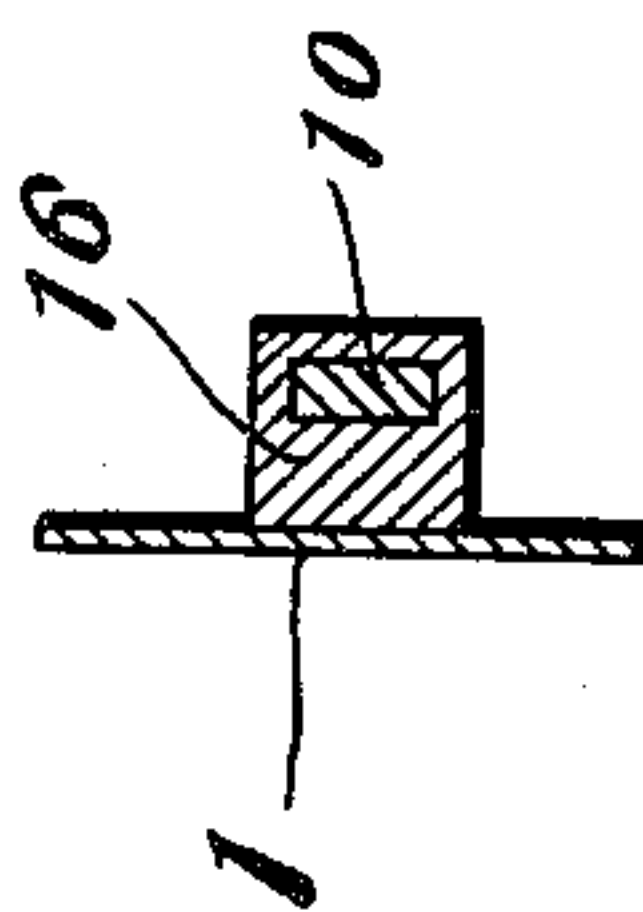
