

G. KLENK.
METAL BOX AND CRATE.
APPLICATION FILED SEPT. 21, 1907.

959,553.

Patented May 31, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

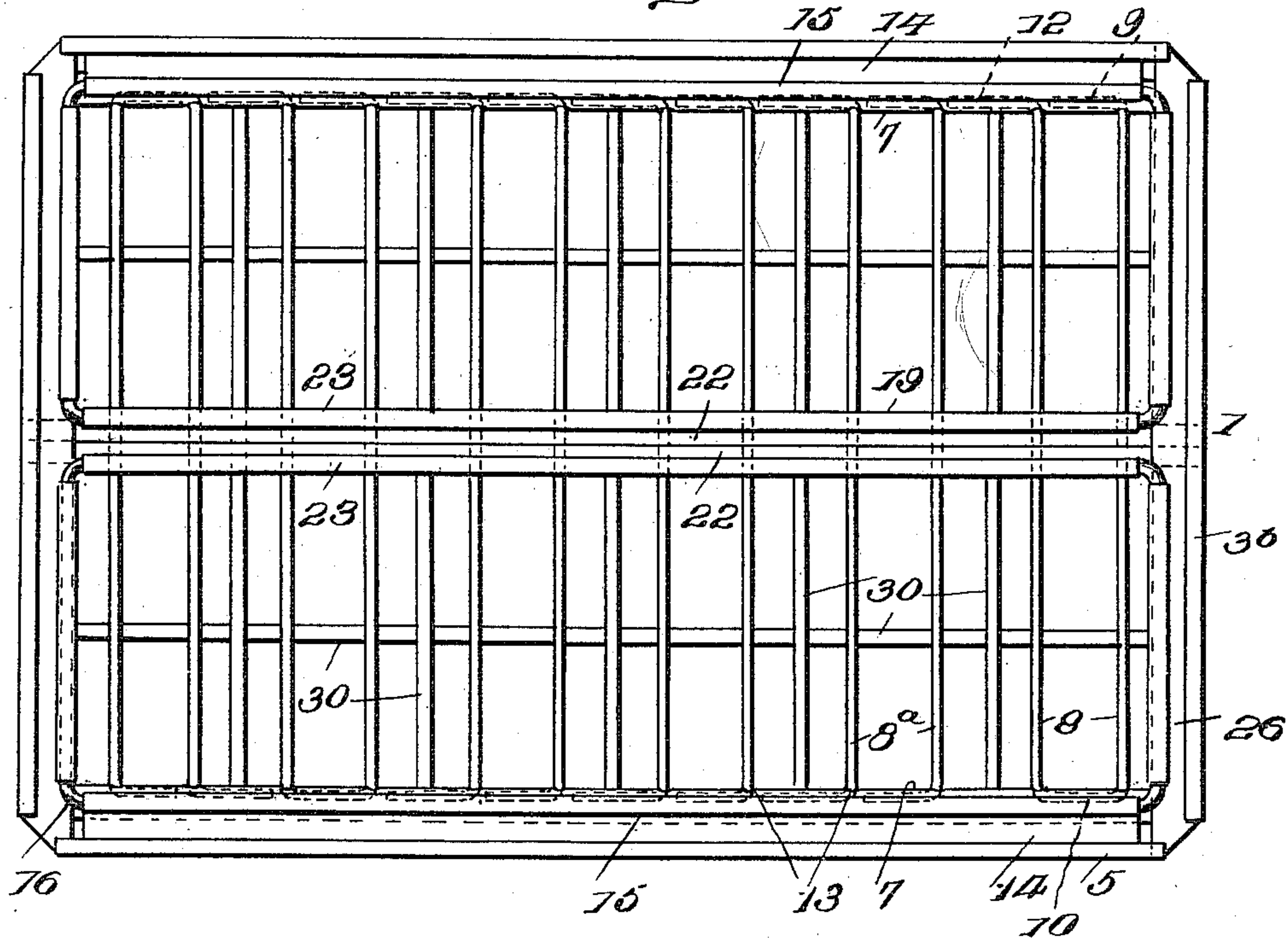


Fig. 2.

