

Jan. 6, 1953

H. E. CARDENAS

2,624,109

SAFETY RAZOR

2 SHEETS—SHEET 1

Filed Oct. 9, 1951

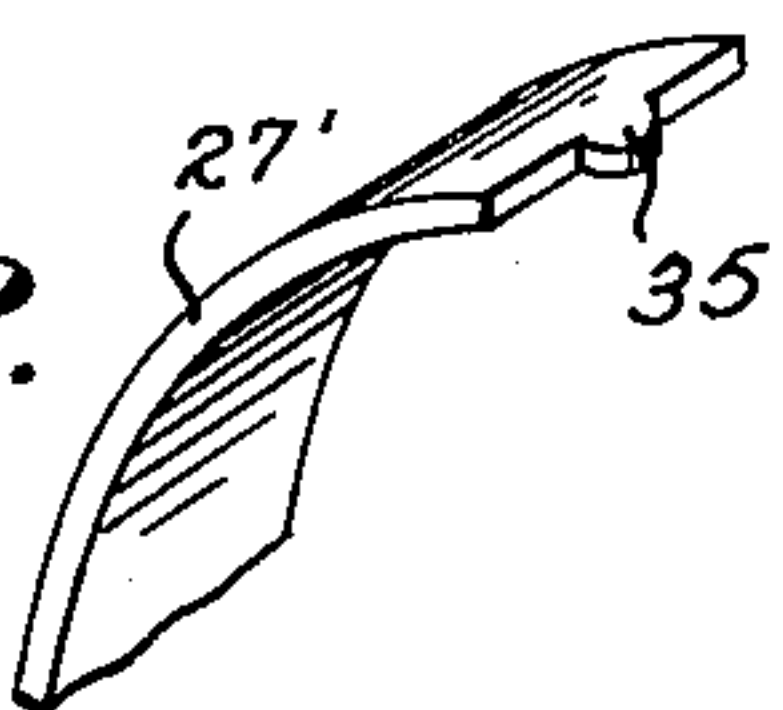