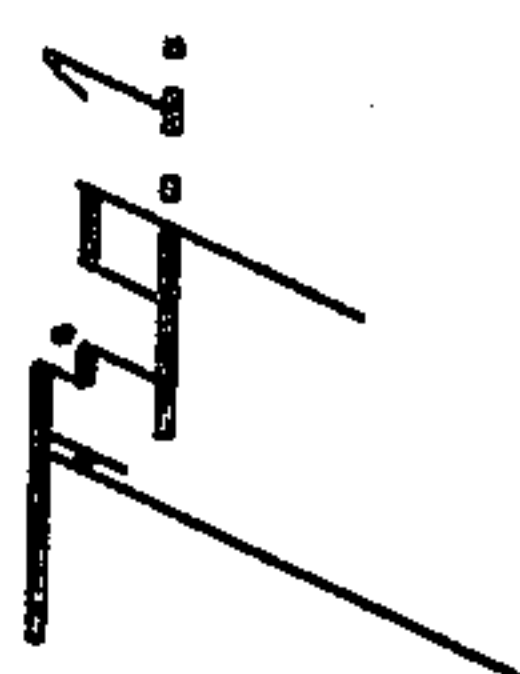
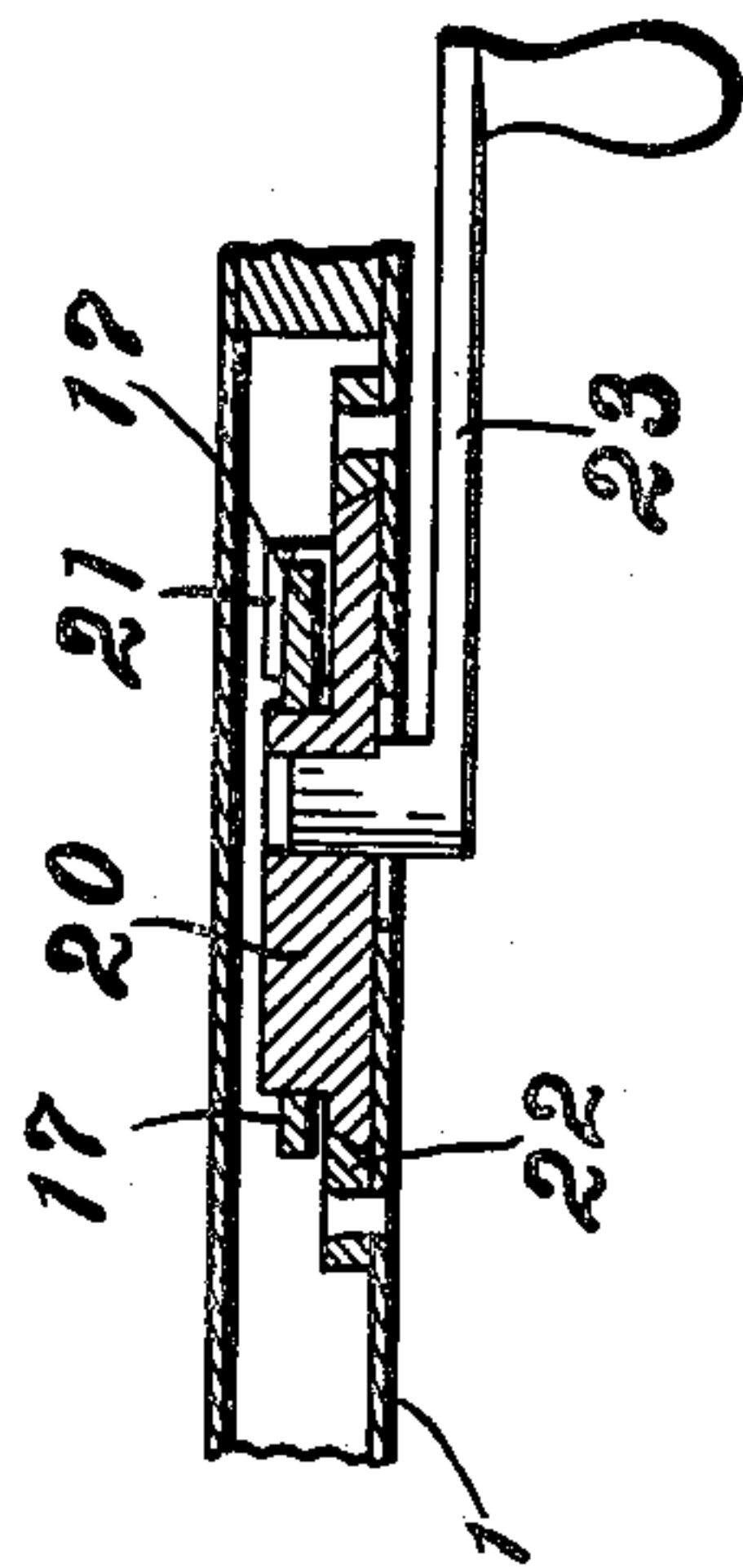
