

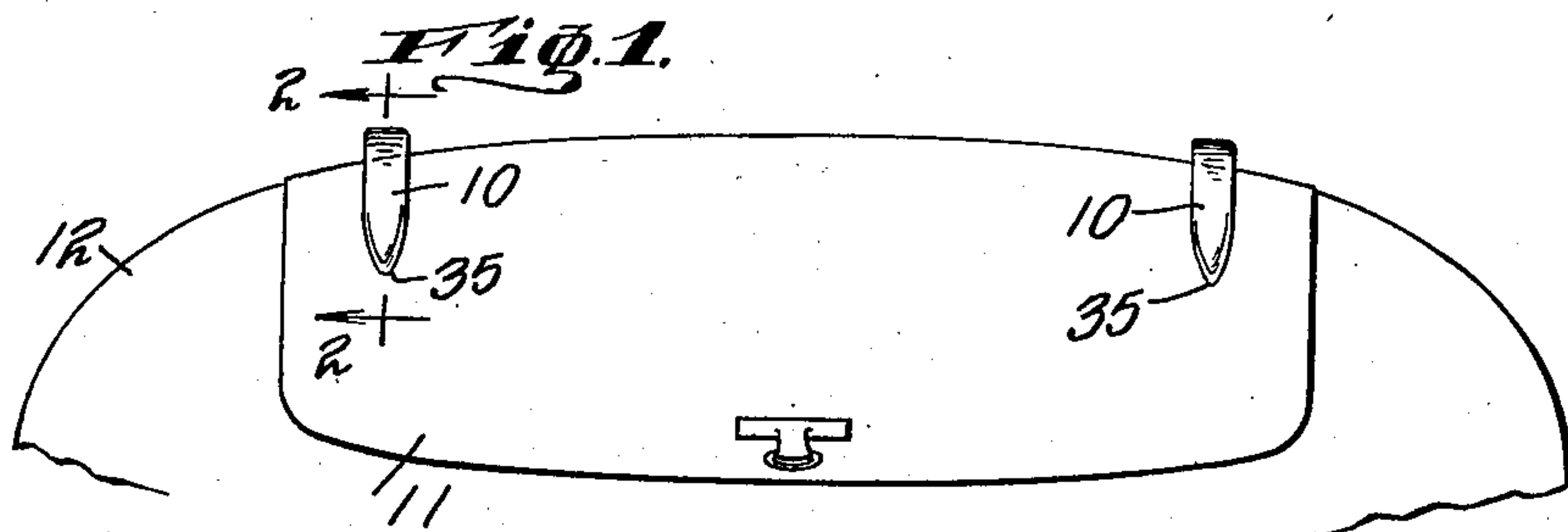
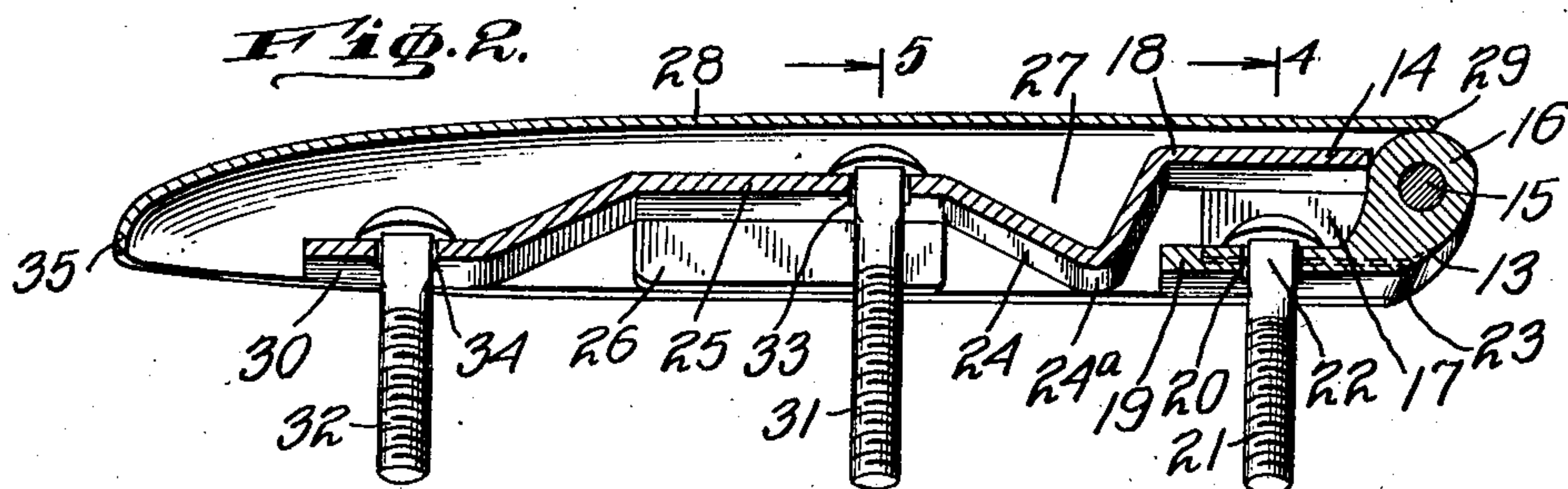
