

No. 685,973.

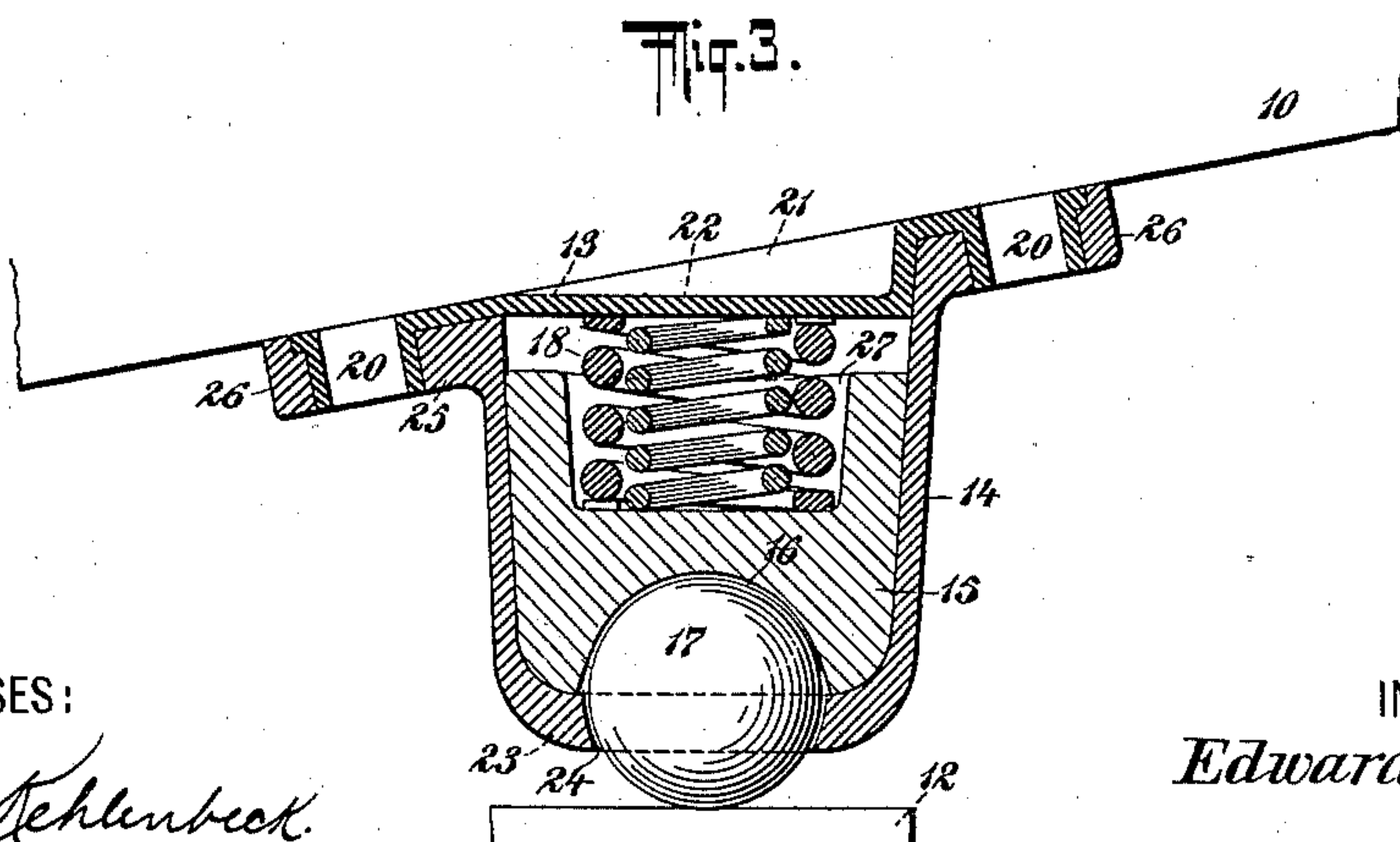