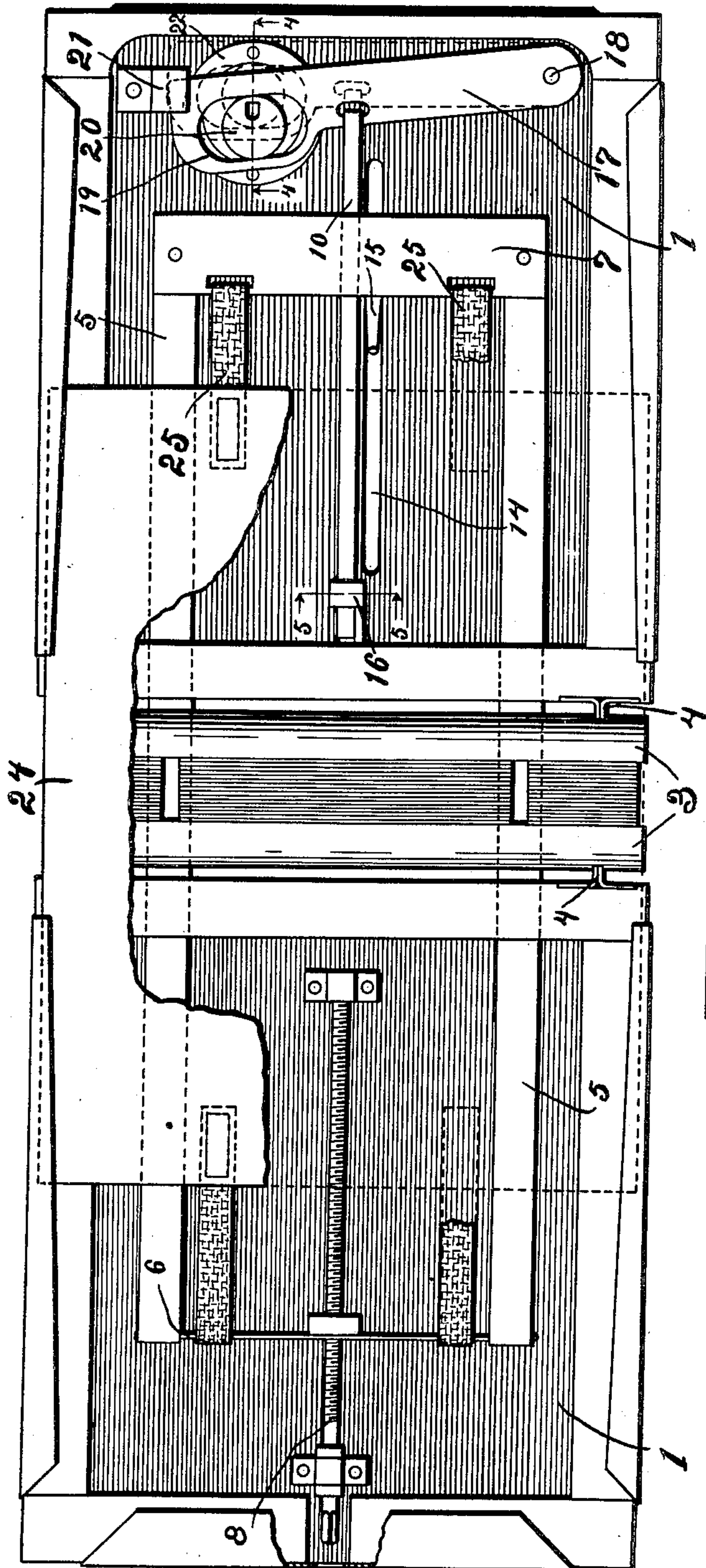


