

D. BOUWMAN.

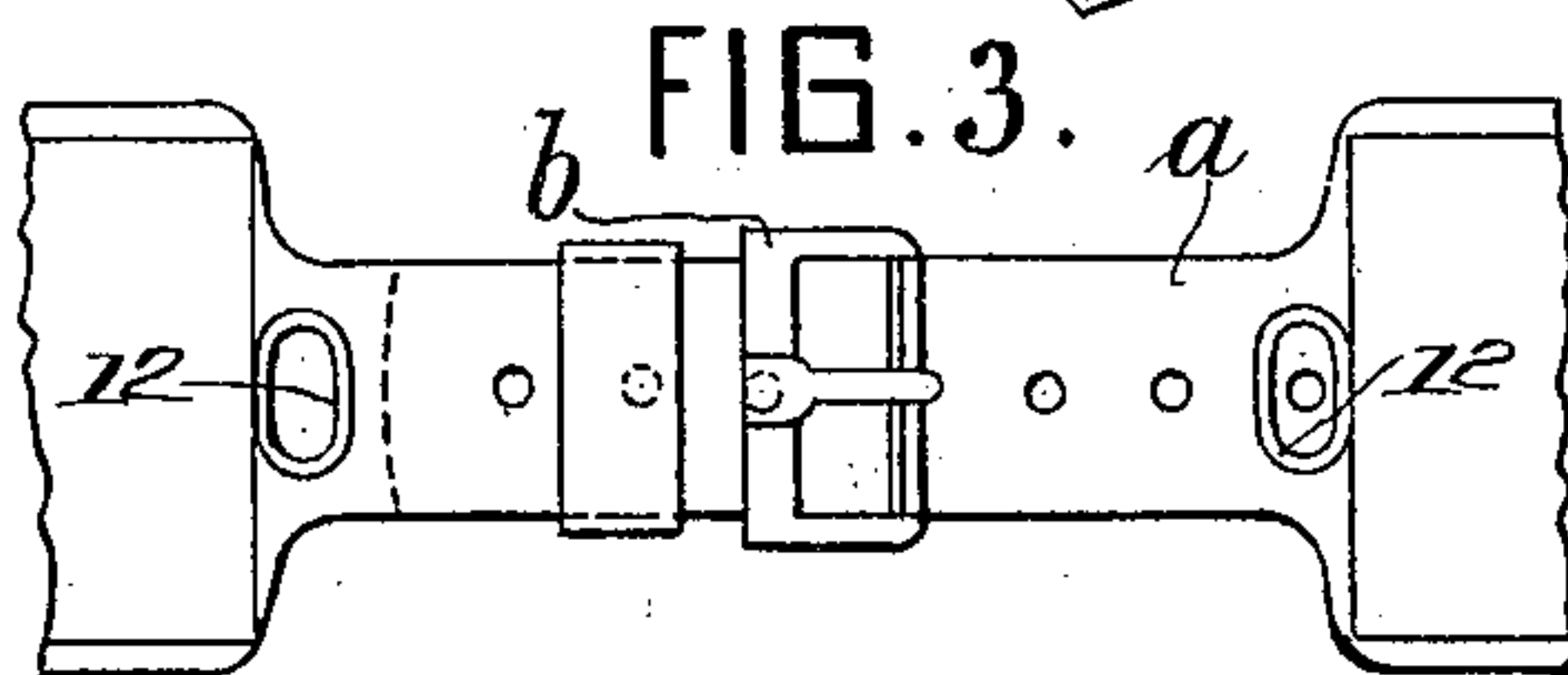
