

No. 827,298.

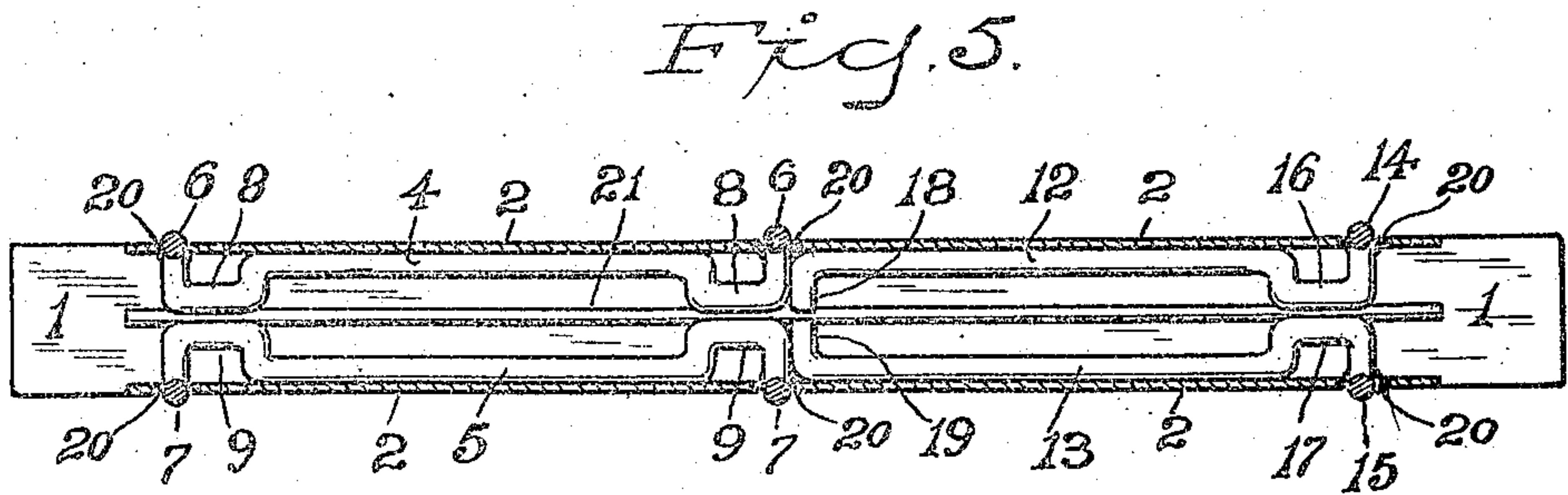
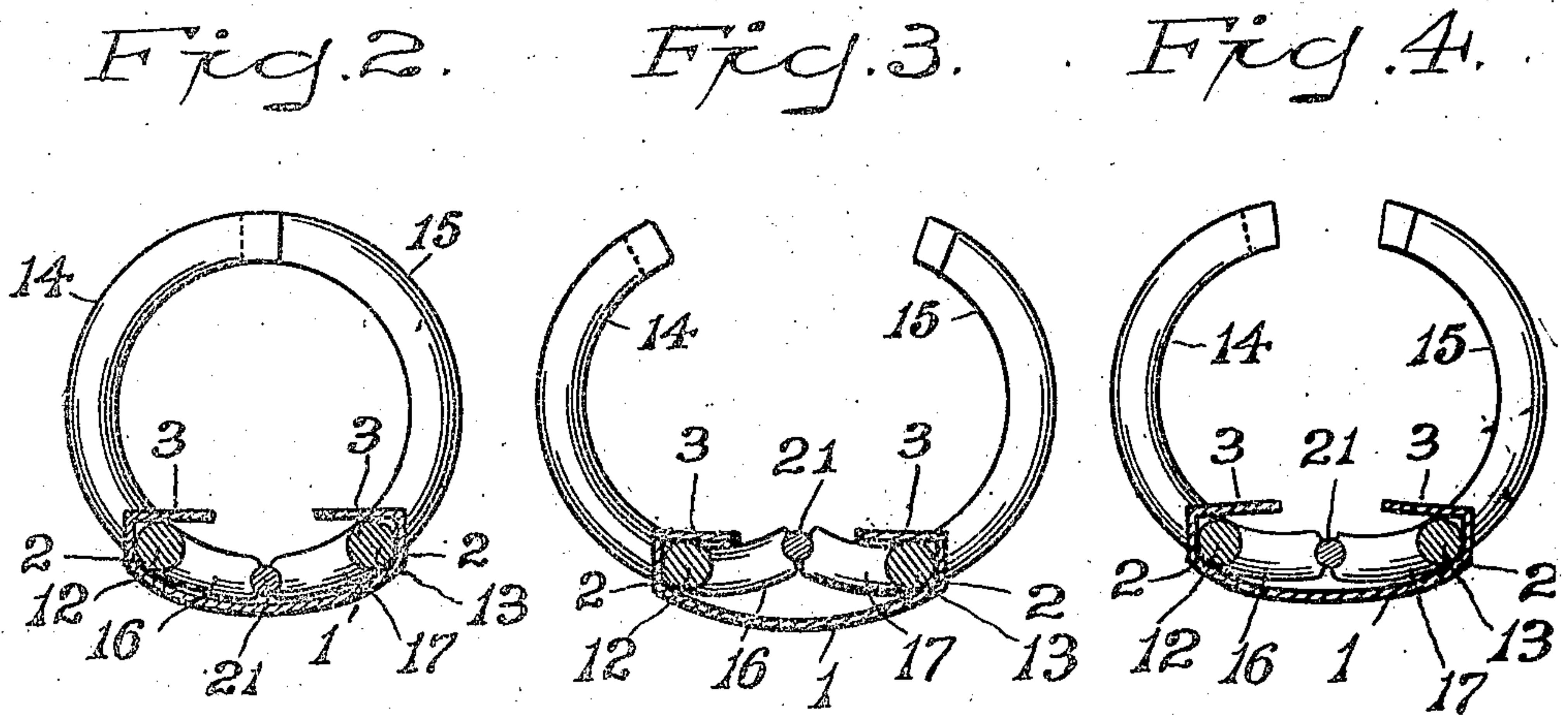