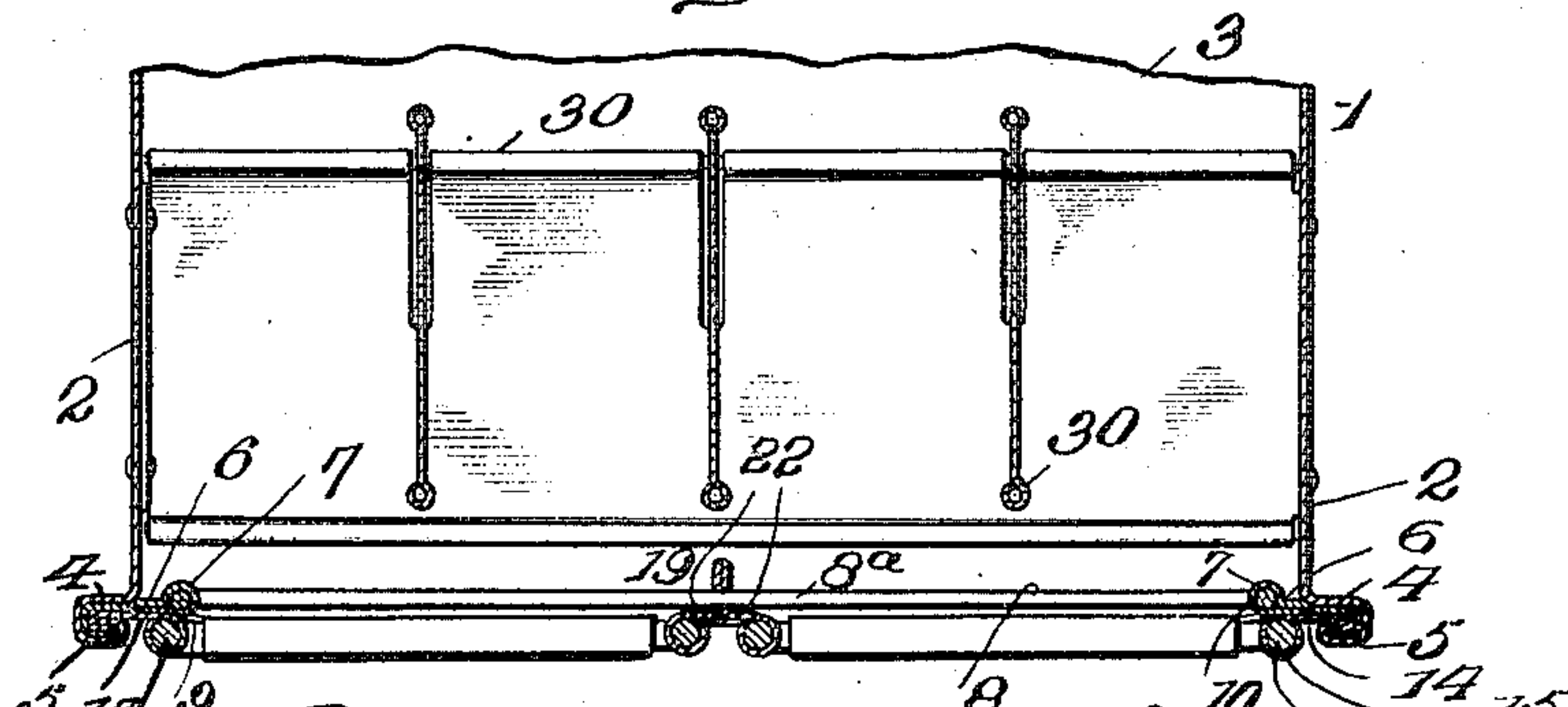
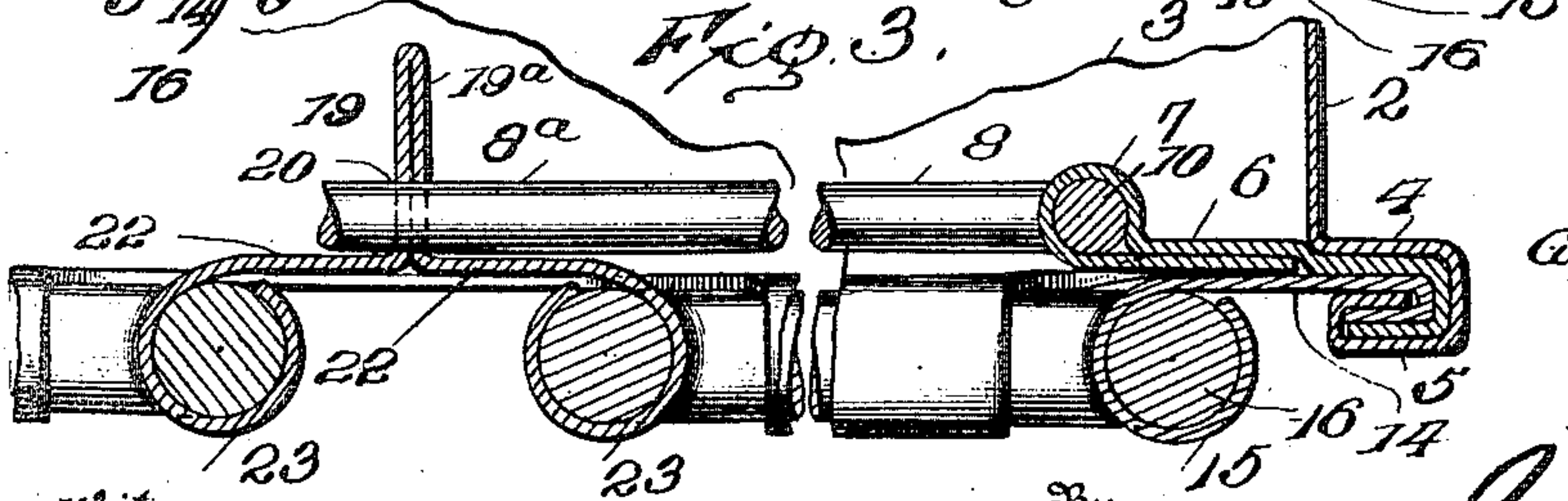