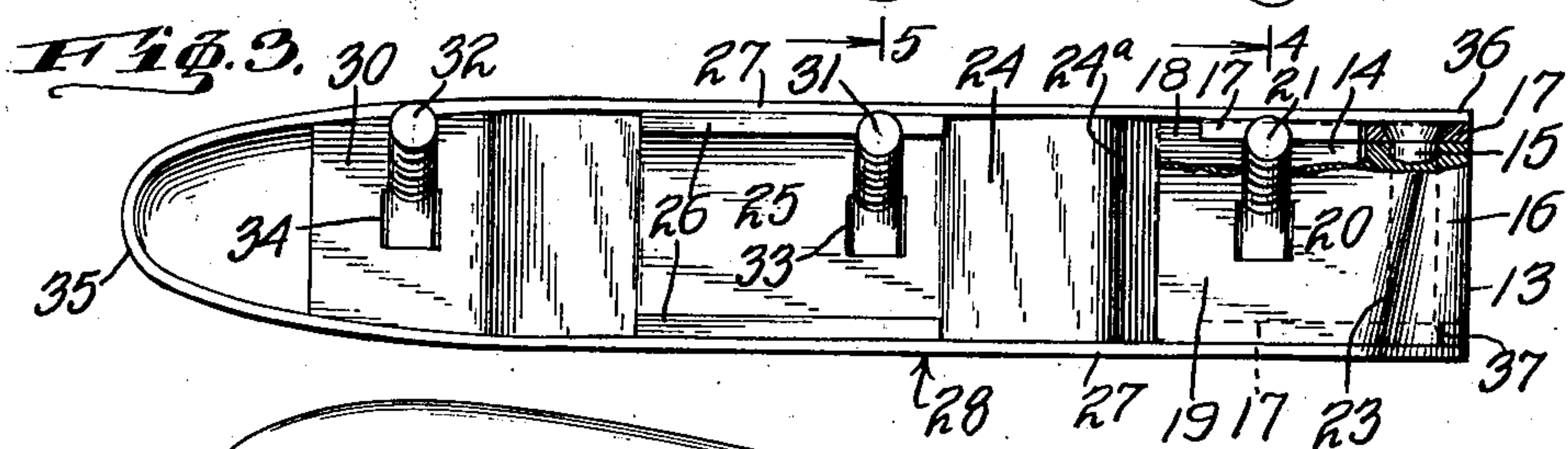
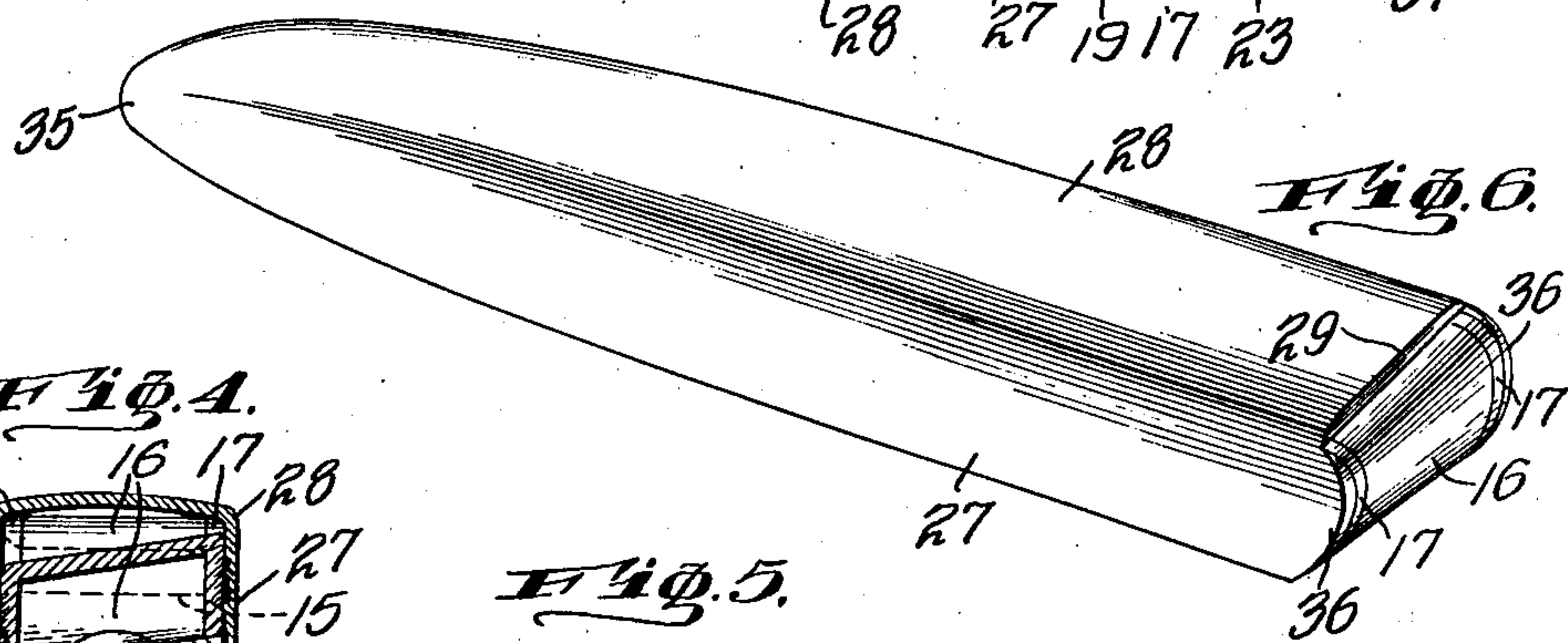
