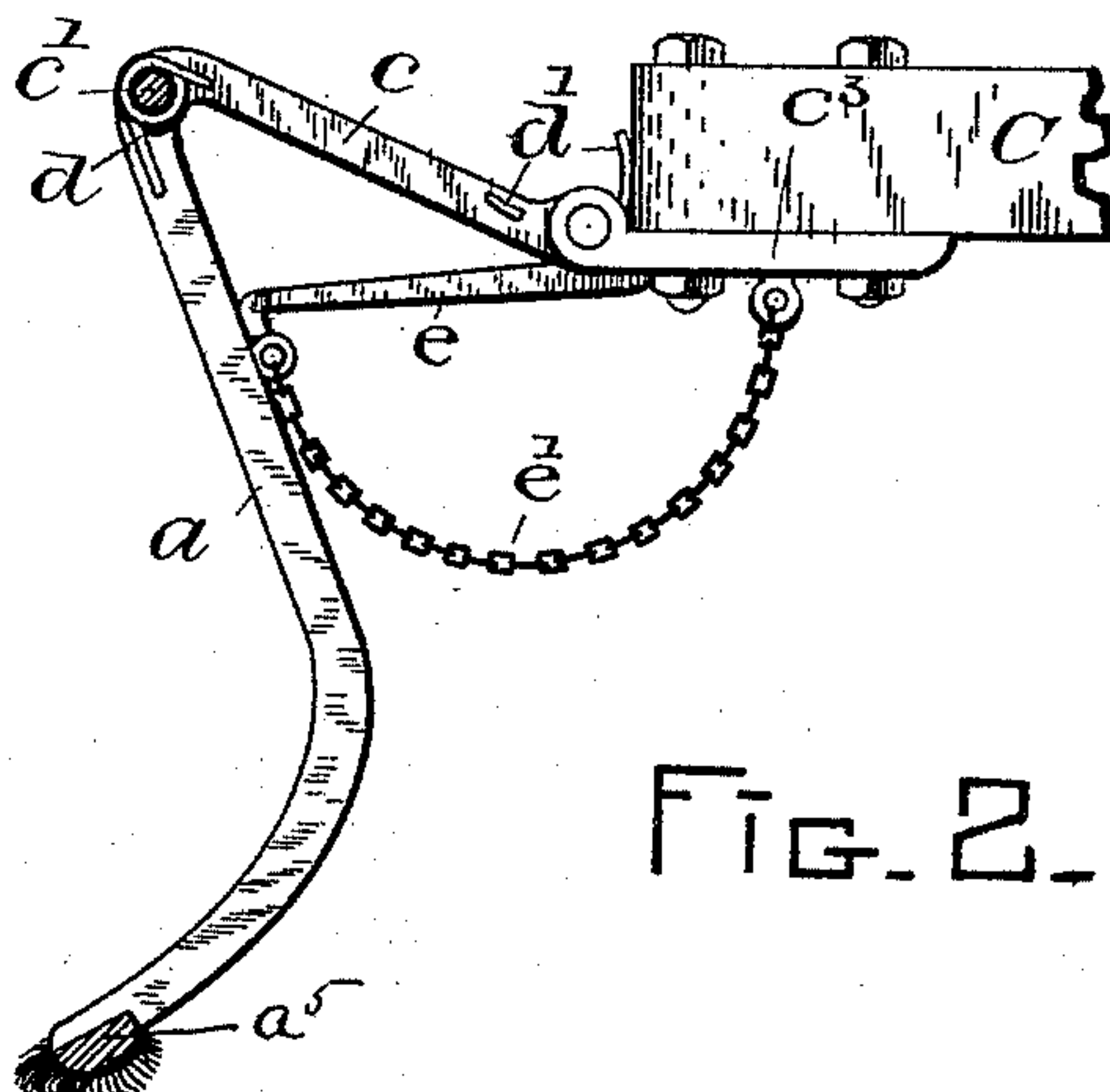


FIG. 2.