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

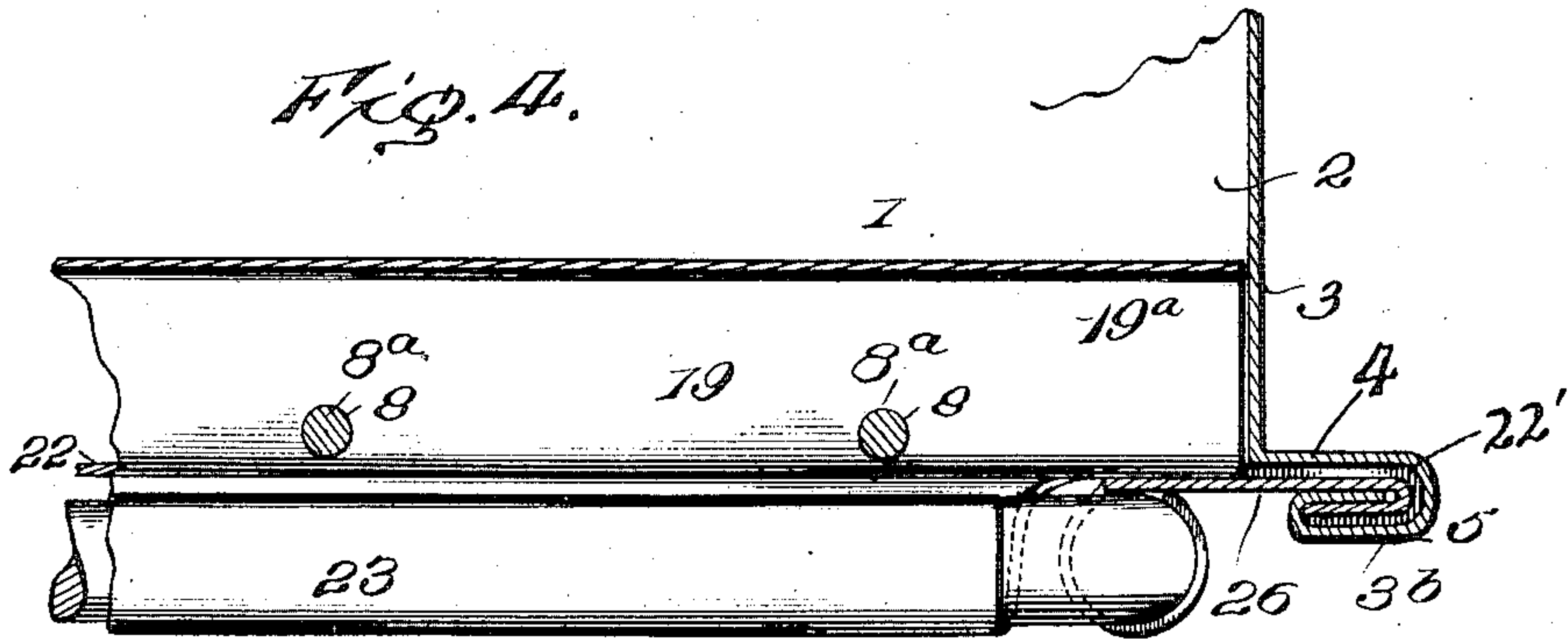


