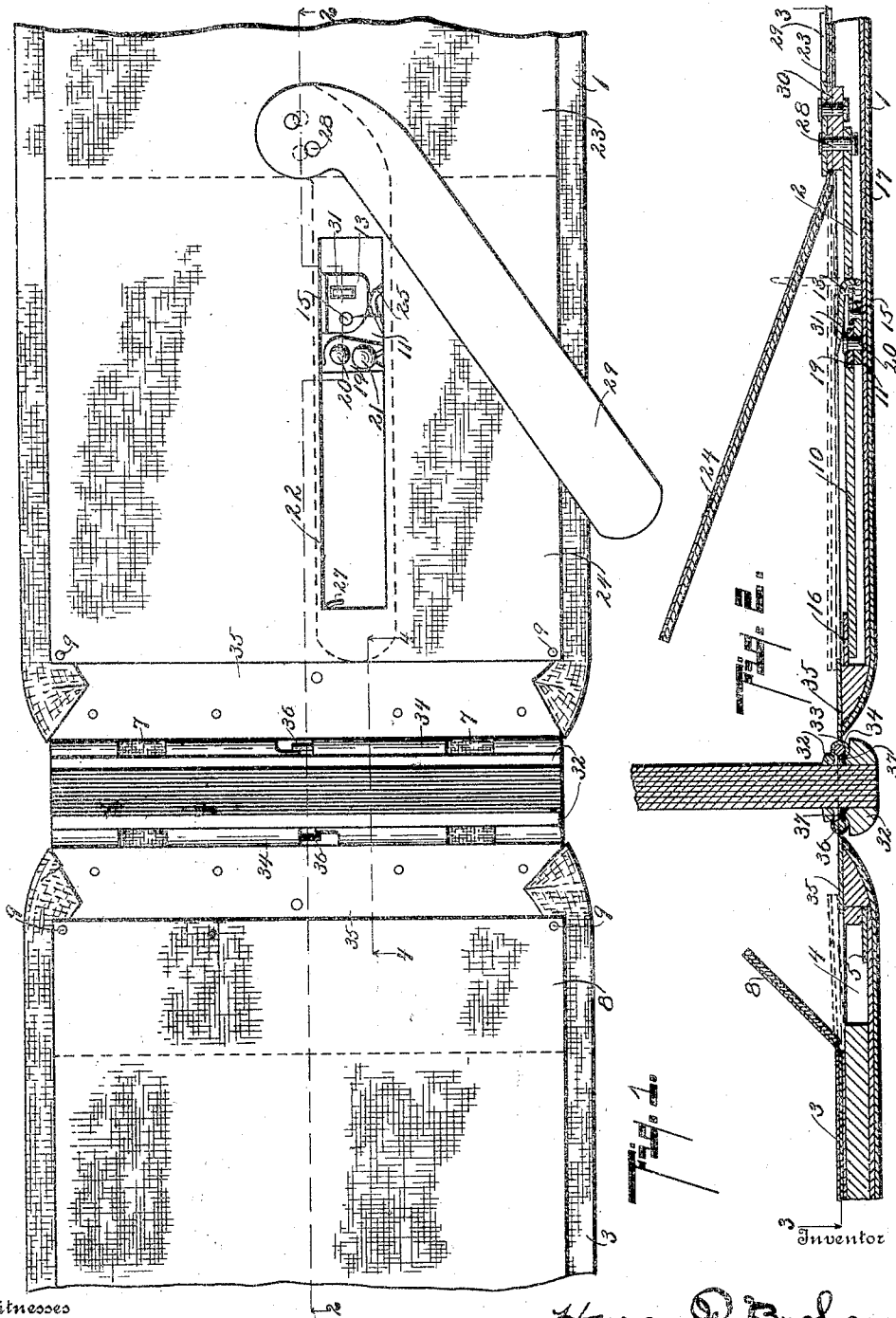


H. F. BUSHONG.
 TEMPORARY BINDER OR LOOSE SHEET HOLDER.
 APPLICATION FILED OCT. 16, 1908.

940,508.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 1.