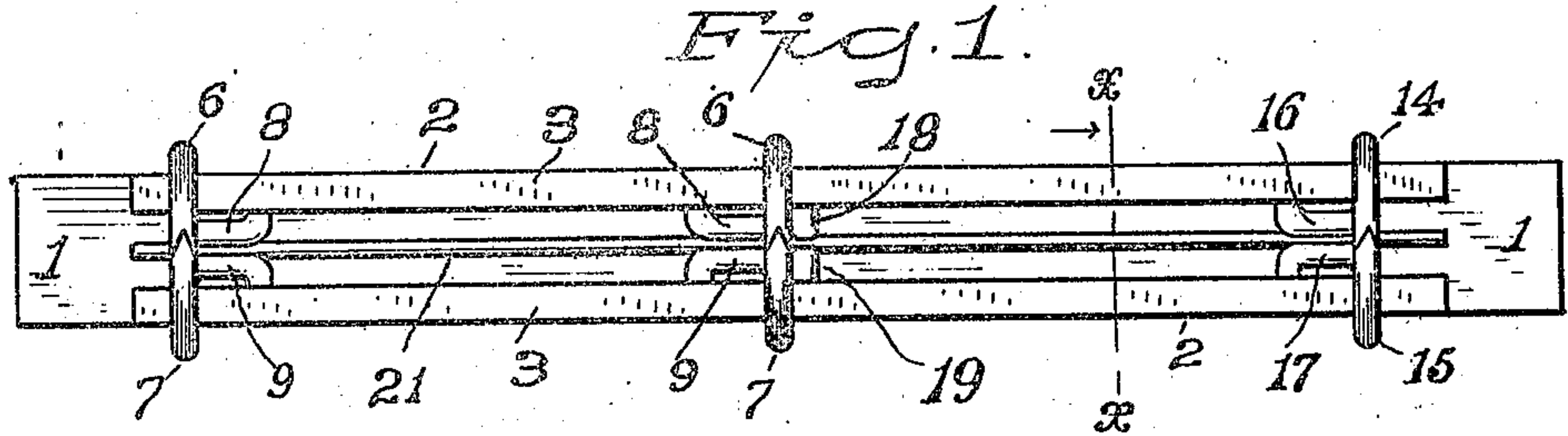
PATENTED JULY 31, 1906.