Fig. 5.

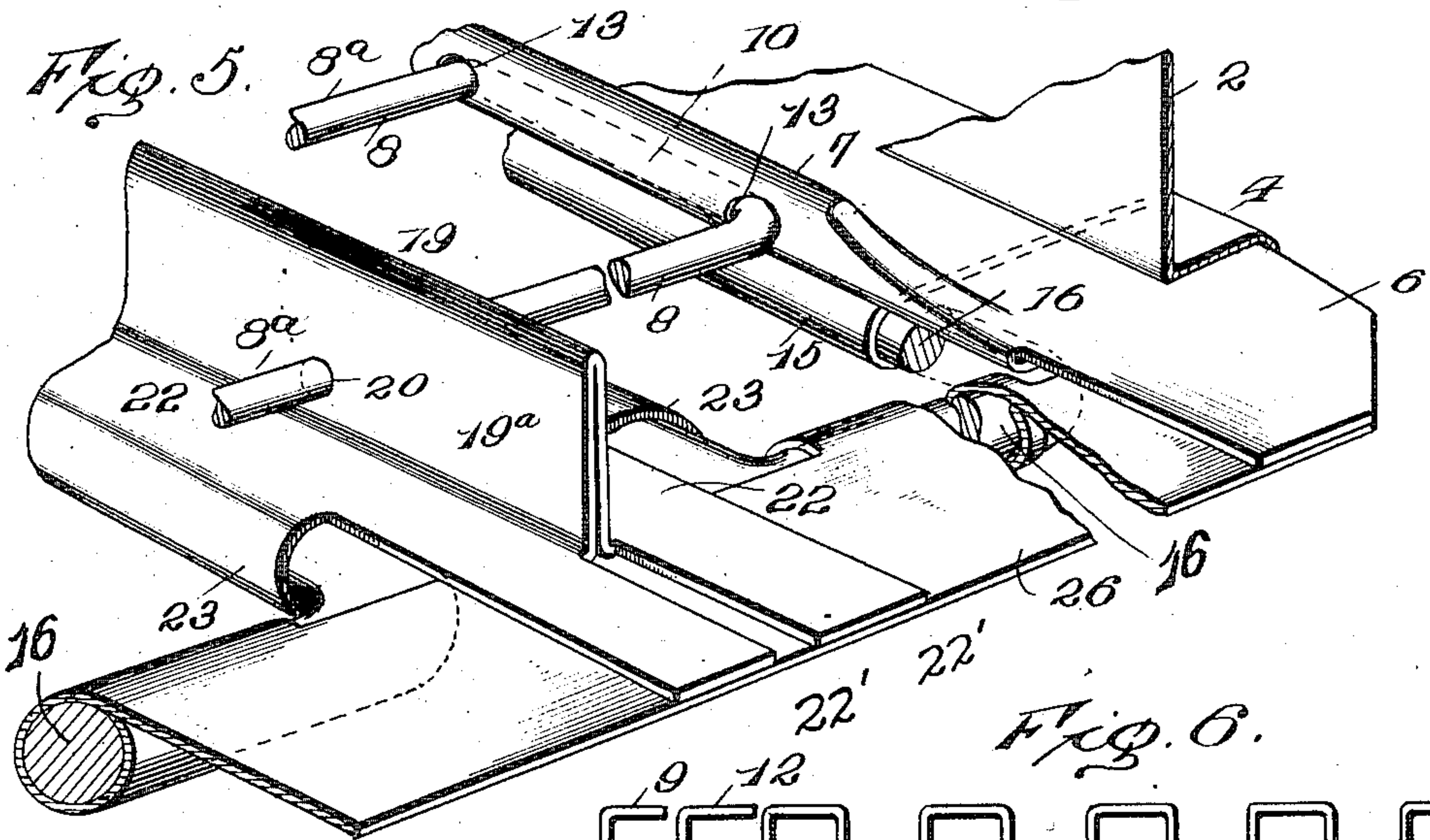


Fig. 6.