Witnesses

Gertrude Tallman
 Clara E. Braden

By

Harry P. Bushong
 Chappell & Co.
 Attorneys

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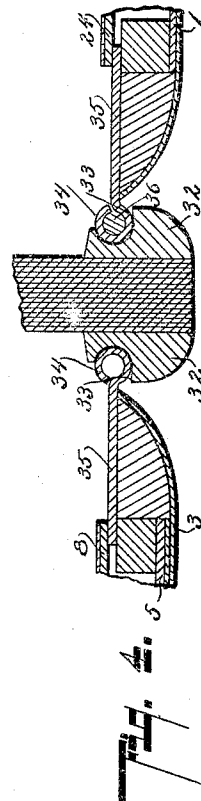
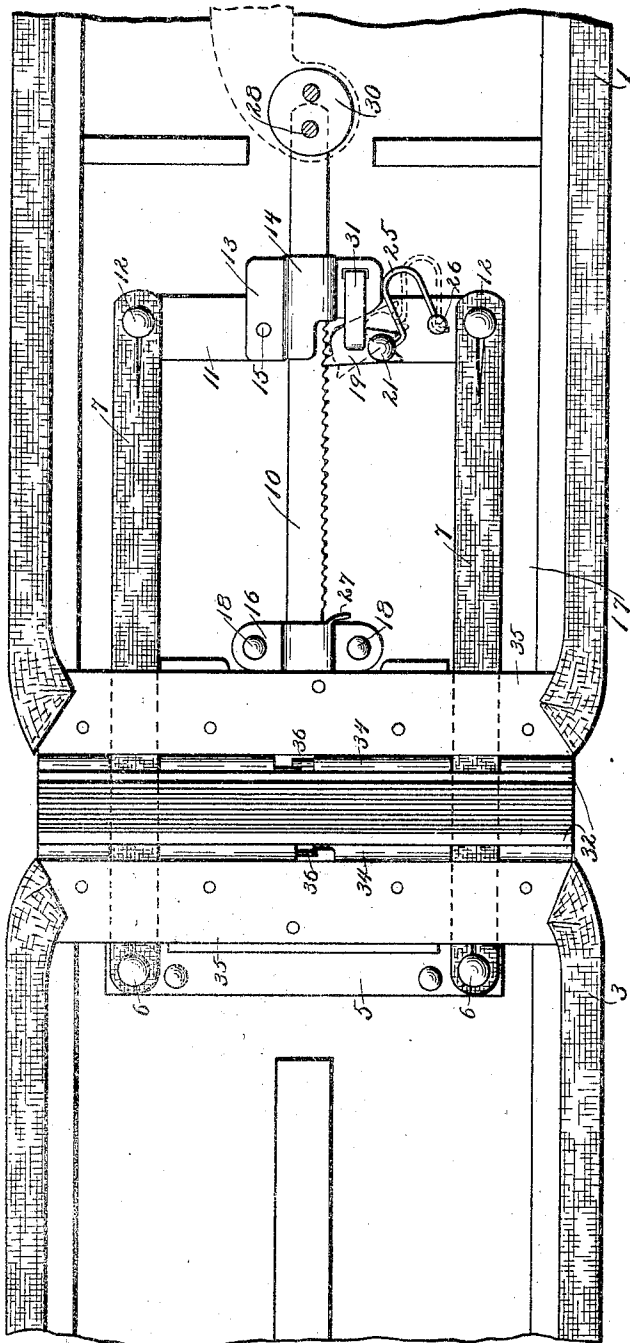


Fig. 5.

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UNITED STATES PATENT OFFICE.

HARRY F. BUSHONG, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO THE KALAMAZOO LOOSE
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TEMPORARY BINDER OR LOOSE-SHEET HOLDER.

940,508.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed October 16, 1908. Serial No. 458,062.

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.

My present invention is particularly applicable to the style of binder illustrated and described in Letters Patent No. 878,340, dated February 4, 1908, and my application for patent filed November 11, 1907, Serial No. 401,652, and is, in some respects, an adaptation and an improvement upon the structures there illustrated, although certain features of my present invention are of general application and are applicable and desirable for use in various relations.

