

Jan. 6, 1953

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2,624,642

JOURNAL BOX LID

Filed May 24, 1950

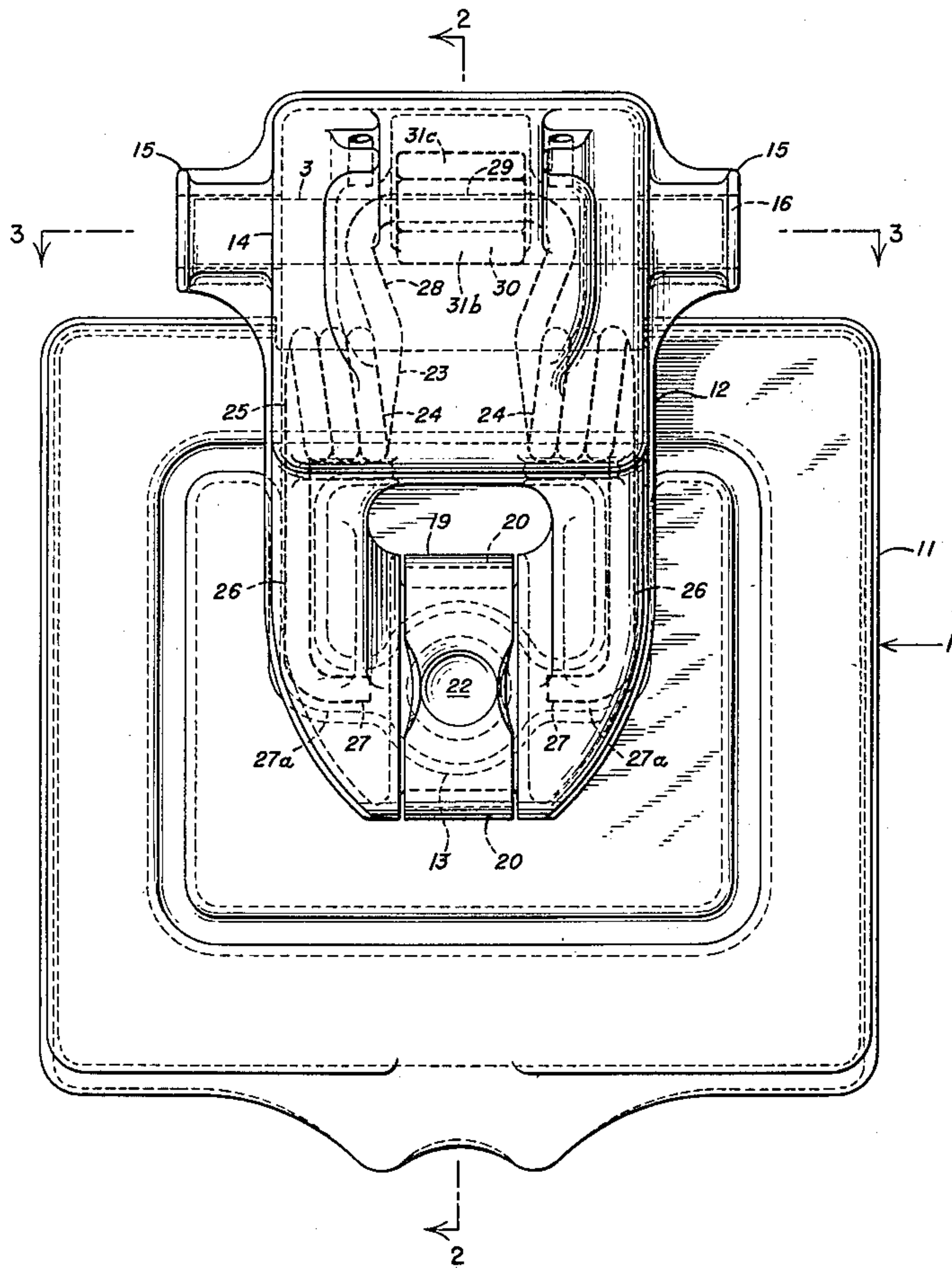


FIG. 1

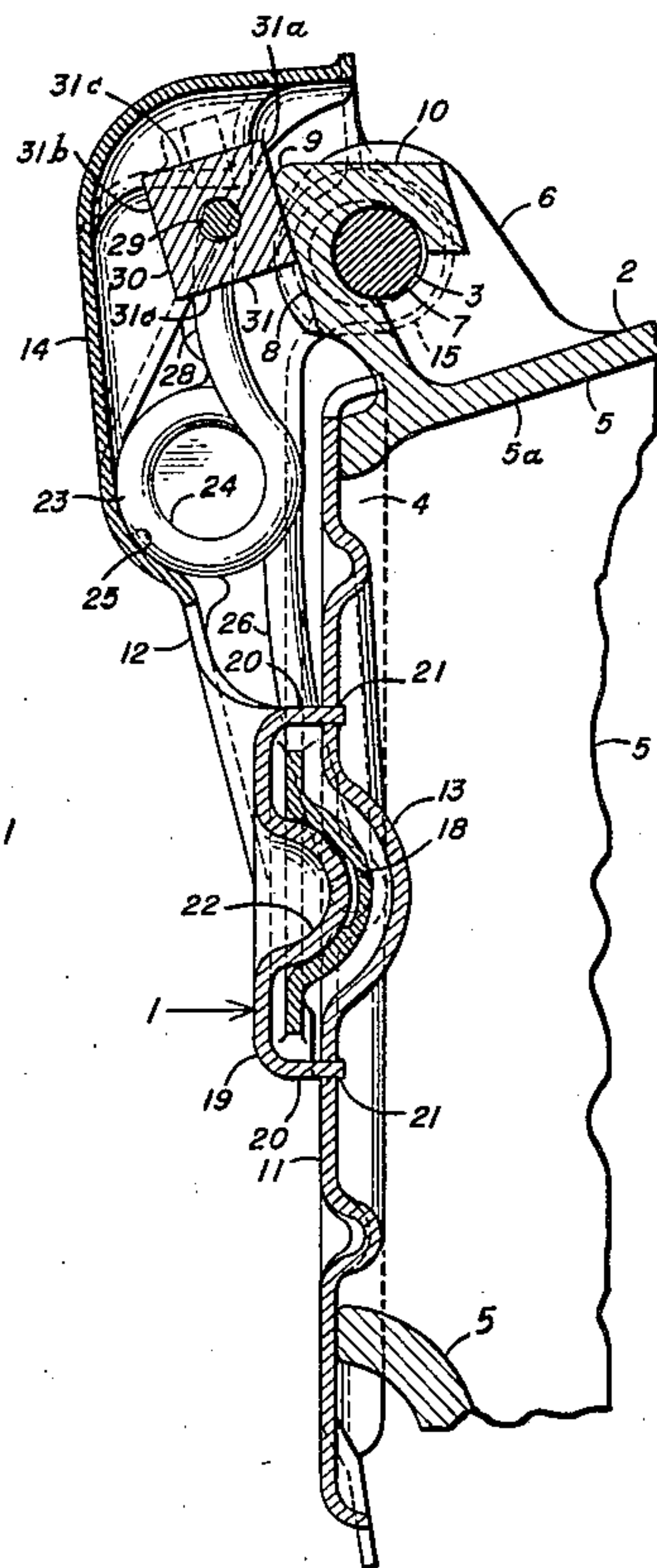


FIG. 2

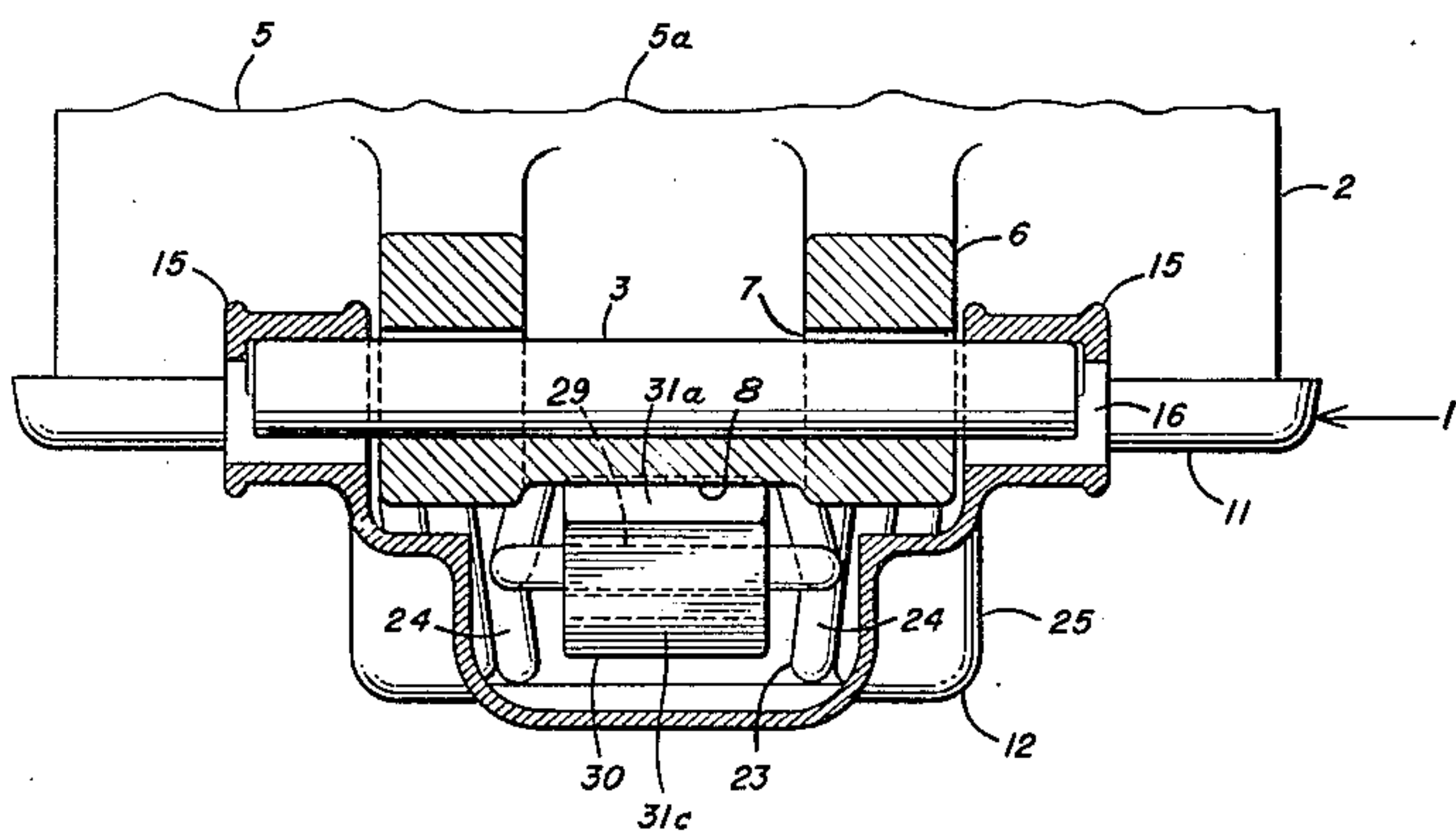


FIG. 3

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2,624,642

JOURNAL BOX LID

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Application May 24, 1950, Serial No. 163,893

5 Claims. (Cl. 308—47)

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This invention pertains to a journal box lid and more particularly to a type thereof which is mounted for pivotal movement about a journal box hinge lug.

An object of the present invention is the provision of a bearing block or slipper rotatably associated with a spring and so arranged and constructed that as the bearing surface of the slipper wears during service, the slipper may be rotated about its axis to present another unworn surface for contact with a journal box lug.

A further object of the present invention is the provision of an elongated, rectangular slipper rotatably mounted on a loop of a journal box lid spring with the slipper presenting angularly disposed surfaces to be selectively in contact with faces of a journal box hinge lug to hold the lid in open or closed position.

The above and numerous other objects of the invention will become apparent to those skilled in the art to which this invention appertains by reference to the accompanying drawing which illustrates an exemplification of the invention and wherein:

Figure 1 is a front elevational view of a journal box lid embodying the present invention.

Figure 2 is a vertical sectional view taken along the line 2—2 of Figure 1 and looking in the direction of the arrows.

Figure 3 is a horizontal sectional view taken along the lines 3—3 of Figure 1 looking in the direction of the arrows.

