

P. A. BOWEN.
SECTIONAL POST BINDER BALL LOCK.
APPLICATION FILED SEPT. 9, 1909.

962,416.

Patented June 28, 1910.

2 SHEETS—SHEET 1.

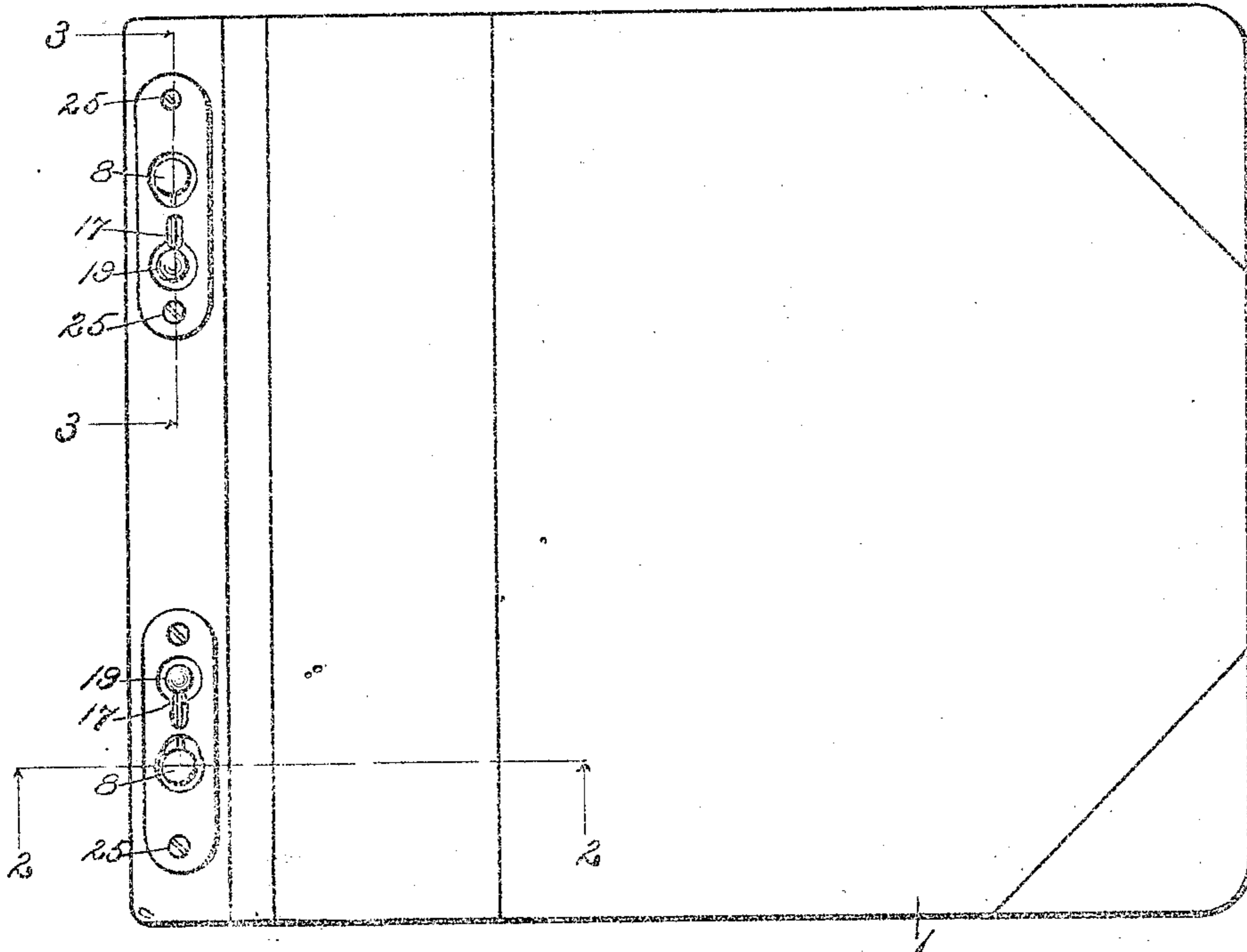
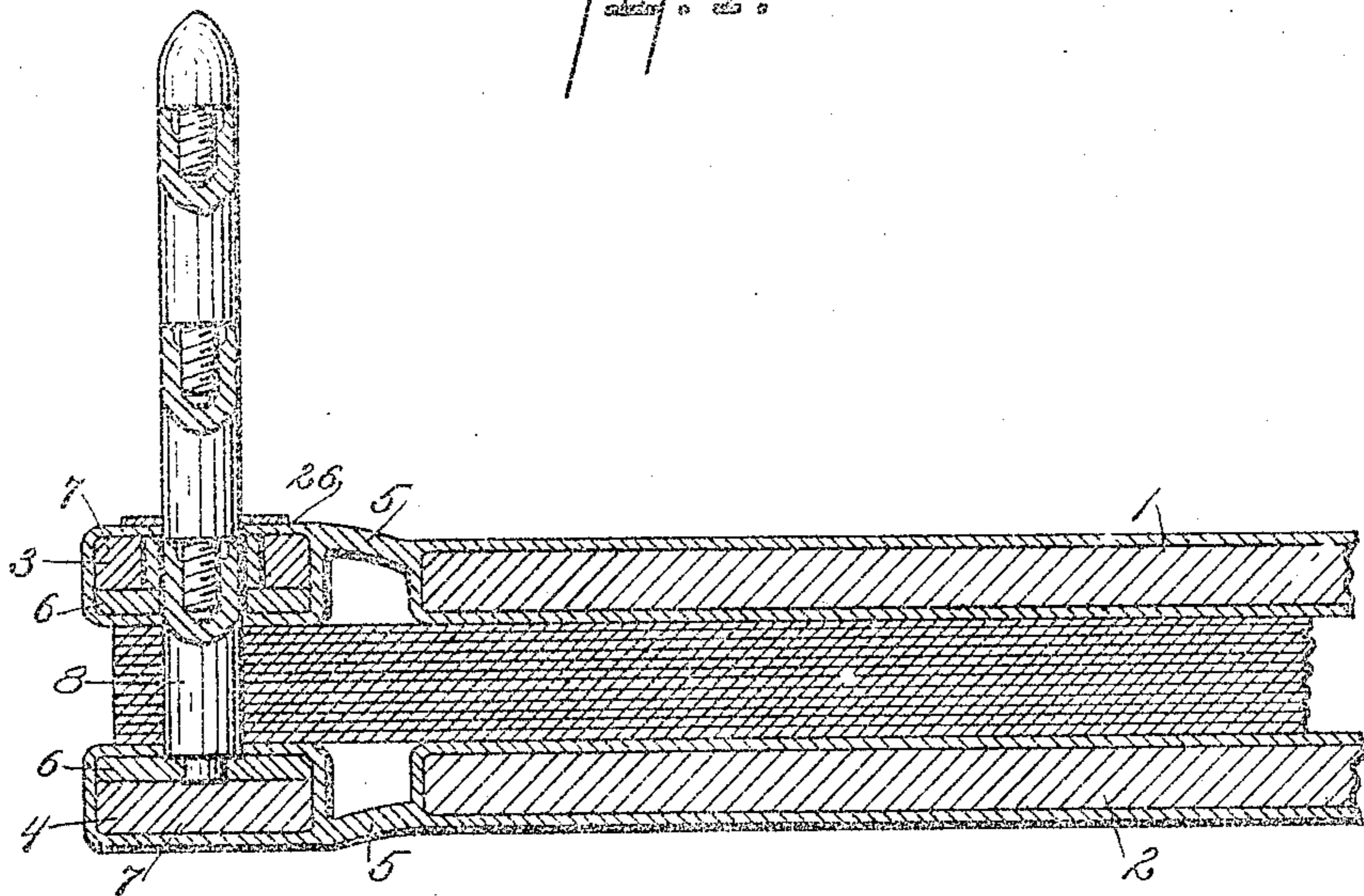