The main objects of this invention are: First, to provide an improved temporary binder or loose sheet holder which is very compact and adapted for use as a pocket or hand book. Second, to provide an improved temporary binder or loose sheet holder which may be embodied in a structure of pocket or hand size, as above referred to, which is adapted to hold a large number of leaves, or is effective for holding a small number of leaves. Third, to provide an improved temporary binder or loose sheet holder which may be very quickly and easily adjusted or manipulated to remove or insert sheets or leaves.

Further objects, and objects relating to structural details, 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 plan of a structure embodying the features of my invention, the covers being open and the leaves or sheets being shown in conventional form, the adjusting lever 29 being partially open. Fig. 2 is a detail longitudinal section, taken on a line corresponding to line 2—2 of Fig. 1, the

lids for the cover chambers being shown open. Fig. 3 is a detail inside plan of a structure embodying the features of my invention with the inner walls of the cover removed, the lever 29 being indicated by dotted lines in its open position. Fig. 4 is an enlarged detail section taken on a line corresponding to line 4—4 of Fig. 1.

In the drawing, similar numerals of reference refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, the cover 1 is provided with a chamber 2, adapted to receive the adjusting mechanism of the binder. The cover 3 is provided with a chamber 4, in which I arrange a bar 5 having buttons 6 thereon for securing the binding cords or strips 7 to the cover. The chamber 4 is preferably provided with a hinged lid 8, which is held normally closed by the brads 9, it only being necessary to open the cover when it is desired to renew the binding strips—which is, under ordinary conditions, rarely necessary. In the chamber 2 of the opposite cover, I arrange a ratchet bar 10, to which the adjustable member or cross bar 11 is slidably connected. This cross bar or adjustable member 11 is provided with buttons 12, on which the binding cords or strips 7 are engaged. The cross bar 11 is preferably arranged under the ratchet bar 10 and slidably connected thereto by means of the clip 13, which is upset at 14 to receive the bar, the clip being riveted to the bar at 15—15, there being a rivet at each side of the bar 10. The inner end of the bar 10 is slidably supported by the clip-like support 16, which is secured to the outer wall 17 of the cover 1 by means of the rivets 18, the outer wall being preferably formed of tin or other suitable sheet metal. The adjustable bar or member 11 is detachably connected to the bar 10 by means of the pawl 19, which is pivoted at 20 upon the cross bar. This pawl is provided with a finger piece 21, so that the pawl may be manipulated to disengage it through the slot 22 in the inner wall 23 of the cover 1. This inner wall is provided with a lid 24, which affords access to the chamber for the adjustment or repair of the parts, or for the renewal of the binding strips, should occasion require. The lid is held normally closed by the brads 9.

The pawl 19 is held yieldingly in engagement, and also is held out of engagement, by means of the spring 25, one end of which is secured to the cross bar at 26, and the other end being arranged to engage the outer end of the pawl 19. This spring 25 is preferably U-shaped in form and its support 26 is so arranged that the spring either acts to hold the pawl in its engaging or disengaging position, according to its adjustment. A trip is provided for throwing the pawl into its engaging position at the limit or end of the opening movement of the binder. This is preferably in the form of a projecting finger 27 on the support 16 for the end of the bar 10, the finger being adapted to engage the pawl and throw it to its engaging position when the pawl contacts therewith when the binder is fully opened. The outer end of the bar 10 is connected by the pivot to the lever 29, which is provided with a head or bearing portion 30, pivoted in the inner wall of the cover 1. This lever is adapted, when closed, to lie over and cover the slot 22 for the cover chamber—see dotted lines in Fig. 1. The pivot 28 is arranged eccentrically of the axis of the lever, so that, as the lever is swung, the bar 10 is adjusted, thus tightening or loosening the binder.

The cross bar 11 is provided with a finger piece 31, which is adapted to be manipulated through the slot 22 in the inner cover wall for adjusting the binder, the operation being substantially the same as that of the structure of my patent and application for patent above referred to. This finger piece is adapted to fold down into the cover chamber, or to be raised up, as indicated in Fig. 2. By this arrangement of the adjusting mechanism, very rapid and secure adjustment is obtained, and the binder is one which has a very large capacity, although of small size, a binder of the size illustrated being capable of receiving and effectively supporting from one sheet up to a number sufficient to make at least two inches in thickness.

