

No. 661,347.

Patented Nov. 6, 1900.

H. LÜNING.
LIFE SAVING BELT.

(Application filed Feb. 19, 1900.)

(No Model.)

Fig. 1.

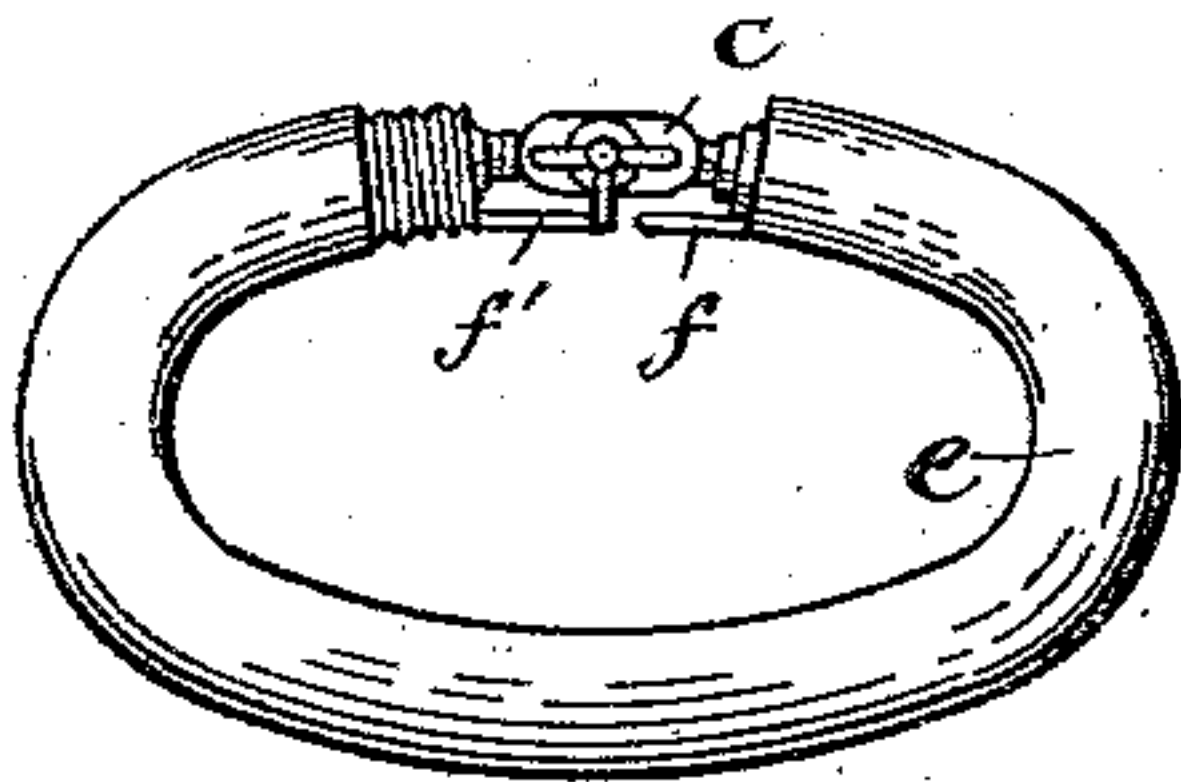


Fig. 2.