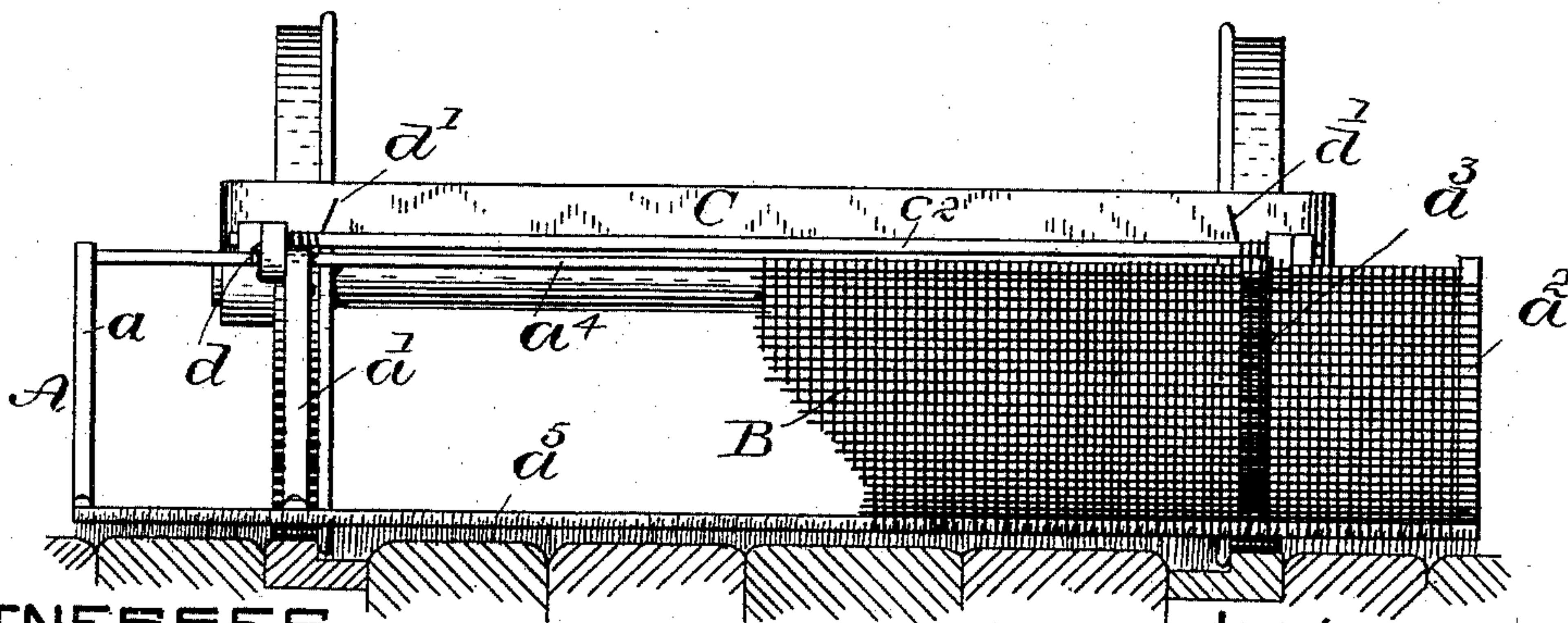


FIG. 4.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## LIFE-SAVING DEVICE OR FENDER.

SPECIFICATION forming part of Letters Patent No. 495,632, dated April 18, 1893.

Application filed January 24, 1893. Serial No. 459,519. (No model.)

*To all whom it may concern.*

Be it known that I, WILLIAM E. HOLMES, a citizen of the United States, residing at Boston, in the county of Suffolk, in the State of Massachusetts, have invented a new and useful Improvement in Life-Saving Devices or Fenders for Electric or other Street Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification in explaining its nature.

It is desirable in my opinion that a life-saving fender should be simple in construction, and organized to yield somewhat when brought into contact with a body or obstruction; while at the same time its lower edge is maintained in contact with the pavement in such a way that it cannot ride over the obstructing body, and my invention is designed to embody these requirements in a practical form.

Referring to the drawings: Figure 1 is a view of the portion of a car truck with my fender attached thereto. Fig. 2 is a view of the same parts, without the wheel, representing the fender when brought into contact with an obstruction like the body of a child or adult. Fig. 3 is a detail view in front elevation. Fig. 4, is a view of the complete fender in front elevation.