The clamping bars 32 are preferably formed of metal in order that they may be made small and possess the required strength. For the sake of lightness, I preferably use aluminum.

In the outer faces of the clamping bars, I form longitudinal groove-like hinge sockets 33, adapted to receive and form bearings for the knuckles 34 of the hinge members 35. These hinge members are preferably in the form of sheet metal plates having the cylindrical bead-like knuckles 34 rolled on their outer edges. These knuckles bear in the seats to receive the clamping strain of the binder, making a very compact and strong construction. The clamping bars are secured to the hinge members by means of short pins 36, which engage the knuckles (see Fig. 1), and are secured to the clamp-

ing bars by the rivets 37 which project laterally from the pins, the only work required of these pins being to secure the clamping bars to the covers, so that they are not drawn apart when the binder is opened. The clamping bars are provided with suitable openings through which the binding cords are arranged. This connection for the clamping bars to the covers permits their free pivotal movement, independent of the covers, and vice versa, at the same time securing a very strong and compact hinge connection.

My improved binder is capable of rapid manipulation for the insertion or removal of the sheets or leaves, and holds the same very securely. As previously remarked, the structure is very compact, and, at the same time, is capable of receiving a few or a large number of sheets or leaves.

I have illustrated and described my improvements in detail in the form preferred by me on account of the structural simplicity and economy thereof. I am, however, aware that the same are capable of considerable variation in structural details without departing from my invention, and I desire to be understood as claiming the same specifically, as illustrated, as well as broadly.

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

1. The combination with the covers, one of said covers having a chamber therein, the inner wall of said chamber being slotted, of binding cords; a ratchet bar arranged in said chamber; a support in which the inner end of said ratchet is slidably mounted; a lever to which the outer end of said ratchet is connected, pivotally mounted on the inner wall of said cover, said lever being adapted, when closed, to cover said slot in the inner wall of said chamber; a cross bar to which said binding cords are secured arranged below said ratchet bar; a clip on said cross bar adapted to slidably embrace said ratchet; a pawl pivoted on said cross bar adapted to engage said ratchet; a spring for holding said pawl yieldingly in its engaging position, carried by said cross bar; a trip on said support for the inner end of said ratchet adapted to engage said pawl to throw it into its engaging position when the binder is fully opened; and finger pieces for said crossbar and pawl adapted to be manipulated through said slot.

2. The combination with the covers, one of said covers having a chamber therein, the inner wall of said chamber being slotted, of binding cords; a ratchet bar arranged in said chamber; a support in which the inner end of said ratchet is slidably mounted; a lever to which the outer end of said ratchet is connected, pivotally mounted on the in-

ner wall of said cover, said lever being adapted, when closed, to cover said slot in the inner wall of said chamber; a cross bar to which said binding cords are secured arranged below said ratchet bar; a clip on said cross bar adapted to slidably embrace said ratchet; a pawl pivoted on said cross bar adapted to engage said ratchet; a spring for holding said pawl yieldingly in its engaging position, carried by said cross bar; and finger pieces for said cross bar and pawl adapted to be manipulated through said slot.

3. The combination with the covers, one of said covers having a chamber therein, the inner wall of said chamber being slotted, of binding cords; a ratchet bar arranged in said chamber; a support in which the inner end of said ratchet is slidably mounted; a lever to which the outer end of said ratchet is connected, pivotally mounted on the inner wall of said cover, said lever being adapted, when closed, to cover said slot in the inner wall of said chamber; a cross bar to which said binding cords are secured arranged below said ratchet bar; a clip on said cross bar adapted to slidably embrace said ratchet; a pawl pivoted on said cross bar adapted to engage said ratchet; a spring for holding said pawl yieldingly in its engaging position, carried by said cross bar; and a trip on said support for the inner end of said ratchet adapted to engage said pawl to throw it into its engaging position when the binder is fully opened.