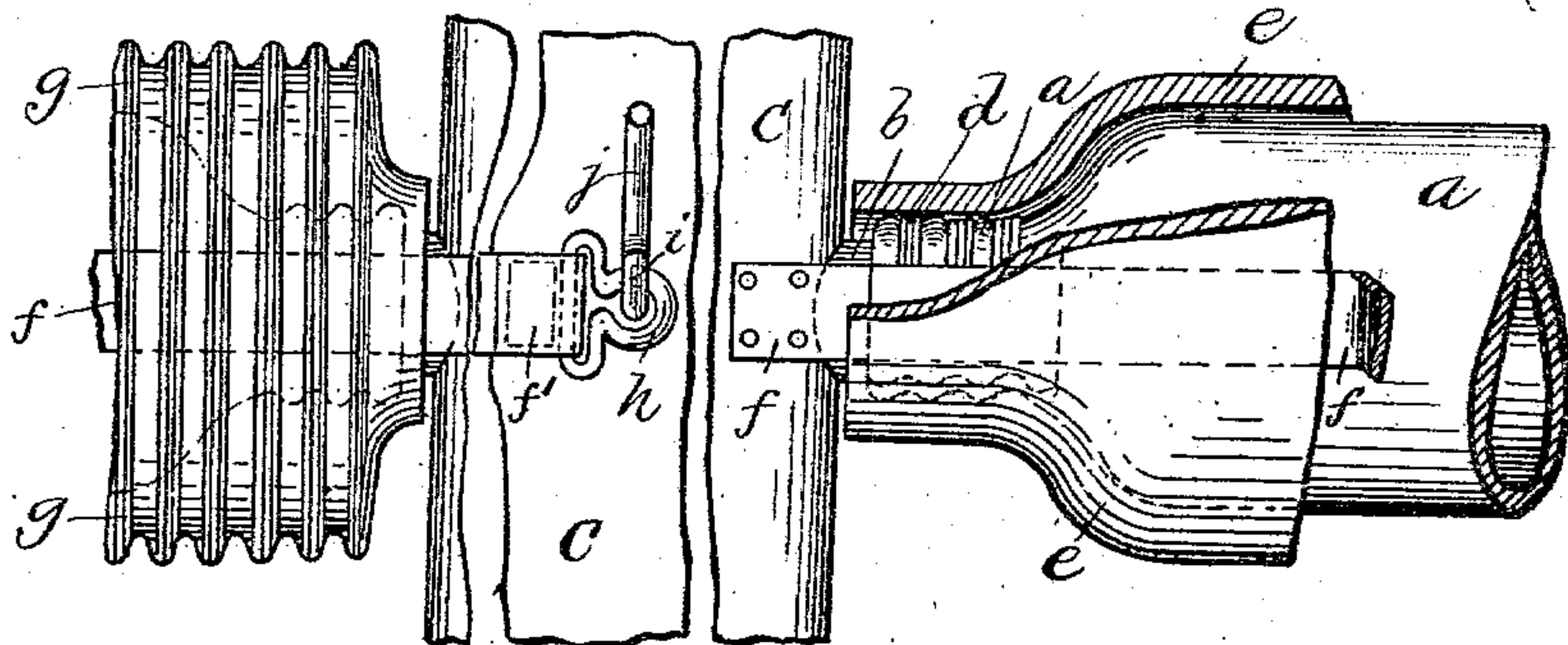


Fig. 3.