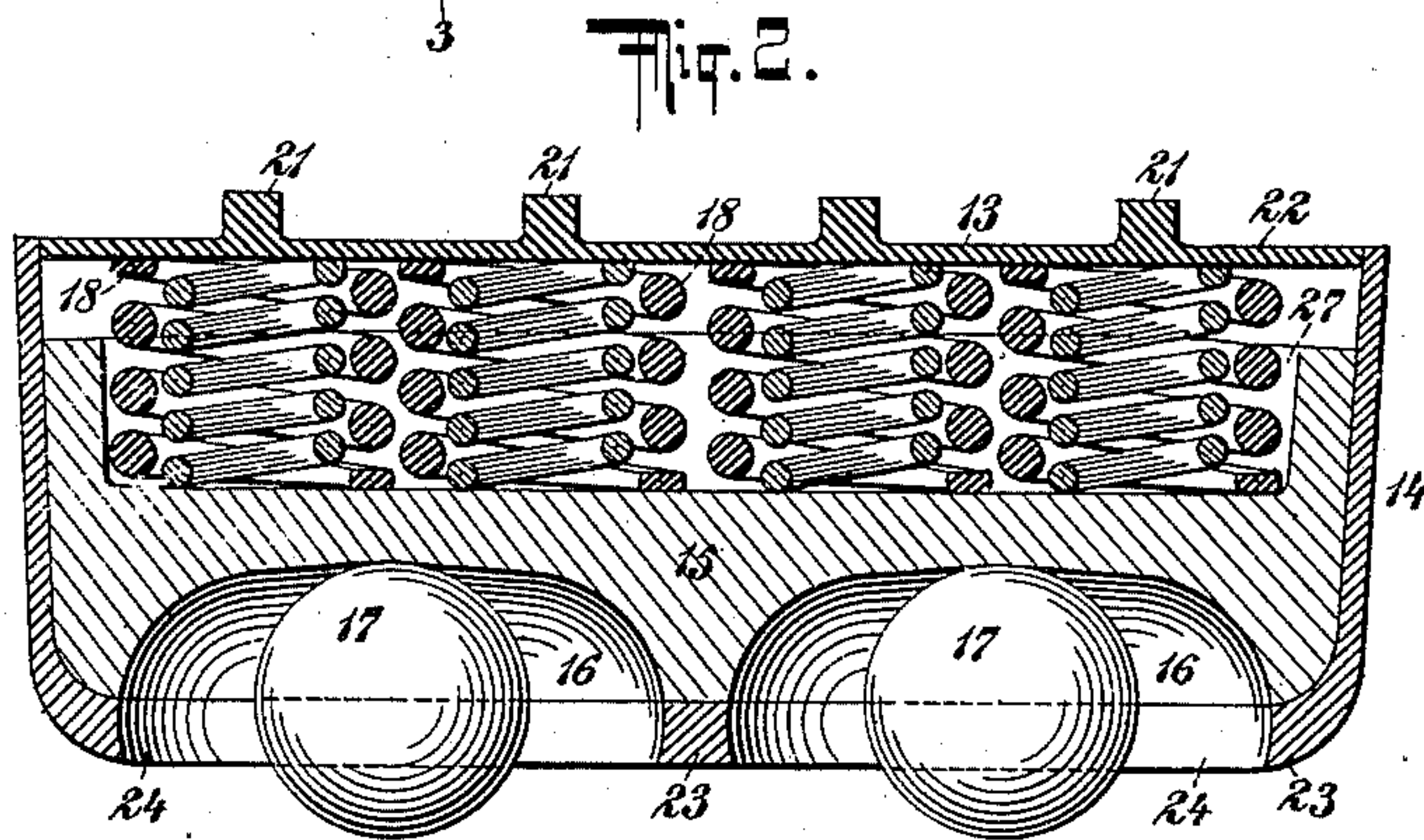