Fig. 1.



Inventor

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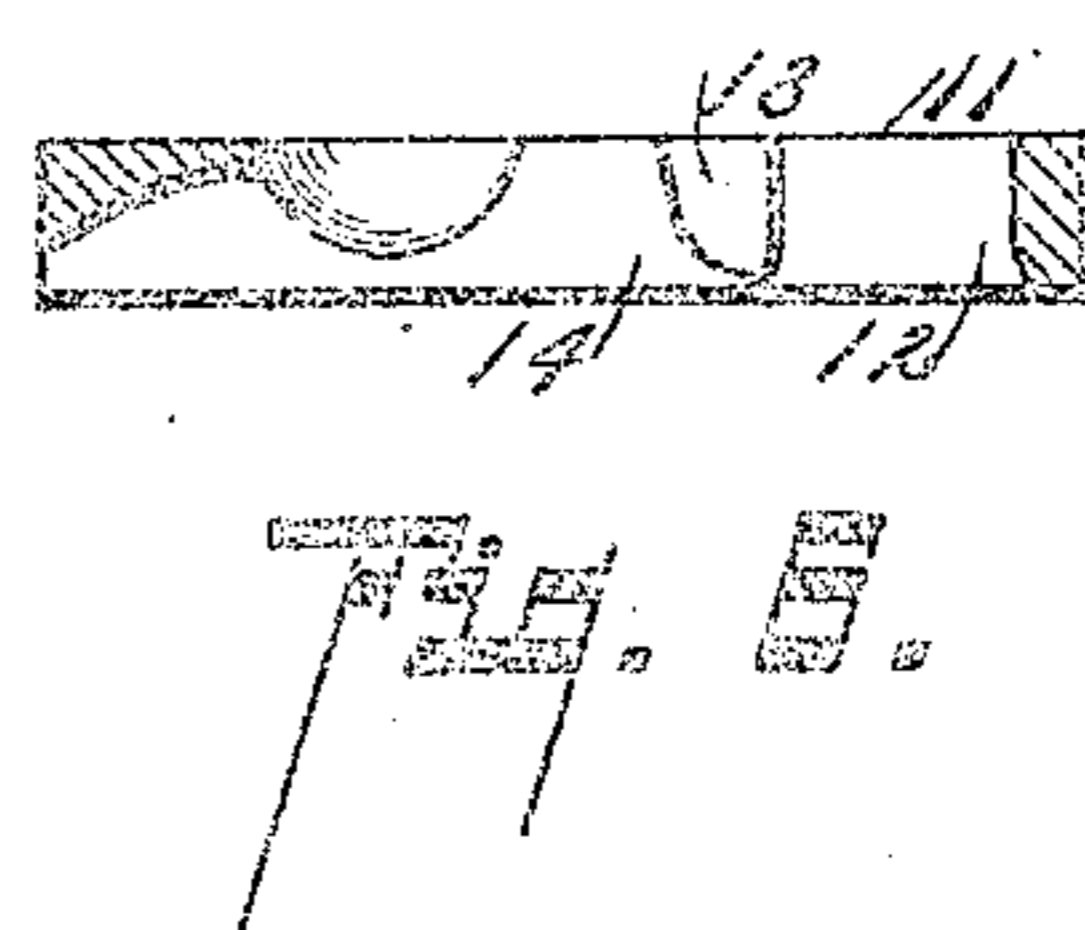