F. EGGE.

LOOSE LEAF BINDER.

APPLICATION FILED MAR. 14, 1906.

2 SHEETS—SHEET 1.



WITNESSES

H. A. Lamb.
W. T. Longden

INVENTOR

F. Egge

BY

J. H. Smith
ATTORNEY

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Fig. 6.

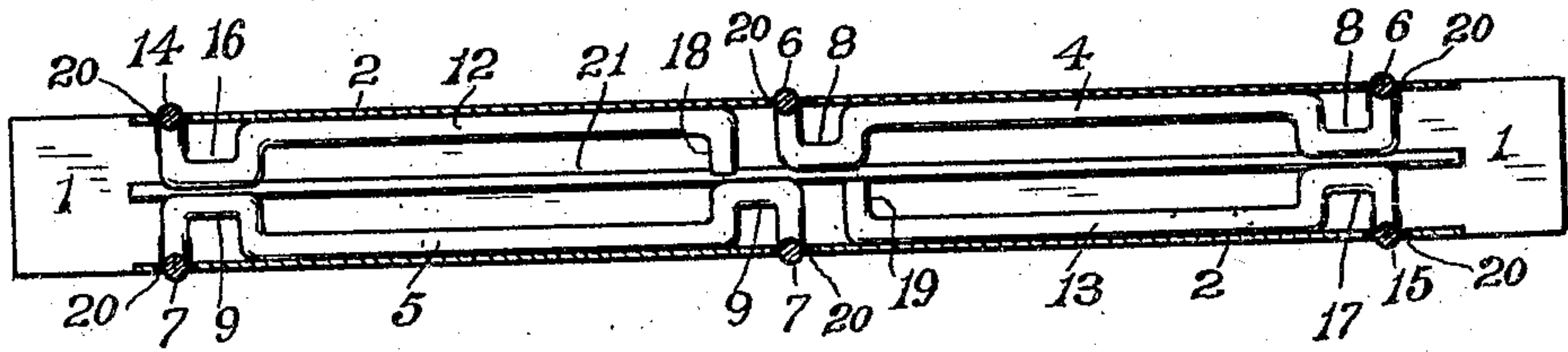
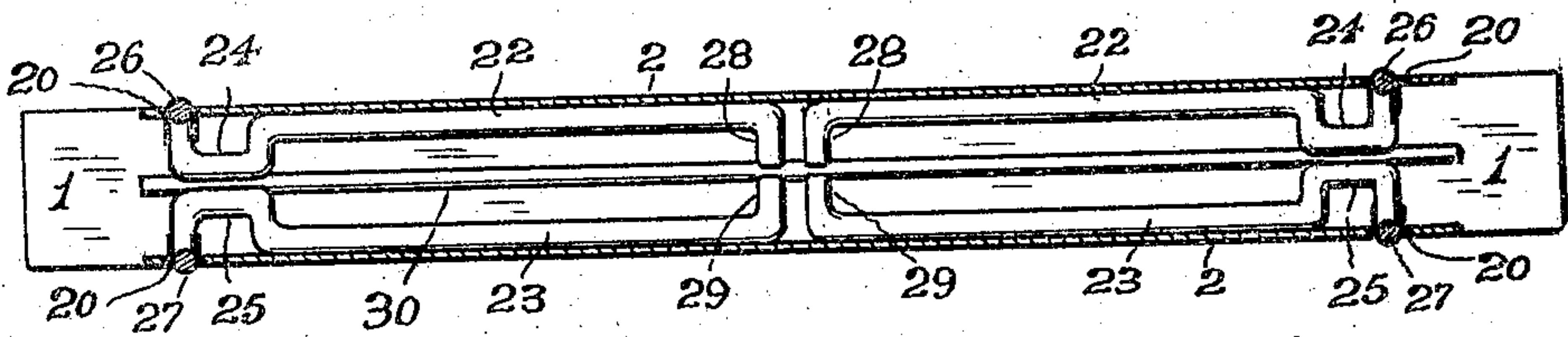


Fig. 7.