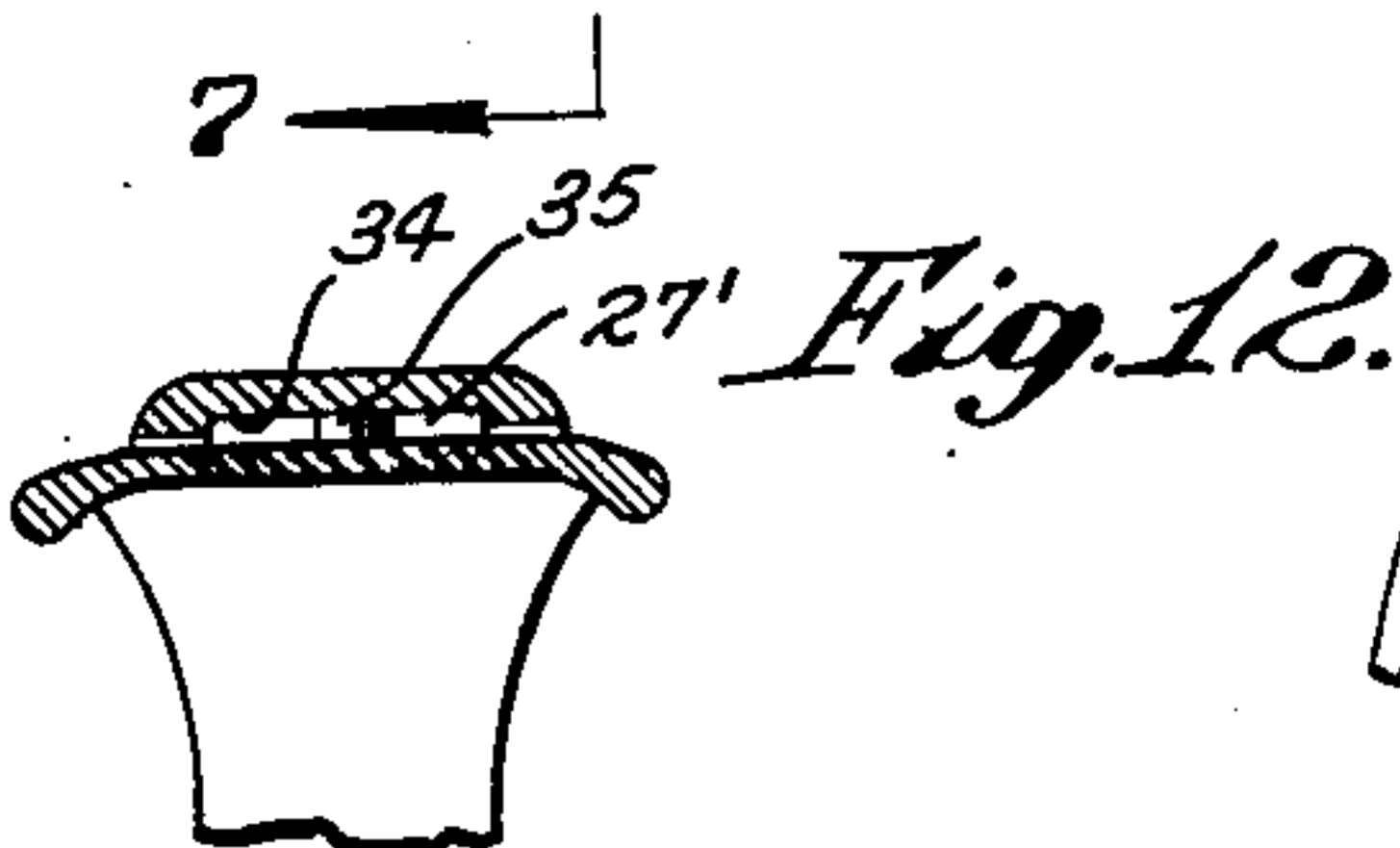
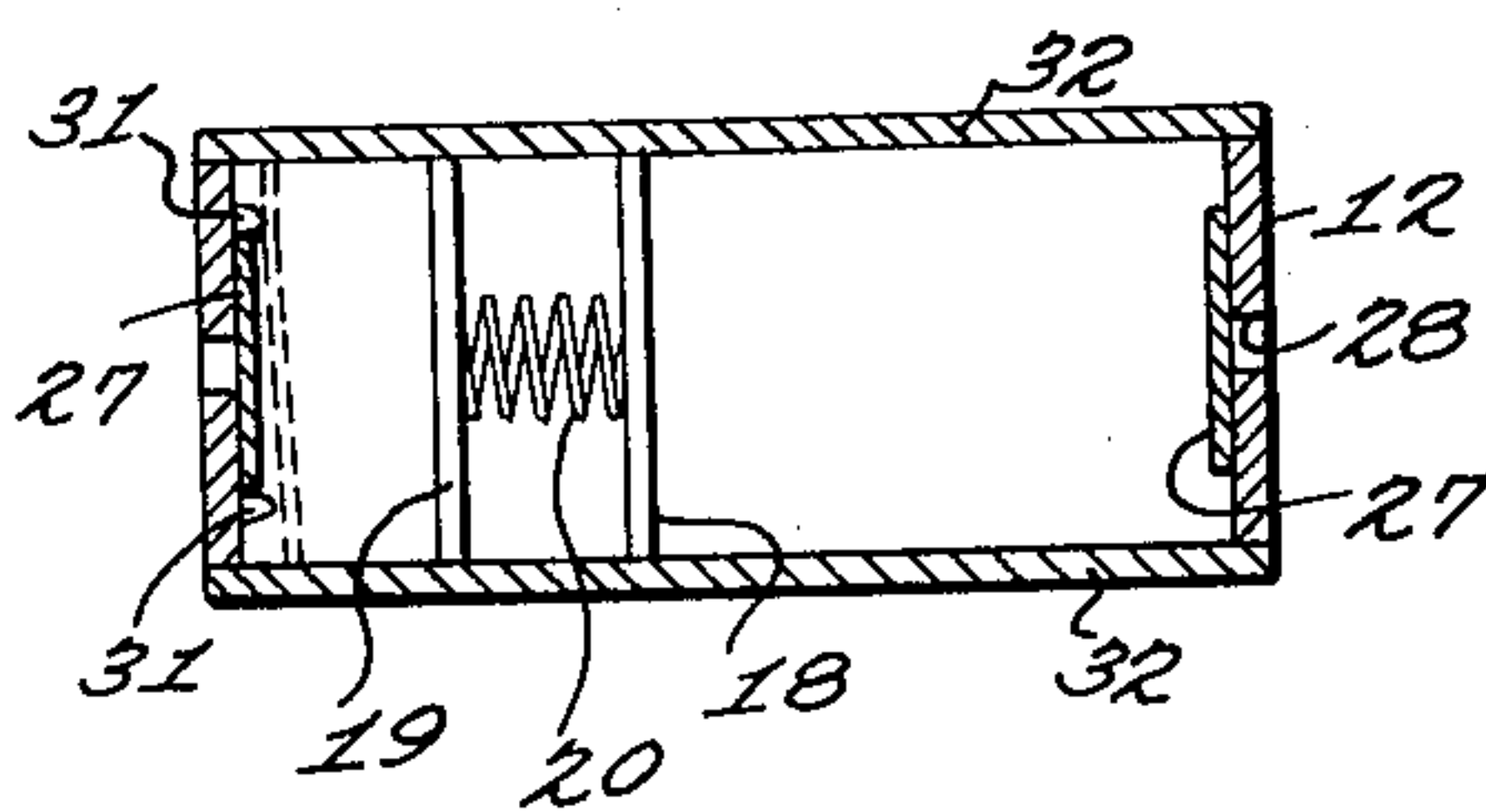
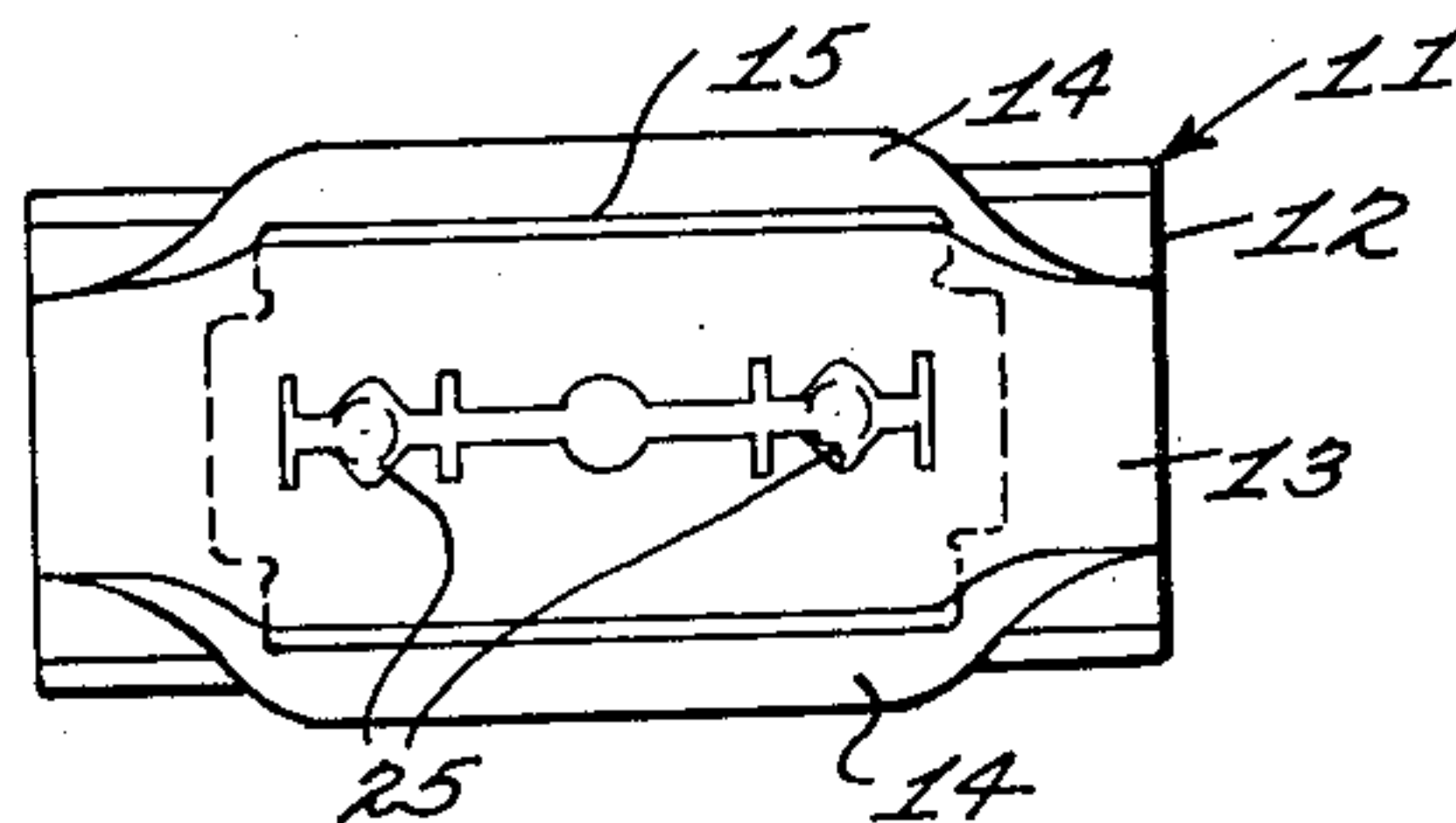