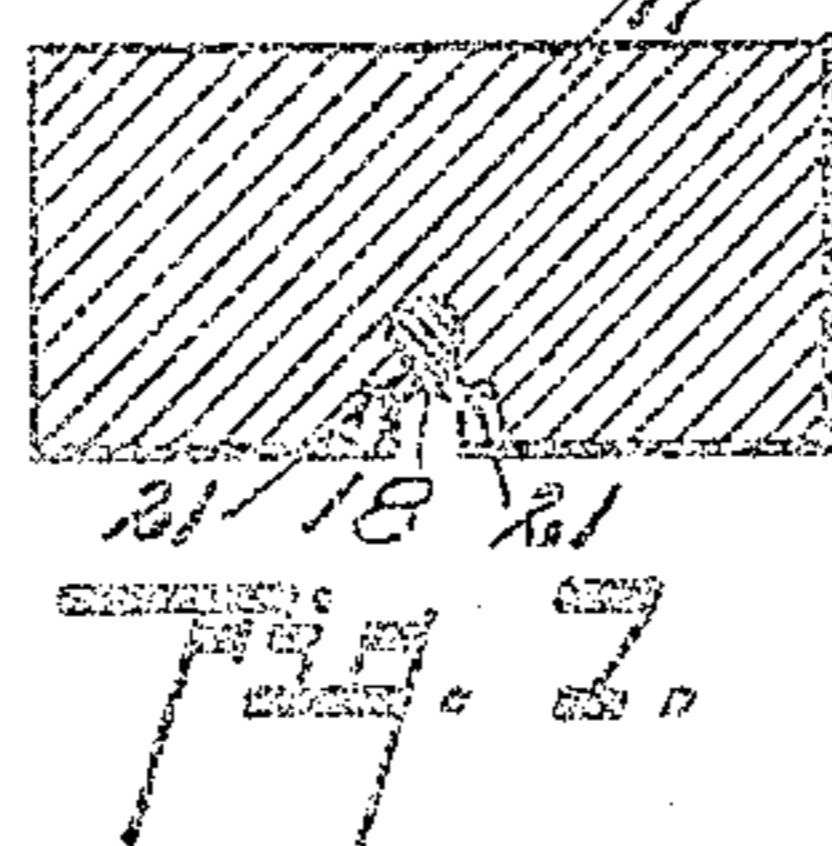
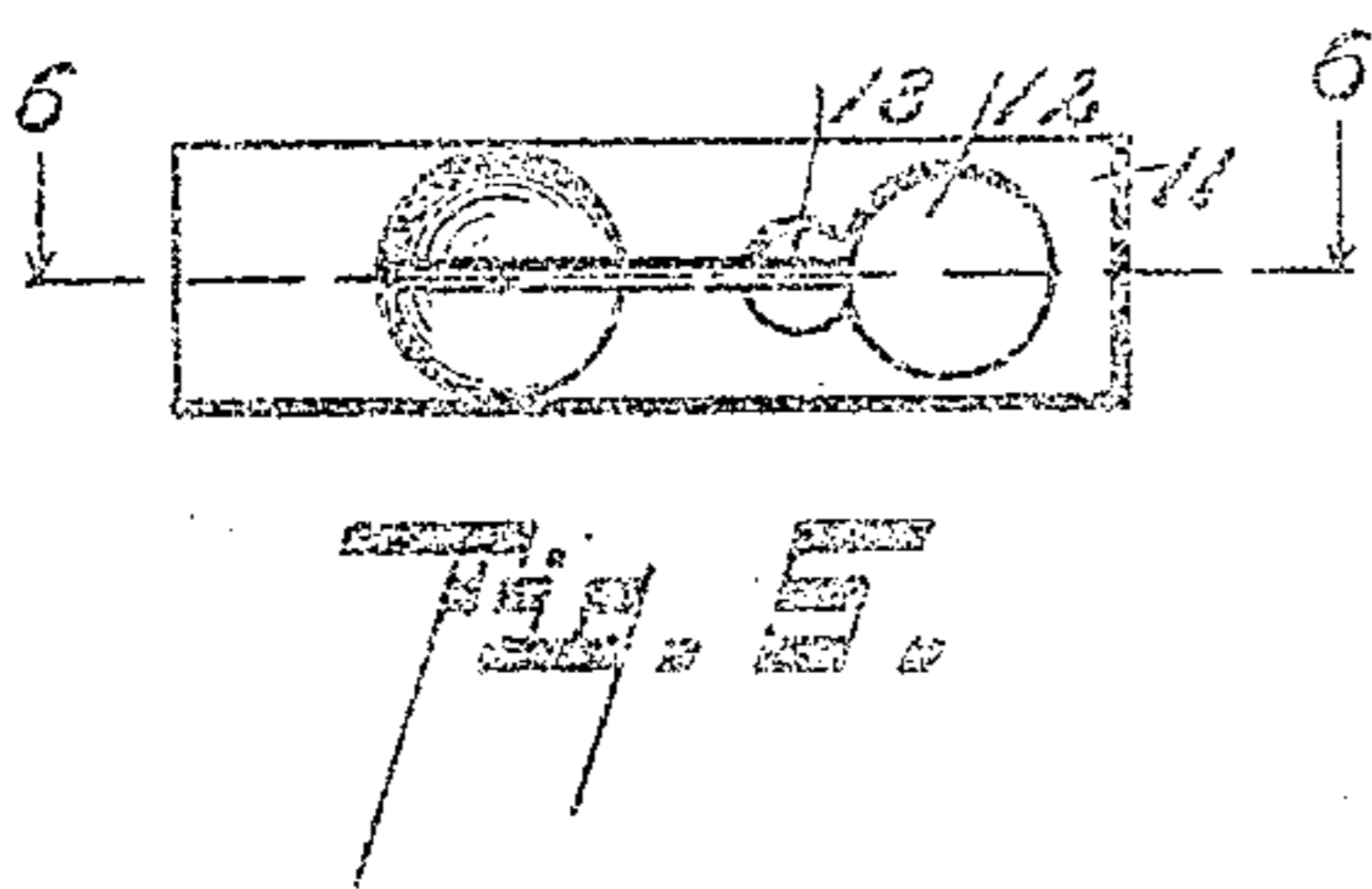
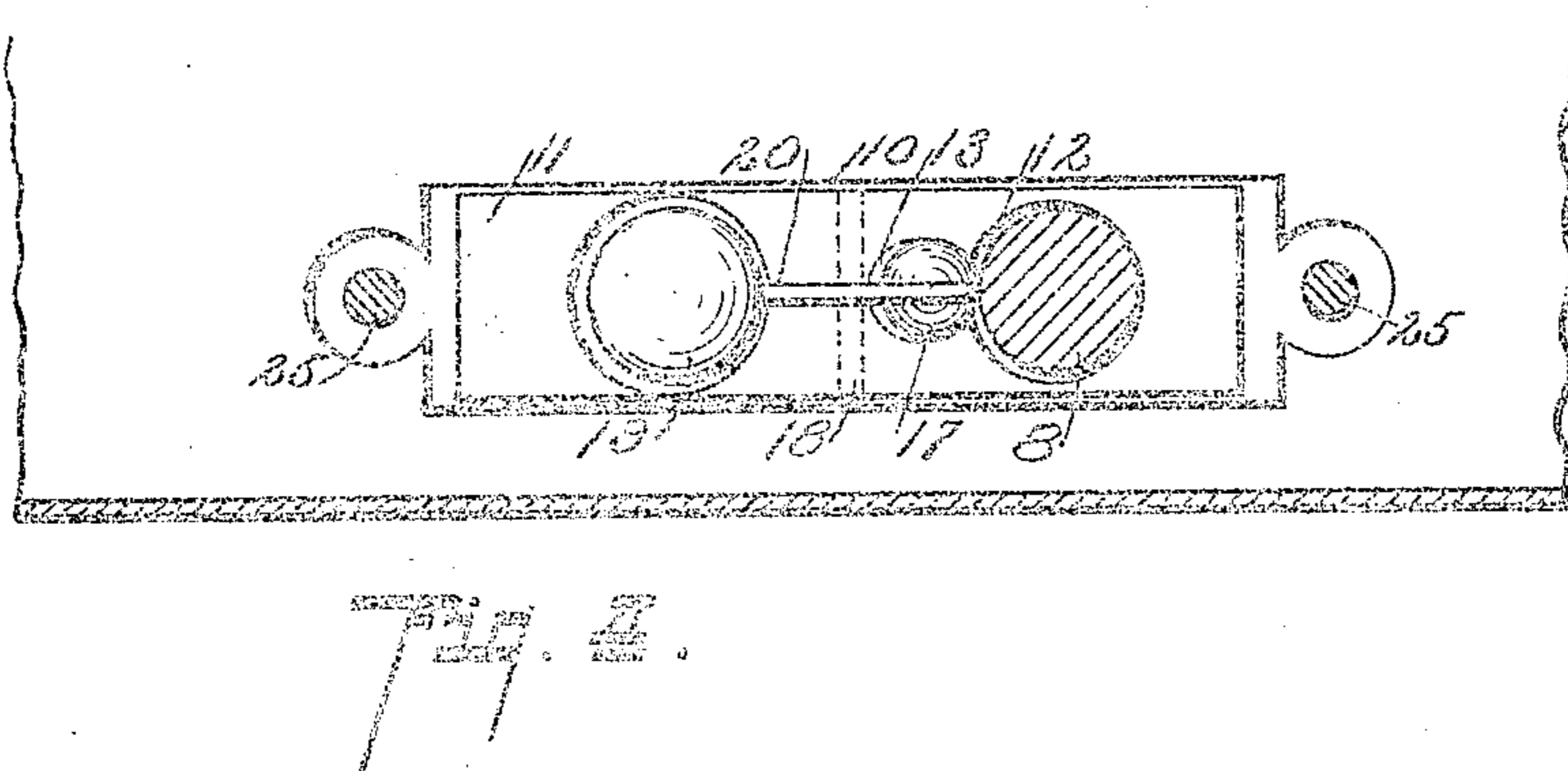