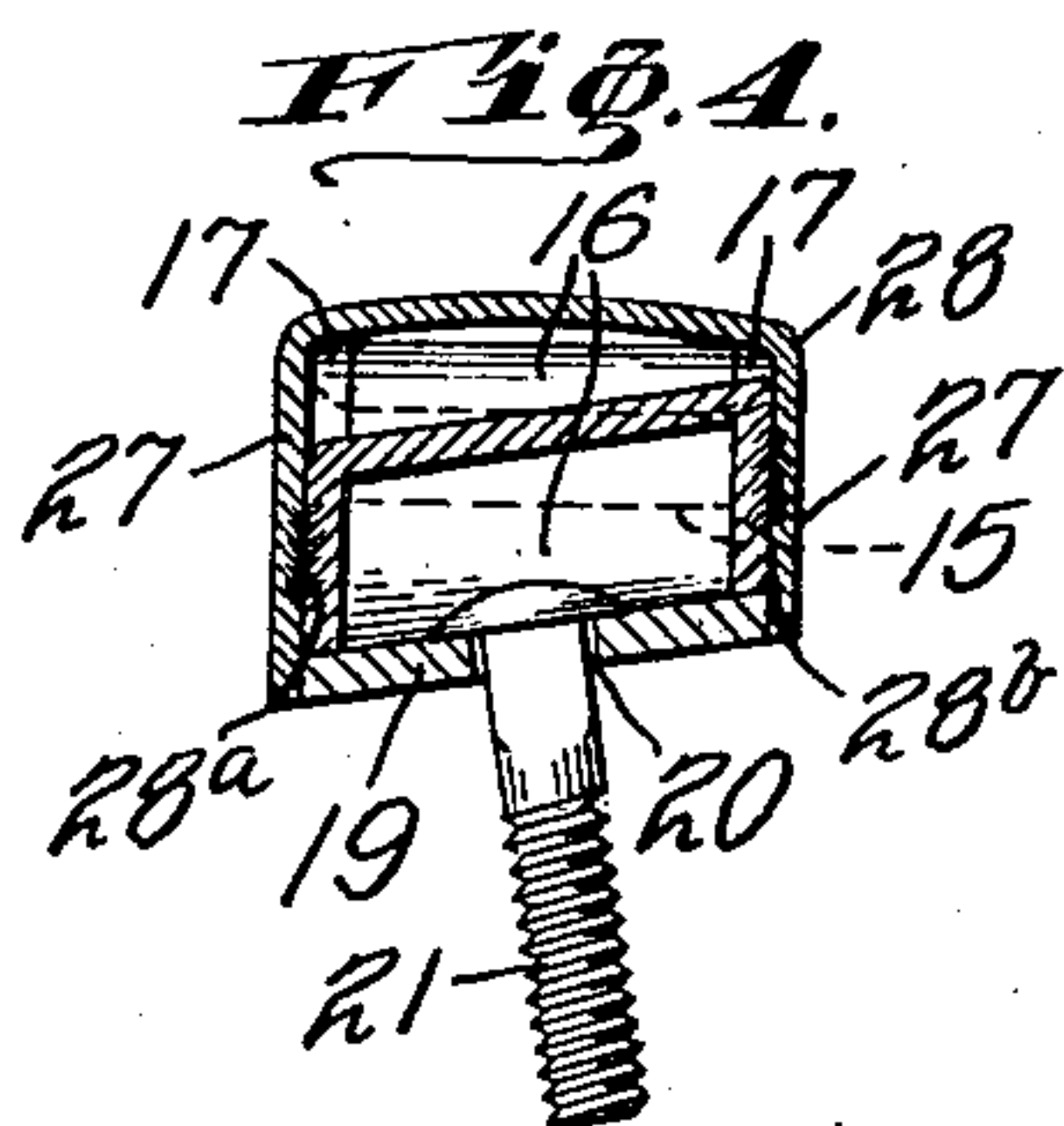
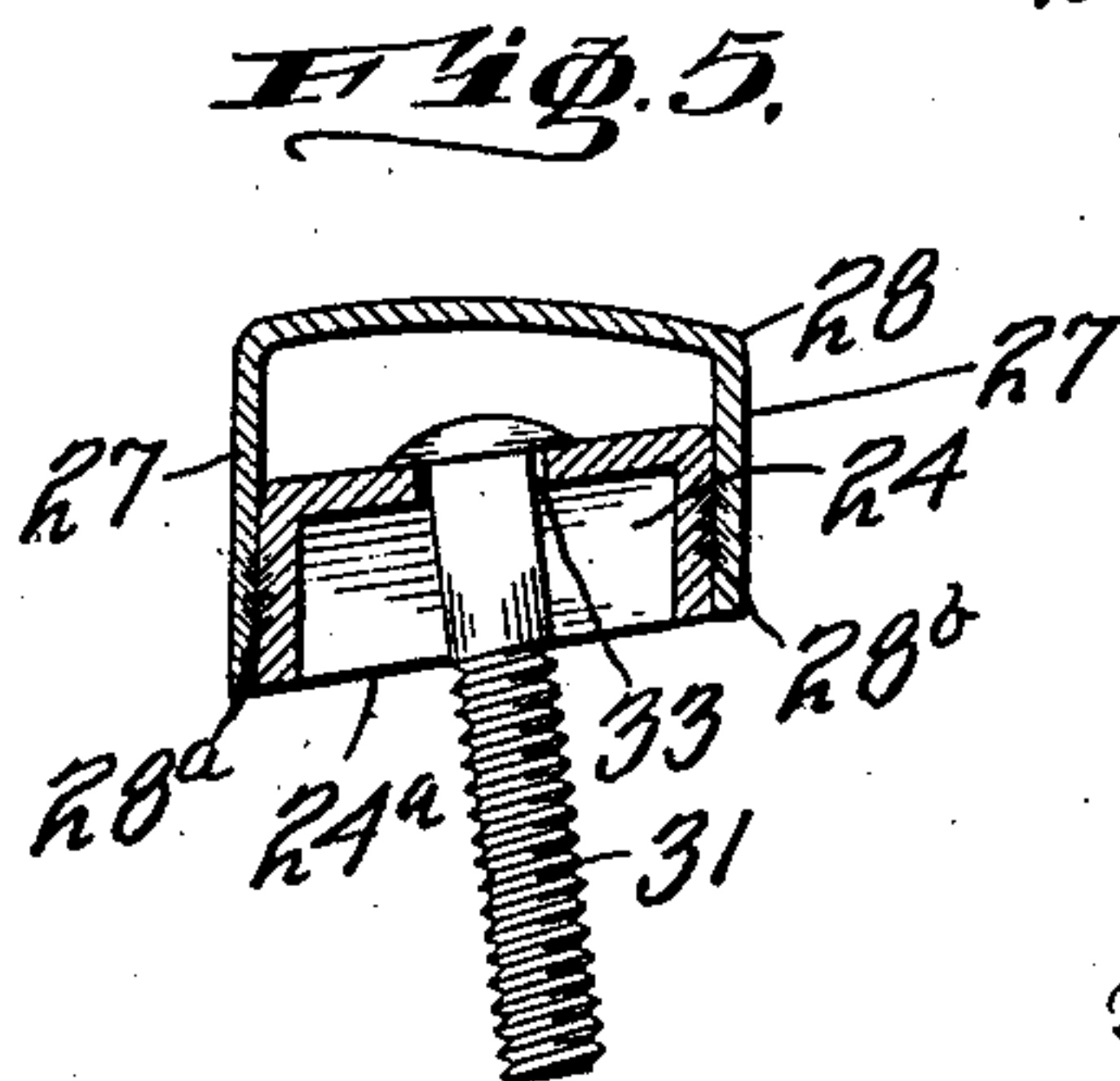
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HINGE