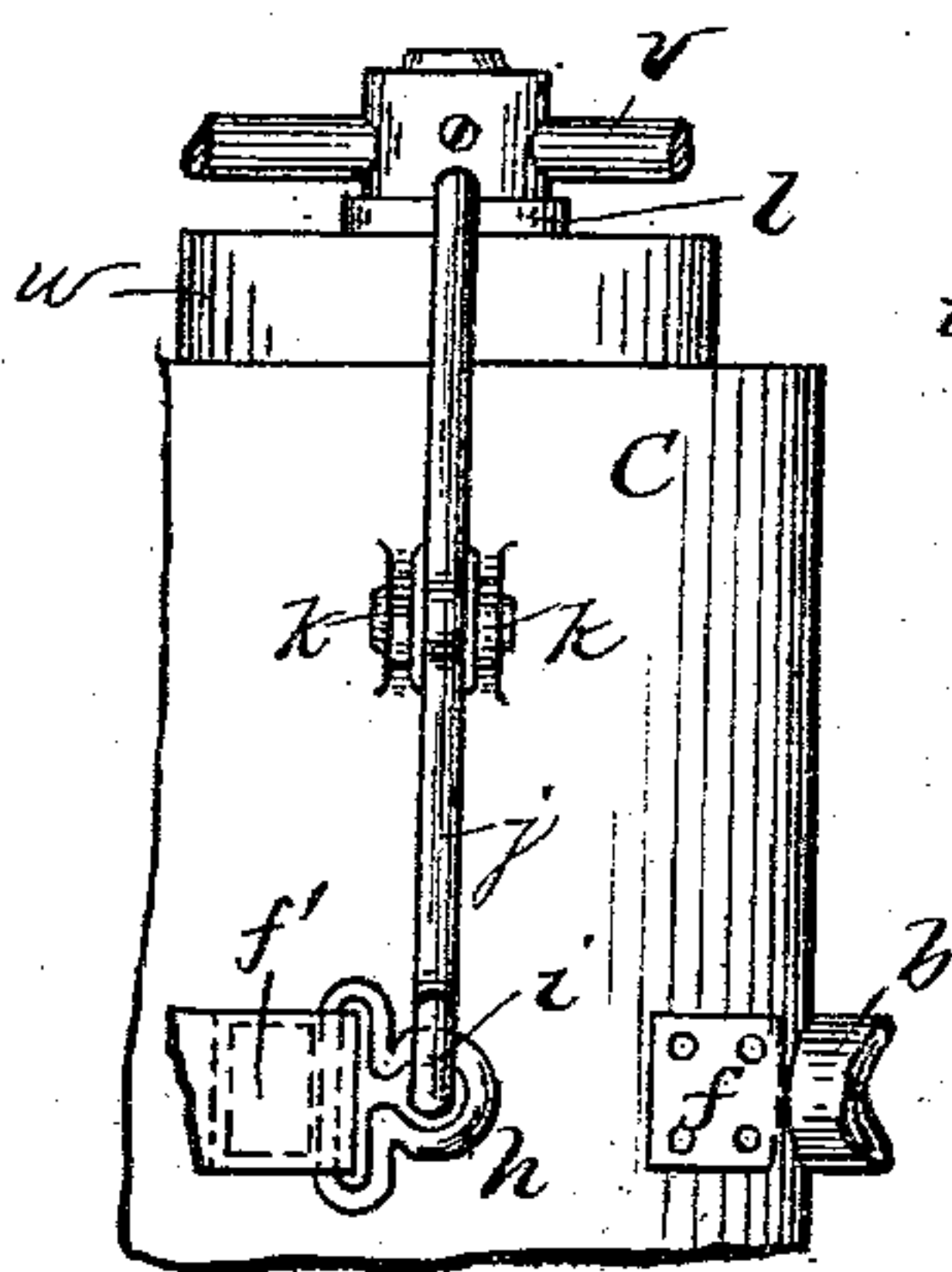


Fig. 4.