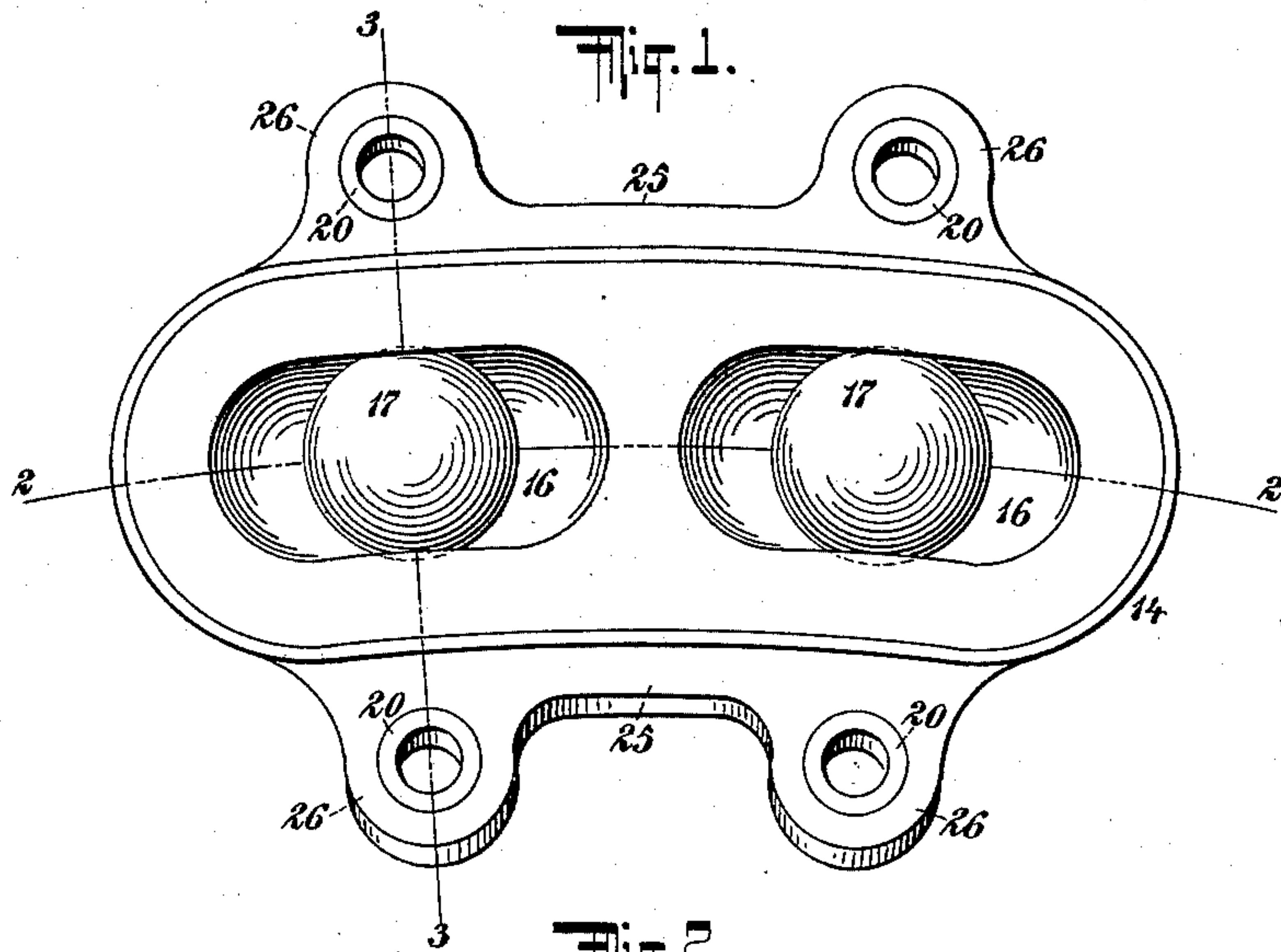
Patented Nov. 5, 1901.