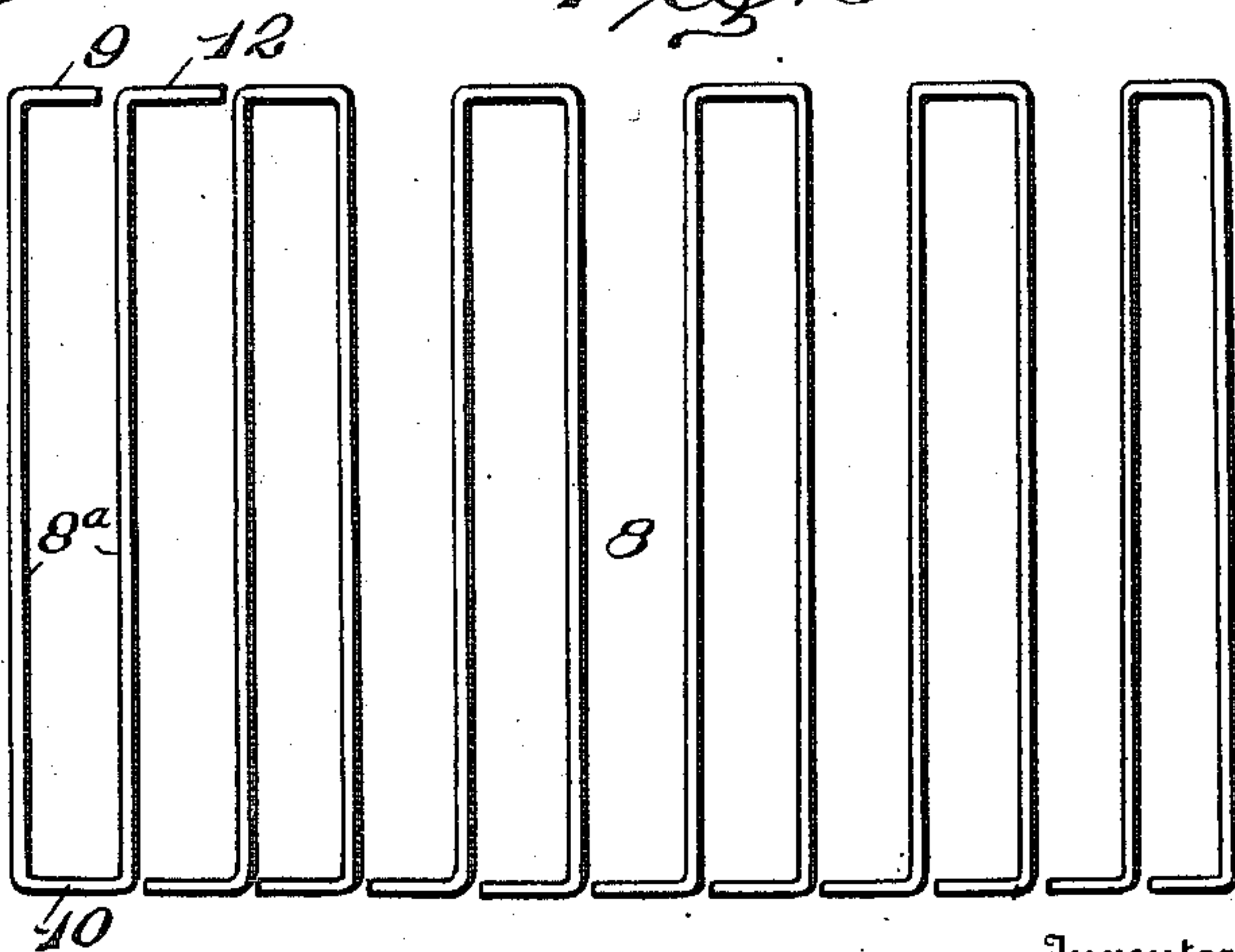
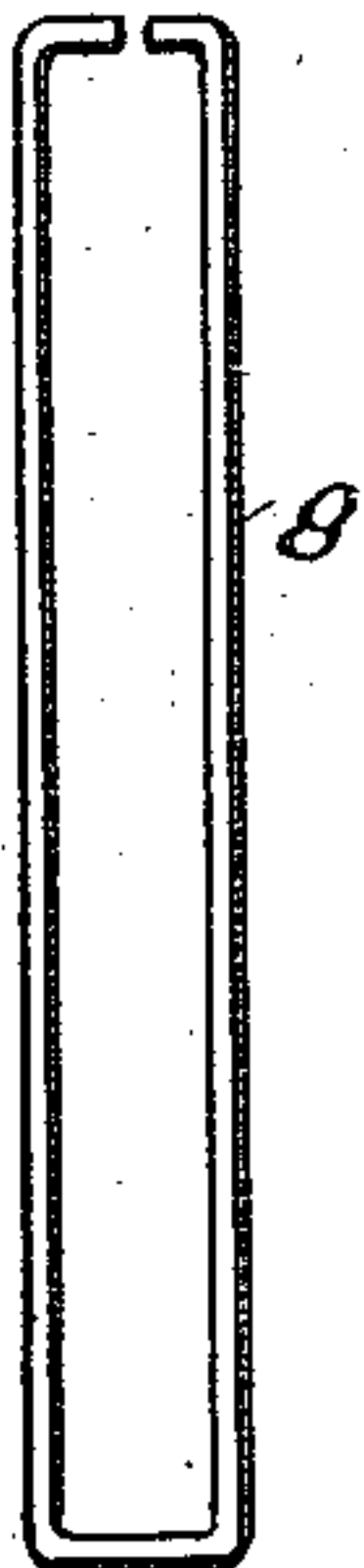