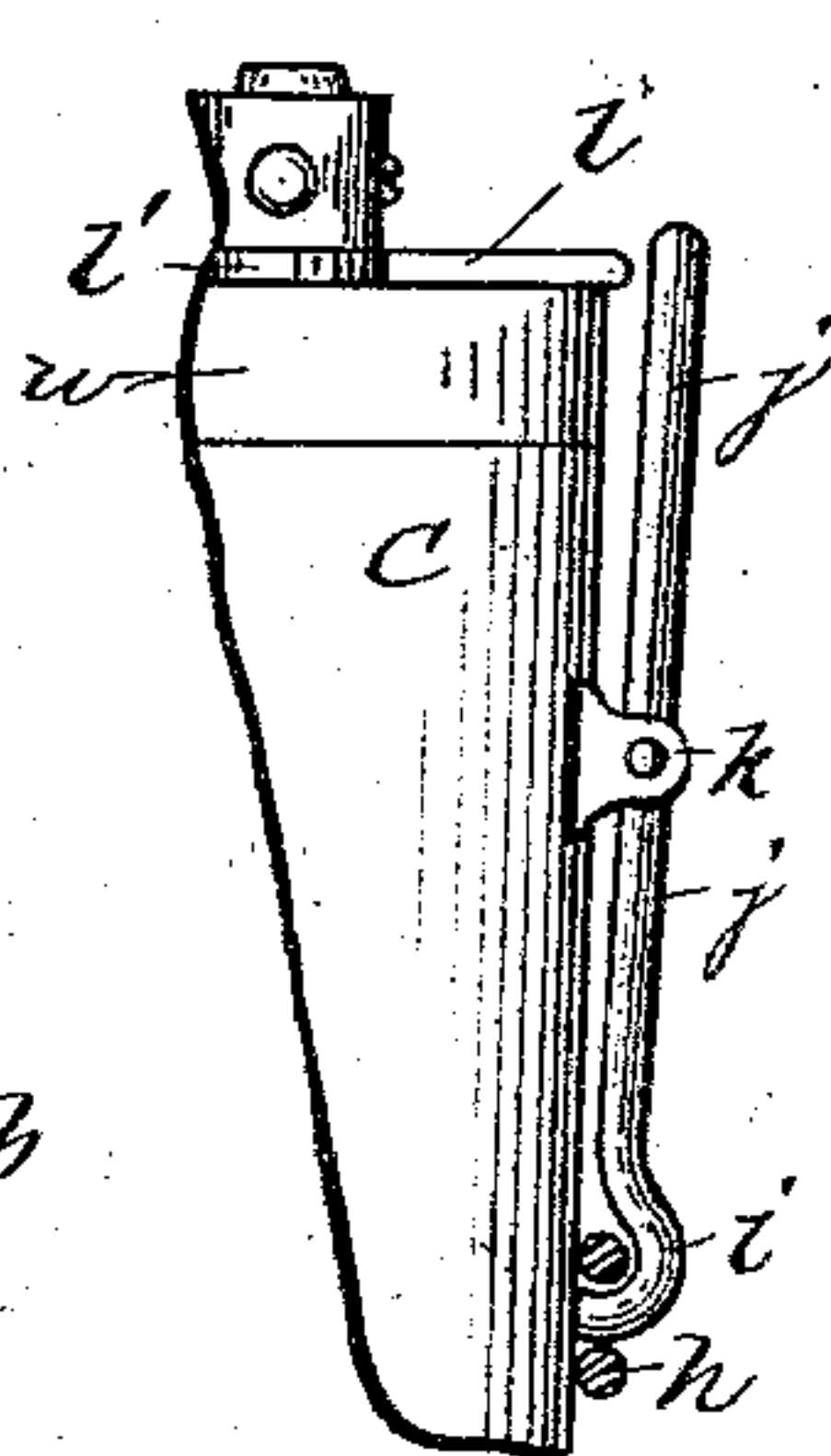


Fig. 5.