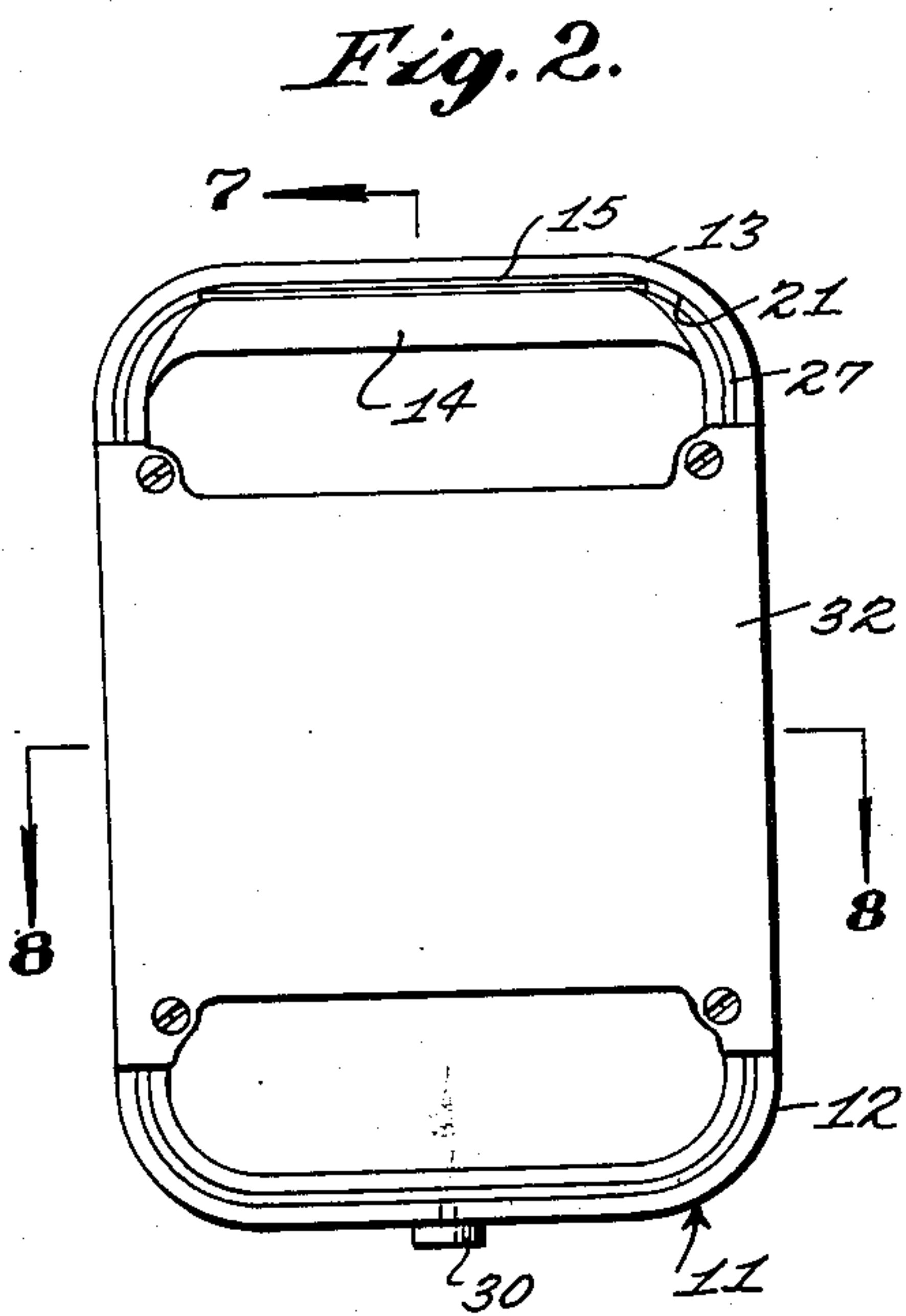
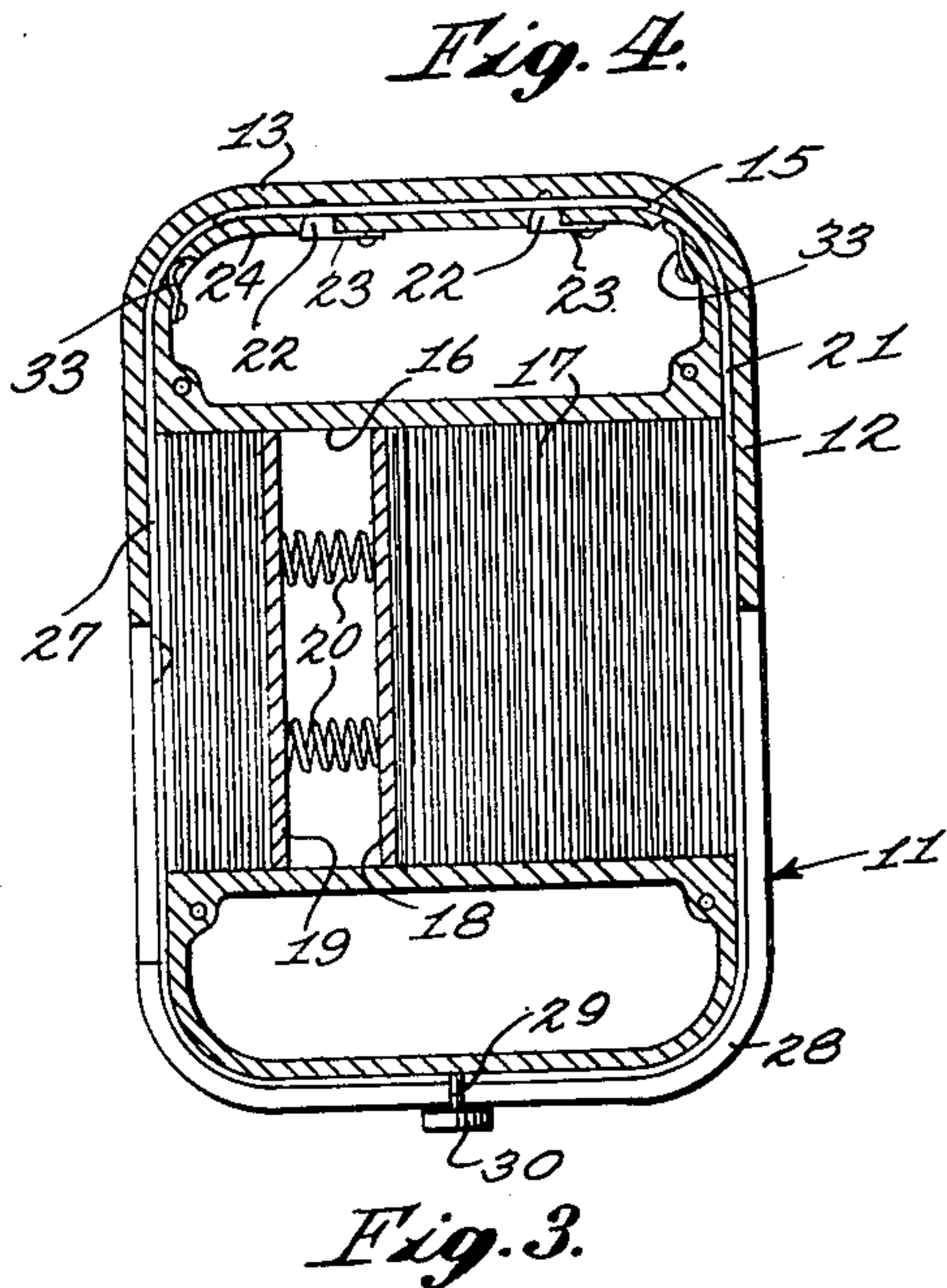
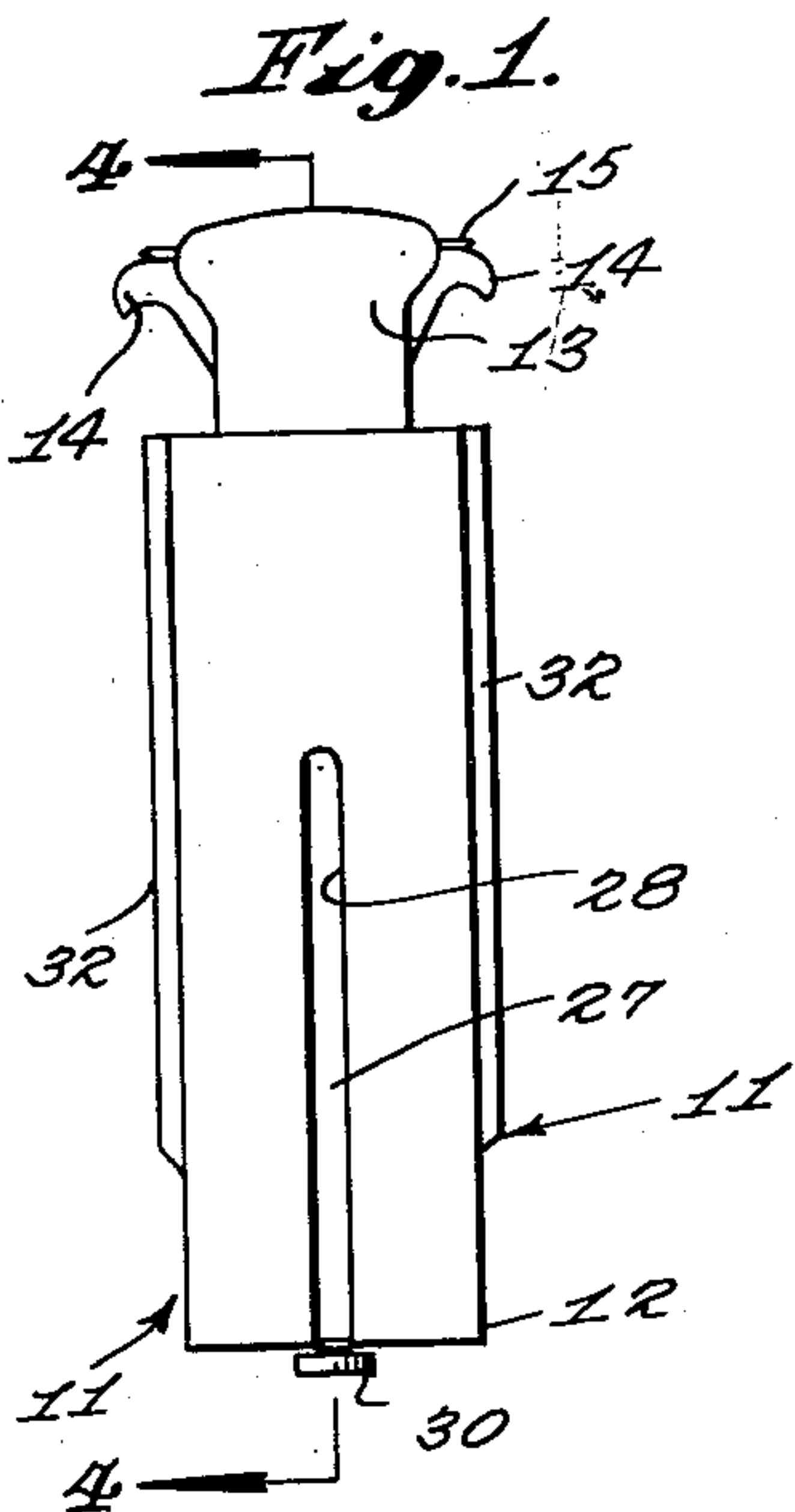