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 TEMPORARY BINDER OR LOOSE SHEET HOLDER.
 APPLICATION FILED NOV. 11, 1907.

914,383.

Patented Mar. 9, 1909.
 2 SHEETS—SHEET 1.



Witnesses
 Lulu Greenfield
 Clara E. Braden

By

Inventor
 Harry P. Bushong
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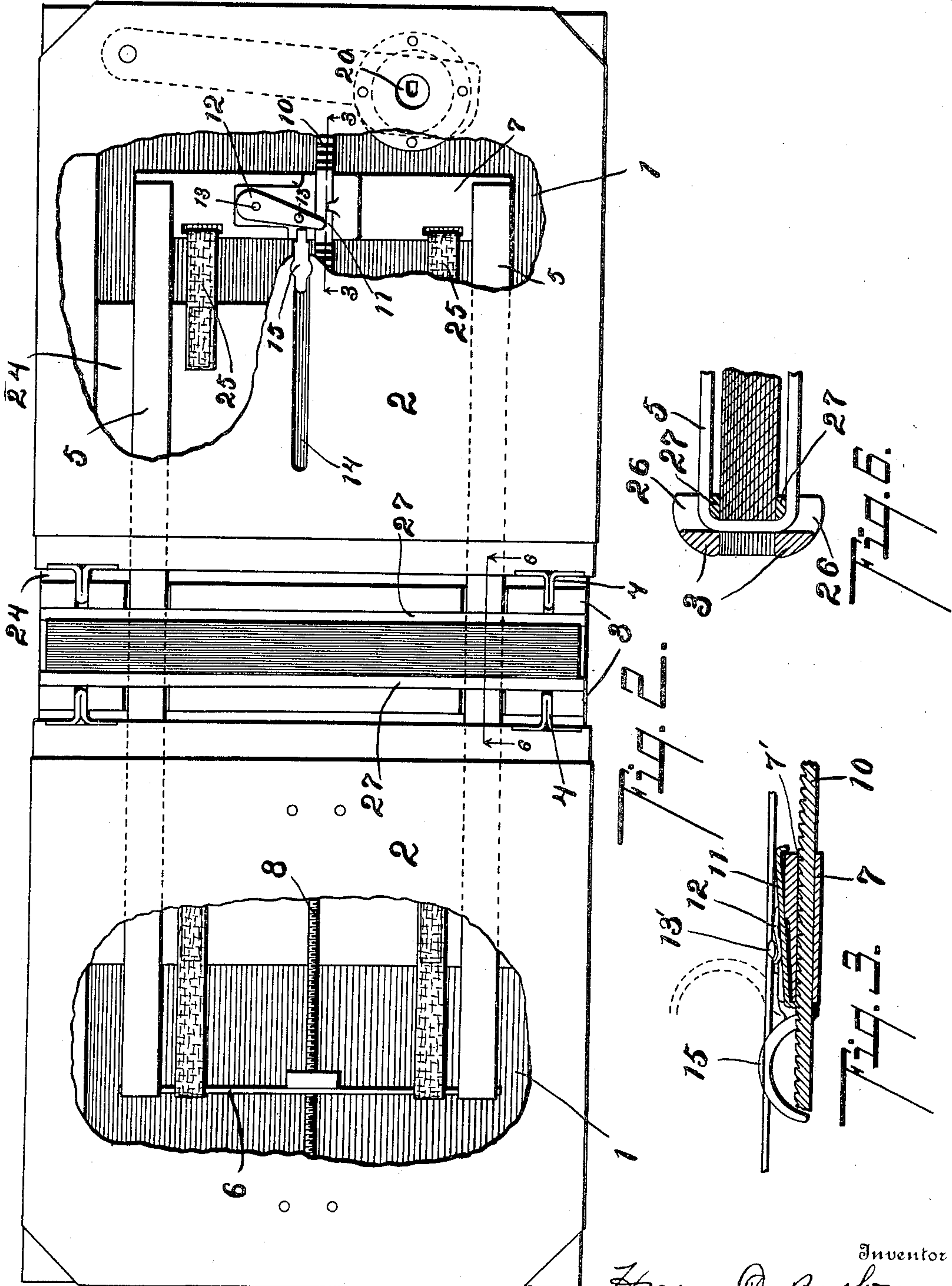
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UNITED STATES PATENT OFFICE.

HARRY F. BUSHONG, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO THE KALAMAZOO LOOSE LEAF BINDER COMPANY, OF KALAMAZOO, MICHIGAN.

TEMPORARY BINDER OR LOOSE-SHEET HOLDER.

No. 914,383.

Specification of Letters Patent.

Patented March 2, 1909.

Application filed November 11, 1907. Serial No. 401,652.

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 my application for Letters Patent filed December 31, 1906, Serial No. 350,267, finally allowed July 11, 1907, and is a modification, and, in some respects, an improvement on the structure there illustrated, although it is applicable for use in various relations.

The main objects of this invention are: first, to provide an improved temporary binder or loose sheet holder which may be very quickly and easily adjusted or manipulated to remove or insert the sheets or leaves; second, to provide an improved temporary binder or loose sheet holder which is of very large capacity; that is, it is adapted to hold a very large number of leaves in proportion to its size, and, at the same time, is effective for holding a small number of leaves; and third, to provide an improved temporary binder or loose sheet holder with a back which is automatically adjusted with the adjusting of the binder, and one which may be easily kept centered as the book is adjusted for different quantities of leaves.

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 rear view of a structure embodying the features of my invention, the covers being open or extended, the rear walls of the covers being removed, and also portions of the back being broken away to better show the mechanism; Fig. 2 is an inside view, the covers being open or extended,

with parts of the inner wall of the covers broken away to better show the mechanism, and leaves or sheets being illustrated in conventional form; Fig. 3 is an enlarged detail, taken on a line corresponding to line 3—3 of Fig. 2; Fig. 4 is an enlarged detail section, taken on a line corresponding to line 4—4 of Fig. 1; Fig. 5 is an enlarged detail section, taken on a line corresponding to line 5—5 of Fig. 1; Fig. 6 is an enlarged detail section, taken on a line corresponding to line 6—6 of Fig. 2, the book being shown closed and the binding cords being shown in full lines.