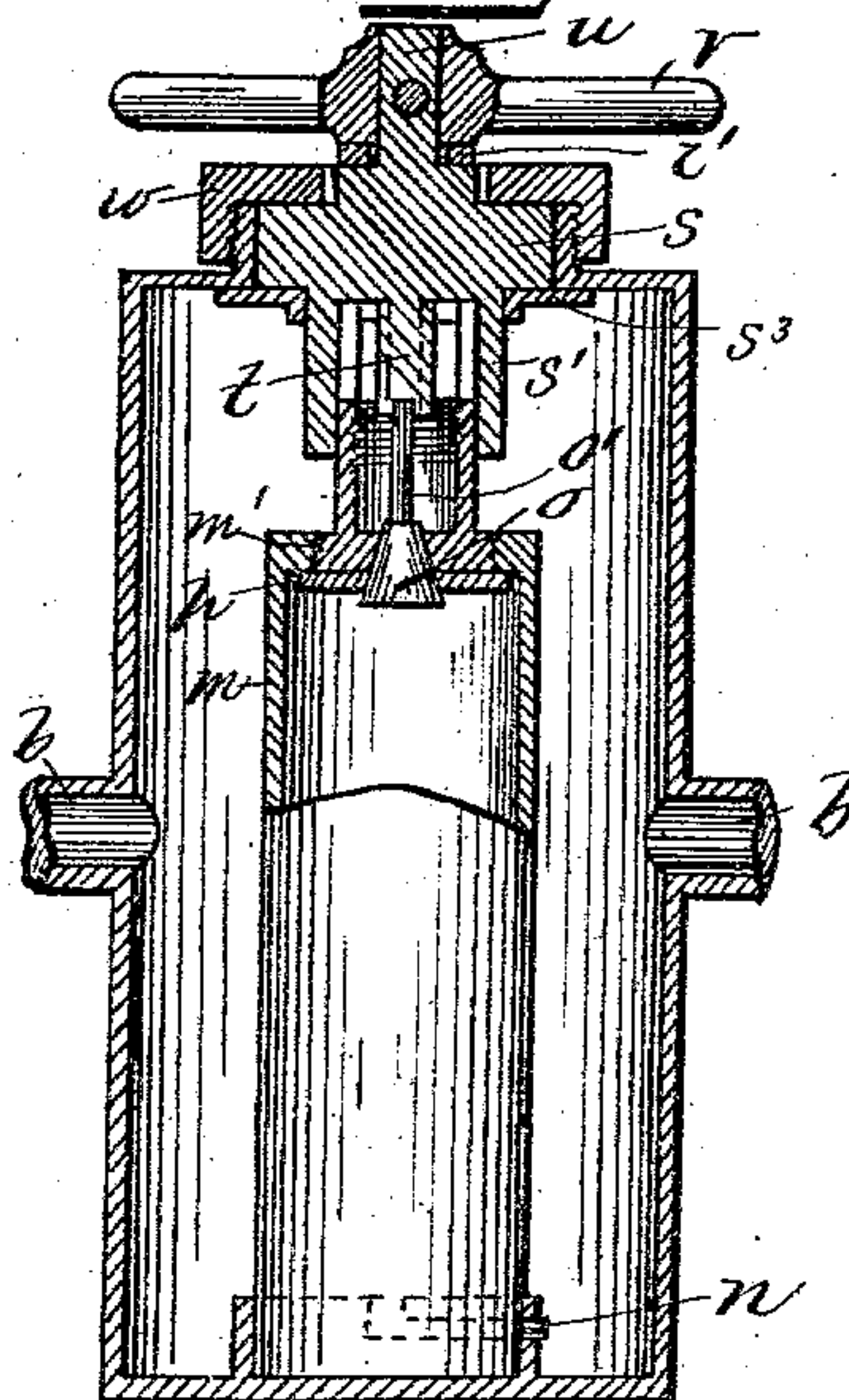


Fig. 6.

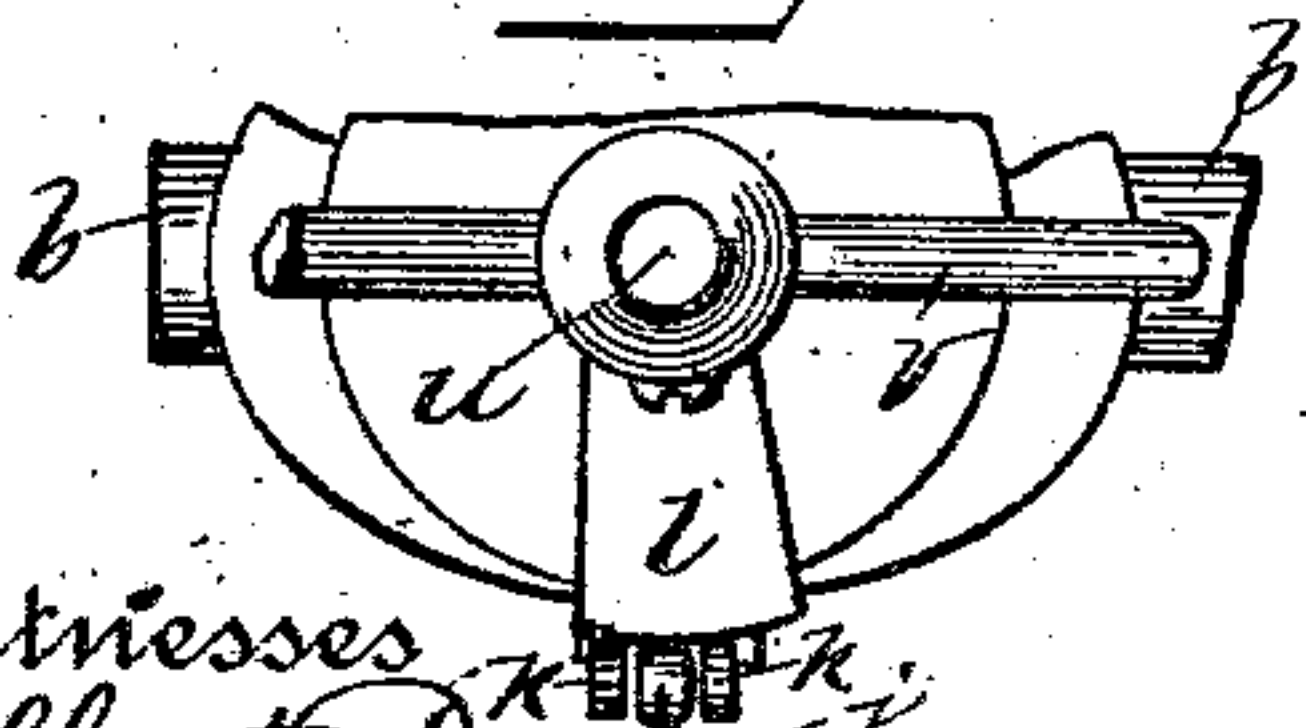
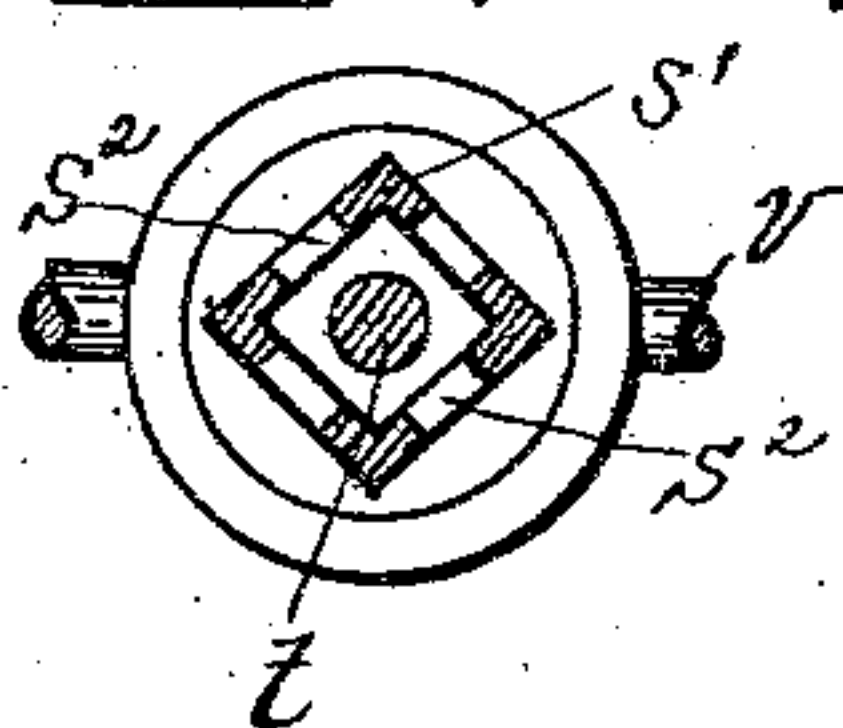


