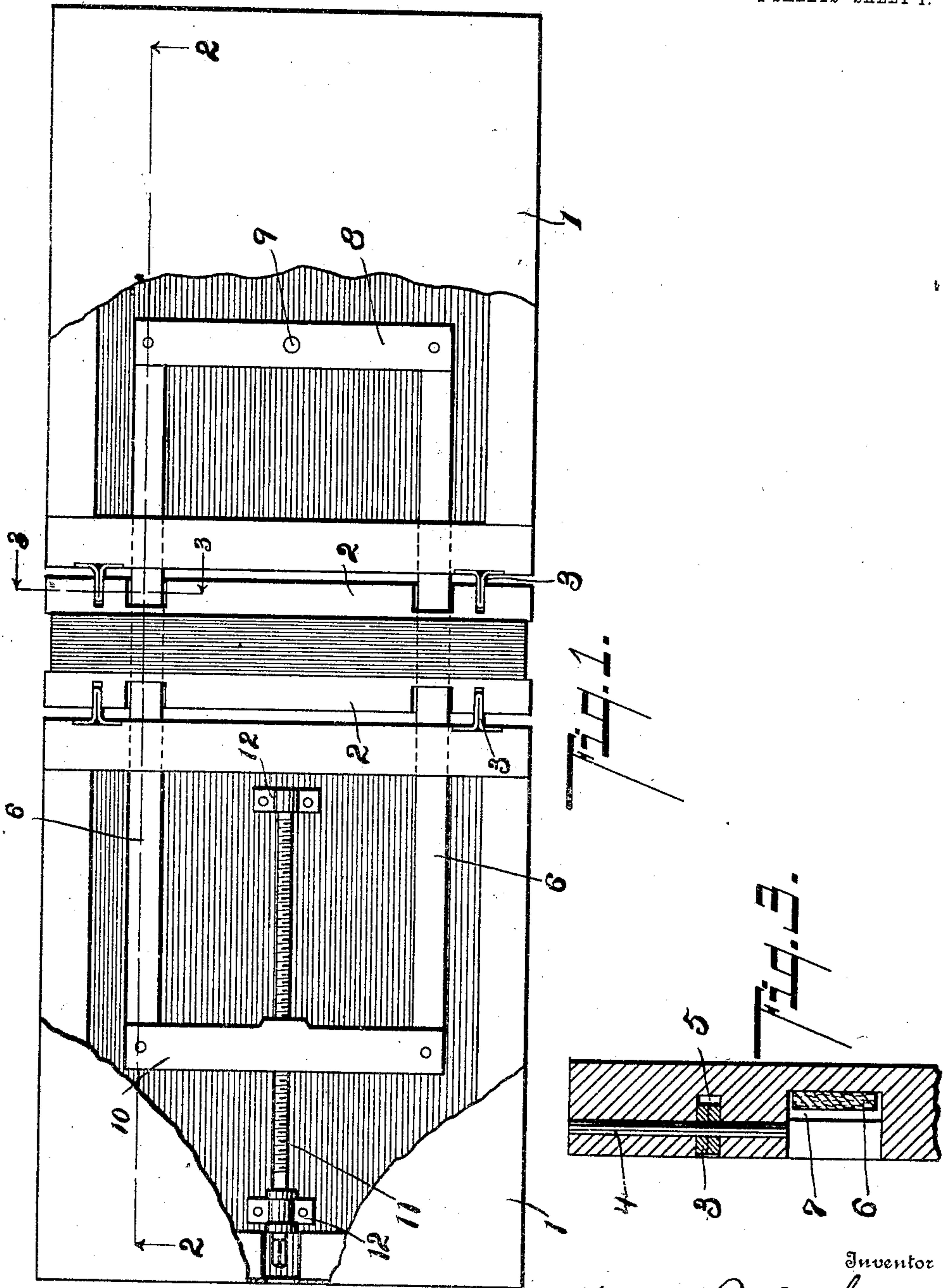


H. F. BUSHONG.
 TEMPORARY BINDER OR LOOSE SHEET HOLDER.
 APPLICATION FILED NOV. 11, 1907.

912,361.

Patented Feb. 16, 1909.
 2 SHEETS—SHEET 1.