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2,216,632

HINGE

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12 Claims. (Cl. 16—148)

This invention relates to hinges and particularly to devices of this kind which are arranged upon outer surfaces of stationary support and swinging member and which bridge the space between the support and member; and the object of the invention is to provide a hinge of this class consisting of two butt parts hingedly coupled at one end, and the attaching plate portions of which are disposed one upon the other in an overlapped manner when the hinge is in closed position, the attaching plate of one butt being considerably longer than the plate of the other butt and including a hood portion attached thereto for substantially concealing the entire hinge including the pintle pin ends; a further object being to provide a hinge of the class described wherein the hood portion consists of an elongated shell substantially U-shaped in form in cross-section and one end of which is contracted and closed to form a streamline finish to said hood, and still further wherein the attaching plate to which the hood is secured consists of angularly arranged wall portions forming means for supporting bolts or other securing devices in connection with the hinge butt and against displacement therefrom and rotation therein; a further object being to provide means on the second mentioned attaching plate arranged within the hood or shell therefor to provide a reinforcing abutment against which the surface upon which the hinge is mounted may be drawn in firmly attaching the butt to the support and to relieve stress or strain on said hood; a still further object being to provide a hinge of the class described, the lower surface of the butt parts of which including the hood or shell is arranged at an angle to adapt the hinge for mounting on angular surfaces of a support while maintaining the pintle pins of a pair of hinges in substantially common alinement to provide free swinging movement of an irregular shaped closure as will be apparent; and with these and other objects in view the invention consists in a hinge of the class and for the purpose specified which is simple in construction, efficient in use, and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of our improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a diagrammatic view illustrating part

of a motor vehicle showing the arrangement of two of my improved hinges thereon.

Fig. 2 is a central longitudinal section through one of the hinges shown in Fig. 1, detached, the section being on the line 2—2 of Fig. 1.

Fig. 3 is a bottom plan view of the hinge shown in Fig. 2 with parts of the construction broken away and in section.

Fig. 4 is a section on the line 4—4 of Fig. 2.

Fig. 5 is a section on the line 5—5 of Fig. 2; and,

Fig. 6 is a perspective view of the hinge detached.

To illustrate one method of using hinges of the class forming the subject matter of this invention, two hinges 10 are illustrated as attached to a door or closure 11, of a trunk or other compartment 12 at the rear of a motor vehicle, as diagrammatically illustrated in part in Fig. 1 of the drawing. Each hinge is of the same construction excepting that one is made a left and the other a right; and consists of two butts 13 and 14, coupled together by a rivet 15 forming the pintle of the hinge, the rivet passing through a cylindrical bearing 16 on the butt 13 and through side bearing walls 17 formed on the butt 14 at opposite sides of the attaching plate portion 18 of the butt 14 adjacent the pintle 15.