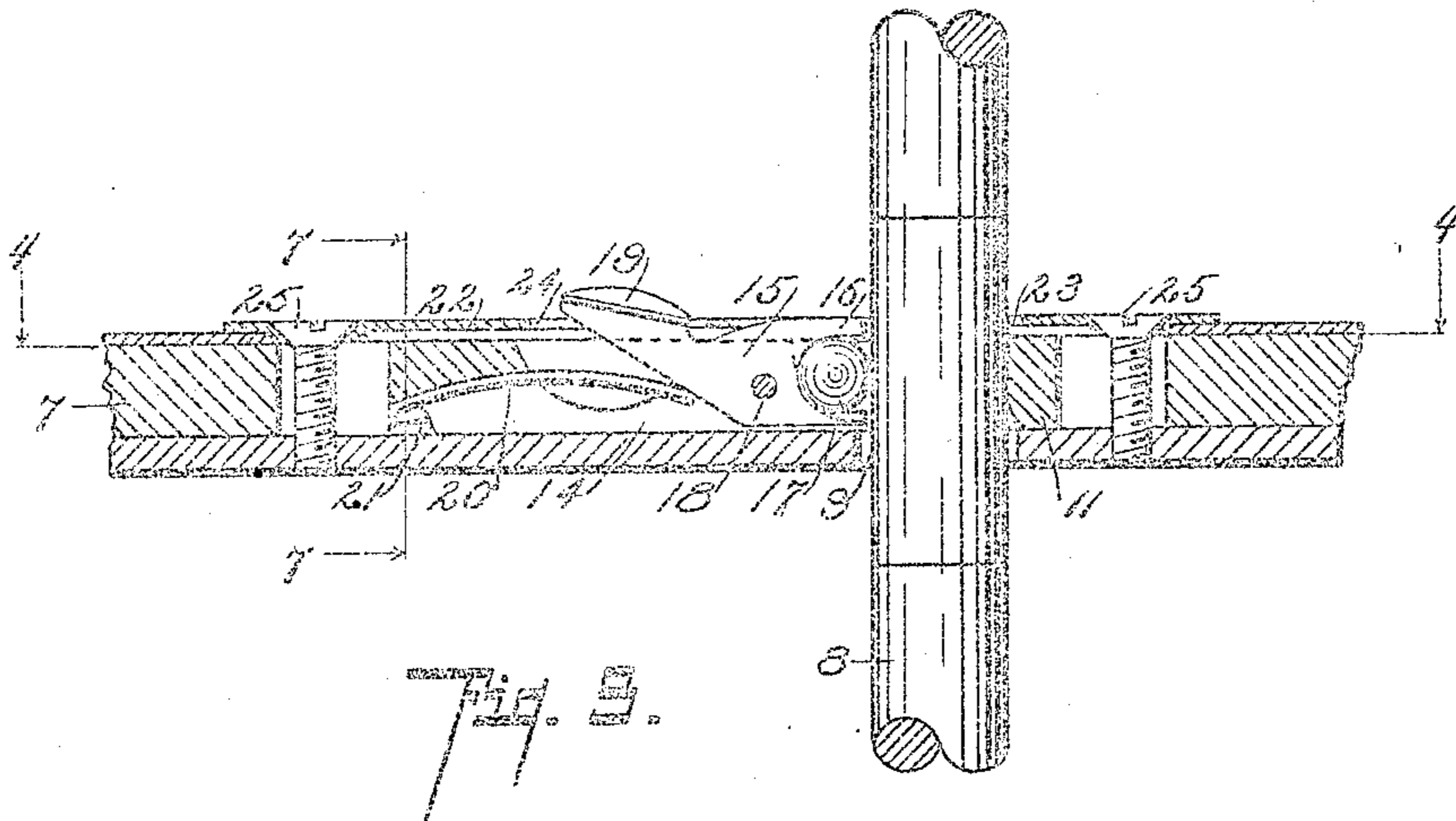
Fig. 2. Philip A. Bowen
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Attorneys

