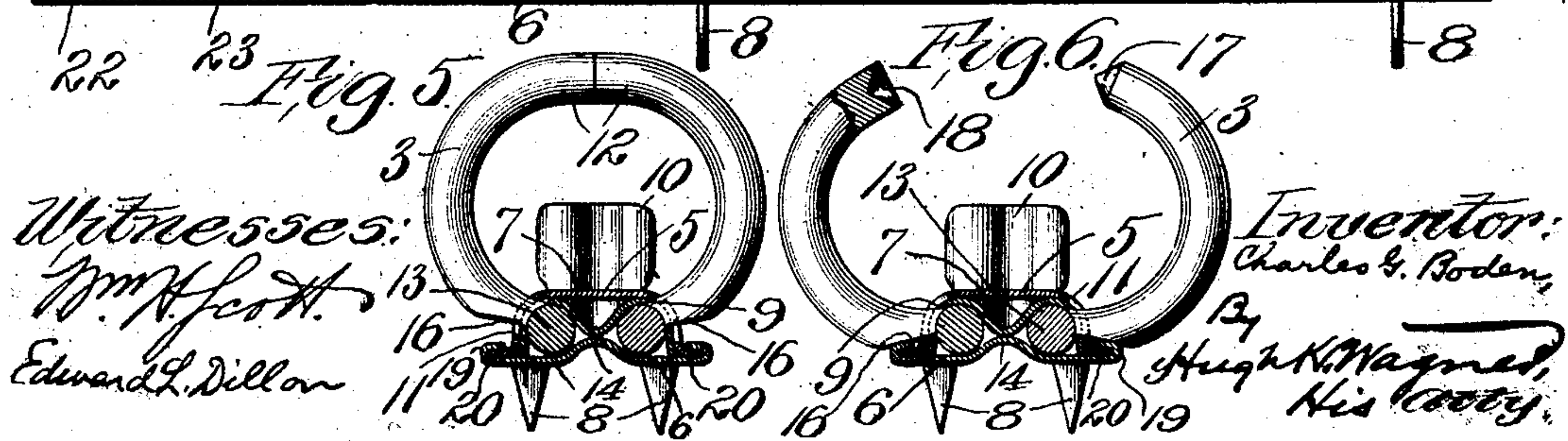
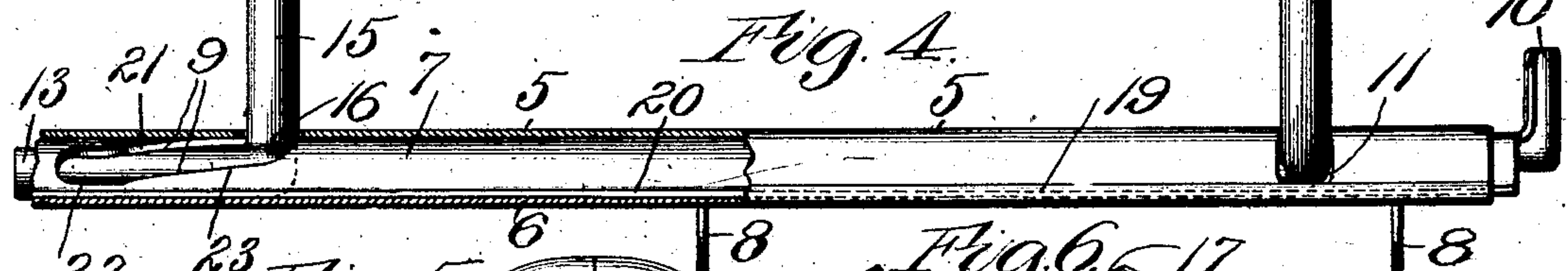