4. The combination with the covers, one of said covers having a chamber therein, the inner wall of said chamber being slotted, of binding cords; a ratchet bar arranged in said chamber; a support in which the inner end of said ratchet is slidably mounted, a lever to which the outer end of said ratchet is connected, pivotally mounted on the inner wall of said cover, said lever being adapted, when closed, to cover said slot in the inner wall of said chamber; a cross bar to which said binding cords are secured arranged below said ratchet bar; a clip on said cross bar adapted to slidably embrace said ratchet; a pawl pivoted on said cross bar adapted to engage said ratchet; and a spring for holding said pawl yieldingly in its engaging position, carried by said cross bar.

5. The combination with the covers, one of said covers having a chamber therein, the inner wall of said chamber being slotted, of binding cords; a ratchet bar arranged in said chamber; a support in which the inner end of said ratchet is slidably mounted; a pivoted lever to which the outer end of said ratchet is connected, said lever being adapted, when closed, to cover said slot in the inner wall of said chamber; a cross bar to which said binding cords are secured slidably connected to said ratchet bar; a pawl

carried by said cross bar adapted to engage said ratchet; means for holding said pawl out of engaging position; and a trip on said support for the inner end of said ratchet adapted to engage said pawl to throw it into its engaging position when the binder is fully opened.

6. The combination with the covers, one of said covers having a chamber therein, of binding cords; a ratchet bar arranged in said chamber; a support in which the inner end of said ratchet is slidably mounted; a pivoted lever to which the outer end of said ratchet is connected; a cross bar to which said binding cords are secured, slidably connected to said ratchet bar; a pawl carried by said cross bar adapted to engage said ratchet; means for holding said pawl out of engaging position; and a trip on said support for the inner end of said ratchet adapted to engage said pawl to throw it into its engaging position when the binder is fully opened.

7. The combination with the covers, one of said covers having a chamber therein, the inner wall of said chamber being slotted, of binding cords; a ratchet bar arranged in said chamber; a support in which the inner end of said ratchet is slidably mounted; a pivoted lever to which the outer end of said ratchet is connected, said lever being adapted, when closed, to cover said slot in the inner wall of said chamber; a cross bar to which said binding cords are secured slidably connected to said ratchet bar; a pawl carried by said cross bar adapted to engage said ratchet; and means for holding said pawl out of engaging position.

8. The combination with the covers, one of said covers having a chamber therein, the inner wall of said chamber being slotted, of binding cords; a ratchet bar arranged in said chamber; a pivoted lever to which the outer end of said ratchet is connected, said lever being adapted, when closed, to cover said slot in the inner wall of said chamber; a cross bar to which said binding cords are secured, slidably connected to said ratchet bar; a pawl pivoted on said cross bar adapted to engage said ratchet; a spring for holding said pawl yieldingly in its engaging position; and a trip to engage said pawl to throw it into its engaging position when the binder is fully opened.

9. The combination with the covers, one of said covers having a chamber therein, of binding cords; a ratchet bar arranged in said chamber; a pivoted lever to which the outer end of said ratchet is connected; a cross bar to which said binding cords are secured, slidably connected to said ratchet bar; a pawl pivoted on said cross bar adapted to engage said ratchet; a spring for holding said pawl yieldingly in its engaging position; and a trip adapted to engage said

pawl to throw it into its engaging position when the binder is fully opened.

10. The combination with the covers, one of said covers having a chamber therein, the inner wall of said chamber being slotted, of binding cords; a ratchet bar arranged in said chamber; a pivoted lever to which the outer end of said ratchet is connected, said lever being adapted, when closed, to cover said slot in the inner wall of said chamber; a cross bar to which said binding cords are secured, slidably connected to said ratchet bar; a pawl pivoted on said cross bar adapted to engage said ratchet; and a spring for holding said pawl yieldingly in its engaging position.

11. The combination with the covers, one of said covers having a chamber therein, the inner wall of said chamber being slotted, of binding cords; a ratchet bar arranged in said chamber; a pivoted lever to which the outer end of said ratchet is connected, said lever being adapted, when closed, to cover said slot in the inner wall of said chamber; a cross bar to which said binding cords are secured, slidably connected to said ratchet bar; a pawl carried by said cross bar adapted to engage said ratchet; means for holding said pawl out of its engaging position; and a trip adapted to engage said pawl to throw it into its engaging position when the binder is fully opened.

