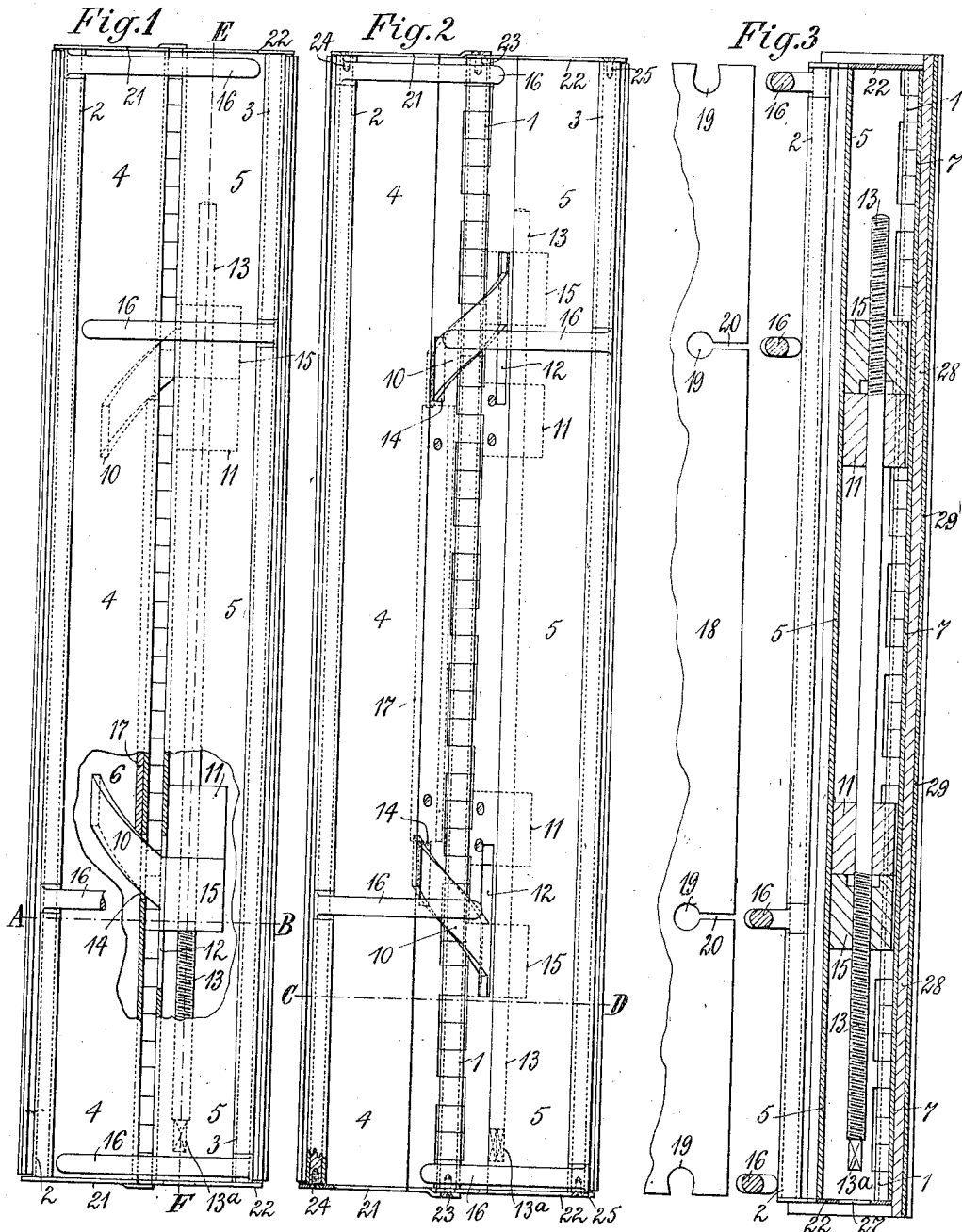


933,882.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.



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T. C. BRUHN.
 LOOSE LEAF BOOK.
 APPLICATION FILED MAR. 9, 1909.

933,882.