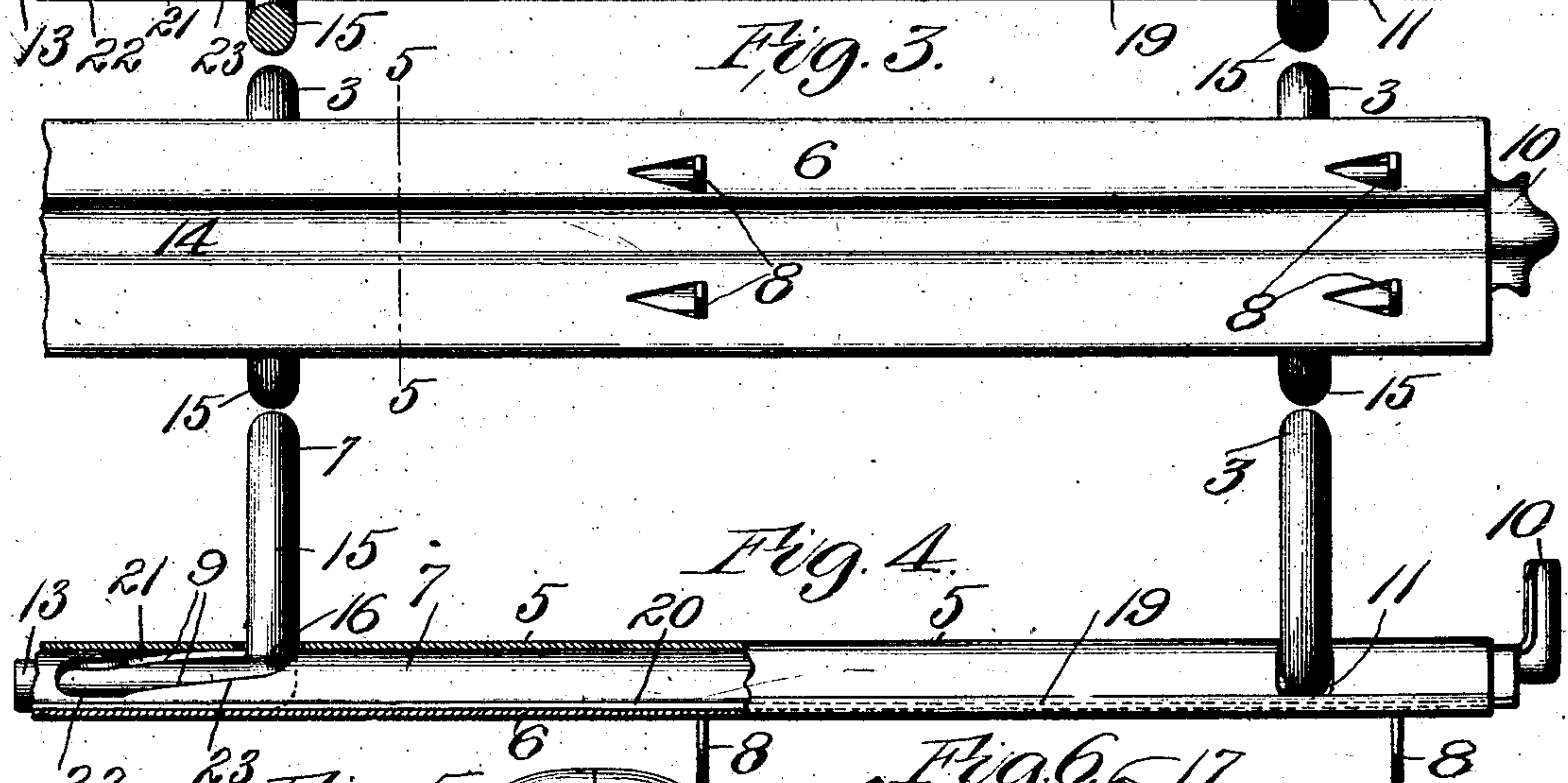