Witnesses
 Lucy Greenfield
 Clara E. Braden

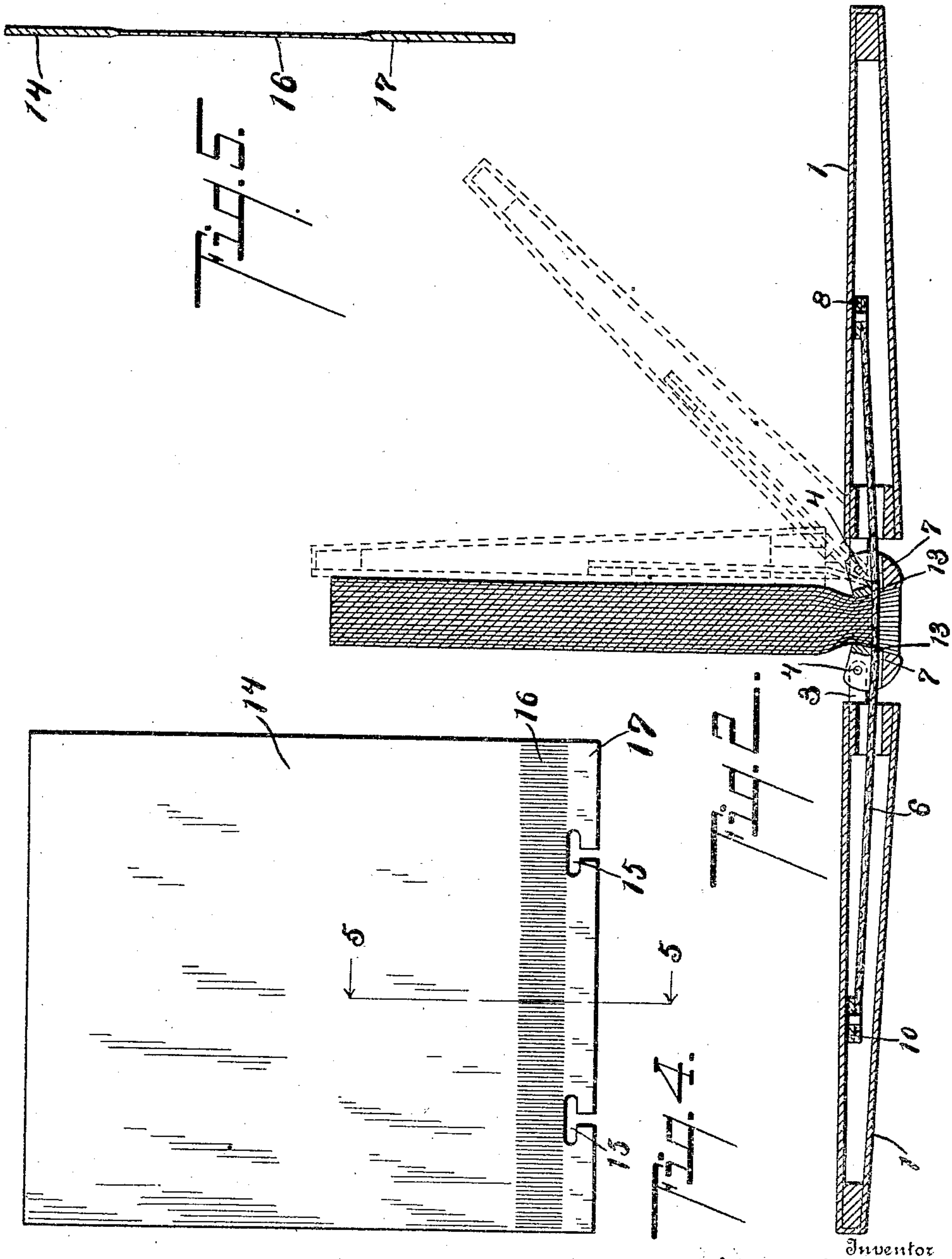
Inventor
 Harry F. Bushong
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UNITED STATES PATENT OFFICE.

HARRY F. BUSHONG, OF KALAMAZOO, MICHIGAN.

TEMPORARY BINDER OR LOOSE-SHEET HOLDER.

No. 912,361.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed November 11, 1907. Serial No. 401,651.

To all whom it may concern:

Be it known that I, HARRY F. BUSHONG, a citizen of the United States, residing in the city and county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Temporary Binders or Loose-Sheet Holders, of which the following is a specification.

This invention relates to improvements in temporary binders or loose sheet holders.