Patented Sept. 14, 1909.
 2 SHEETS—SHEET 1

Fig. 4

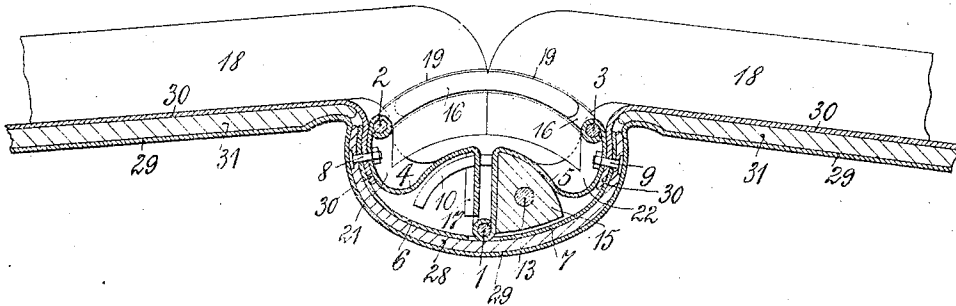


Fig. 5

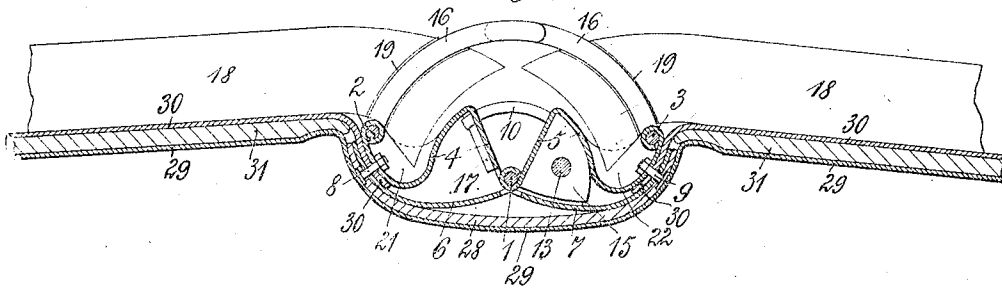


Fig. 6

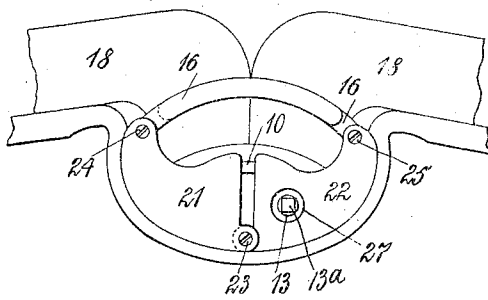
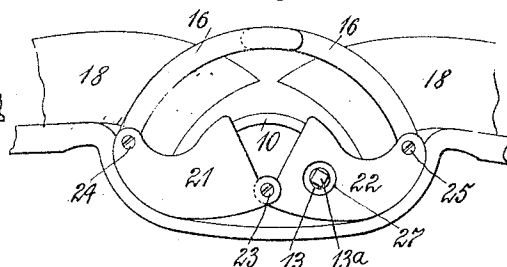


Fig. 7



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UNITED STATES PATENT OFFICE.

THEODOR CLAUDIUS BRUHN, OF ALTONA-OTTENSEN, GERMANY.

LOOSE-LEAF BOOK.

922,882.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed March 5, 1909. Serial No. 432,276.

To all whom it may concern:

Be it known that I, THEODOR CLAUDIUS BRUHN, a subject of the German Emperor, and resident of No. 71/73 Bahrenfelderstrasse, Altona-Ottensen, Germany, have invented certain new and useful Improvements Relating to Loose-Leaf Books, of which the following is a specification.

The present invention has for its object a book with loose leaves in which the device for opening and closing it and for pressing the loose leaves together is arranged and fitted to the back of the book in such a manner that this back presents the round shape usual in commercial books.

The novel book is illustrated in the accompanying drawings in which:

Figures 1 and 2 are elevations of the mechanism fitted to the back of the book in its closed and open positions respectively. Fig. 3 is a longitudinal section on the line E-F of Fig. 1. Figs. 4 and 5 are cross sections on the lines A-B and C-D in Figs. 1 and 2 respectively. Figs. 6 and 7 are end elevations of the back of the book in the closed and open positions respectively.