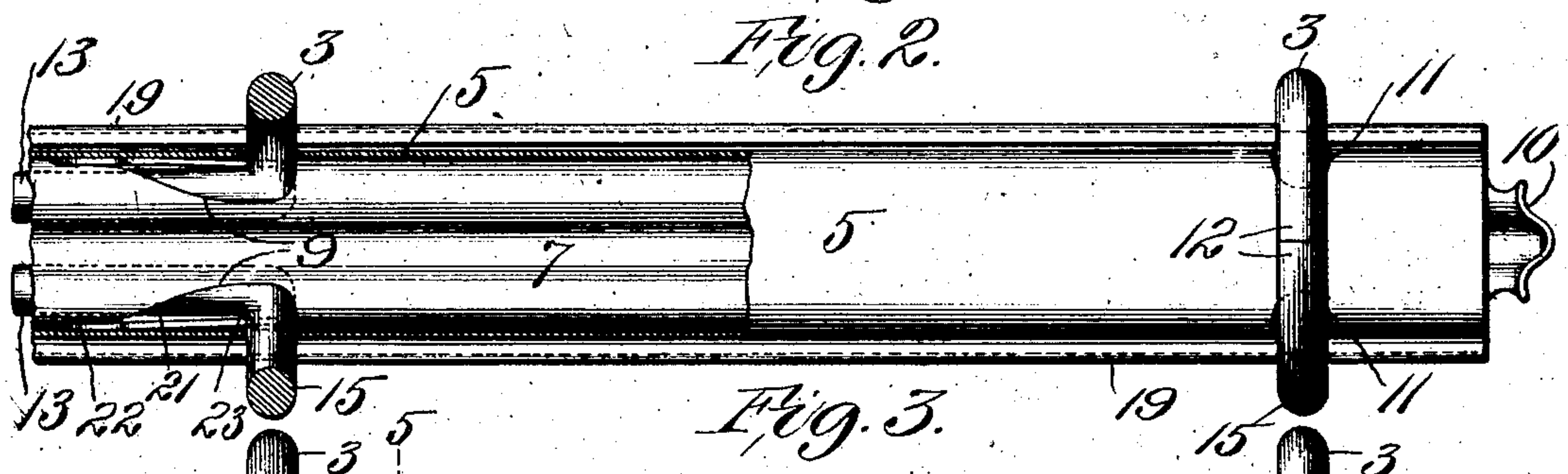
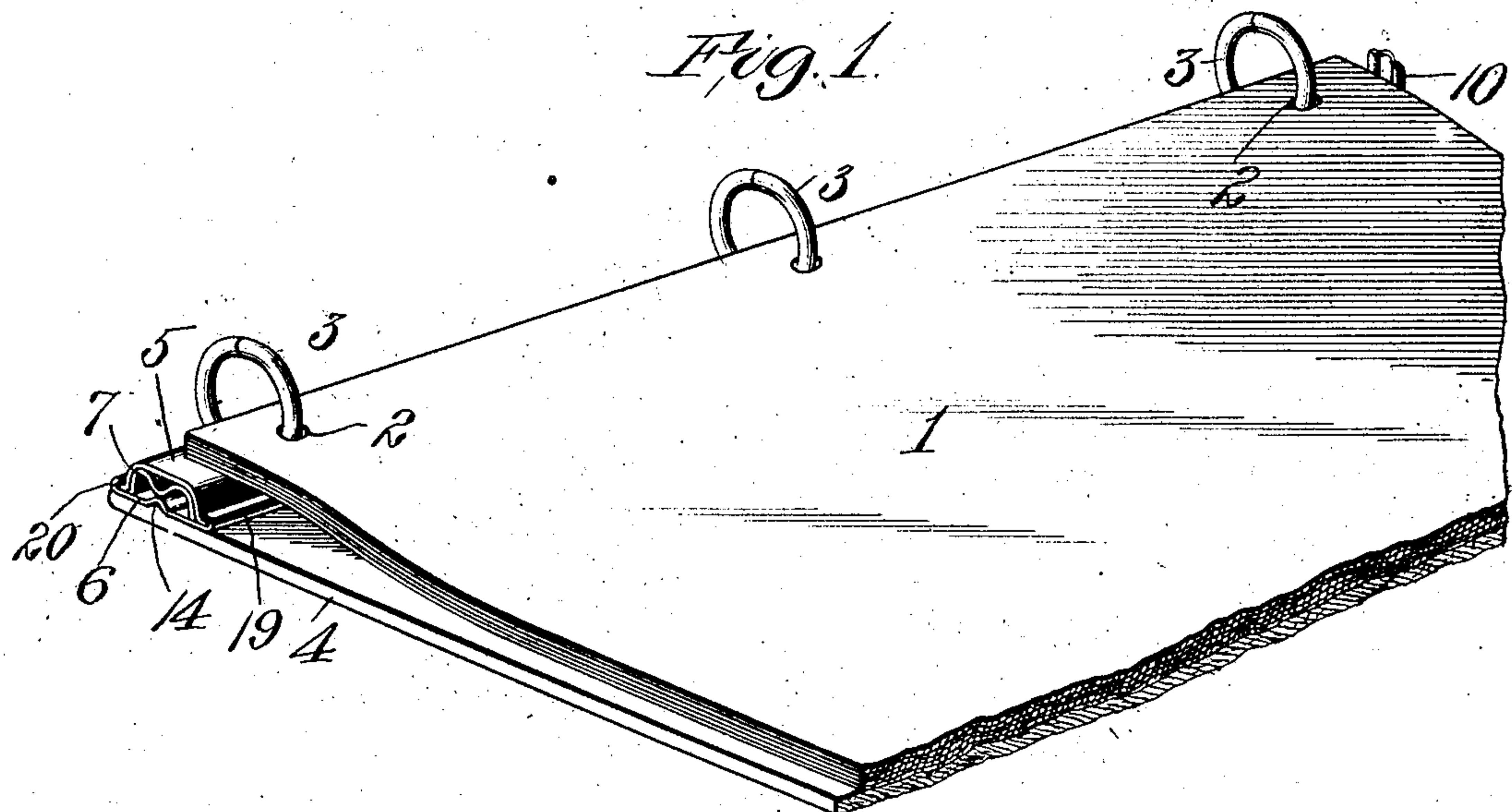