Fig. 7.



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UNITED STATES PATENT OFFICE.

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METAL BOX AND CRATE.

959,553.

Specification of Letters Patent.

Patented May 31, 1910.

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To all whom it may concern:

Be it known that I, GOTTLIEB KLENK, citizen of the United States, residing at Defiance, in the county of Defiance and State of Ohio, have invented certain new and useful Improvements in Metal Boxes and Crates, of which the following is a specification.

This invention relates to improvements in metal boxes and particularly in the bottom structure of metal boxes which are used primarily for carrying bottles.

The prime object of the invention is to provide an open bottom receptacle in which there can be no lodgment of dirt or refuse matter, and which can be easily cleaned.

Manufacturers, dealers and users of bottle holding boxes are continually suffering loss because unauthorized persons use their boxes as receptacles for ashes and the like.

It is one of the objects of my invention to construct a box having a bottom such that the box can not be used for such purposes, and at the same time to provide a strong and substantial structure, capable of withstanding the rough usage to which a box of this type is usually put.

The invention also comprehends improvements in the specific details of construction and arrangement of parts, which will be hereinafter referred to in the description, and be particularly pointed out in the claims.

In the drawings—Figure 1 is a bottom plan view of my improved box. Fig. 2 is a transverse section of the lower portion of the same. Fig. 3 is an enlarged fragmentary transverse section taken through one side and the rib for supporting the wire bottom. Fig. 4 is an enlarged fragmentary longitudinal section taken through the end of the box and the supporting rib for the wire bottom. Fig. 5 is an enlarged perspective view of a portion of the bottom of the box. Figs. 6 and 7 are views of different configurations of the wire frames for forming the box bottom.

The numeral 1, indicates a metal box, 2 being the sides, and 3, the ends thereof. The sides and ends at their lower edges are turned outwardly at 4, and the lower edges of the sides are crimped with strips of flat metal 6 to form the outwardly projecting flange 5. The strips 6 are formed on their inner edges with beads 7, which receive a series of trans-