Fig. 13.

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2 SHEETS—SHEET 2

Fig. 5.

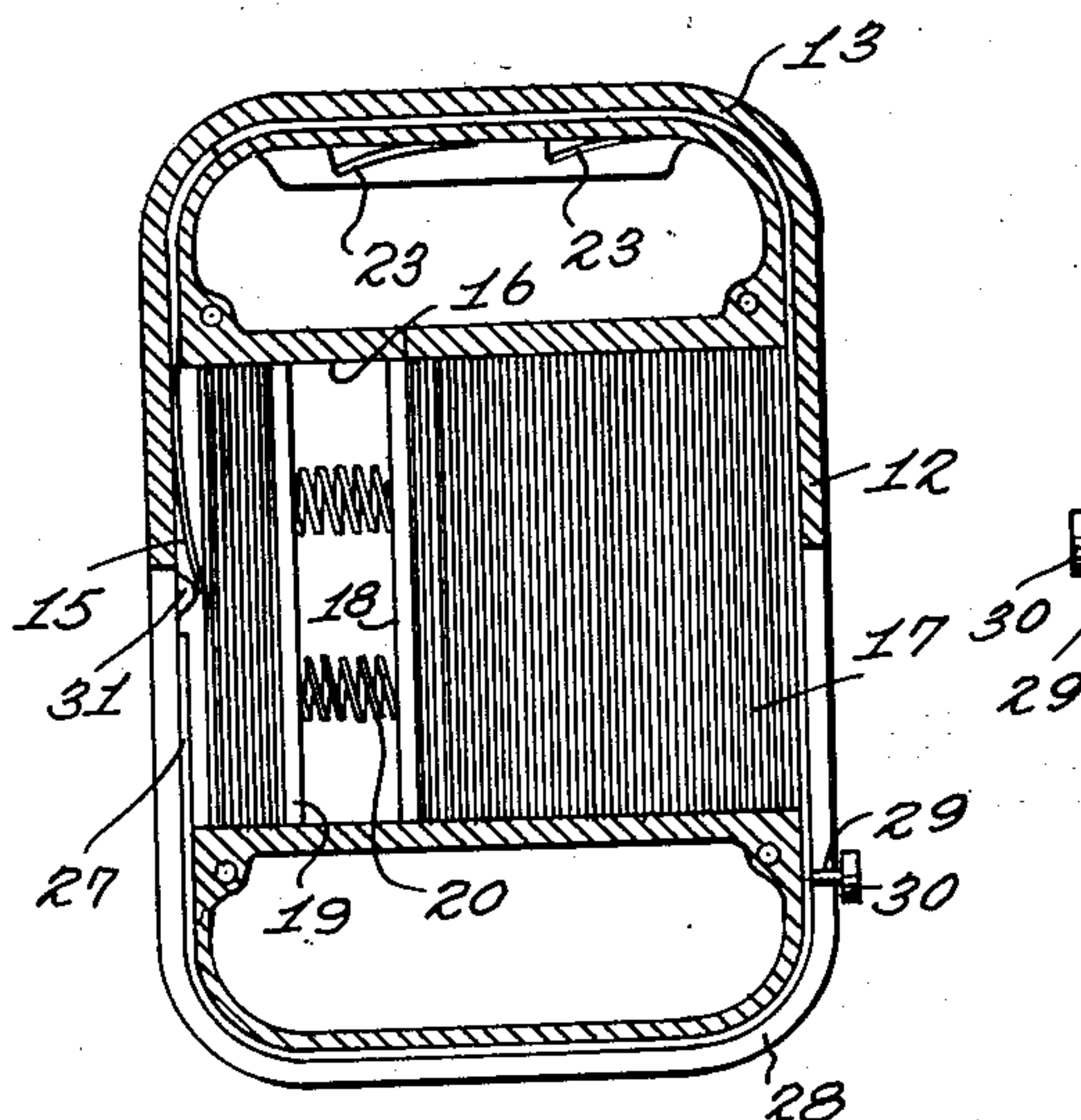


Fig. 6.