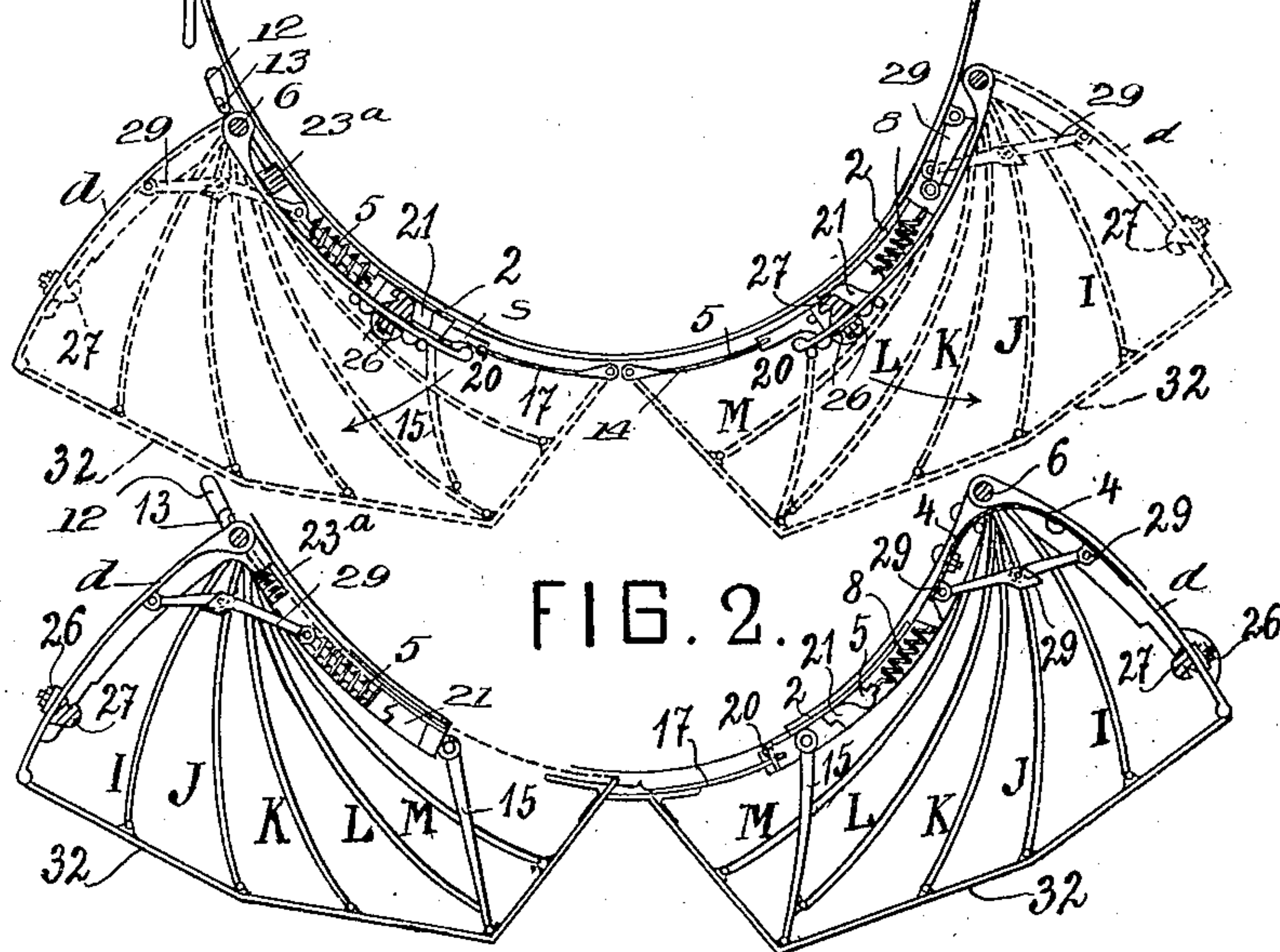