The butt 13 includes a short attaching plate 19 having a square aperture 20 therein to receive a bolt 21 or the square end thereof 22 adjacent the head of the bolt in order to key the bolt against rotation in the attaching plate 19. The plate 19 is arranged angularly to the axis of the pin 15 as will be seen upon a consideration of Fig. 4 of the drawing, in order to fit an angular irregular contour to a supporting surface and the angularity of this plate 19 breaks into the cylindrical portion 16 of the butt 13 in the angular line 23 represented in shading in Fig. 3, of the drawing.

The attaching plate 18 has a substantially V-shaped offset 24 disposed outwardly of the end of the plate 19 when the butts are in closed position and extending from the V-shaped portion is a relatively long mounting part 25 having depending side walls 26 producing in transverse section a U-shaped or channel shaped portion centrally of the plate for reinforcing and strengthening the same also providing means for welding the plate 18 to the side walls 27 of an enclosing shell casing or hood portion 28. It will be understood that the side walls 17 of the plate 18 will also be welded to the side walls 27 of the hood 28 at the

open end portion 29, in accordance with known methods.

At the free end of the plate 18 is a mounting plate part 30, the lower surface of which is preferably in alinement with the lower edges 28a, 28b, of the hood 28, which are at different levels with respect to the axis of the pintle to be consistent with the angular arrangement of the plate 19 so that the part 30 also lies flush with the bottom of the butt 14. The lower end 24a of the V-shaped part 24 is also in alinement with the edges 28a, 28b, and this forms a supporting surface for taking the direct thrust or strain in securing the hinge butt 14 to its support by two bolts or other fastenings 31 and 32, both having squared shanks engaging square apertures 33 and 34 in the parts 25 and 30, respectively, for retaining the bolts against rotation in the operation of tightening nuts thereon in securing the butt to its support.

The free end of the hood 28 is closed as seen at 35 and is also preferably tapered to form a contracted or semi-pointed end to give a streamline appearance to the entire hinge. At the other open end 29 of the hood 28, the side walls 27 extend to form projecting ears 36 which overlie the rivet ends of the pintle pins 15 and thus conceal said pins from view externally of the hinge.

The attaching plate 19 of the butt 13 is of greater width than the width of the cylindrical bearing 16 so as to form shoulders 37, one of which is shown in Fig. 3; and this permits the plate 19 to fit snugly within and between the side walls 27 of the hood 28 as will appear from a consideration of Figs. 3 and 4 of the drawing. The contour of the hood 28 is rounded in cross-sectional form except at the open end portion 29 thereof where the top wall is substantially flat to fit about the circumference of the cylindrical bearing 16. This produces a neat, semi-bullet appearance of the entire hinge as will appear from a consideration of Fig. 6 of the drawing. The parts 18 and 28 of the butt 14 may be composed of sheet metal and thus be economically produced; and this may also be true of the butt part 13, which on the other hand may be composed of a forging or rolled section as illustrated in Fig. 2 of the drawing. By constructing a hinge in the manner described the same may be economically produced and yet a strong and durable hinge will be provided; it being understood that the attaching plate 18 of the butt 14 in addition to providing means for supporting the bolts 31 and 32, also reinforces and strengthens the hood portion 28 which becomes a unitary part thereof. It will appear that by attaching the hood part after the bolts 31, 32 have been inserted in position, these bolts become a permanent fixture of the complete hinge and will be provided of sufficient length to insure proper mounting of the hinge, and may be cut off after the hinge is attached. In shipping the hinge, the bolt 21 may also be retained against displacement from the plate 19 by simply applying the nut thereon.

The separate butts of the hinge in the construction shown, are capable of swinging through an arc greater than 90°, but it will be understood in this connection that the separate butts may be so constructed as to provide any desired swinging movement and in addition to normally arranging the butts in the manner shown in the accompanying drawing, the butts may be arranged in the manner taught in application Ser. No. 132,705 of which this case constitutes an improvement and continuation in part; it being understood that the separate butt parts may be

arranged and assembled in accordance with the teachings in said earlier application. It will also appear that in some instance, the attaching and reinforcing portion of the butt 14 consisting of the parts 17, 18, 24, 25, 26 and 30 may be composed of separate parts welded in position within the housing or hood 28.