Fig. 7.



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HEINRICH LÜNING, OF HAMBURG, GERMANY.

LIFE-SAVING BELT.

SPECIFICATION forming part of Letters Patent No. 661,347, dated November 6, 1900.

Application filed February 19, 1900. Serial No. 5,804. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH LÜNING, mate, a subject of the German Emperor, residing at Hamburg, Steinstrasse 110, in the German Empire, have invented new and useful Improvements in and Relating to Life-Saving Belts, of which the following is a specification.

This invention relates to a life-belt designed for saving the lives of persons from drowning. The improved life-saving belt is intended to be constantly worn by persons during a sea voyage; but the belt, which is of a material adapted for inflation, is ordinarily deflated and worn in a flat condition. At the moment of danger the improved belt is inflated by admitting a compressed gas thereto through a suitable valve. In this manner the belt, which is ordinarily worn around the waist over the clothes, is inflated, and in order to enable the inflated belt to be moved upward under the arms provision is made to allow of enlarging the belt by so manufacturing the protecting-cover thereof, which latter is made of inextensible fabric, as to permit of its being unfastened in a definite manner, and thus lengthened.

The invention is clearly shown in the accompanying drawings, in which—

Figure 1 is a plan of the improved life-saving belt. Fig. 2 shows the manner of attaching the belt to the user, inclosing the carbonic-acid cylinder. Fig. 3 shows the means for extending the length of the protective cover. Fig. 4 is a side elevation of Fig. 3. Fig. 5 shows a section through the casing. Fig. 6 is a plan of the same, and Fig. 7 is a cross-section of the closing device for the casing.