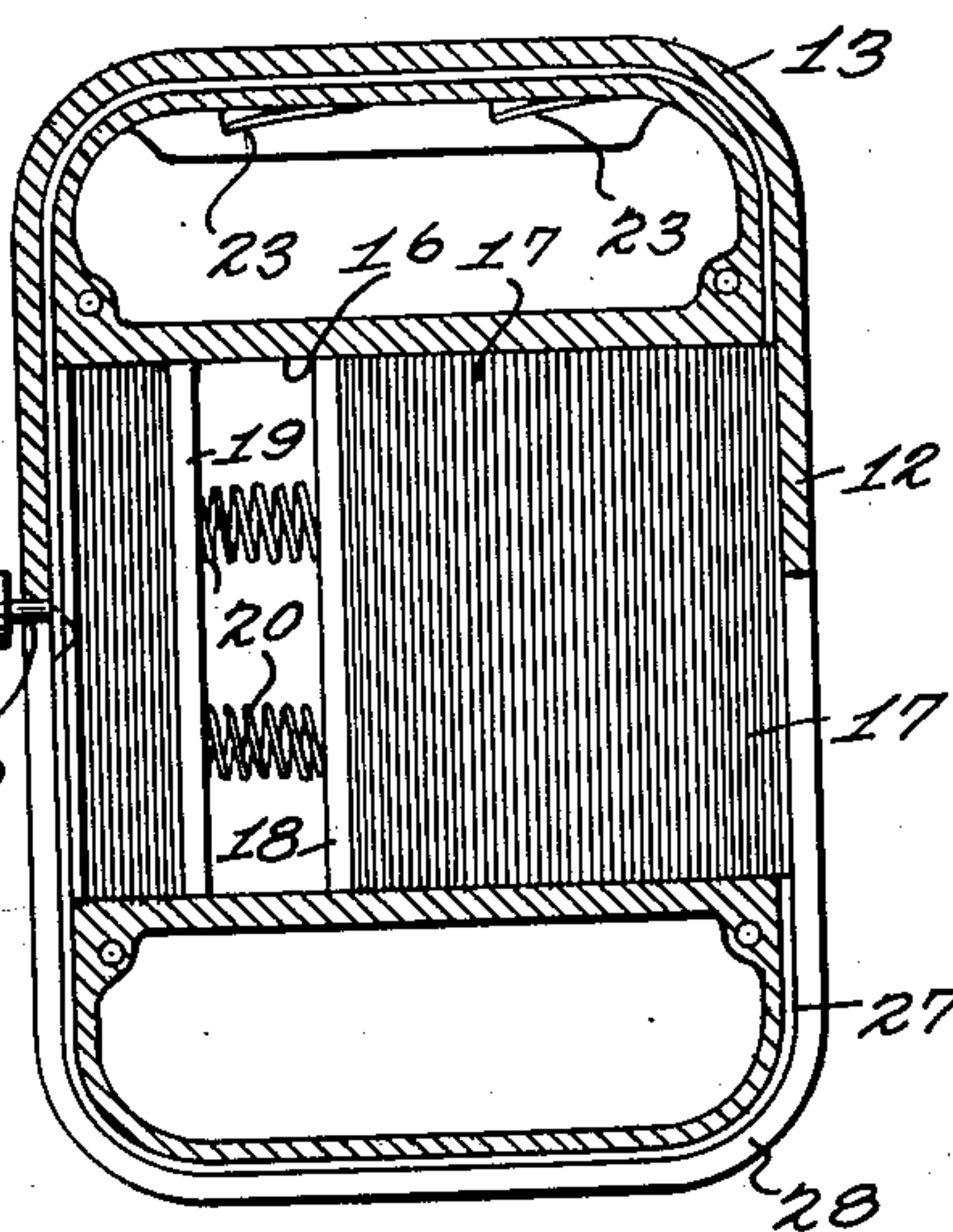


Fig. 7.

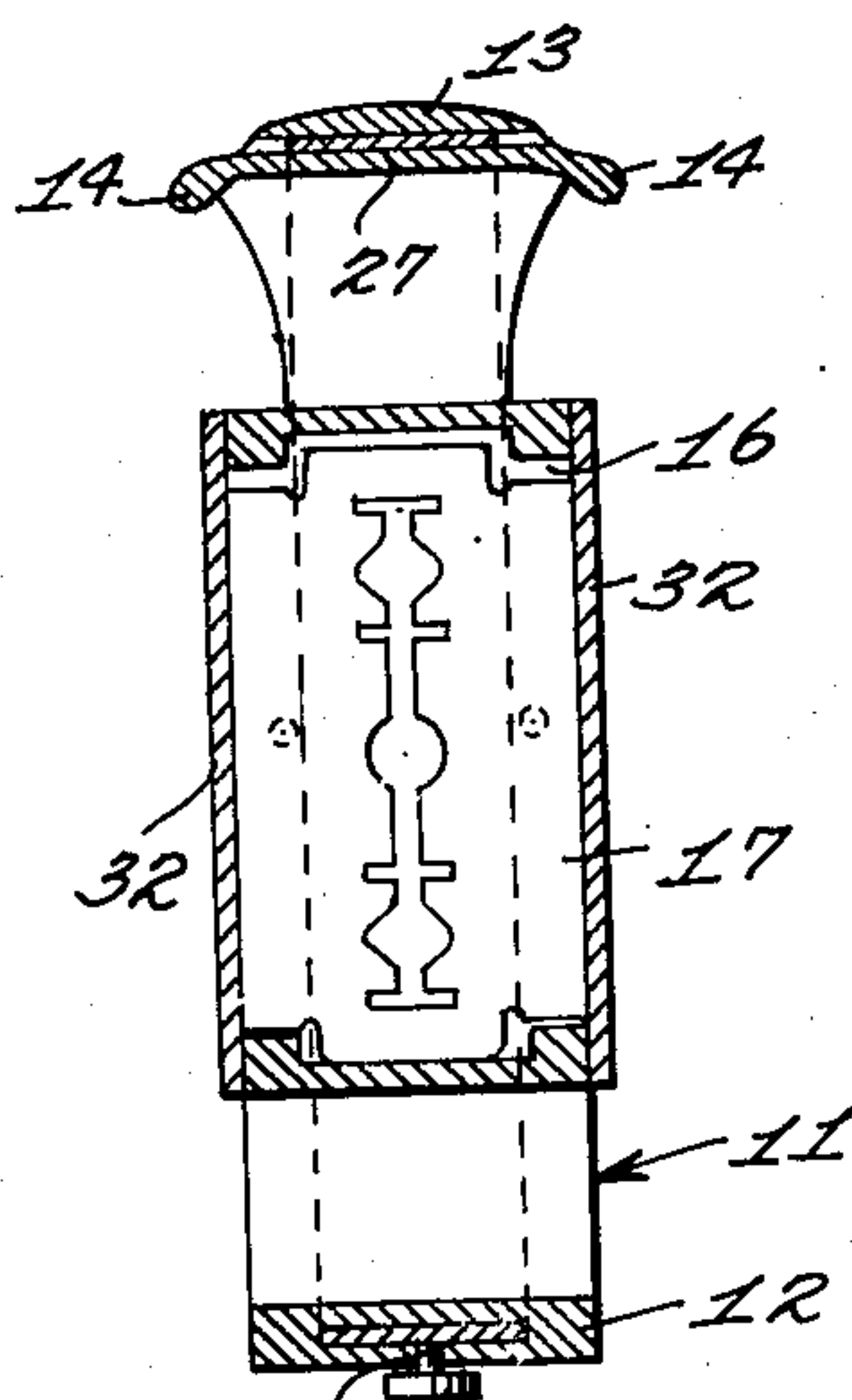


Fig. 9.