WITNESSES

H. A. Lamb,
M. J. Longden

INVENTOR

F. Egge

BY

M. Miller,
ATTORNEY

UNITED STATES PATENT OFFICE.

FREDERICK EGGE, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
NATIONAL BLANK BOOK COMPANY, OF HOLYOKE, MASSACHUSETTS,
A CORPORATION OF MASSACHUSETTS.

LOOSE-LEAF BINDER

No. 827,298.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed March 14, 1906. Serial No. 305,976.

To all whom it may concern:

Be it known that I, FREDERICK EGGE, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Loose-Leaf Binders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to loose-leaf binders; and it consists of certain arrangements of parts and combinations of parts, such as will be hereinafter fully described and then particularly pointed out in the claims which conclude this application.

The object of my invention is to do away entirely with soldering or brazing and to provide a device which can be assembled or put together without the aid of any special tools, while at the same time the construction shall be exceedingly durable.

In the accompanying drawings, Figure 1 is a plan view of my preferred construction; Fig. 2, a cross-section with the arched arms closed; Fig. 3, a view similar to Fig. 2, but showing the arched arms opened to their fullest extent; Fig. 4, a view similar to Fig. 3, but showing the arched arms only part way open; Fig. 5, a horizontal section; and Figs. 6 and 7 views similar to Fig. 5, but showing, respectively, different modified forms of my improvement.

Similar numbers of reference denote like parts in the several figures of the drawings.

Heretofore loose-leaf binders have been constructed in which a pair of rods were confined within the opposite upstanding sides of a resilient retaining plate or casing, and oppositely-disposed arched arms have been pivoted around these respective rods, and the lower extremities of these arms have been pivoted together in a plane which normally is below the plane of the side rods; but in this construction it is necessary to employ some sort of stop independent of these rods or arms to limit the upward throw of the lower extremities of said arms, so that the latter would open uniformly and could not be disarranged. Also in this construction it is necessary that different pairs of oppositely-disposed arched arms be opened separately,

owing to the fact that these arms are pivoted around the side rods, or else these arms must be opened by manipulating the book to which this loose-leaf binder is connected. In my improvement there is no independent pivoting whatever of the arched arms, but, on the contrary, they are integral with the side rods themselves, which latter have a pivotal or rocking action and the arrangement of parts is such that the manipulation of any one pair of arched arms will effect the operation of the remaining pairs of such arms.

For a clear understanding of my invention attention is called to the following description, wherein references are made to the drawings which have been described above.

1 is a casing, preferably made from spring-steel, the bottom of this casing being preferably concavo-convex. The sides 2 of this casing are upstanding and are turned over to form ledges 3, which overhang the bottom of this casing.

Referring to Figs. 1 and 5, wherein my preferred form of construction is illustrated, 4 5 are rods which are disposed in opposite sides of the casing, the extreme ends of these rods being formed into complementary arched arms 6 7, while at the bases of these arms the rods are bent so as to form inwardly-extending lugs 8 9, whose inner faces are cut out, so as to form shallow grooves for the purpose presently explained. Adjoining these rods 4 5 are rods 12 13, which are likewise confined in opposite sides of the casing in alinement with the first-mentioned rods. On the outer extremities of these rods 12 13 are formed complementary arched arms 14 15, these rods being bent so as to form inwardly-extending lugs 16 17 at the bases of these arched arms, while the inner extremities of these rods are simply bent inwardly, so as to form lugs 18 19, that are close to the lugs at the inner ends of the rods 4 5. These lugs 16 17 18 19 all have shallow grooves within their inner faces similar to the grooves hereinbefore mentioned. The several arched arms pass loosely through openings 20 in the sides of the casing, and the several lugs are all immediately below the ledges 3, which extend at the sides of the casing for the purpose presently to be explained. 21 is a small wire or rod which is inserted between the various oppositely-disposed lugs through the grooved portions