No. 842,851.

PATENTED FEB. 5, 1907

C. G. BODEN.
BINDER.

APPLICATION FILED DEC. 5, 1904.



UNITED STATES PATENT OFFICE.

CHARLES G. BODEN, OF ST. LOUIS, MISSOURI.

BINDER.

No. 842,851.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed December 5, 1904. Serial No. 235,547.

To all whom it may concern:

Be it known that I, CHARLES G. BODEN, a citizen of the United States, residing at the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Binders, of which the following is a specification.

This invention relates to improvements in binders or holders for loose-leaf records.

In the drawings, in which like numbers of reference denote like parts wherever they occur, Figure 1 is a perspective view of my device in position on a board for the base or back for a loose-leaf book, said view showing the loose leaves also in position. Fig. 2 is a top plan view, partly in section, showing one of the clips closed. Fig. 3 is a bottom plan view. Fig. 4 is a side elevation, partly broken away. Fig. 5 is a sectional view on the line 5 5, Fig. 3; and Fig. 6 is a similar sectional view showing the clips open.

The individual loose leaves 1 contain perforations 2, through which are inserted the arches 3 to hold same in position on and in relation to the board or back 4. The arches 3 are held and borne by the device composed of the upper plate 5, the lower plate 6, and the slide 7. The plate 6 is attached to the board 4 by the teeth 8, which are punched out of the metal forming the plate 6, as indicated in Fig. 3, said teeth being driven into the board 4.