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 covers 1 are preferably formed with chambers therein to receive the adjusting mechanism of the binder. The binder walls 2 of the covers are preferably of sheet metal on account of strength, so that the covers may be made comparatively thin. The leaf clamping bars 2 are pivotally mounted on the inner ends of the covers, the hinge members 4 being rigidly secured to the covers, and the clamping bars being secured thereto by pivots, so that the clamping bars and covers may move independently on the opening and closing of the binder. As the details of this connection form no part of my present invention, I do not illustrate the same in detail herein.

The covers are connected by the binding cords or strips 5, which are preferably arranged through the clamping bars, as is illustrated in Fig. 6. These binding cords are connected to the adjustable members or cross bars 6 and 7. One of the adjustable members, as 6, is mounted upon the screw 8, which is adapted to be manipulated by means of a suitable key, a key-hole opening 9 being provided in the end of the cover. The cross bar 6 is preferably a spring bar, the advantage of which will be hereinafter pointed out. This adjusting mechanism is the same as that illustrated in Letters Patent, No. 851,276, issued to me on the 23rd day of April, 1907. The other cross bar or adjustable member 7 is slidably mounted on the rack or ratchet bar 10. The rack bar is preferably arranged through the transverse hole 7' in the cross bar. The cross bar 7 is provided with a pawl 11, adapted to en-

gage the rack bar for adjustably securing the cross bar thereon. The pawl 11 is preferably arranged loosely on a suitable seat provided therefor on the rack bar, and is held
 5 in or out of its engaging position by means of the spring 12, which is pivoted at 13, so that it may be swung forward to hold the pawl in its engaging position, or rearward to hold it out of its engaging position. The
 10 spring is provided with a finger piece 13', which may be manipulated through the slot 14 in the inner wall of the cover. The cross bar 7 is also preferably provided with a finger piece 15 adapted to be swung up for
 15 convenience in adjusting the cross bar. This finger piece is adapted to swing down onto the cover chamber when not in use. This rack bar, and the connections for the cross bar thereto, illustrated, is substantially that shown in my application herein-
 20 before referred to. The bar 10 is adjustably supported at its inner end, being arranged in a bearing 16, while its outer end is connected to a pivoted lever 17. The lever 17
 25 is pivoted at 18, and is preferably arranged transversely of the cover at the outer end thereof. The lever 17 is provided with a slot 19 in which the cam 20 is arranged. The swinging end of the lever is held upon
 30 the cam by means of a suitable slip, as 21. The cam 20 is rotatably mounted on the cover, preferably being secured by a ring-like bearing 22, as clearly appears in Fig. 4. The cam is adapted to be manipulated by
 35 means of a key, as 23. By this arrangement, the binder may be quickly adjusted to permit the insertion of the sheets or leaves, or the removal of the same. In adjusting the binder under ordinary circumstances, it
 40 is intended that the rack bar shall be released or shifted to relieve the binding cords, and the cross bar 7 disengaged from the rack bar, which allows the covers and the leaf clamping bars carried thereby to be
 45 drawn apart freely. When it is desired to retract the clamping bars, it may be done by drawing up the member 7 on the rack bar as tightly as it is convenient, and then adjusting the rack bar, which puts stress
 50 upon the clamping bars to retain the sheets or leaves for handling. As the book is designed to receive any number of leaves up to its maximum, the cross bar 6 is preferably a spring bar so that the parts will not be sub-
 55 ject to excessive strain when the cam is tightened with only a few leaves therein. The rack or ratchet bar is preferably adjusted by means of the lever and cam mechanism illustrated, as by this mechanism,
 60 great power is secured in a small compass and it is quite impossible to overstrain the parts, as the continued movement of the cam would release the tension. Another advantage of this adjusting mechanism is
 65 that, when the book is in use,—that is,