E. CLIFF.

SIDE BEARING FOR RAILWAY CARS.

(Application filed Sept. 9, 1901.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## SIDE BEARING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 685,973, dated November 5, 1901.

Application filed September 9, 1901. Serial No. 74,752. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD CLIFF, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Side Bearings for Railway-Cars, of which the following is a specification.

The invention relates to improvements in swiveling car-trucks, and pertains more particularly to novel side bearings arranged adjacent to the ends of the body-bolster and adapted to be engaged by the truck-bolster, which should under ordinary conditions be provided with suitable rub irons or surfaces to contact with the side bearings.

The present invention consists in the novel side bearing comprising a rigid exterior casing, an inner spring-pressed or yielding body member or block having elongated pockets in its outer face, and rollers held within said pockets for contact with the rub-iron or like surface, the said rollers being confined within said pockets, but permitted to have a rolling action therein; and the said invention consists in the novel features of construction and combinations of parts hereinafter described, and particularly pointed out in the claims.

The object of the invention is to produce a side bearing which is an improvement over all other side bearings known to me.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a face view of a side bearing constructed in accordance with and embodying the invention. Fig. 2 is a central vertical longitudinal section of same on the dotted line 2 2 of Fig. 1; and Fig. 3 is a vertical transverse section of same on the dotted line 3 3 of Fig. 1 and illustrates in addition a portion of the body-bolster, carrying the side bearing, and a portion of the truck-bolster, carrying the rub-iron for contact with the side bearing.

In the drawings, 10 designates the body-bolster and 11 the truck-bolster, these bolsters being of any suitable or usual construction.

My side bearing may be applied to either

the body-bolster or truck-bolster; but by preference I apply the same, as shown in Fig. 3, to the body-bolster and upon the truck-bolster secure an ordinary rub-iron 12.

The side bearing proper comprises a base member 13, an exterior shell or casing 14, secured thereto, an inner bearing member or block 15, containing elongated pockets 16, rollers 17, confined within said pockets, and springs 18, confined intermediate said base-plate 13 and said bearing member or block 15 and normally pressing said bearing member or block 15 in a direction from said base-plate. The base member 13 may be a malleable casting and is adapted to the lower surface of the body-bolster 10, and said base member 13 is formed with the apertured lugs 20 to receive the securing screws or bolts, the ribs 21 for contact with the lower surface of the body-bolster, and the horizontal section 22, against which the upper ends of the springs 18 have their bearing, the said base member 13 being in one integral piece. The exterior shell or casing 14 may also be a malleable casting and in one integral piece, and said casing 14 is formed with the vertical sides, the horizontal lower end 23, containing the openings 24, and the laterally-extending flanges 25, which afford the ears 26, the latter being apertured and passing snugly upon the apertured lugs 20 of the base member 13, as shown in Fig. 3 in which it will be observed that the thickness of the ears 26 is substantially equal to the height of the apertured lugs 20 and that the upper surfaces of the ears 26 and flanges 25 firmly press against the lower surfaces of the said base member 13. The screws or bolts for securing the side bearing to the body-bolster 10 will pass through the apertured lugs 20 and will be of the usual character. The casing 14 will preferably be fastened to the base member 13 by driving an expanding-tool into the lower ends of the apertured lugs 20, whereby to expand said ends of said lugs outward against the walls of the apertures surrounding them in the ears 26, this operation having the effect of firmly connecting the exterior casing 14 and base member 13 together. The casing 14 will preferably be elongated and curved in outline, as shown in Fig. 1, and the inner substantially vertical



walls of the casing 14 will diverge toward the base member 13, whereby the chamber formed within the shell or casing 14 will have slightly-inclined wall-surfaces, for the purposes hereinafter mentioned.

5 Within the chamber formed by the base member 13 and exterior casing 14 is applied the intermediate member 15, whose side walls correspond with the inner wall-surfaces of the casing 14 and whose upper surface is recessed, as at 27, to receive and confine the lower portions of the series of springs 18, the said springs being ordinary coiled springs whose lower portions are confined within the recess 27 and whose upper ends find a bearing against the base member 13. The springs 18 exert a downward pressure against the intermediate member 15, and hence operate to firmly keep said intermediate member 15 pressed in a direction from said base member. The lower surfaces of the intermediate member 15 are formed with elongated pockets 16, which are substantially semicircular in cross-section and receive and constitute runways for the roller-bearings 17. When the member 15 is in its lower position, its side walls and lower surfaces snugly fit against the inner walls of the casing 14, as shown in Fig. 3; but when the member 15 is pressed upward, as in practical use, the member 15 will pass from contact with the lower end of the casing 14 and also substantially free itself from the inner side walls of the casing 14 by reason of the fact that said walls and the exterior sides of the said member 15 are inclined or tapered, the purpose of tapering the adjacent surfaces of the casing 14 and inner member 15 being to permit said inner member to have an unobstructed and practically free movement in a vertical direction within said casing 14.

The lower end of the casing 14 contains the elongated openings 24, corresponding in outline with the lower edges of the pockets 16 in the inner member 14; but, as will be observed on reference to Fig. 3, the edge surfaces of the said openings 24 converge downward, so as to partly close the pockets 16 and extend below the horizontal center of the rolls 17, and thereby be enabled to afford a support for the rollers 17 and confine the latter without interfering with the proper movement of the same within said pockets, the said edge surfaces of the openings 24 in effect forming a continuation of the wall-surfaces of the said pockets 16. The lower end of the casing 14 constitutes a face-plate for the side bearing proper, and the openings 24 therein are of proper dimensions to permit the rollers 17 to project downward through the same to a sufficient extent to contact with the rub-iron 12.