The slide 7 is corrugated, as shown in Figs. 1, 2, 5, and 6, such corrugations imparting greater strength thereto and also allowing for the formation therein in each corrugation or bend of a slot 9. On one or both ends of the slide 7 an upturned extension 10, corrugated like the remainder of the slide 7, forms a convenient handle by which the slide 7 may be moved longitudinally between the plates 5 and 6, which hold it in its proper place.

Perforations or openings 11 in the plate 5 allow for the passage therethrough of the arches 12. Three or more pairs of said arches 12 are provided, as shown in Fig. 1, the other figures in the drawings being on an enlarged scale for clearness of details. Said arches 12 consist of a long cylindrical arm 13, which fits into the corrugation on the underneath side of the slide 7 and between same and the plate 6, which is formed with an upwardly-directed bead 14, and thus the arm 13 is held from lateral play or motion. Said arches 12 are further formed by the approxi-

mately semicircular arm 15, projecting outwardly from and above the longitudinal arm 13. At the point of union between the arms 13 and 15 a notch 16 is formed, which allows the arches to open wider, as illustrated in Fig. 6. In order that the oppositely-facing arms 15, forming the arches 12, may lock together when in the locked position, (indicated in Fig. 5,) the end of one of said arms is formed with the cone-point 17, while the opposite arm contains in its end the cavity 18 to receive same.

The plate 6 at its edges is formed into the upturned flanges 19, which overlap and retain the flanges 20, forming the edges of the downturned portions of the plate 5. The connection between the plates 5 and 6 is made comparatively tight. This allows the slide 7 to move between said plates without dislodging same.

When the slide 7 is in the position indicated in Fig. 4, the arches 12 are closed, as depicted in Fig. 5. When the slide 7 is pulled to the right in Fig. 4 by means of the handle 10, the arches 12 are opened by the oppositely-facing arms 15 being rotated on the arms 13 outwardly from each other until they occupy the position exhibited in Fig. 6, by reason of the pressure exerted on the arm 15 by the edge 21 of the slot 9 in the slide 7. The movement of the slide 7, as just described, to the right in Fig. 4, for instance, positively forces the arms 15 apart by the inclined edge 21 of the slot 9, there being one such slot for each arm 15, and the further movement of the slide 7 to the right causes the arms 15 to seat themselves in the straight portion 22 of said slots 9, whereby the arches 12 are locked open, as shown in Fig. 6. The reverse movement of the slide 7, by reason of the pressure exerted by the oppositely-inclined edge 23 of the slots 9 on the notched portion 16 of the arm 15, causes the same to assume the closed position (shown in Fig. 5) and positively locks the same in that position.

Having thus described my said invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with a plate, a sliding element spaced therefrom, arches consisting of members having portions thereof penetrating said element and confined in said space, and means whereby said element may operate said arches.

2. In a device of the character described,

the combination with a housing of arches comprising a pair of members having continuations thereof projecting into said housing, said continuations being arranged in parallel relation to each other within said housing, and a slide acting as a keeper for the continuations of said arches and also cooperating with said arches to actuate same.

3. In combination with a plate having a central raised portion, arches comprising a pair of members each having a continuation, a sliding element having a central depression overlying said raised portion and having its side portions shaped to confine said continuations between said raised portion and said side portions, and means whereby said element may operate said arches.

4. In a device of the character described, the combination of a lower plate having an upwardly-projecting bead, an upper plate forming a space between said upper and lower plates, a corrugated slide, the central bead of which cooperates with the before-mentioned bead to form grooves on each side of same, arches passing through said upper plate and said slide and having horizontal arms fitting into said grooves, said slide being provided with means to operate said arches.

5. In a device of the character described, the combination of a lower plate, an upper plate having apertures therethrough, a slide having slots therein, arches passing through said apertures and said slots, and having arms which are retained between said slide and one of said plates, said slots in said slide cooperating with the arches passing there-through to operate said arches.