when it is laid upon the desk and the leaves or sheets are being turned,—it is desirable that they should not be clamped as tightly as when the book is being handled, as in placing it upon a shelf. By this mechan- 70
 ism, it will be obvious that the clamping members can be eased off or tightened very quickly. A further advantage of this arrangement is that even binders of large size and containing a great many sheets can be 75
 easily adjusted; that is, but little power is required to satisfactorily adjust the binder. The combination of this rapid adjustment mechanism with the screw adjustment shown in my patent hereinbefore referred to, is de- 80
 sirable on account of the great expansion which is thereby secured. Also, by providing adjustable members for the binding cords in each cover, the back strip 24 may be kept properly centered. This is of ad- 85
 vantage, as will be obvious, the title of the book appearing on the back strip. The ends of the back strip are arranged to telescope in the covers and are connected to the cross bars by means of elastic bands 25. This in- 90
 sures the keeping of the back piece taut, and also permits the adjustment of the cross bars. It is obvious that when the sheets of the book are varied greatly by adjusting both of the adjustable members 6 and 7, the 95
 back strip is kept properly centered.

The clamping bars 3 are provided with openings 26 through which the binding cords or strips are arranged. The clamping bars are preferably formed of strips of wood hav- 100
 ing slots cut in their inner edges and strips of metal 27 arranged at their inner corners. These strips of metal strengthen the wood and form bearings for the binding cords.

I have illustrated and described my inven- 105
 tion in detail in the form preferred by me and embodied in the structures of my patent and application hereinbefore referred to. I am, however, aware that it is capable of being embodied in other structures, and as such 110
 embodiment will be readily understood to those skilled in the art to which this invention relates, I do not illustrate the same herein.

Having thus described my invention, what 115
 I claim as new and desire to secure by Letters Patent is:

1. The combination with the covers, of binding cords; cross bars to which said binding cords are secured; means for adjusting 120
 one of said cross bars, carried by one of said covers; a ratchet bar on which the other of said cross bars is slidably mounted, carried by the other cover; a pawl carried by said cross bar for adjustably securing the same to said 125
 ratchet bar; a bearing for the inner end of said ratchet bar; a pivoted lever to which the outer end of said ratchet bar is connected; a cam for shifting said lever; a back piece adapted to telescope into said covers; and 130

connections for said back piece to said cross bars.

2. The combination with the covers, of binding cords; cross bars to which said binding cords are secured; means for adjusting one of said cross bars, carried by one of said covers; a ratchet bar on which the other of said cross bars is slidably mounted, carried by the other cover; a pawl carried by said cross bar for adjustably securing the same to said ratchet bar; a bearing for the inner end of said ratchet bar; a pivoted lever to which the outer end of said ratchet bar is connected; and a cam for shifting said lever.

3. The combination with the covers, of binding cords; cross bars to which said binding cords are secured; means for adjusting one of said cross bars, carried by one of said covers; a bar on which the other of said cross bars is slidably mounted, adjustably carried by the other cover; means for adjustably securing said cross bar to said bar upon which it is mounted; a pivoted lever to which said bar is connected; means for shifting said lever; a back piece adapted to telescope into said covers; and connections for said back piece to said cross bars.

4. The combination with the covers, of binding cords; cross bars to which said binding cords are secured; means for adjusting one of said cross bars, carried by one of said covers; a bar on which the other of said cross bars is slidably mounted, adjustably carried by the other cover; means for adjustably securing said cross bar to said bar upon which it is mounted; a pivoted lever to which said bar is connected; and means for shifting said lever.

5. The combination with the covers, of binding cords; cross bars to which said binding cords are secured; means for adjusting one of said cross bars, carried by one of said covers; a bar on which the other of said cross bars is slidably mounted, adjustably carried by the other cover; means for adjustably securing said cross bar to said bar upon which it is mounted; means for adjusting said bar on which said cross bar is mounted; a back piece adapted to telescope into said covers; and connections for said back piece to said cross bars.

6. The combination with the covers, of binding cords; cross bars to which said binding cords are secured; means for adjusting one of said cross bars, carried by one of said covers; a bar on which the other of said cross bars is slidably mounted, adjustably carried by the other cover; means for adjustably securing said cross bar to said bar upon which it is mounted; and means for adjusting said bar on which said cross bar is mounted.

7. The combination with the covers, of binding cords; cross bars to which said binding cords are secured; a bar on which one of said cross bars is slidably mounted; means

for securing said cross bar in its adjusted position on said bar; a screw for adjusting the other cross bar, carried by the other cover; and a back adapted to telescope into said covers connected to said cross bars.