thereof, and the plane of this wire 21 when the arched arms are closed is below the plane of the several rods in the sides of the casing, so that it will be clear that when the arched arms are open the side rods will be forced against the spring-casing, while the wire 21 will be elevated until it has been carried upwardly above the plane of the side rods, whereupon the casing by its resiliency will return to normal position and hold the parts with these arched arms in open condition. When the arms are closed, this will be effected against the resiliency of the casing, and when this wire has been carried below the plane of the side rods said resiliency will effect the final closing with a spring action. By reason of the fact that the lugs 18 19 on one set of side rods are close to lugs on the other set of side rods all of the arms may be opened simultaneously by the manipulation of any one pair of said arms. As has above been stated, the various lugs are immediately below the overhanging ledges, so that when the arms are opened these lugs will abut against these ledges, which latter will thus act as stops to limit the extent to which the arms may be opened and to thereby insure the uniform opening of said arms.

At Fig. 6 I have shown a slight modification of my improvement, in which the places of the rods 4 and 12 are interchanged, so as to bring the lugs 16 18 opposite the lugs 9 on the rod 5, while the lugs 8 on the rod 4 are brought opposite the lugs 17 19 on the rod 13; but this is a very slight change and merely involves the assembly of the parts in a different position, while the operation is not changed in the slightest.

Loose-leaf binders are made with two or more sets of complementary arched arms, and in making a device of this description with only two sets of arms I would prefer to construct it as is shown at Fig. 7, where rods 22 23 are assembled within opposite sides of the spring-casing and are provided at their outer ends with inwardly-extending grooved lugs 24 25, which terminate in complementary arched arms 26 27, while the inner extremities of these oppositely-disposed arms have simple grooved lugs 28 29, which extend inwardly toward each other and in close proximity, so that when a wire 30 is passed between these lugs in the grooves therein the device will operate in the same manner as the construction hereinbefore referred to. It will thus be understood that the arched arms and lugs of oppositely-disposed rods are integral with said respective rods, while the arms themselves act as crank-levers to impart rocking movements to the rods.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a loose-leaf binder, the combination of a resilient casing having upstanding sides the latter terminating in ledges which overhang the bottom of said casing, the rock-rods confined at opposite sides of said casing and terminating at both ends in complementary arched arms which pass loosely through the sides of said casing said rods also having inwardly-extending lugs which are opposite each other and have their inner faces grooved, a second pair of rock-rods aligned with the rods first mentioned and confined at opposite sides of said casing and terminating at their outer ends in complementary arched arms which pass loosely through the sides of said casing, both outer and inner ends having lugs which have their inner faces grooved and which extend inwardly opposite each other the inner lugs being close to the inner lugs of the first-mentioned rods and all of the lugs being immediately below said ledges, and a wire rod extending freely between all of said lugs and within said grooved portions.

2. In a loose-leaf binder, the combination of a resilient casing, a series of rock-rods confined in opposite sides of said casing, a series of oppositely-disposed complementary arched arms integral with said rods, a series of oppositely-disposed lugs integral with said rods and extending inwardly near the bottom of the casing and having grooves in their inner faces, adjacent series of rods being in alinement with their adjacent lugs close together, and a wire rod loosely extending between each pair of lugs and within said grooves whereby oppositely-disposed lugs are separated by a fixed distance.

3. In a loose-leaf binder, the combination of a resilient casing having a concavo-convex bottom, separate aligned series of oppositely-disposed rock-rods confined in the opposite sides of said casing, oppositely-disposed complementary arched arms integral with each series of rods, oppositely-disposed lugs integral with each series of rods at the bases of said arms and extending inwardly and having grooves in their inner faces, the inner ends of rods that are adjacent to arched arms on other rods being bent to form lugs which extend inwardly and are grooved in their inner faces, and a wire rod passed freely between oppositely-disposed lugs and within said grooves.

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

FREDERICK EGGE.

Witnesses:

F. W. SMITH, Jr.,
M. T. LONGDEN.