The parts of the side bearing will be assembled as follows: The base member 13 will be placed upon a suitable support with its lower surface turned upward, and the springs 18, intermediate member 15, and rollers 17 will then be placed in order upon and over

said base member 13, whereupon the casing 14 will be applied over the rollers, intermediate member, and springs and be secured to the base member, in the manner hereinbefore described, by expanding the outer ends of the apertured lugs 20 into the openings of the ears 26, forming a part of said casing 14.

In the employment of the side bearing made the subject hereof the rollers 17 will contact with the rub-irons 12 and the springs 18 will afford a yielding cushion to receive the initial thrust of the body-bolster and prevent as far as possible the transmission of any shocks or strains from or through the side bearing to the car or its truck. The springs 18 should be of sufficient strength to adequately resist the upward motion of the middle or intermediate member 15, but should yield sufficiently under the force applied in use to admit of the upward movement to a limited extent of the intermediate member 15 and rollers 17. It is not intended, however, that the rollers 17 should pass upward entirely within the exterior casing 14.

In the construction of the intermediate member 15 I recommend that said member be made of cast-iron and that the portions thereof about the pockets 16 be chilled.

The invention is not confined to the employment of any special number of the rollers 17, pockets 16, and openings 24, and these in number will vary in accordance with the size of the bearing manufactured.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The side bearing comprising the exterior shell or casing 14, the yielding member 15, and the spring 18 for said member, said member having the elongated pocket 16, and said casing having the elongated opening 24 in line with said pocket, combined with the roller in said pocket and opening and held against outward displacement by the walls of said opening; substantially as set forth.

2. The side bearing comprising the elongated and curved exterior shell or casing 14, the elongated and curved yielding member 15, and the springs 18 for said member, said member having the elongated pockets 16, and said casing having the elongated openings 24 matching said pockets, combined with the rollers in said pockets and openings and confined by the walls of the latter; substantially as set forth.

3. The side bearing comprising the exterior shell or casing 14, the base member 13 closing the base end thereof and connected thereto, the yielding member 15, and the spring 18 interposed between said members 13, 15, said member 15 having the elongated pocket 16, and said casing having the elongated opening 24 in line with said pocket, combined with the roller in said pocket and opening and held against outward displacement by the walls of said opening; substantially as set forth.

4. The side bearing comprising the exterior



shell or casing 14, the yielding member 15 having the recess 27, and the spring 18 confined for a portion of its length within said recess and acting against said member 15, 5 said member having the elongated pocket 16, and said casing having the elongated opening 24 in line with said pocket, combined with the roller in said pocket and opening and held against outward displacement by the walls of 10 said opening; substantially as set forth.

5. The side bearing comprising the exterior shell or casing 14 having the apertured ears 26, the base member 13 having the apertured lugs 20 entering said ears, the yielding member 15, and the spring 18 interposed between 15 said members 13, 15, said member 15 having the elongated pocket 16, and said casing having the elongated opening 24 in line with said pocket, combined with the roller in said 20 pocket and opening and held against outward displacement by the walls of said opening; substantially as set forth.

6. The side bearing comprising a yielding body member containing an elongated pocket, 25 and a face-plate having an elongated opening matching said pocket, combined with the roller adapted to said pocket and opening and

confined by the walls of the latter; substantially as set forth.

7. The side bearing comprising the yielding 30 body member having inclined side surfaces and provided with the elongated pocket, the inclosing shell or casing having the inner inclined side surfaces, and the face-plate provided with the elongated opening matching 35 said pocket, combined with the roller adapted to said pocket and opening and confined by the walls of the latter; substantially as set forth.

8. The side bearing comprising the yielding 40 body member containing a pocket, the inclosing casing for said body member, and the face-plate having an opening matching said pocket, combined with the roller adapted to said pocket and opening and confined by the walls 45 of the latter; substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 7th day of September, A. D. 1901.

EDWARD CLIFF.

Witnesses:

CHAS. C. GILL,  
ANNA V. BRODERICK.