6. In a device of the character described, the combination of a casing, a slide located within same movable in either direction, said slide having slots therein, the sides of which slant from the center of said slide, arches penetrating from the exterior of said casing and passing through said slots, said arches having arms which rest between said slide and said casing and said slanting sides of said slots by pressure upon said arches, actuating same to rotate upon said arms as on pivots either to open or to close, according to the direction of movement of said slide.

7. In a device of the character described, the combination of a casing, a slide located within same movable in either direction, said slide having slots therein, the sides of which slant from the center of said slide, arches penetrating from the exterior of said casing and passing through said slots, said arches having arms which rest between said slide and said casing and said slanting sides of said slots by pressure upon said arches actuating same to rotate upon said arms as on pivots either to open or to close, according to the direction of movement of said slide, said slots terminating in straight portions.

8. In combination with a plate, a sliding

element having a central depressed portion, arches consisting of members having portions thereof penetrating said element and arranged on opposite sides of said depressed portion, and confined between said plate and element, and means whereby said element may operate said arches.

9. In combination with a housing and a slide therein, arches comprising a pair of semicircular portions and integral horizontal arms disposed at right angles to said portions, said slide having a pair of oppositely-disposed irregularly-formed slots therein through which the lower portions of said semicircular portions project, whereby the latter may be actuated to be locked in either open or closed position.

10. In combination with a housing, a corrugated slide therein, the outer side portions of the corrugations in said slide being longitudinally cut to form cam-slots, and arches having portions passing through said slots with which the walls of said slots cooperate, whereby the slide is adapted to actuate said arches, said arches being supported by said corrugations.

11. In combination with a plate and an element bearing a sliding relation thereto, said plate and element each having a bent portion oppositely disposed to one another, arches consisting of members having portions thereof retained between said plate and element on opposite sides of said bent portions, and means whereby said element may operate said arches.

12. In combination with a plate, an element slidably related thereto, said plate and element having cooperating portions bent to form seats, arches consisting of members having portions thereof penetrating said element and arranged in said seats, and means whereby said element may operate said arches.

13. In combination with a plate, an element slidably mounted with respect to said plate, and arches comprising a pair of members for actuation by said element having continuations thereof disposed within said element and arranged between said element and plate and being confined thereby, said slide having irregularly-formed slots therein through which said members project.

14. In combination with a plate, a slide movably mounted with respect to said plate and having a pair of oppositely-disposed inclined slots therein terminating in straight portions, arches comprising a pair of members having portions projecting through said slots and engaged by and confined between said slide and plate.

15. In combination with a plate, an element having a sliding relation thereto, said plate and element having their side portions and central portions cooperating to form seats therebetween, and arches consisting of members having portions thereof penetrating said

element and disposed in said seats, and means whereby said element may operate said arches.

16. In combination with a plate, an element having a sliding relation thereto, said plate and element having inwardly-bent portions and having their side portions disposed in juxtaposition to one another and spaced from said first-named portions to form seats in conjunction therewith, arches consisting of members having portions thereof arranged in said seats, and means whereby said element may operate said arches.

17. In combination with a plate, an element slidably related thereto, arches consisting of members having portions thereof penetrating said element, said element being formed to receive said arch-member portions and to confine the same to said plate, and means whereby said element may operate said arches.

18. In combination with a housing, arches consisting of members having portions thereof penetrating said housing and disposed in longitudinal alinement therein, a sliding element in the housing penetrated by said arch-member portions and shaped to receive the same, and means whereby said element may operate said arches.

19. In combination with a plate, an element slidably related thereto, arches consisting of members having portions thereof penetrating said element and arranged in side-by-side relation therein, said element confining said arch-member portions to said plate, and means whereby said element may operate said arches.

20. In combination with a housing, arches comprising a pair of members having continuations thereof projecting into the housing and arranged in parallel relation therein, and a slide surrounding said continuations of the members and provided with means for actuating the members.

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

CHAS. G. BODEN.

Witnesses:

GLADYS WALTON,
HUGH K. WAGNER.