By now referring to the various figures of the drawing wherein like reference characters indicate like parts the numeral 1 is employed to indicate, in a somewhat general manner, a journal box lid pivotally mounted on a journal box 2 about a pintle 3 in order to close or expose an access opening 4 of the journal box. As will be understood by those skilled in the art, the access opening is formed in the journal box for the insertion or removal of a bearing brass and lubricating retainer, none of which is illustrated and further so that the components of the interior of the journal box may be inspected periodically. The journal box lid is primarily a shiftable component adapted and arranged to prevent the ingress of foreign substance to the interior of the journal box and thereby provide a tight, weather-proof seal at the access opening.

The journal box is made up, primarily of box-like formation having walls 5 defining the access opening. The roof or top wall 5a of the journal box has, adjacent a leading edge thereof, a hinge lug 6 having an axial bore or cylindrical hole 7 extending entirely therethrough trans-

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versely of the box and spaced a predetermined distance above the top wall. Also, as is usual in hinge lugs of the type under consideration, the hinge lug is provided, intermediate its ends, with a front or forward face 8 somewhat vertically disposed and which, through a graceful curved corner 9, merges or blends into a top or upper face 10 somewhat horizontally disposed. These faces function as bearing or holding faces hereinafter brought out more in detail.

The journal box lid is preferably, for the purpose of illustration only, of a so-called two-piece type and as such is made up of a cover 11 and a hood 12. The cover is a plate-like formation of an extent or area sufficient to blanket the access opening. The cover is suitably ribbed and flanged to strengthen the cover against stresses to which it will be subjected in service and provide protective skirting to function as baffles or barriers against foreign substance directed toward the cover-box juncture in service. Further, the cover has a centrally arranged recess of spherical formation 13 to inset or depress the cover at a central region for the accommodation of related structure.

The hood, formed as a separate component from the cover, is provided with an upper extremity 14 of hollow cage-like design and opening toward the journal box to overlay and house at least a forward portion of the hinge lug. The hood upper extremity has oppositely extending ears 15 suitably reinforced and apertured as at 16 to accommodate the pintle or hinge pin 3. This hinge pin, projecting through and beyond the hinge lug axial bore, functions as the sole connecting medium through which the journal box lid is pivotally connected to the journal box. A lower extremity of the hood has an outwardly opening, cup-shaped or spherically disposed formation 18 adjacent the central lower portion thereof and this formation is spaced a predetermined distance outwardly of or away from the cover recess and preferably concentric therewith so that, within certain limits no interference between the cover proper and hood will take place in this region.

Associated with the cover is a bridge member 19 having legs 20 directed toward and secured to the cover proper by means of welds 21 or any other desired means. As viewed in the drawing, the bridge member embraces the hood spherically disposed formation so as to interlock flexibly the hood with the cover at this juncture. Accordingly, the bridge member is also provided with a knob or spherically disposed recess 22 arranged to be accommodated by the hood spherical

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formation and thus a universal movement is provided for between the hood and cover. This is believed essential because the lid is pivoted about the hinge pin 3 and some means of equalization is necessary between the hood and cover to allow for manufacturing tolerances and assure a full seating of the cover on the journal box over the access opening.

Among the causes of journal box lid failure is the fact that certain related parts of the lid and journal box being subjected to wear after assembly and during service, wear to such an extent that the pressure value of the cover against the journal box is materially reduced. This subsequently worn condition then allows external impulses imparted to the journal box, to bounce the lid away from the journal box further allowing, if only momentarily, the access opening to be uncovered and the ingress of foreign particles of matter to the interior of the journal box in defeat of the purpose for which the journal box lid is employed. Provision is made in the instant structure to correct this condition without subsequently adding any other components to the lid assemblage. Many thoughts present themselves toward the solution of the problem of subsequent wear; however, the preferred structure involves, in part, the use of a common type of resilient means improved to take care of difficulties arising from subsequent wearing of parts. The lid assemblage includes a spring means comprising a pair of coils 24 cradled in a curved spring seat 25 in the hood so as to retain the coils in a fixed position relative to the hood. Each coil has an outer downstanding leg 26 extending to a horizontal position in substantial alignment with what might be considered the center of the mating spherically disposed formation 18 and spherically disposed recess 22 where such legs terminate in angularly directed feet 27. Lower portions of the legs and the feet are contained in suitable grooves 27a in the cover proper so that the downstanding legs are capable of urging the cover toward the journal box at all times.