It will be understood that while the hinge, in the accompanying drawing, is shown as having a lower surface which, in cross section, is angular to the axis of the pintle of the hinge that the hinge may be constructed with a lower surface paralleling the pintle axis, or constructed in any desired contour or arrangement conforming with the surface to which the hinge butt parts are attached. For example, in accordance with the teachings in companion application, Serial No. 132,705, filed March 24, 1937.

It will be understood that the hood or housing 28 in addition to concealing the pintle of the hinge also conceals the means of fastening the attaching plate of one or both butts of the hinge; and in fact conceals the entire hinge except for a part of the knuckle or pintle bearing of the respective butts.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a hinge of the class described, a hood for substantially enclosing and concealing hinge butts joined by a pintle pin, said hood comprising a hollow body substantially U-shaped in form throughout the length thereof, one end of said body being closed, the other end of said body being open, the side walls of the body at the open end thereof having means covering the pintle of the hinge, and one side wall of said body being of greater depth than the other side wall thereof to offset the lower edges of said side walls.

2. The combination with a hinge consisting of separate butts adapted to be coupled with outer surfaces of a stationary support and a swinging support at adjacent edges of said support, said butts having interengaging pintle bearings with a pintle passed through said bearings, of a shell arranged upon and substantially concealing the entire hinge except for a portion of said bearings, one of said butts having a short attaching plate and the other butt a long attaching plate, part of which is arranged over the first named plate and said shell being secured to the long plate and movable therewith, said long attaching plate having spaced seating surfaces arranged longitudinally thereon and in alinement with the edges of the shell to engage the surfaces of the support to which said long butt is secured, means on said attaching plate portion for mounting fastening devices thereon and keying the same against rotation in said attaching plate, and said shell having depending side walls and the long attaching plate having at spaced intervals corresponding side walls secured to the side walls of the shell.

3. A hinge of the class described, one of the butts of which comprises an elongated hollow body of channel-shaped cross-sectional form, one end of said body being closed by a contracted wall, the other end of the body being open, a reinforcing member arranged longitudinally of said body, said member having a portion U-shaped in cross-section at the open end of said body and forming pintle bearings for said butt, another portion U-shaped in cross-section centrally of said body, said member being offset in the direction of the lower surface of said body intermediate said U-shaped portions to form a transverse

surface arranged in alinement with the lower edge of said body, said member having a similar surface between the second named U-shaped portion and the contracted end of said body, and coupling devices secured and keyed to said member at longitudinally spaced intervals.

4. A hinge of the class described comprising hinge butts joined by a pintle pin, a hood for substantially enclosing and concealing the hinge butts, said hood comprising a hollow body substantially U-shaped in form throughout the length thereof, one end of said body being closed, the other end of said body being open, the side walls of the body at the open end thereof having means covering the pintle of the hinge, one side wall of said body being of greater depth than the other side wall thereof to offset the lower edges of said side walls, both of said butts having attaching plate portions concealed within said hood when the hinge is in closed position and arranged on the respective supports for said butts, one of said attaching plate portions being secured to the hood and having spaced surfaces transversely of the hood and in alinement with the lower edges of the side walls of the hood, and said butts having pintle bearings parts of which are exposed through the open end of said hood.

5. A hinge of the class described comprising two butts adapted to be arranged upon and secured to outer surfaces of a stationary support, and swinging member, said butts having interengaging pintle bearings at one end, a pintle for coupling said bearings, one butt having a short attaching plate arranged upon and secured to the outer surface of the stationary support, the other butt having a long attaching plate adapted to be secured to the outer surface of the swinging member, the pintle bearing end portion of the long attaching plate being arranged outwardly of and overlapping the short attaching plate to dispose the pintle bearings of the butts upon the stationary support, said long attaching plate having spaced portions of U-shaped cross-sectional form, a hood mounted on and enclosing said long attaching plate and secured to the U-shaped portions thereof, and said hood extending onto and concealing the ends of the pintle in the bearings of said butt and part of said bearings.

