

W. P. PITT.
 LOOSE SHEET BINDER.
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943,844.

Patented Dec. 21, 1909.

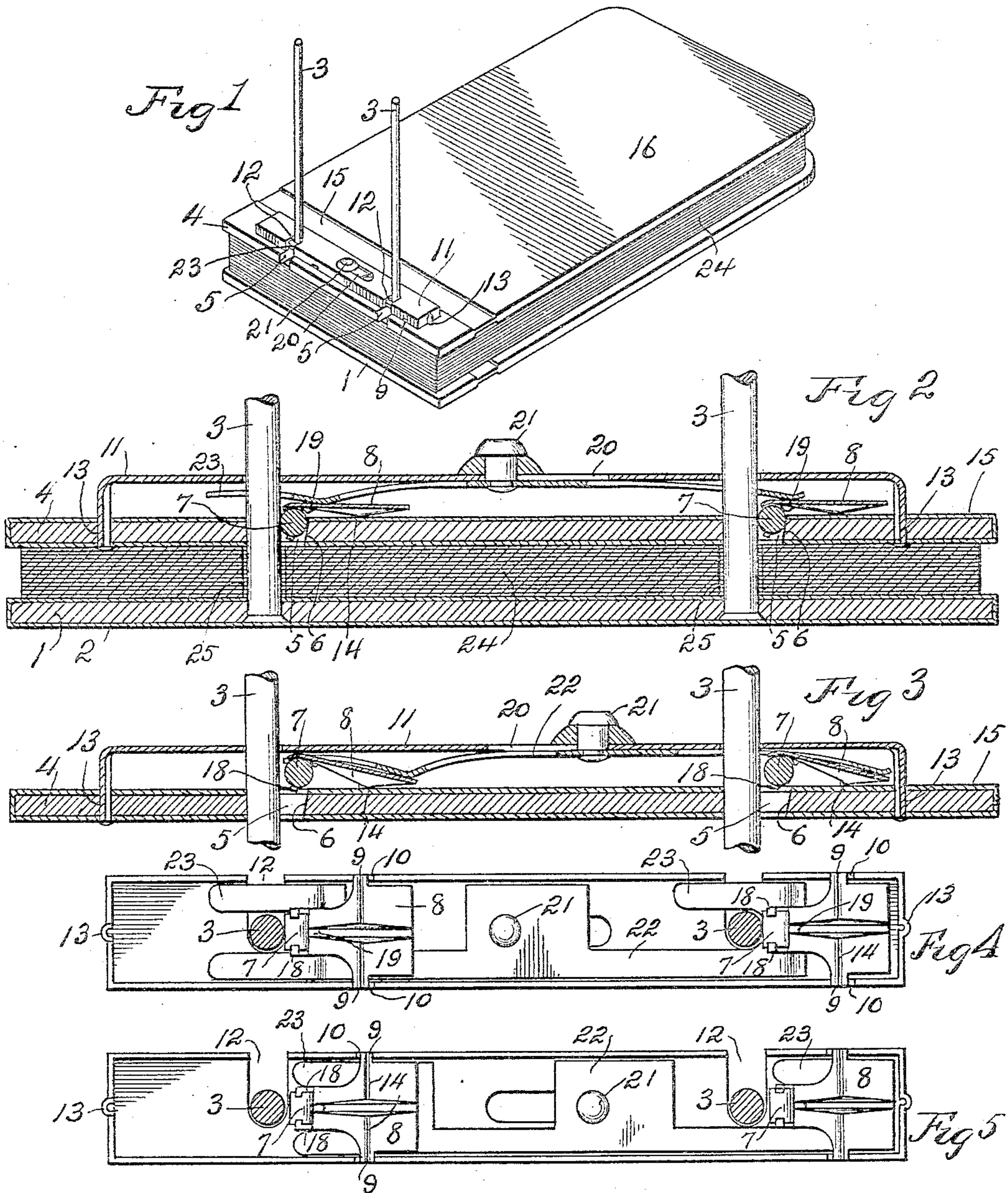


Fig 6

WITNESSES:

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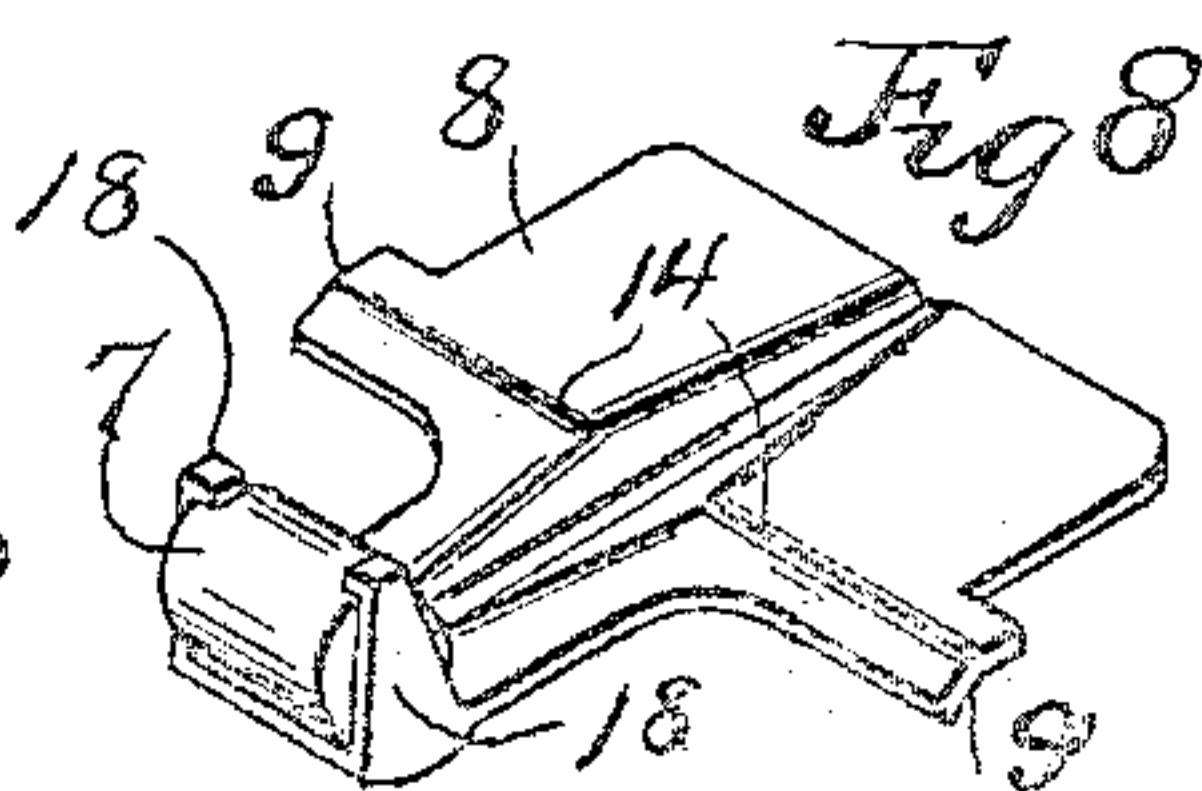