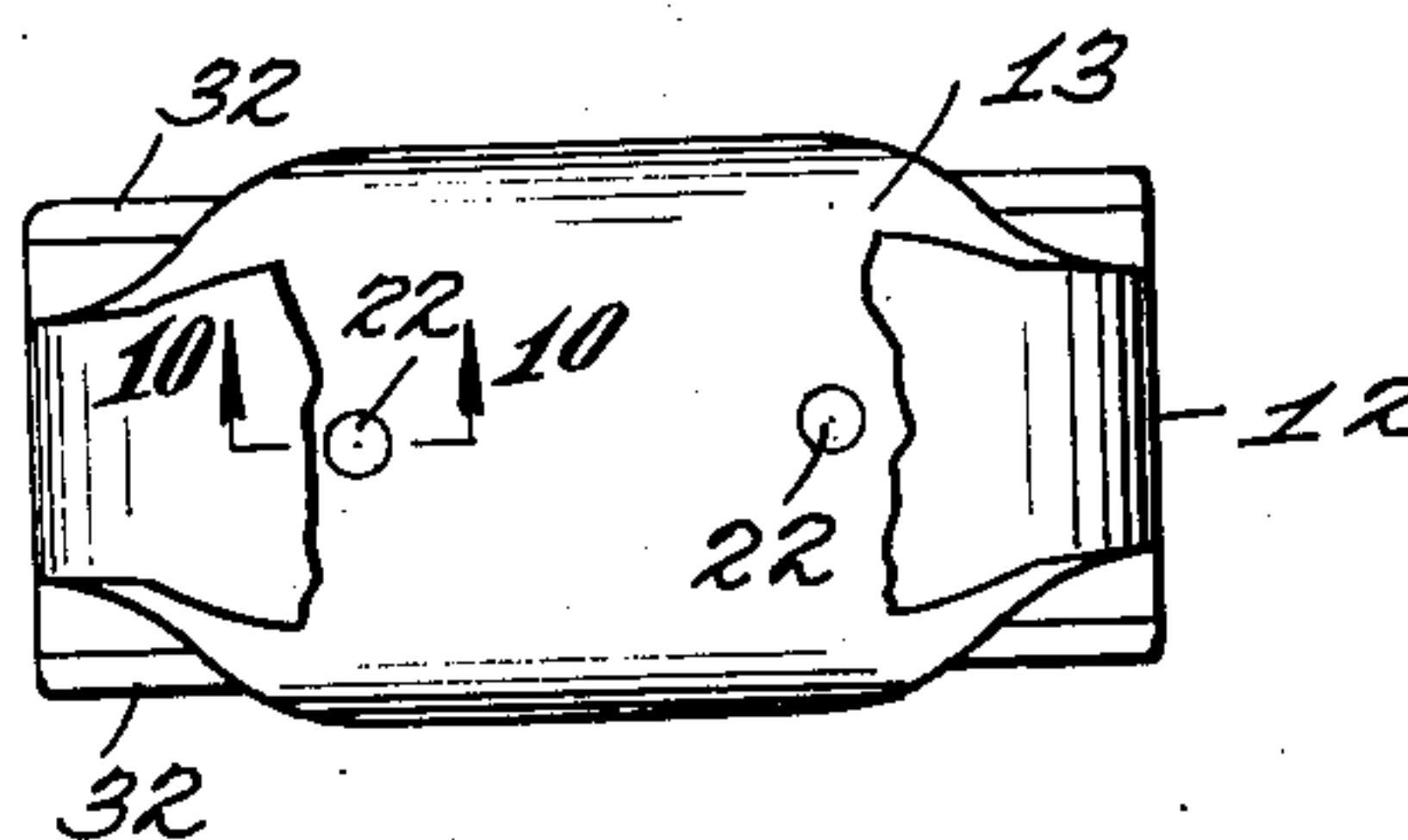


Fig. 10.