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2 SHEETS—SHEET 2



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UNITED STATES PATENT OFFICE.

PHILIP A. BOWEN, OF NEWARK, NEW JERSEY, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE HEINN COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

SECTIONAL POST-BINDER BALL-LOCK.

962,416.

Specification of Letters Patent. Patented June 28, 1910.

Application filed September 9, 1909. Serial No. 518,921.

To all whom it may concern:

Be it known that I, PHILIP A. BOWEN, a citizen of the United States, residing at Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Sectional Post-Binder Ball-Locks, 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 a temporary binder or loose sheet holder which may be very rapidly adjusted to permit the insertion or removal of leaves and sheets, and which, when adjusted, is very secure. Second, to provide an improved temporary binder in which the parts are very simple and economical to produce, and easily assembled, and should occasion require, easily disassembled.

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 plan view of a binder embodying the features of my invention. Fig. 2 is an enlarged longitudinal detail section taken on a line corresponding to line 2, 2 of Fig. 1, portions of the post being shown in full line. Fig. 3 is an enlarged detail transverse section, taken on a line corresponding to line 3, 3 of Fig. 1, parts being shown in full lines, to better show their relation. Fig. 4 is a detail sectional view taken on a line corresponding to line 4, 4 of Fig. 3. Fig. 5 is a plan view of one of the clutch blocks, with the clutch lever and spring removed. Fig. 6 is a central section with lever and spring removed. Fig. 7 is a cross section of the block taken on a line corresponding to line 7, 7 of Fig. 3.

In the drawings, similar reference characters 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 structure 55 illustrated is provided with a pair of covers 1 and 2, to which the clamping bars or members 3 and 4 respectively are secured, by means of hinged portions 5. The clamping members 3 and 4 are preferably formed of 60 pieces of metal 6, and pieces of wood 7, rigidly secured together, the metal pieces being arranged on the inside of the wood pieces. The binder posts 8, which are illustrated of the sectional type, are rigidly secured to the metal piece 6 of one of the 65 clamping members, the other section of the posts being attachably secured together by means of screws, as is illustrated. (See Fig. 2.) The metal piece of the clamping member 3 is provided with holes 9 adapted to receive the posts and the wood piece is provided with the chambers 10, which embrace 70 these holes. These chambers 10 are adapted to receive the clutch mechanism for adjustably securing the cover bar or clamping member 3 upon the posts. This clutch mechanism preferably consists of a block 11, preferably rectangular in shape, adapted to fit into the chamber 10. The block is provided with a 75 hole 12, adapted to receive the post. At one side of the hole 12 is a clutch ball seat 13, which opens on one side into the hole 12 for the post. The inner wall of the seat is inclined outwardly relative to the post, so that on the outward movement of the clamping member the ball draws down, into clamping engagement with the post. To release the bar this ball is held in an elevated position, thereby preventing its wedge or clutch action. The block is also provided with a 80 longitudinal slot 14 adapted to receive the lever 15. This lever is forked at one end, as 16, to receive the clutch ball 17, so that when the lever is actuated on its pivot 18 by pushing on the finger piece 19 the ball is elevated, thereby preventing its clutch action, and permitting the bar 3 to be raised upwardly on the post. A spring 20 is provided for holding the clutch ball normally 85 in its position, the spring engaging the lever, throwing the finger piece upwardly, and thereby throwing the ball downwardly in its seat. This spring is arranged in the slot 14 and is preferably secured by the retaining lugs 21, which are upset on the block by means of a punch or the like. The spring is thus supported so that it is impossible for 90 95 100 105

it to become disengaged from the lever 15, as it is effectively guided by the walls of the slot.