The main objects of this invention are: first, to provide an improved temporary binder, in which the covers are automatically held, both in their open and in their closed position; second, to provide an improved temporary binder or loose sheet holder, in which the sheets or leaves are held so that they are not likely to get out of alinement in handling the binder, or in turning the leaves; and, at the same time, one in which the sheets or leaves may be very quickly inserted, or removed, or changed, as desired.

Further objects, and objects relating to details of construction, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which,

Figure 1 is a detail view of a structure embodying the features of my invention, the covers being shown extended, and portions of the inner walls thereof being broken away to show the arrangement of the parts; sheets or leaves being illustrated therein in conventional form; Fig. 2 is a longitudinal section, taken on a line corresponding to line 2—2 of Fig. 1, the sheets being shown in a vertical position, and the movement of the covers being illustrated by dotted lines; Fig. 3 is an enlarged detail section, taken on a line corresponding to line 3—3 of Fig. 1; Fig. 4 is a plan of one of the sheets or leaves, which I preferably use in my improved binder; Fig. 5 is an enlarged detail taken on a line corresponding to line 5—5 of Fig. 4, the figure being somewhat exaggerated to better illustrate the form of the leaf.

In the drawing, the sectional views are taken looking in the direction of the little arrows at the ends of the section lines, and

similar numerals of reference refer to similar parts throughout the several views.

Referring to the drawing, the covers 1 are preferably chambered to receive the binding cords and the adjusting mechanism therefor. The clamping bars 2 are pivotally connected to the inner ends of the covers, preferably by means of the inwardly-projecting rigid hinge members 3 at the inner ends of the covers and the pivot pins 4, by which the clamping bars are connected to the hinge members. The clamping bars are preferably slotted at 5 to receive the hinge members, and the pivots are inserted into the clamping bars, as clearly appears in Fig. 3. The covers are connected by the binding cords 6, which are arranged through the inner ends of the covers, and through the clamping bars, suitable holes 7 being provided therefor in the clamping bars. The binding cords are connected to one of the covers, preferably by means of the equalizing bar or cross piece 8, which is secured to the cover by means of a suitable centrally-arranged pivot 9. The cross bar 10 is adjustably connected to the other cover by means of the screw 11, which is mounted in suitable bearings, as 12, on the cover, the screw being adapted to be adjusted by means of a key. This general arrangement of the covers, the clamping bars, binding cords, and adjusting means therefor is substantially that shown in Letters Patent 851,276, issued to me on April 23, 1907, for temporary binders or loose sheet holders. The present structure is a modification, and, in some respects, an improvement upon the structure there illustrated.

The clamping bars are provided with bearings 13 in their inner or clamping faces for the binding cords. These bearings are so located relative to the pivots 4 for the hinge members to the clamping bars, that, when the covers are opened or closed, the binding cords are swung across the axes of the pivots, so that the tension on the binding cords is varied somewhat, it being the greatest when the cover is partially opened. By thus arranging the binding cords in the clamping bars and the pivots for the clamping bars, the binding cords tend to hold the covers in either their closed or in their open position, and will either open or close the same when partially opened. This variation in tension is not sufficient to in any wise injure the binding cords, or interfere with the

manipulation of the book, but is found to be of advantage, especially where the books are to be used on racks, or the like; also, in holding the covers in their closed position when the books are placed on a shelf in an upright position. By providing the equalizing bar 8 for securing the binding cords to one of the covers, great care is not required in adjusting the cords, and any uneven stretching of the two binding cords is compensated for.

I preferably employ, in my improved binder, leaves or sheets 14 having notches 15 in their rear edges, adapted to receive the binding cords and having a thinned portion 16 lying in front of the notches, so that the clamping bars engage both the thin portion and the thicker portion 17 of the leaf at the rear of the thin portion, thus engaging the leaves in a wedge-like manner, so that they are held very securely, and it is quite impossible for them to get out of alinement in handling or using the book. This thinned portion preferably extends inwardly beyond the edge of the clamping bars, so that it forms a hinge or flexing point for the sheets, thus permitting them to lie flat when the book is opened. As the clamping bars and the covers are free to move independently of each other in the opening or closing of the book, or in the manipulation of the leaves, and also in adjusting the clamping bars to the sheets or leaves, the leaves are very securely held, and the book may be very easily manipulated.