Fig 8

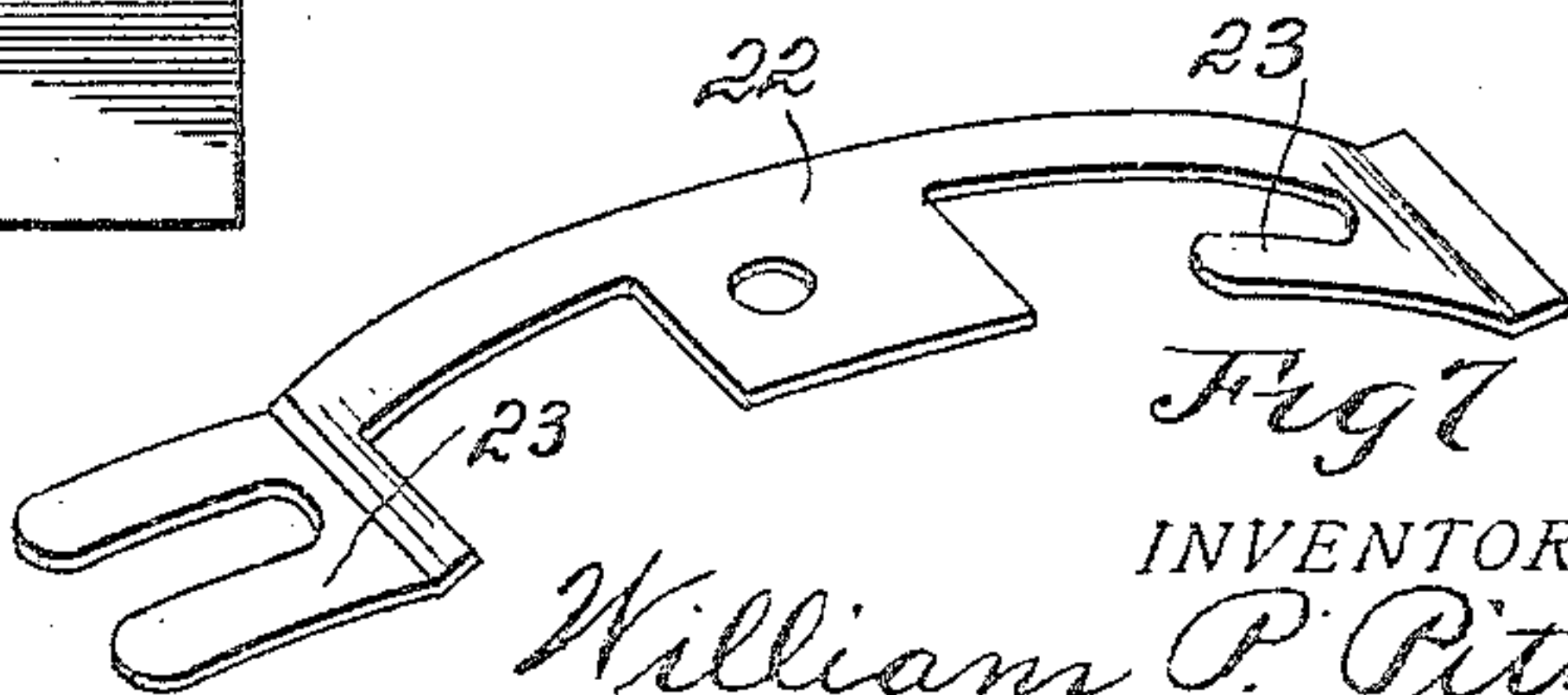


Fig 7

INVENTOR.

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UNITED STATES PATENT OFFICE.

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LOOSE-SHEET BINDER.

943,844.

Specification of Letters Patent.

Patented Dec. 21, 1909.

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To all whom it may concern:

Be it known that I, WILLIAM P. PITT, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Loose-Sheet Binders, of which the following is a specification.

My invention relates to improvements in loose sheet binders.

It relates particularly to the class of loose sheet binders in which a follower is slidable on posts secured to a base.

The object of the invention is to provide a construction by which the follower will be firmly held from movement on the posts away from the base, and which will permit, however, the easy and quick release of the follower when it is desired to insert or extract sheets.

The novel features of the invention are hereinafter fully described and claimed.