The block 11 is retained in the chamber 10 preferably by means of a retaining escutcheon-like plate 22. This plate is provided with a hole 23 adapted to receive the posts, and with a hole 24 adapted to receive the finger piece. (See Figs. 1 and 3.) The plate is preferably retained by means of screws 25 which are threaded into the metal piece 6 and the clamping bar. The plate 22 also serves as a finishing plate, as it is preferably arranged over the covering 26 for the clamping bars, this covering being preferably leather, and formed integral with the hinged portions 5, by which the covers 1 and 2 are connected to the clamping bars. When the retaining plate is thus arranged, it covers the edges of the opening formed in the covering above the chamber 10.

By thus forming and arranging the parts, they are very economically produced and can be very easily assembled. It will be obvious that the entire clutch mechanism is secured in place by two screws, 25.

In use, the binder may be adjusted to clamp the leaves merely by pressing down upon the clamping bar 3 as the clutch ball seat is shaped so that this movement releases the clutch. When it is desired to release the binder, it is only necessary to press down upon the finger piece, when the clamping bar can be elevated upon or off from the posts. It remains in whatever position it is adjusted to upon the posts, so that the leaves can be readily changed or transposed, as may be desired.

While the mechanism is economical to produce, it is at the same time very effective for the purpose, and is strong and durable. The seat for the clutch ball is preferably formed by drilling a hole at an angle to the hole for the binder posts, and so that the seat will open into the hole for the post. The ball actuating lever being forked retains the ball in its seat effectively, though this might be accomplished by other means. The forked lever is, however, very desirable and advantageous, as it positively carries the ball into and out of its engaging position.

I have illustrated and described my improved binder in detail in the form preferred by me on account of its structural simplicity, and the convenience with which the parts may be constructed and assembled, and adjusted when in use. I am, however, aware that it is capable of considerable variation in details. I desire to be understood as claiming my invention broadly as well as specifically.

I claim—

1. The combination with the clamping members; posts secured to one of said clamp-

ing members, the other being provided with holes adapted to receive said posts; clutch blocks arranged in chambers provided therefor in said clamping member having said holes therethrough, said clutch blocks having holes therethrough, adapted to receive said posts and clutch ball seats therein, said ball seats opening at one side into said holes for said posts, the inner walls of the said seats being outwardly inclined relative to said posts, and blocks also having longitudinal slots therein opening into said clutch ball seats and finger piece cavities in their outer faces; clutch balls arranged in said ball seats to engage said balls and having finger pieces on their outer ends, pivoted in said slots in said blocks; and springs arranged in said slots to engage said levers.

2. The combination with the clamping members comprising inner pieces of metal and outer pieces of wood rigidly secured together, posts secured to the metal piece of one clamping member, the metal piece of the other clamping member being provided with holes adapted to receive said posts and the wood piece thereof being provided with chambers into which said holes open; clutch blocks arranged in said chambers in said clamping member, said clutch blocks having holes therethrough adapted to receive said posts and clutch ball seats therein, said ball seats opening at one side into said holes for said posts; clutch balls arranged in said ball seats to engage said posts; levers carried by said blocks and arranged to engage said balls and having finger pieces thereon, retaining plates having holes therein adapted to receive said posts and the finger pieces of said levers arranged over said chambers in said clamping member; screws for securing said plates threaded into the metal piece of said clamping member, and a covering for said clamping members, said retaining plates being arranged over said covering.

3. The combination with the clamping members comprising inner pieces of metal and outer pieces of wood rigidly secured together, posts secured to the metal piece of one clamping member, the metal piece of the other clamping member being provided with holes adapted to receive said posts and the wood piece thereof being provided with chambers into which said holes open; clutch blocks arranged in said chambers in said clamping member, said clutch blocks having holes therethrough adapted to receive said posts and clutch ball seats therein, said ball seats opening at one side into said holes for said posts; clutch balls arranged in said ball seats to engage said posts; levers carried by said blocks and arranged to engage said balls and having finger pieces thereon, retaining plates having holes therein adapted to receive said posts and the finger pieces of said levers arranged over said chambers in

said clamping member; and screws for securing said plates threaded into the metal piece of said clamping member.

4. The combination with the clamping members comprising inner pieces of metal and outer pieces of wood rigidly secured together, posts secured to the metal piece of one clamping member, the metal piece of the other clamping member being provided with holes adapted to receive said posts and the wood piece thereof being provided with chambers into which said holes open; clutch blocks arranged in said chambers in said clamping member, said clutch blocks having holes therethrough adapted to receive said posts and clutch ball seats therein, said ball seats opening at one side into said holes for said posts; clutch balls arranged in said ball seats to engage said posts; levers carried by said blocks and arranged to engage said balls; binder covers; and a covering for said clamping members secured to said binder covers, and forming a hinge connection therefor to said clamping members, said retaining plates being arranged over said covering.