The spring coils are further provided with an upstanding continuous or uninterrupted loop 28 which is bowed outwardly laterally along the axis of the coils so that a top bar 29 of the loop is of a length greater than the horizontal clear distance between the coils as clearly illustrated in Figure 1 of the drawing. Mounted upon the loop bar is a slipper or bearing block 30 which is rectangular in formation both in elevation and in cross-section. This slipper which is rotatably or pivotally mounted on the loop bar presents a plurality of surfaces 31 which are selectively arranged to bear alternately or selectively against the lug faces 8 or 10 to hold the lid in closed or open position. Accordingly, when the surface 31 which is illustrated in bearing relation with the lug face 8, because of repeated sliding actions across the faces 8 and 10, wears to such an extent that the predetermined pressure of the cover against the journal box is decreased beyond a required degree, the slipper may then be rotated through an arc of ninety degrees to present a new or unworn surface of the slipper for contact with the hinge lug. The surfaces of the slipper may, if desired, be all equidistant from the slipper's axis of rotation about the loop bar; however, it is preferred to establish the surface 31a a fixed distance from the axis of rotation and possibly the surface 31b positioned at an equal distance. The surfaces 31c may be spaced a slightly greater distance from the axis of rota-

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tion because it is to be remembered that as the surface 31a wears with continued sliding action over the faces 8 and 10 these latter faces are also wearing down and by positioning the surfaces 31c as above indicated, this disposition will compensate for wear of the journal box lug surfaces and establish, even after wear, the predetermined pressure value of the cover against the journal box.

From the above, it will be noted that various changes and alterations may be made to the illustrated and described construction without departing from the spirit of this invention or scope of the appended claims.

I claim:

1. In a journal box lid of a type having a pivotal connection to a hinge lug provided with vertically and horizontally arranged faces and a spring within said lid and having coil portions joined by an upwardly directed loop, the improvement comprising a slipper pivotally mounted on said loop and having a plurality of angularly arranged surfaces spaced a predetermined distance from said loop, one of said surfaces being arranged to contact said faces to retain said lid in open or closed position and turn about said lug on said loop during movement of said lid between said positions, and another of said surfaces being presentable for contact with said faces on wear of said one surface by rotation of said slipper about said loop.

2. In a journal box lid of a type having a pivotal connection to a hinge lug provided with vertically and horizontally arranged faces and a spring within said lid and having coil portions joined by an upwardly extending loop, the improvement comprising an elongated slipper pivotally mounted on said loop and having a plurality of angularly disposed surfaces spaced a predetermined distance from said loop, any of said surfaces being arrangeable in selective bearing contact with said faces to retain said lid in open or closed position and adapted to slide relative to said faces on movement of said lid between said positions, and another surface being presentable for contact with said faces by rotation of said slipper about an axis.

3. In a journal box lid of a type having a pivotal connection to a hinge lug provided with vertically and horizontally arranged faces and a spring within said lid and having coil portions joined by an upwardly directed loop, the improvement comprising a rectangular slipper pivotally mounted on said loop, said slipper having a plurality of angularly disposed surfaces extending axially of and spaced different distances from said loop, one of said surfaces having selective surface contact with and arranged to slide relative to said faces for retaining said lid in open or closed position, and a surface spaced at a greater distance from said loop being presentable for contact with said faces on wear of said one surface by rotation of said slipper.

4. In a journal box lid of a type having a pivotal connection to a hinge lug provided with substantially horizontal and vertical faces, and a spring within said lid and having coiled portions joined by an upwardly directed loop, the improvement comprising a slipper rotatably mounted on a substantially horizontal disposed portion of said loop, said slipper having a plurality of angularly arranged substantially flat surfaces extending axially thereof, one of said surfaces having selective contact with said faces through rotation of said slipper relative to said loop on opening and

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closing of said lid, and another of said surfaces being presentable by further rotation of said slipper on wear of said one surface.

5. In a journal box lid of a type having a pivotal connection to a hinge lug provided with substantially horizontal and vertical faces, and a spring having coiled portions joined by an upstanding loop, the improvement comprising a slipper carried by said loop and rotatable thereabout on a substantially horizontal axis, said slipper having a plurality of angularly arranged substantially flat surfaces spaced from said loop and selectively presentable for contact with said hinge lug by rotation of said slipper, and said selected surface

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sequentially having surface contact with said faces of said hinge lug and being turned by said lug about said axis on opening and closing of said lid.

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The following references are of record in the file of this patent:

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