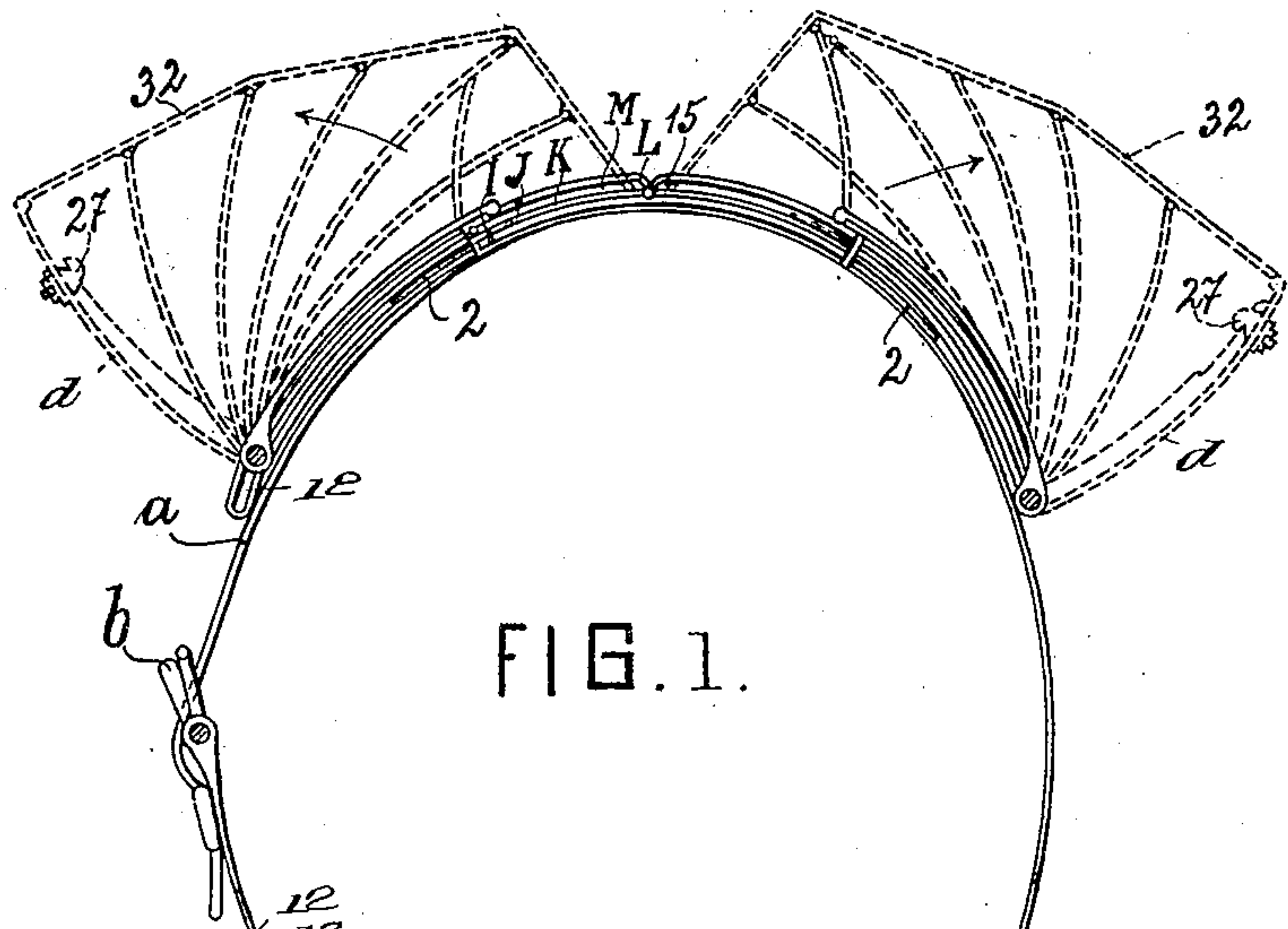
LIFE BELT.