The life-saving-belt is made in the manner adapted for pneumatic tires, and it consists of an air-tube and a protecting-tube or outer cover. The reduced ends of the air-tube *a* are drawn over the tubular parts or sockets *b* of a casing *c* of oval cross-section, and they are secured so as to be air-tight by wiring *d* or by any other appropriate means. The correspondingly-formed protecting-tube *e* has its extremities arranged so as to be in contact with the casing *c*, and at one end it has fixed to it an internal band or strip *f*, which is firmly fixed to the casing *c*. At the other end the covering-tube is arranged in plaits

or folds *g*, bellows fashion, and the end *f'* of the internal band or strip *f* is left unconnected with the cover at the plaited portion of the latter, and its extremity protruding from the cover is furnished with an eye *h*. This eye is engaged in a hook *i* of a lever *j*. The said lever *j*, Figs. 3, 4, and 5, is two-armed and is fulcrumed to lugs *K*, provided at the side of the casing *c* worn nearest the body. The lower lever-arm, formed with a hook *i*, engages the eye *h* and presses against the casing, so as to retain the eye *h*, while the upper arm of the lever is forced outward by a tongue-piece *l*, projecting beyond the side of the casing, and thereby preventing the eye *h* being accidentally released from the hook *i*.

The casing *c* contains a carbonic-acid cylinder *m*, which is secured to the bottom of the casing by means of a bayonet-lock *n*. The cylinder-head *m'* is provided with a non-return valve *o*. The valve is seated in the top cover *p* of the cylinder, secured by screwing and rendered tight by means of a washer *q*. The cover *p* is formed with a box-shaped extension *r*, having internal screw-threads, serving for filling the cylinder and formed with a square cross-section. Around the said box-shaped extension *r* there is fitted another downwardly-projecting portion *s'* of the top cover *s* of the casing *c*, having a square-shaped interior to fit the square section of *r*. The portion *s'* is shown in cross-section in Fig. 7, and it has cut-out portions *s''* extending the entire length of the part *s'*. In this center of the square-shaped interior there is a pin *t*, engaging the stem *o'* of the valve-cone *o*. The disk-shaped cover *s* is rendered tight by a rubber washer *s''*. It is provided with an upwardly-projecting pin *u*, upon which is mounted the eye *l'* of the tongue-piece *l* and also a handle *v*, which are fixed in position so as to be prevented from turning by means of a screw or other convenient means. The disk-shaped cover *s* is prevented from being removed from the casing *c* by a screw-cap *w*. About the middle of the height of the casing *c* the sockets *b* are located at opposite sides thereof. The life-saving belt is to be worn around the waist during the sea voyage. Should the wearer of the belt fall overboard or should an accident happen to the

boat, he need only turn the handle. This turning causes the cover *p* of the carbonic-acid cylinder *m* to be unscrewed by the head *s*, Fig. 5. As the stem *o'* of the valve-cone *o* rests against the central pin *t*, it will be evident that the compressed carbonic-acid gas can escape between the valve and its seat, whereupon it passes through the opening *s*² into the interior of the casing *c*, and thence through the sockets *b* into the air-tube. The air-tube thus becomes inflated, and in order to enable the protecting-cover *e* to participate in the extending motion of the belt its plaitings *g* are released by disconnecting the band or strip. By turning the handle *v* the tongue-piece *l* is moved sidewise of the upper arm of the lever *j* and enables the lower arm to release the eye *h*, so that now the band or strip *f'* permits the extension of the plaitings *g*. This renders the life-saving belt large enough to allow it slipping upward under the arms of the person and so support him safely. If by accident the belt has been inflated, it may be restored to its former condition and size by removing the handle *v* and the cap *w*, and therewith the top cover *s*, so as to allow the carbonic acid to escape. A fresh cylinder *m*, filled with compressed carbonic acid, is then inserted, and finally the top-cover *s* and han-

dle *v* are replaced, whereupon the apparatus is again ready for use. The protecting-cover *e*, now loose, owing to the deflation of the air-tube, is readjusted to its normal size by re-engaging the eye *h* of the strip *f* with the hook *i*. The tightening up of the top cover brings the tongue-piece *l* into position to act upon the end of the lever *j*, so as to secure the hook *i* in position until the belt is once more required for use.

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

1. In a life-saving device, the combination of an inflatable tube having an extensible cover, of a casing connected with said tube, a gas-container in said casing, and means for releasing the gas from said container.

2. In a life-saving device, the combination of an inflatable tube having an extensible cover, of the internal band *f*, means for securing same, and means for inflating said tube, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HEINRICH LÜNING.

Witnesses:

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