Four parts 4, 5, 6 and 7 of sheet metal or the like are hinged together by means of a rod 1 common to them all. The parts 4 and 5 and the parts 6 and 7 present the same form. The outer ends of the parts 4 and 5 are connected with the rods 2 and 3 while the parts 6 and 7 are connected by means of screws or rivets 8, 9 with the parts 4 and 5 respectively. By this means each pair of parts 4, 6 and 5, 7 forms a rigid body. The form of the parts 4, 6 and 5, 7 is such that each of them incloses a prismatic space which serves for the reception of a device producing the opening and closing of the rigid bodies 4, 6 and 5, 7. This device consists of a spindle 13 rotatable in lugs 11 and two nuts 15 held thereon and displaced when it rotates; each of said nuts comprising a tongue 10. Each tongue is bent in a circle the center of which is located in the axis of the rod 1, and is likewise directed obliquely. Both the tongues 10 extend through slots 12 in the parts 5 and 14 in the part 4 into the prismatic space situated between the part 4 and the part 6. When the spindle 13 rotates the edges of the tongues 10 act as cams in one direction or the other against the outer or inner ends of the slot 14 which are reinforced by a bar 17, and either force the part 4 away or bring it closer. At its front end

the spindle 13 is formed with a square 13^a for the reception of a key by means of which it may be rotated in either direction. In place of this square 13^a the end of the spindle could of course be provided with a fixed knob projecting somewhat from the mechanism and serving to rotate the spindle 13.

Prongs 16 are mounted on the rods 2 and 3; they are bent into a circle the center of which is located in the axis of the rod 1. The loose sheets of paper 18 are passed on to the prongs 16 by means of holes 19. From the two central holes 19 slots 20 proceed as far as the inner edge of the leaf 18. The two outer holes 19 are opened toward the upper and lower edges of the leaf 18 respectively.

The ends of the device constituted by the hinged parts 4, 6 and 5, 7 are covered by disks 21, 21 and 22, 22. They are connected with the rods 1, 2, 3 by means of screws 23, 24, 25. The front, right hand disk 22 is provided with a hole 27 for the reception of the key or knob intended to be placed on the square 13^a on the spindle 13.

The device is connected with the back of the book and the covers of the book in the following manner: A piece of card-board 28 or the like is arranged upon the parts 6 and 7 and provided with holes for the heads of the bolts 8 and 9 connecting the parts 4, 6 and 5, 7. Over the card-board 28, canvas, cloth or leather 29 is arranged, its front (lower) and rear (upper) end is turned over and stuck to the parts 6 and 7 and to the piece of card-board 28. Two additional pieces of canvas, cloth or leather 30 are clamped by the screw bolts 8 and 9 between the parts 4, 6 and 5, 7. The card-board or the like 31 is then fixed in the known manner between the pieces of canvas, cloth or leather 29 and 30.

No metal parts which might be inconvenient in use or scratch the table exist on the outer surface of a book embodying the invention.

A leaf cannot be withdrawn when the book is closed because the leaves are pressed very tightly together by means of the mechanism fitted to the back of the book.

It is possible to arrange a larger or smaller number of loose leaves than originally intended in a book formed in the manner described above. This additional or smaller number of leaves is of course limited and depends upon the extent to which it is prac-

tically possible to contract the parts 4, 6 and 5, 7.

What I claim is:

1. A temporary binder comprising a pair
5 of pivotally connected hollow members, a
spindle journaled within one of said mem-
bers, nuts engaging the spindle, cam-faced
tongues carried by the nuts and adapted to
project into the second member, and prongs
10 secured to one of the members.

2. A temporary binder comprising a pair
of pivotally connected hollow members, a
spindle journaled within one of said mem-
bers, nuts engaging said spindle, cam-faced
15 tongues carried by the nuts and adapted to
project into the second member, rods car-
ried by both members, and prongs project-
ing from said rods.

3. A temporary binder comprising a cover,

a pair of pivotally connected hollow mem- 20
bers secured thereto, a spindle journaled
within one of said members, nuts engaging
said spindle, cam-faced tongues carried by
said nuts and adapted to project into the
second member, and prongs secured to one 25
of the members.

4. A temporary binder comprising a pair
of pivotally connected hollow members, cam-
faced tongues operably secured within one 30
of said members and adapted to engage the
other member, and a flexible back connected
to the outer ends of the hollow members.

Signed by me at Hamburg, Germany this
22d day of February 1909.

THEODOR CLAUDIUS BRUHN.

Witnesses:

F. JULIUS POTHs,
ERNEST H. L. MUMMENHOFF.