I have illustrated and described my improvements embodied in a binder such as is illustrated in my patent hereinbefore referred to, and I have particularly adapted the same to use in that relation. I am aware, however, that it is applicable to and may be adapted for use in various other forms of binders.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination with the covers, of inwardly-projecting rigid hinge members at the inner ends of said covers; clamping bars pivoted on said hinge members; and binding cords connected to said covers and arranged through the inner ends thereof and through said clamping bars, said clamping bars being provided on their clamping faces with bearings for said binding cords, the said bearings being below the plane of the axes of the clamping bar pivots, whereby the binding cords are moved across the axes of the said pivots in opening or closing the covers.

2. The combination with the covers, of inwardly-projecting rigid hinge members at the inner ends of said covers; clamping bars pivoted on said hinge members; and binding cords connected to said covers and arranged through said clamping bars, said clamping

bars being provided on their clamping faces with bearings for said binding cords, the said bearings being below the plane of the axes of the clamping bar pivots, whereby the binding cords are moved across the axes of the said pivots in opening or closing the covers.

3. The combination with the covers, of clamping bars; pivotal connections for said clamping bars to said covers; and binding cords connected to said covers and arranged through said clamping bars, said clamping bars being provided on their clamping faces with bearings for said binding cords, the said bearings being below the plane of the axes of the pivots for said clamping bars, whereby the binding cords are moved across the axes of the said pivots in opening or closing the covers.

4. The combination with the covers, of clamping bars; pivotal connections for said clamping bars to said covers; and binding cords connected to said covers, said clamping bars being provided with bearings for said binding cords, arranged so that the binding cords are moved across the axes of the said pivots in opening or closing the covers.

5. The combination with the covers, of clamping bars; connections for said bars to said covers; binding cords uniting said covers, connected thereto independently of said clamping bars and bearings on said clamping bars for said binding cords, arranged so that the stress on said binding cords is increased and diminished again on the opening or closing of the covers.

6. The combination with the covers, of clamping bars; connections for said bars to said covers; binding cords uniting said covers; and bearings on said clamping bars for said binding cords, arranged so that the stress on said binding cords is increased and diminished again on the opening or closing of the covers.

7. The combination with the covers having inwardly-projecting rigid hinge members at their inner ends; clamping bars pivoted on said hinge members; binding cords connecting said covers; and bearings on said clamping bars for said binding cords arranged so that the stress on said binding cords is increased and diminished again on the opening or closing movement of the covers.

8. The combination with the covers, of clamping members; connections for said clamping members to said covers; and binding cords uniting said covers, connected thereto independently of said clamping members and arranged so that the stress thereon is increased and diminished again on the opening or closing movement of the covers.

9. The combination with the covers, of clamping members; connections for said clamping members to said covers; and binding

ing cords uniting said covers, arranged so that the stress thereon is increased and diminished again on the opening or closing movement of the covers.

5 10. In a temporary binder, the combination with the covers, of clamping bars; connections for said bars to said covers; binding
cords uniting said covers, connected thereto
independently of said clamping bars and
10 arranged through said clamping bars so
that they tend to hold the covers in their
open position.

11. In a temporary binder, the combination with the covers, of clamping bars; con-
15 nections for said bars to said covers; and
binding cords uniting said covers, connected
thereto independently of said clamping bars
and arranged through said clamping bars
so that they tend to hold the covers in their
20 closed position.

12. In a temporary binder, the combination with the covers having inwardly-pro-
jecting rigid hinge members at their inner
ends, of clamping bars pivoted on said hinge
25 members so that said clamping bars and
covers may move independently; binding
cords connecting said covers arranged
through said clamping bars; and sheets or

leaves having notches in their rear edges
adapted to receive said binding cords, said 30
sheets or leaves having a thin strip extending
across the binding portion thereof, said
clamping bars being adapted to engage both
the thin portion of said sheet and the thicker
portion to the rear thereof.

13. In a temporary binder, the combination with the covers, of clamping bars; con-
nections for said bars to said covers arranged
so that the covers and bars may move inde-
pendently; binding cords connecting said 40
covers, arranged through said clamping
bars; and sheets or leaves having notches in
their rear edges adapted to receive said bind-
ing cords, said sheets or leaves having a thin
strip extending across the binding portion 45
thereof, said clamping bars being adapted
to engage both the thin portion of said sheet
and the thicker portion to the rear thereof.

In witness whereof, I have hereunto set
my hand and seal in the presence of two 50
witnesses.

HARRY F. BUSHONG. [L.S.]

Witnesses:

LULU G. GREENFIELD,
CLARA E. BRADEN.