The fender is represented as applied to the truck-frame, in which event it would be beneath the body of the car. It need not, however, be applied to the frame, as it can be attached to the frame work or sills of the car, either beneath the car body or to project in front of the dasher of the car. Of course, where necessary there is a separate fender at each end of the car.

The fender comprises a frame A, consisting of the curved bars  $a a'$  at one end of the frame and the curved bars  $a^2 a^3$  at the other end. These bars are connected at their upper ends by the horizontal bar  $a^4$  and at their lower end by a bar  $a^5$ , and this frame carries a netting B, of wire or cord, or any suitable material. The frame is curved downward from its upper end in a forward direction, as represented in Figs. 1 and 2, the lower section extending considerably in advance of the upper part, when in the position represented in Fig. 1. The lower bar  $a^5$  preferably carries short

bristles of any suitable material upon its outward and under surfaces, the bar preferably being rounded upon such surfaces. This frame-work or fender section is attached to the truck frame C, by the relatively short links  $c$ , the frame being jointed or hinged at  $c'$  to the forward ends of the links, and the links being hinged or jointed at  $c^2$  to the arms or pieces  $c^3$  which are bolted to the truck frame. The hinges permit the frame to yield backwardly and to a limited extent upwardly, see Fig. 2, the links being of course lifted with the frame. This movement is in opposition to the springs  $d$  which act to hold the fender frame in the position represented in Fig. 1, and to resist its yielding movement, and the springs  $d'$  act to move downward the links  $c$  and maintain them in the depressed position, and act to resist their upward movement so that the fender is maintained in normal position by the action of the springs  $d d'$  and when brought into contact with any body or movable obstruction they permit the backward and upward yielding of the fender frame, while at the same time they resist such movement. The extent of the backward movement of the frame is limited by the stop bar  $e$ , see Fig. 2, and the extent of the forward movement of the frame is limited by the chain  $e'$ , which is fastened to the frame at its forward end, and at its rear end to the piece  $c^3$ .

It will be understood that the fender may be normally carried above the track and pavement and may be depressed automatically or otherwise to the position represented in Fig. 1. But I do not herein claim mechanism for providing it with such movement, such devices being already well known.

The action of the combined forces or parts of the device herein specified is such as to probably cause an object, such as a human body, to be yieldingly received by the fender and carried along safely until the car can be stopped and the body removed; and it will in any event greatly lessen the chances of injury to the body struck, by giving a yielding rather than a rigid blow, due to the yielding back of the fender after striking the body, and it would positively prevent the body passing underneath the fender of the wheel.

It will be observed that the device is very



simple, can be cheaply made, and that it can be attached to the car without making any change in its construction.

I would say that any mechanical equivalent for the jointed parts, which I have called links, may be employed; also that the bristles may be either carried by the lower bar of the fender frame or by a separate wooden or other bar to which they are secured, and which would be attached to the lower edge of the frame. While I prefer that the lower edge of the fender be thus provided with a resilient yielding substance or material like bristles, yet I do not confine myself to this use in connection with the fender, although I prefer to employ there something that shall have the yielding effect of a cushion, and at the same time prevent anything from riding under the lower bar.

While I have indicated the stops in the fender as provided by a chain and stop bar, yet any mechanical equivalent that shall restrain or limit the extent of the movement of the fender frame in both directions may be employed.

Having thus fully described my invention, I claim, and desire to secure by Letters Patent of the United States—

1. A life saving device or fender for electric or other cars, comprising a fender frame or section attached to the car truck or frame by a double jointed or hinged connection arranged to yield backwardly and upwardly against resisting spring pressure, as and for the purposes described.

2. A fender for electric and other cars comprising a fender section, and the links *c* hinged at their forward ends to the upper edge of the fender section, and at their rear ends to the track or car frame, the springs *d* acting upon the fender section as described, and the spring *d'* acting upon the links *c*, as specified, all as and for the purposes described.

3. In a fender for electric and other cars, the fender section or frame curved as specified, and having the cross-piece or bar at its lower edge armed with bristles, the connecting links *c*, hinged to the fender section and truck or car frame, as specified, the springs *d* *d'* and stops for limiting the extent of movement of the fender, as and for the purposes described.

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