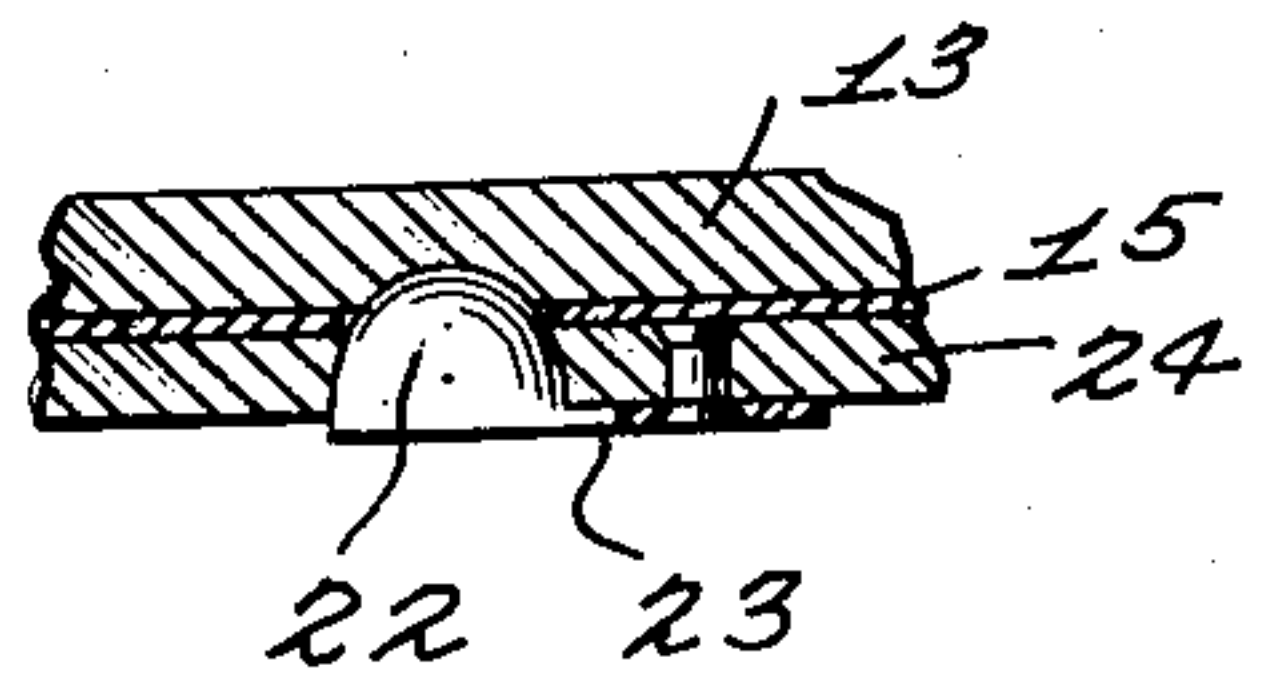
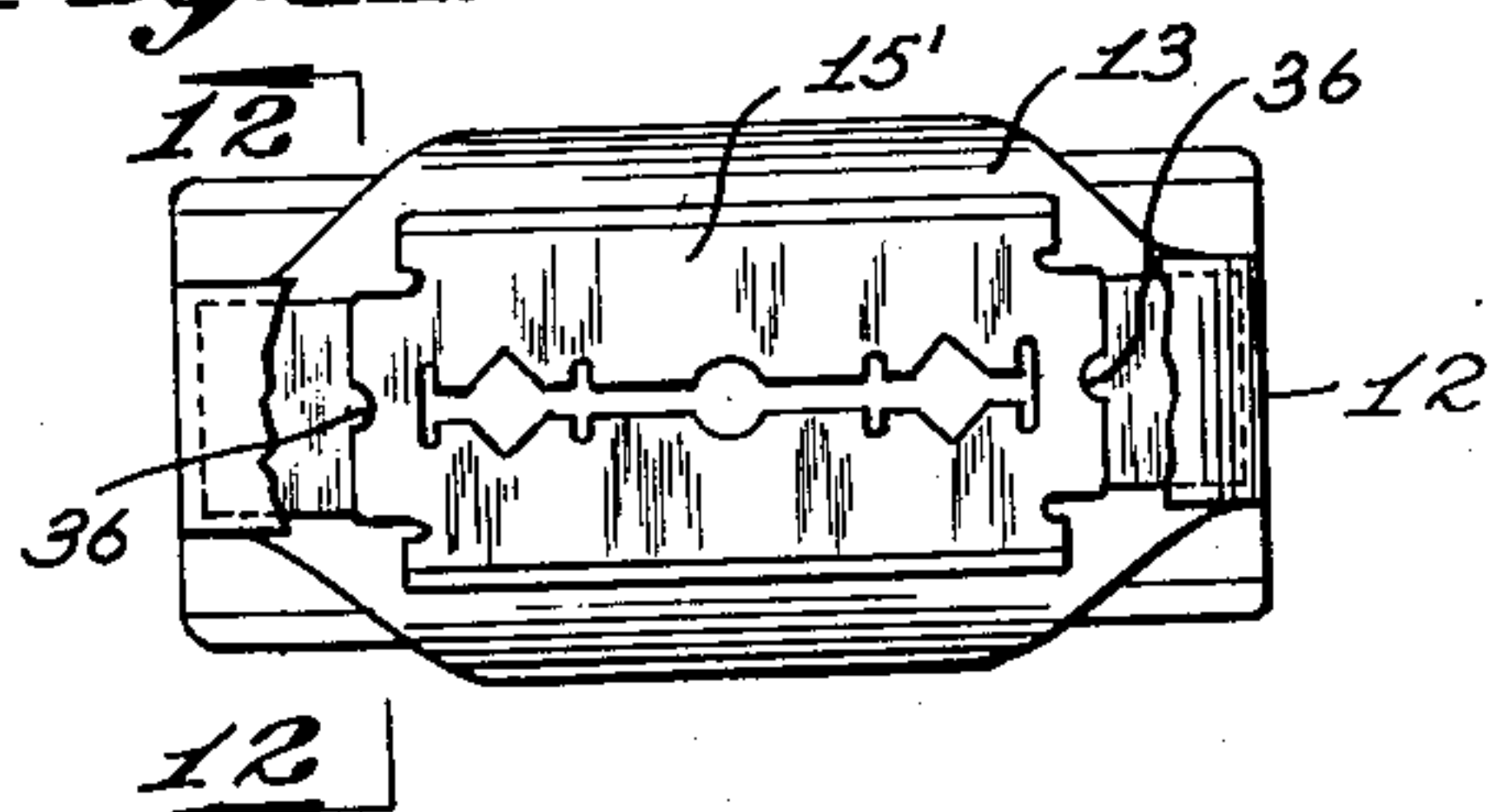


Fig. 11.



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2,624,109

SAFETY RAZOR

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Application October 9, 1951, Serial No. 250,465

3 Claims. (Cl. 30—40)

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This invention relates to safety razors, and more particularly to an improved safety razor of the magazine type.

A main object of the invention is to provide a novel and improved safety razor adapted to contain a large supply of razor blades and arranged so that a new razor blade may be moved into position for shaving by a simple manual operation, said operation at the same time causing the old blade to be moved into a storage space in the razor, whereby it is unnecessary to remove the old blade until all of the blades supplied in the razor are used up.

A further object of the invention is to provide an improved safety razor of the magazine type which is simple in construction, which is very easy to manipulate, which involves only a few parts, and which is sturdy in construction.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a side elevational view of an improved safety razor constructed in accordance with the present invention;

Figure 2 is a front elevational view of the razor of Figure 1;

Figure 3 is a top plan view of the razor of Figures 1 and 2;

Figure 4 is a vertical, cross-sectional view taken on the line 4—4 of Figure 1;

Figure 5 is a cross-sectional view similar to Figure 4, but showing a used razor blade being ejected into the used blade storage space of the razor;

Figure 6 is a cross-sectional view similar to Figure 4, but showing the parts arranged preliminary to the movement of a new blade into the head of the razor;

Figure 7 is a cross-sectional view taken on the line 7—7 of Figure 2;

Figure 8 is a cross-sectional view taken on the line 8—8 of Figure 2;

Figure 9 is a fragmentary, top plan view of the razor of Figure 1, a portion of the head being broken away to show the retaining lugs employed to hold the razor blade in proper shaving position in the head;

Figure 10 is an enlarged, cross-sectional, detail view taken on the line 10—10 of Figure 9;

Figure 11 is a fragmentary top plan view, similar to Figure 9, but illustrating a modified form of the present invention;

Figure 12 is a fragmentary cross-sectional view taken on line 12—12 of Figure 11;

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Figure 13 is a fragmentary enlarged perspective view of one end portion of the flexible band member employed in the form of the invention illustrated in Figures 11 and 12.

Referring to the drawings, the razor is designated generally at 11 and comprises a substantially rectangular body 12 formed with the head 13, said head being provided on opposite sides thereof with the guard flanges 14, 14 arranged to underlie the respective cutting edges of a razor blade 15 disposed in the head in the manner shown in Figure 1. The body 12 is formed with a transverse cavity 16 which is generally rectangular in cross-section and which is shaped to receive a supply of conventional safety razor blades 17 in stacked relationship, as shown in Figure 4. Designated at 18 and 19 are a pair of parallel, rectangular plate members which are slidably positioned in the cavity 16 and which are urged apart by a plurality of coil springs 20 secured to and connecting the opposed inside surfaces of the plate members 18 and 19, as shown in Figure 4.

The body 12 is formed with a continuous flat passage 21 which extends around the periphery of the body and which passes through the head 13. The sides of the passage in the head 13 are open and extend over the guard flanges 14, 14, whereby a razor blade in the passage will be positioned in the manner shown in Figure 1 with the sharpened side edges of the blade exposed on opposite sides of the passage and overlying the guard flanges 14, 14. Designated at 22, 22 are spaced lug elements carried on resilient arms 23, 23 secured at their ends to the wall 24 forming the lower portion of the head 13, said lugs 22, 22 projecting upwardly through openings provided in wall 24 and being spaced apart so as to engage in the locking recesses 25, 25 of a conventional razor blade 15, as shown in Figure 3.