5. The combination with the clamping members; posts secured to one of said clamping members, the other being provided with holes adapted to receive said posts; clutch blocks arranged in chambers provided therefor in said clamping member having holes therethrough, said clutch blocks having holes therethrough adapted to receive said posts, and clutch ball seats therein, said ball seats opening at one side into said holes for said posts; clutch balls arranged in said seats to engage said posts; levers carried by said blocks arranged to engage said balls; springs for said levers; retaining plates having holes therein adapted to receive said posts arranged over said chambers in said clamping member; and a covering for said clamping members, said retaining plates being arranged over said covering.

6. The combination with the clamping members; posts secured to one of said clamping members, the other being provided with holes adapted to receive said posts; clutch blocks arranged in chambers provided therefor in said clamping member having holes therethrough, said clutch blocks having holes therethrough adapted to receive said posts, and clutch ball seats therein, said ball seats opening at one side into said holes for said posts; clutch balls arranged in said seats to engage said posts; levers carried by said blocks arranged to engage said balls; springs for said levers; and retaining plates having holes therein adapted to receive said posts arranged over said chambers in said clamping member.

7. The combination with the clamping members; posts secured to one of said clamping members, the other being provided with

holes adapted to receive said posts; clutch blocks arranged in chambers provided therefor in said clamping member having holes therethrough, said clutch blocks having holes therethrough adapted to receive said posts, and clutch ball seats therein, said ball seats opening at one side into said holes for said posts; clutch balls arranged in said seats to engage said posts; levers carried by said blocks arranged to engage said balls; and springs for said levers.

8. The combination with a binding post, of a clamping member having a hole therethrough for said post; a clutch block arranged in a chamber provided therefor in said clamping member, said clutch block having a hole therethrough adapted to receive said post, and a clutch ball seat therein said ball seat opening at one side into said hole for said post, the inner wall of the said seat being outwardly inclined relative to said post, said block also having a longitudinal slot therein opening into said clutch ball seat, and a finger cavity in its outer face; a clutch ball arranged in said ball seat to engage said post; a lever forked at one end to engage said ball and having a finger piece on its other end, pivoted in said slot in said block; and a spring arranged in said slot to engage said lever.

9. The combination with a binding post, of a clamping member having a hole therethrough for said post; a clutch block arranged in a chamber provided therefor in said clamping member, said clutch block having a hole therethrough adapted to receive said post, and a clutch ball seat therein, said ball seat opening at one side into said hole for said post, a clutch ball arranged in said ball seat to engage said post; a lever arranged to engage said ball; a spring arranged to engage said lever; a retaining plate having holes therein adapted to receive said post and the finger piece of said lever, arranged over said chamber in said clamping member; and a covering for said clamping member, said retaining plate being arranged over said covering.

10. The combination with a binding post, of a clamping member having a hole therethrough for said post; a clutch block arranged in a chamber provided therefor in said clamping member, said clutch block having a hole therethrough adapted to receive said post, and a clutch ball seat therein, said ball seat opening at one side into said hole for said post, a clutch ball arranged in said ball seat to engage said post; a lever arranged to engage said ball; a spring arranged to engage said lever; and a retaining plate having holes therein adapted to receive said post and the finger piece of said lever, arranged over said chamber in said clamping member.

11. The combination with a binding post,

of a clamping member having a hole there-
through for said post; a clutch block ar-
ranged in a chamber provided therefor in
said clamping member, said clutch block
5 having a hole therethrough adapted to re-
ceive said post, and a clutch ball seat therein,
said ball seat opening at one side into said
hole for said post, a clutch ball arranged in
said ball seat to engage said post; a lever
10 arranged to engage said ball; and a spring
arranged to engage said lever.

12. The combination with a binding post,
a clamping member having a hole there-
through for said post, a clutch block carried
15 by said clamping member, said clutch block
having a hole therethrough adapted to re-
ceive said post, and a clutch ball seat therein,
said clutch ball seat opening at one side into
said opening for said post, the inner wall of
20 said seat being inclined outwardly relative to
the said post, a clutch ball arranged in said

seat to engage said post, and a lever for
elevating said ball in its said seat, said lever
being positioned to be actuated by pressing
inwardly relative to said clamping member. 25

13. The combination with a binding post,
a clamping member having a hole there-
through for said post, a clutch block having
a clutch ball seat therein, the inner wall of
said seat being inclined outwardly relative 30
to the said post, a clutch ball arranged in
said seat to engage said post, and a lever for
elevating said ball in its said seat, said lever
being positioned to be actuated by pressing
inwardly relative to said clamping member. 35

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

PHILIP A. BOWEN. [L. s.]

Witnesses:

FREDK. C. FRAENTZEL,
EVELYN R. LESSER.