12. The combination with the covers, one of said covers having a chamber therein, of binding cords; a ratchet bar arranged in said chamber; a pivoted lever to which the outer end of said ratchet is connected; a cross bar to which said binding cords are secured, slidably connected to said ratchet bar; a pawl carried by said cross bar adapted to engage said ratchet; means for holding said pawl out of its engaging position; and a trip adapted to engage said pawl to throw it into its engaging position when the binder is fully opened.

13. The combination with the covers, one of said covers having a chamber therein, of binding cords; a ratchet bar arranged in said chamber; a pivoted lever to which the outer end of said ratchet is connected; a cross bar to which said binding cords are secured, slidably connected to said ratchet bar; a pawl carried by said cross bar adapted to engage said ratchet; and means for holding said pawl out of its engaging position.

14. The combination with the covers, one of said covers having a chamber therein, the inner wall of said chamber being slotted, of binding cords; a ratchet bar arranged in said chamber; a pivoted lever to which the outer end of said ratchet is connected, said lever being adapted, when closed, to cover said slot in the inner wall of said chamber; a member to which said binding cords are secured, slidably connected to said ratchet

bar; a pawl carried by said member adapted to engage said ratchet; and a finger piece for said member adapted to be manipulated through said slot.

15. The combination with the covers, of binding cords; a ratchet bar; an adjustable member to which said binding cords are connected, mounted on said ratchet bar; a pawl carried by said adjustable member; means for holding said pawl out of its engaging position; and means for automatically throwing said pawl into its engaging position on the complete opening of the binder.

16. The combination with the covers, of binding cords; a member to which said binding cords are secured; an adjustable support to which said member is detachably connected; and means for automatically engaging said connection for said member to said adjustable support.

17. The combination with the covers, of binding cords; a member to which said binding cords are secured; a support to which said member is adjustably connected; and means for automatically engaging said connection for said member to said support on the complete opening of the binder.

18. The combination with the covers, of binding cords; an adjustable bar; an adjustable member to which said binding cords are connected, mounted on said bar; and a pivoted lever to which said bar is connected, said bar being connected to said lever in such a relation to its pivot that the parts are automatically locked in their adjusted or closed position.

19. The combination with a pair of covers, of a pair of clamping bars having holes therethrough through which said binding cords are arranged, said clamping bars having curved groove-like hinge sockets in their outer faces; hinge members formed of strips of sheet metal secured to said covers and having cylindrical knuckles formed on their rear edges adapted to bear in said sockets; retaining pins arranged to engage said knuckles on said hinge members and secured to said clamping bars, and binding cords arranged to connect said covers independently of said clamping bars.

20. The combination with a pair of covers, of a pair of clamping bars having holes therethrough through which said binding cords are arranged, said clamping bars having curved groove-like hinge sockets in their outer faces; hinge members formed of strips of sheet metal secured to said covers and having cylindrical knuckles formed on their rear edges adapted to bear in said sockets, and means for retaining said hinge members in said hinge sockets, and binding cords arranged to connect said covers independently of said clamping bars.

21. The combination with a pair of covers, of a pair of clamping bars having groove-

like hinge sockets in their outer faces; hinge members secured to said covers and having cylindrical knuckles arranged in said sockets; retaining pins arranged to engage
5 said knuckles on said hinge members and secured to said clamping bars, and binding cords arranged to connect said covers independently of said clamping bars.

22. The combination with a pair of covers,
10 of a pair of clamping bars having groove-like hinge sockets in their outer faces; hinge members secured to said covers and having cylindrical knuckles arranged in said sockets, and means for retaining said hinge
15 members in said hinge sockets, and binding cords arranged to connect said covers independently of said clamping bars.

23. The combination with a pair of covers, of a pair of clamping bars having hinge sockets in their outer faces; hinge members 20 secured to said covers and having knuckles arranged in said sockets, and means for retaining said hinge members in said hinge sockets, and binding cords arranged to connect said covers independently of said 25 clamping bars.

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

HARRY F. BUSHONG. [L. S.]

Witnesses:

CLARA E. BRADEN,
GERTRUDE TALLMAN.