Slidably disposed in the passage 21 is a thin, flat, flexible band 27 which extends around the periphery of the body 12 in the passage 21 and which is of such a length that the space between its ends is just sufficient to receive a conventional razor blade. As shown in Figure 4, the razor blade 15 is of a length substantially equal to the distance between the ends of the band 27. The passage 21 is open to the ends of the cavity 16, whereby the springs 20 urge the blades 17 against the band 27, when the band is arranged as shown in Figure 4.

The lower half of the body 12, as viewed in Figure 4, is formed with the peripheral slot 28 which opens into the passage 21 and which ex-

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tends from approximately the mid-point of the left end of cavity 16 to approximately the mid-point of the right end of the cavity 16, as viewed in Figure 4. Designated at 29 is a pin member secured to the band 27 and provided with a head 30. The pin member 29 extends through the slot 28 to the exterior of the body 12, the head 30 being located adjacent to the outer surface of the body at slot 28. It will be readily apparent that the band 27 may be moved in the passage 21 by moving the head 30 along the slot 28.

Referring now to Figure 8, it will be seen that the inside surface of the left side wall of the body 12 is formed adjacent the ends of the slot 28 with the spaced, inwardly projecting lug elements 31, 31 which are symmetrically located on opposite sides of the slot 28 and which are spaced apart sufficiently to receive the band 27 between them. The lugs 31, 31 serve as guide means for the band 27 and also serve to deflect a used razor blade inwardly into the cavity 16 when the band 27 is moved in a counterclockwise direction, as viewed in Figure 5, whereby a used razor blade may be guided into the left end of the cavity 16 for storage therein.

As shown in Figure 4, the band 27 is approximately equal in thickness to the thickness of a conventional razor blade 15, whereby the band 27 may readily urge a blade through the passage 21 when the band is moved by means of the pin 29.

Assuming that a blade 15 is in the position shown in Figure 4 and it is desired to substitute a new blade, the head 30 is first moved in a counterclockwise direction, as viewed in Figure 4, whereby the right end of the band 27 engages the used blade 15 and forces said used blade into the position shown in Figure 5, whereby the used blade is deflected inwardly into the left end of the cavity 16. When the head 30 is moved so that the pin 29 engages the right end of slot 28, as viewed in Figure 5, the used blade will have been moved completely into the cavity 16. The head 30 is then moved clockwise to the position shown in Figure 6, wherein the pin 29 engages the left end of slot 28 and the ends of band 27 are disposed adjacent opposite ends of the new blade at the right end of the stack of blades 17, as shown in Figure 6. The head 30 is then moved to the position shown in Figure 4, whereby the band 27 moves the new blade in a counterclockwise direction, as viewed in Figure 6, until the blade moves into the head 13 and becomes interlocked with the lugs 22, 22. The razor is now ready for use.

The razor is initially furnished with a stack of blades 17 which substantially fills the cavity 16. As the razor is used, the used blades accumulate in the left end of the cavity 16, new blades being constantly furnished from the stack 17. After all of the new blades are used, the blades will all be contained in the cavity 16 to the left of the plate member 19, as viewed in Figure 4, whereupon it is necessary to remove the used blades and replenish the supply of blades. The body 12 is provided with the removable front and rear cover plates 32, providing access to the interior of cavity 16 by the removal of either of said cover plates.

As shown in Figure 4, suitable friction springs 33, 33 may be provided in the head 13, said springs having free end portions which engage the band 27 through suitable openings formed in the inner wall of passage 21.

In the form of the invention illustrated in Fig-

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ures 11, 12 and 13, the flexible band, designated at 27', is somewhat thicker than a razor blade and is slidably retained in a groove or channel, shown at 34 in Figure 12, whereby the band 27' is maintained centered at all times. The ends of the band 27' are formed with centered lugs 35 engageable in notches 36 in the ends of the razor blade 15', as shown in Figure 11, whereby the blade 15' is also maintained centered.

While specific embodiments of an improved safety razor of the magazine type have been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. In a safety razor, a body formed with a transverse cavity adapted to receive a plurality of razor blades in stacked relation parallel to the sides of the body, a head at one end of the body, said body being formed with a continuous flat passage extending around its periphery and through said head, the passage being opened at the side edges of said head and said head being arranged so that a razor blade in the head passage portion will have its side edges exposed, a flat, thin, flexible band of substantial width slidably positioned in said passage for movement therealong, said body being formed with a peripheral slot of substantial length opening into said passage and extending therealong, and a projection secured to said band and extending outwardly through said slot, whereby the band may be moved through said passage by moving the projection through said slot, the end of said band being arranged to engage the endmost blade in one end of said transverse cavity and to push the blade into said head responsive to an initial movement of said projection, and to push the same blade into the other end of said cavity responsive to continued movement of the projection.

2. In a safety razor, a body formed with a transverse cavity adapted to receive a plurality of razor blades in stacked relation parallel to the sides of the body, a head at one end of the body, said body being formed with a continuous flat passage extending around its periphery and through said head, the passage being open at the side edges of said head and said head being arranged so that a razor blade in the head passage portion will have its side edges exposed, a flat, thin, flexible band of substantial length slidably positioned in said passage for movement therealong, said body being formed with a peripheral slot of substantial length opening into said passage and extending therealong, a projection secured to said band and extending outwardly through said slot, whereby the band may be moved through said passage by moving the projection through said slot, the end of said band being arranged to engage the endmost blade in one end of said transverse cavity and to push the blade into said head responsive to an initial movement of said projection and to push the same blade into the other end of said cavity responsive to continued movement of the projection, a pair of parallel plate members slidably positioned in said cavity and arranged parallel to the side edges of the body, and spring means between said plate members urging said plate members apart.

3. In a safety razor, a body formed with a

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transverse cavity adapted to receive a plurality of razor blades in stacked relation parallel to the sides of the body, a head at one end of the body, said body being formed with a continuous flat passage extending around its periphery and through said head, the passage being open at the side edges of said head and said head being arranged so that a razor blade in the head passage portion will have its side edges exposed, a flat, thin, flexible band of substantial length slidably positioned in said passage for movement therealong, said band in one position extending from one end wall of the cavity at one side of the body, around the body to the other end wall of the cavity at said one side of the body, whereby a razor blade is receivable between the ends of the band, said body being formed with a peripheral slot of substantial length opening into said passage and extending therealong, said slot being located opposite the head and being approximately one-half the length of the passage,

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a projection secured to said band and extending outwardly through said slot, whereby the band may be moved through said passage by moving the projection through said slot, the ends of said band being arranged to engage the endmost blade in one end of said transverse cavity and to push the blade into said head responsive to an initial movement of said projection, and to push the same blade into the other end of said cavity responsive to continued movement of the projection, a pair of parallel plate members slidably positioned in said cavity and arranged parallel to the side edges of the body, spring means between said plate members urging said plate members apart, and an inwardly projecting abutment in said passage facing the cavity at the other side of the body.

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No references cited.