verse wires 8. The sheet metal of the strip after being curled to form the beads 7 is extended outward in contact with the under side of its first fold and is held in position by strips to be hereafter referred to. For convenience in manufacture, each length of wire is bent at one end to form a hook-like portion 9, to engage the bead 7; then it extends across the bottom and is bent again parallel with the hooked portion 9, as shown at 10. The wire is then again bent parallel with the transverse portion, to a point opposite the hook 9, and in alinement therewith, and is finally bent again to form a second hook 12. A wire length thus bent provides two parallel transverse members 8^a, which extend across the bottom of the box, the end part 10, and the hooks 9 and 12, which are seated and clamped in the beads 7. The inner faces of the beads are formed with alined openings 13, through which the wires pass. By bending a section of wire as described, each two transverse members are secured in the beads at the points adjacent the former. In addition to strips 6, other strips 14 are crimped with the lower edges of the sides 2 in the bottom side flange 5. Strips 26 are also crimped with the lower edges of the ends 3 to form the bottom end flange 5. The inner edge of each strip 14 or 26, is formed into a bead 15, which depends below the plane of the bottom of the box, and incase a reinforcing wire 16. The bead 15, and its reinforcing wire forms a depending flange set in from the outer edge of the bottom side flange 5, adapted to support the box on the floor or to interlock laterally with the upper edges of a similar box when the boxes are stacked vertically.

The centers of the transverse wires 8^a, are supported by a rib 19. The rib is formed of sheet metal and is bent upon itself to provide a vertical reinforced portion 19^a, having openings 20, for the wires, said openings being in alinement with the openings 13, in the beads 7. From the reinforced portion 19^a, the two folds of the rib are oppositely bent in a plane parallel with the transverse wires and form supports 22, therefor; and at the ends said supports are bent to form beads 23. These beads are arranged to embrace the reinforcing wires 16, and form a central longitudinal continuation of the de-

pending flange 15. The ends of the supports extend beyond the beads, as at 22; terminating within the turned-in portions 4, of the box end flange 5. Strips 26, corresponding to strips 14 are arranged transverse the box, beneath the support ends 22' and within the fold of flange 5; the box end portions 4, the outer edge of strips 26, and the support extensions 22' being crimped together as at 3^b in forming flange 5. By this arrangement the strips 26 and the rib 19 are securely held in position. The relatively inner edges of the strips 26 are formed to embrace the approximate portions of the wires 16.

It will be noted that the reinforcing wires 16 are preferably two in number, each bent into rectangular outline; the opposing sides of each wire being held within a bead formed by one of the strips 14, and by one of the supports 22, respectively, while the ends are secured within beads formed in the strips 26. The transverse wires 8, may be bent in several ways to accomplish the desired result. For instance, as shown in Fig. 7, they may be bent to form a rectangle.

30, indicates a series of cell partitions but as such form no part of the present invention, it is not deemed necessary to describe them in detail.

The strips 6, for supporting the ends of the transverse wires 8, are, it will be noted, housed within the box, and protected, the strain upon the transverse wires being further resisted by the central rib 19. The strips 14 and 26, and the supports 22 are formed to embrace the reinforcing wires 16, the beads thus provided being arranged below the transverse wires 8 and serving to form supporting elements for the box, and further protecting the wires 8 against injury. The wire supporting strips 6 each project at a right angle from the plane of the wall to which it is connected, thereby affording the maximum strength at this point, while the transverse wires 8 are terminally engaged with the respective strips 6 and bridge the space between them.

In combination with the above construction it is to be particularly noted that the flange strips 14 directly underlie the return sections of the strips 6, and therefore serve to maintain the beads 7 closed and in position to receive and support the terminals of the wires 8, said wires being also supported on opposite sides of the rib 19 by the laterally-projecting supports 22.

A bottom for a bottle box thus constructed possesses strength and durability, and at the same time affords a substantial support for the bottles.

In the claims where I have used the term "wires" it is to be understood as covering a length of metal of relatively small cross-sectional area, and of any sectional shape.

The wires 8 may also be disposed lengthwise of the box, instead of across the structure as shown in the drawing.

I claim—

1. In a box, the combination of sides, ends and a bottom, the bottom comprising wires formed with angularly disposed bent portions, around the edges of the bottom and sheet metal beads attached to the box formed with openings through which the wires pass, the angularly bent portion fitting in and crimped in the beads, and a reinforcing rib secured at its ends to the box and formed with openings through which the wires pass.

2. In a box, the combination of ends, sides and a bottom, said bottom comprising wire supporting strips formed with beads, wires formed with bent portions which are seated in the beads, means for securing the strips to the box, a reinforcing strip secured to the box and formed with openings through which the wires pass.

3. In a box, the combination of ends, sides and a bottom, said bottom comprising a series of wires secured on opposite sides of the box, a reinforcing rib formed with openings through which the wires pass, and with depending beads, strips formed with beads around the bottom of the sides and ends, and reinforcing elements inclosed by the latter beads and the beads on the reinforcing rib.