APPLICATION FILED APR. 2, 1908.

925,281.

Patented June 15, 1909.

2 SHEETS—SHEET 1.



Witnesses:
Jaco Hajo de Peer
August Hegfried Bloem

Inventor:
Derk Bouwman

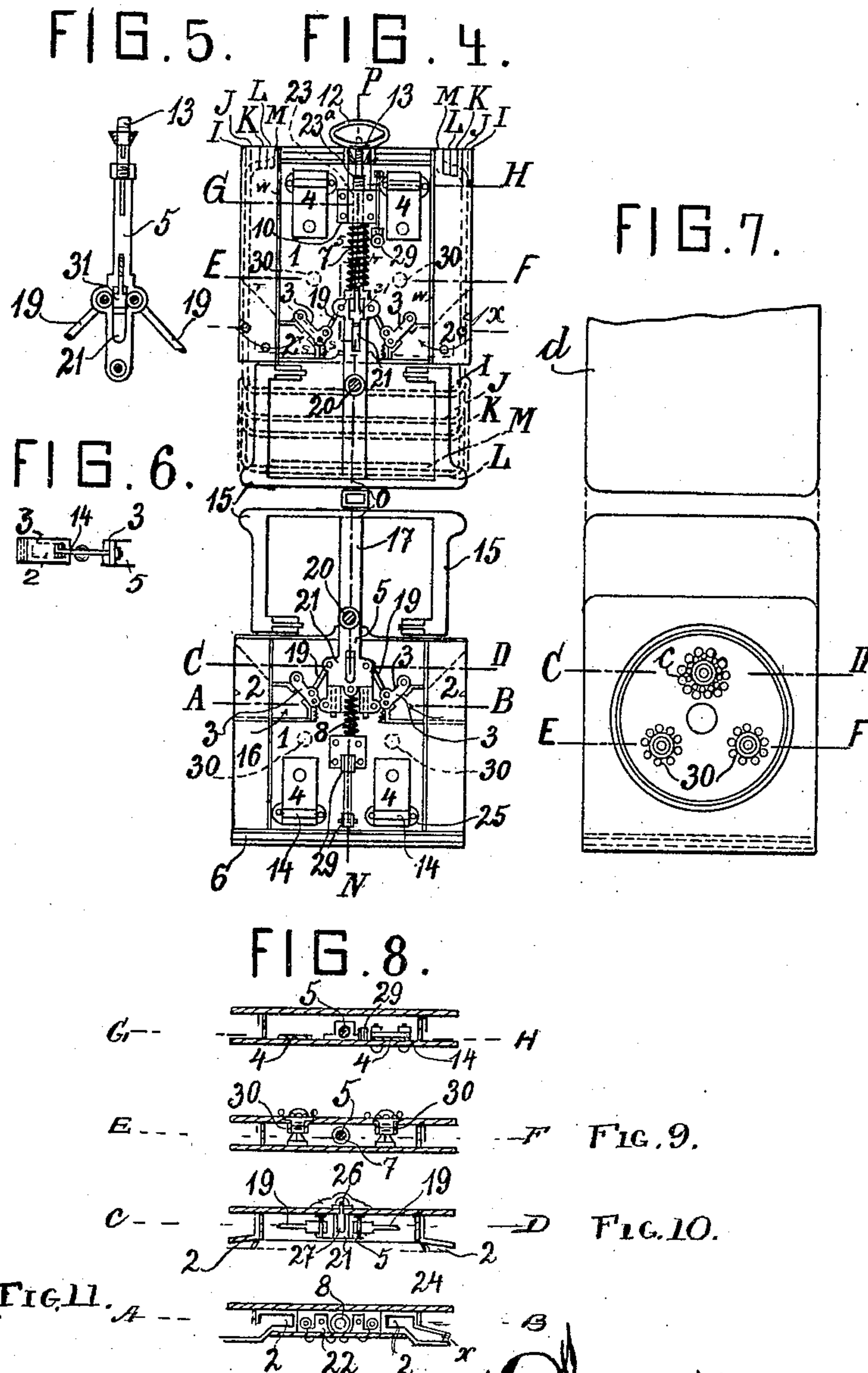
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Witnesses:

Tago Hajo de Beer

August Dieffendruck

Inventor,

D. Bouwman

UNITED STATES PATENT OFFICE.

DIRK BOUWMAN, OF BUSSUM, NETHERLANDS.

LIFE-BELT.

No. 925,281.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed April 2, 1908. Serial No. 424,849.

To all whom it may concern:

Be it known that I, DIRK BOUWMAN, a subject of the Queen of the Netherlands, residing at Bussum, in the Province of North Holland, Kingdom of the Netherlands, have invented a new and useful Life-Belt, of which the following is a specification.

My invention relates to life belts, my more particular improvement consisting in providing such belts with air compartments adapted to collapse or fold and to normally remain folded, but ready to be spread or inflated at a moment's notice when the belt is to be used.

Reference is to be had to the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a top view partly in plan and partly in section, upon the line P—N of Fig. 4, this view showing in full lines the compartments occupying their normal positions, and showing in dotted lines the compartments as inflated and ready for use; Fig. 2 is a horizontal section of the left, front and rear compartment, this view being taken upon the line O—P and O—N of Fig. 4; Fig. 3 is a fragmentary front elevation of the life belt; Fig. 4 is a front elevation showing a pair of the compartments coupled together and the cover being removed; Fig. 5 is a detail view of the main locking bar; Fig. 6 is a detail view of the valve closure; Fig. 7 is a front elevation of the cover of the rear compartment; Fig. 8 is a section on the line A—B of Fig. 4, showing in detail certain parts connected with the collapsible compartments, and Fig. 9 is a similar section on the line C, D of the same figure; Fig. 10 is a similar section on the line E, F, of such figure; and Fig. 11 is a similar section on the line G, H of the same figure.