6. A hinge of the class described comprising two butts adapted to be arranged upon and secured to outer surfaces of a stationary support and swinging member, said butts having interengaging pintle bearings at one end, a pintle for coupling said bearings, one butt having a short attaching plate arranged upon and secured to the outer surface of the stationary support, the other butt having a long attaching plate adapted to be secured to the outer surface of the swinging member, the pintle bearing end portion of the long attaching plate being arranged outwardly of and overlapping the short attaching plate to dispose the pintle bearings of the butts upon the stationary support, said long attaching plate having spaced portions of U-shaped cross-sectional form, a hood mounted on and enclosing said long attaching plate and secured to the U-shaped portions thereof, said hood extending onto and concealing the ends of the pintle in the bearings of said butt and part of said bearings, said hood being of U-shaped cross-sectional form to provide depending side walls, the lower edges of which are adapted to engage the surface of the swinging member, and said long attaching plate having surfaces spaced longitudinally thereof in alinement with the lower edges of the hood to re-

inforce the mounting of said plate upon the surface of the swinging member.

7. A hinge for mounting upon the outer surfaces of stationary and swinging supports, said hinge comprising two butts having at one end interengaging pintle bearings and a pintle coupling said bearings, each butt having an attaching plate portion extending from the bearings in one direction when the hinge is in closed position, one attaching plate being longer than the other and arranged thereabove, said long attaching plate having a portion of U-shaped cross-sectional form, an elongated hood of U-shaped cross-section form arranged upon and fixedly secured to the U-shaped portion of said long attaching plate, said hood extending over and concealing the attaching plates of both butts when the hinge is in closed position, and said hood including portions concealing the ends of the pintle and parts of both of the interengaging bearings of said butts.

8. A hinge for mounting upon the outer surfaces of stationary and swinging supports, said hinge comprising two butts having at one end interengaging pintle bearings and a pintle coupling said bearings, each butt having an attaching plate portion extending from the bearings in one direction when the hinge is in closed position, one attaching plate being longer than the other and arranged thereabove, said long attaching plate having a portion of U-shaped cross-sectional form, an elongated hood of U-shaped cross-sectional form arranged upon and fixedly secured to the U-shaped portion of said long attaching plate, said hood extending over and concealing the attaching plates of both butts when the hinge is in closed position, the U-shaped cross-sectional contour of said hood forming side walls, the lower edges of said side walls being arranged upon the outer surfaces of both supports when the hinge is attached thereto, and the attaching plates of both butts having lower surfaces in alinement with the lower edges of the hood to engage said supports.

9. A hinge for mounting upon outer curved surfaces of swinging and stationary supports at adjacent edges thereof, said hinge comprising two butts having interengaging pintle bearings joined by a pintle pin, one butt having a short attaching plate and an integral substantially cylindrical bearing portion arranged at an angle to said plate, the other relatively longer butt having a short channel portion arranged over the attaching plate of said first named butt, and an attaching plate portion at one end of said channel extending beyond said first named plate and arranged in alinement therewith, the side flanges of said channel at the other end thereof having bearing apertures registering with the angularly disposed cylindrical bearing of said first named butt.

10. A hinge structure including a relatively stationary portion and a relatively movable portion, said portions being connected together for articulative movement; said relatively movable portion having spaced uniplanar surfaces engageable with a member to be hinged; said relatively movable portion having spaced raised portions with integrally formed laterally extending projections adjacent the edges of said raised portions; and a sheet metal cover member enclosing said hinge structure and having side flanges attached to the laterally extending projections of the relatively movable portion.

11. A hinge structure including a relatively stationary portion and a relatively movable body

portion connected to said stationary portion for articulative movement therewith, said body portion being formed of sheet metal and having spaced uniplanar surfaces engageable with the member to be hingedly supported; said body portion having a raised central portion and a raised end portion; said raised portions having integrally formed laterally extending wall portions; and a sheet metal cover member enclosing said hinge structure and having side flanges attached to the laterally extending wall portions of the relatively movable body portion, one of said uniplanar portions and one of said raised portions having openings to receive securing means to retain the body portion to the member to be hingedly supported.

12. A hinge structure including a relatively stationary portion and a relatively movable por-

tion, said portions being connected together for articulative movement; said relatively movable portion having spaced uniplanar surfaces engageable with a member to be hinged; said relatively movable portion having spaced raised portions with integrally formed laterally extending projections adjacent the edges of said raised portions; said projections being arranged in parallelism but out of perpendicular relationship with respect to the plane of said raised portions; and a sheet metal cover member enclosing said hinge structure and having side wall portions in parallelism with and secured to the laterally extending projections of the relatively movable portion.

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