4. In a box, the combination of sides, ends and a bottom, said bottom comprising wire receiving strips formed with openings and beads, wires passing through the openings and having a portion seated in and secured by the beads, flanged strips fitted against the beads of the supporting strips to hold the beads thereof closed, reinforcing means for strengthening the flanged strips, the lower edges of the box being bent to hold the said strips in position.

5. In a box, the combination of sides, ends and a bottom, said bottom comprising a series of wires, means securing the wires on opposite sides of the box, a reinforcing rib arranged transversely of the wires and formed of a strip bent upon itself and formed with openings, and then bent outwardly in opposite directions and formed on its edges with beads, the ends of the rib being extended beyond the beads, the wires passing through the openings in the rib and being also supported on the oppositely bent portions, and reinforcing elements engaging the beads and providing a depending flange.

6. In a box, the combination of sides, ends and a bottom, said bottom comprising wires fastened at opposite sides of the box, a rib located between the securing points of the wires, said rib having a vertical portion formed with openings through which the wires pass, and also provided with down-

wardly extending beads, sheet metal beads attached to the box adjacent the points where the wires are secured, and reinforcing elements engaging the latter beads, and the beads on the rib.

7. In a box, the combination of ends, sides and a bottom, said bottom comprising a series of elements extending across the box, strips bent to hold the said elements to the box, means holding the bent portions of the strips to confine the elements, said latter strips having beads, reinforcing elements inclosed by the beads to provide downwardly extending flanges, means for locking the latter strips to the box, a rib supporting the elements, and means for securing the said rib to the box.

8. A metal box comprising ends, sides and a bottom, said bottom comprising side strips, wires secured to certain of said strips and extending across the box, a rib for bracing the wires, oppositely disposed beads formed on the rib, and two reinforcing elements passing through and held by the two beads, and means fastening the reinforcing elements at the edges of the bottom.

9. In a metal box, the combination of sides, ends and a bottom comprising a plurality of parallel rods horizontally mounted in the box interior, and a sheet metal cross bar formed with two vertical walls perforated to receive the rods, and bent to have two horizontal walls to the under rods.

10. In a metal box, the combination of sides, ends and a bottom comprising a plurality of parallel rods horizontally mounted in the box interior, a sheet metal cross bar formed with two vertical walls perforated to receive the rods, two horizontal walls to lie under the rods, and two parallel floor engaging beads beneath said rods.

11. In a metal box, the combination of sides, ends and a bottom comprising a plurality of parallel rods horizontally mounted in the box interior and a sheet metal cross bar formed with two vertical walls integrally joined at their upper edges and each perforated to receive the said rods, and each beaded at its lower edge in the floor contacting plane of the box, these beads being independent of and separated from each other.

12. In a metal box, the combination of sides, ends, a bottom, a downwardly projecting floor engaging rectangular sheet metal bead attached to the box about its four edges, and a strip of metal secured to the bottom of the box and extending across the rectangle of the said bead, and formed at each edge with a floor engaging bead these beads being independent of and separated from each other.

13. In a metal box, the combination of sides, ends, bottom, inwardly projecting horizontal strips seamed at the lower outside edges of the box, the inner edges of the strips being beaded to form a floor engaging flange, a sheet of metal secured to the bottom and extending across the bottom of the box and beaded on its two edges to form two floor engaging flanges and two wire frames inclosed, one in each of the rectangular flanges thus formed by the beads of the edge strips and of the cross metal sheet.

14. In a metal box, the combination of sides, ends, inwardly projecting horizontal strips disposed at each of the lower side edges of the box, formed on their inner edges with beads perforated at intervals in the inner vertical part of the bead wall, and cross wires bridging the box interior, said wires passing through the said perforations and having right angled end parts seated in the said beads.

15. In a metal box, the combination of sides, ends, inwardly projecting horizontal strips disposed at each of the lower side edges of the box, formed on their inner edges with beads perforated at intervals in the inner vertical part of the bead wall, cross wires bridging the box interior, said wires passing through the said perforations and having right angled end parts seated in the said bead, and supplementary strips also mounted at each of the lower side edges of the box and lying flatly against the seam of the said beads.

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

GOTTLIEB KLENK.

Witnesses:

HENRY NEWBEGIN,
C. C. HOFFMAN.