8. The combination with the covers, of binding cords; cross bars to which said binding cords are secured; a bar on which one of said cross bars is slidably mounted; means for securing said cross bar in its adjusted position on said bar; means for adjusting the other cross bar carried by the other cover; and a back adapted to telescope into said covers connected to said cross bars.

9. The combination with the covers, of binding cords; adjustable members to which said binding cords are secured; means for adjusting said members; and a back piece adapted to telescope into said covers connected to said members by yielding connections.

10. The combination with the covers, of binding cords; adjustable members to which said binding cords are secured; means for adjusting said members; and a back piece adapted to telescope into said covers connected to said members.

11. The combination with the covers, of binding cords; a cross bar to which said binding cords are secured; a ratchet bar on which said cross bar is slidably mounted; a pawl carried by said cross bar for adjustably securing the same to said ratchet bar; a bearing for the inner end of said ratchet bar; a pivoted lever to which the outer end of said ratchet bar is connected; and a cam for shifting said lever.

12. The combination with the covers, of binding cords; a cross bar to which said binding cords are secured; a ratchet bar on which said cross bar is slidably mounted; a pawl carried by said cross bar for adjustably securing the same to said ratchet bar; a bearing for the inner end of said ratchet bar; a pivoted lever to which the outer end of said ratchet bar is connected; and means for shifting said lever.

13. The combination with the covers, of binding cords connected to one of the covers; a cross bar to which said binding cords are secured; a bar on which said cross bar is slidably mounted, adjustably arranged in the other cover; means for adjustably securing said cross bar to said bar upon which it is mounted; and a lever and cam mechanism for adjusting said bar on which said cross bar is mounted.

14. The combination with the covers, of binding cords connected to one of the covers; a cross bar to which said binding cords are secured; a bar on which said cross bar is slidably mounted, adjustably arranged in the other cover; means for adjustably securing said cross bar to said bar upon which it is mounted; and means for adjusting said bar on which said cross bar is mounted.

15. The combination with the covers, of binding cords; an adjustable bar to which said binding cords are adjustably connected; a pivoted lever to which said bar is connected; and a cam for shifting said lever.

16. The combination with the covers, of binding cords; a bar adjustably mounted to one of the covers; a member to which said binding cords are connected mounted on said bar to be adjusted independently of the adjustment of the bar, whereby said member may be adjusted on said bar to take up the slack of the binding cords, and said bar adjusted to apply stress to the binding cords.

17. The combination with the covers, of binding cords; a member to which said binding cords are secured; and an adjustable support to which said member is detachably connected.

18. The combination with the covers of binding cords; a spring member to which the said binding cords are secured, carried by one of said covers; a cross-bar to which the said cords are secured, carried by the other cover; a support for said cross-bar; a pivoted lever to which said support is connected; and a cam for actuating said lever.

19. The combination with the covers of binding cords; a cross-bar to which the said cords are secured; a support for said cross-bar; a pivoted lever to which said support is connected; and a cam for actuating said lever.

20. The combination with the covers of binding cords; a spring member to which the said binding cords are secured, carried by one

of said covers; a pivoted lever to which said binding cords are connected; and a cam for actuating said lever.

21. The combination with the covers of binding cords; adjusting members therefor carried by one of said covers; a lever to which said binding cords are connected, carried by the other cover; and a cam for adjusting said lever.

22. The combination with the covers, of binding cords connected to one of the covers; and means for adjusting said cords carried by the other cover comprising an adjustable member, and an actuating cam for said adjustable member, said cam being adapted to be adjusted by a key arranged through the outer wall of the cover.

23. The combination with the covers, of binding cords; an adjusting means for said binding cords consisting of a pivoted lever having a slot therein; and a cam arranged to engage said slot, said cam being arranged to be adjusted from the outside of the cover.

24. The combination with the covers, of binding cords; an adjusting means for said binding cords consisting of a pivoted lever having a slot therein; and a cam arranged to engage said slot.

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

HARRY F. BUSHONG. [L. s.]

Witnesses:

LUELLA G. GREENFIELD,
CLARA E. BRADEN.