The life belt consists of a flexible belt *a*, provided at its front with a buckle *b*, the belt being somewhat narrower at the back than at the front, so that it may be conveniently worn under the outside garments without causing inconvenience. At each side the belt is provided with a front and a rear compartment 1 of aluminum or like material, the compartments being arranged on the outer face of the belt. Each compartment is composed of a collapsible frame, to be presently described, over which is arranged a flexible covering 32 of suitable material, the flexible covering 32 is connected to the collapsible

frame in any suitable manner, the said frame consisting of a number of bows I, J, K, L and M, and a cover *d* all of which are hinged on a common pivot 6 as shown in Fig. 2. The cover *d* is provided with a hook 27, whose stem passes through the cover and is secured by a nut at 26, and hook is adapted for engagement with a nose 31 forming a part of a locking bar 5 which is slidable lengthwise of the belt, by means of rings 12 arranged at the front of the belt or near to the buckle.

The bar 5 has its front end threaded as shown in Fig. 5 for engagement by a threaded socket carried by the ring 12, and at the rear of the threaded portion 13 is a second threaded portion 23 on which is threaded a nut 23^a, the said nut moving in a guideway for guiding the movement of the locking bar. The bar 5 consists of a front portion which has just been described, and a rear portion of larger cross section which is provided in its end with a socket for receiving the first named portion. The nose 31 is provided with a shank moving in a socket in the end of the first named portion of the bar and normally pressed outward by a spring *x* the shank having a slot through which passes a rivet, which secures the two portions of the bar together.

The locking bar of the front compartment is connected by a spring plate 17 with the locking bar of the rear compartment, the spring plates being secured to the bars by screws 20. The larger portion of each bar 5 is provided with a transverse opening 21 for receiving the hook 27 so that the nose 31 may be engaged therewith, and a folding arm 29 has one end pivoted to the adjacent bar and the other to the adjacent cover, the bar folding at its center, and being provided with a rule joint as shown in Fig. 9.

The rear locking bar 5 is substantially the same as the front bar, except that the threaded portions are omitted, the connection being directly with the spring plate 17. Near the front end of the rear bar and the rear end of the front bar, is arranged a link 15, one end of the link being pivoted to the bar and the other to the adjacent bow as clearly shown in Fig. 2 to assist the folding arm 29 in retaining the compartment in open position. As will be evident from an inspection of Fig. 2, the front and the rear compartments open away from each other, the arrangement in the one being the reverse of the arrangement in the other.

The cover *d* of each of the compartments

has a plurality of ornamental buttons, the largest one covering the nut 26 before mentioned, while the smaller ones 30 act as outlet valves. The covers *d* are normally forced upward by plate springs 4, which are arranged between the bottom and the cover of the compartments, being secured to the bottom by means of a pin 14 as shown in Fig. 4. Inlet valves 2 are also provided, which are funnel-shaped in order to permit the free egress of foreign substances, and such valves are closed when the compartments are inflated by means of flaps 3 and are opened to permit the entrance of the air at the same time that the locking bars are moved to release the cover by means of links 19 having one end pivoted to the locking bar, and the other pivoted to the flap as shown in Fig. 4, so that when the bar is moved to release the cover the valves will be opened to permit the entrance of air. Guides 22 are connected to the belt within the compartments between which the bars 5 move, and connected with the guides are springs 8 extending between said guides and the bar 5, the said springs acting to return the bars as soon as they are released.

In operation, the covers of the respective compartments are released by pulling the rings 12 which move the locking bars to release the said covers, and at the same time open the valves to permit the entrance of air. The springs 4 force the compartments open and the air enters. As soon as the compartments are filled with air, the rings are released and the springs 8 return the locking bars to their original position, also closing

the inlet valve. After the belt has been used the compartments may return to their original folded condition by drawing the locking bars outward and pushing the covers into position so that the noses 31 of the locking bars will engage the hooks 27.

I claim:

1. In a life belt the combination of a flexible member for encircling the body, a plurality of collapsible members mounted upon the flexible member, a number of bow shaped supporting members disposed in said collapsible members, means within the collapsible members for normally retaining said bow shaped members in closed position, and manually operated means outside of the chamber for releasing the same.

2. In a device of the class described, a belt, a plurality of collapsible and expansible chambers mounted thereon, means inside the chambers for normally retaining them in collapsed condition, and means outside of the chambers for releasing the retaining means.

3. A device of the class described, comprising a belt, a plurality of series of collapsible chambers mounted thereon and normally collapsed, said series being arranged opposite each other, locking bars for retaining the chambers of each series in collapsible condition, and means connected with the bars for releasing the same whereby to permit the chambers to expand.

DIRK BOUWMAN.

Witnesses:

TACO HAJO DE BEER,
AUGUST SIEGFRIED DOCEN.