In the accompanying drawings illustrative of the invention—Figure 1 is a perspective view, showing the binder in the closed position. Fig. 2 is a transverse vertical section through the binder, showing the rolling wedges in locked engagement with the follower and posts. Fig. 3 is a transverse vertical section through the follower, portions of the two posts being shown and the rolling wedges being shown disengaged from the posts and inclined abutments of the follower. Fig. 4 is an under view of the reciprocating plate, the wedge carrying levers, the roller wedges, and the casing inclosing these parts. In this view the two posts are shown in cross section, and the movable parts are shown in the positions occupied by them when the roller wedges are in locked engagement with the posts. Fig. 5 is a view similar to Fig. 4 with the exception that the parts are shown in the positions occupied by them when the rolling wedges are disengaged from the posts. Fig. 6 is a top view of the follower plate. Fig. 7 is a perspective view of the reciprocating member which throws the rolling wedges to and from the position in which the wedges engage the posts. Fig. 8 is a perspective view of one of the rolling wedges and the lever which supports it.

Similar characters of reference denote similar parts.

1 denotes the horizontal base composed

preferably of a flat piece of metal, such as iron or steel, but the base may be made of any other suitable substance, such as wood or paper. The surface of the base 1 may be covered by cloth, denoted by 2. Two vertical parallel posts 3, have their lower ends rigidly secured to the base 1, adjacent to one end of said base.

A follower is vertically slidable upon the posts 3 and preferably comprises the following named parts:—4 denotes a horizontal follower plate, preferably of metal such as iron or steel, and provided at one edge with two vertical openings or notches 5 through which the posts 3 extend. The notches or openings 5 are provided each with two opposing sides, one of which, denoted by 6, is inclined toward the lower end of the adjacent post 3. The two inclined sides 6 serve as abutments for two wedges 7, preferably rolling wedges in the form of cylinders, which are mounted respectively upon two wedge carrying members comprising each, preferably, a lever 8 having near its middle, at opposite side edges, two projections 9, pivotally mounted respectively, in transverse slots 10, provided in the lower edges of the two opposite vertical sides of a casing 11, rectangular in form, and having its closed top and one side provided with vertical notches 12 through which the posts 3 extend. The casing 11 is provided at two opposite ends with downwardly extending projections 13, which are riveted in holes provided therefor in the follower plate 4. Each lever 8 is provided near its middle with a transverse depressed portion 14, which serves as a fulcrum for the lever, said fulcrum resting upon the cloth cover 15 which envelops the follower plate 4 and also serves as a hinge for connecting the follower plate 4 with a flap 16, shown in Fig. 1. The end of each lever 8, contiguous to the adjacent post 3, is provided with two downwardly extending arms 18, which embrace opposite ends of the adjacent roller wedge 7 and have their lower ends turned toward each other so as to support said roller wedge. Upon the under side of each lever 8, above the middle of the roller 7 and upon the side of the said roller opposite the adjacent post 3, is a projection 19, which serves to prevent the lateral movement of the roller on the lever. In the upper side of the casing 11 is provided a longitudinal slot 20, in

which is slidably movable a button 21, which extends through said slot and has its lower end secured to a substantially horizontal curved plate 22 which, adjacent to its ends, rests upon the upper sides of the levers 8. The plate 22 forms a reciprocating member which is alternately movable upon the levers 8 to opposite sides of the depressed or fulcrum portion 14 of said levers 8. Thus by reciprocating the button 21 in the slot 20 the plate 22, which is of a resilient nature, is moved endwise so as to simultaneously swing the levers 8 to and from the positions shown in Fig. 2 in which the rolling wedges 7 will be moved into the notches 5 and into contact with the abutments 6 and the posts 3.

The plate 22 is provided adjacent opposite ends, with two longitudinal, substantially horizontal arms 23, which, when the plate 22 is moved to the position shown in Figs. 2 and 4, will bridge across the notches 5 and 12 at the outer sides of the posts 3. The arms 23, when so disposed, will prevent the posts 3 from disengagement with the follower by lateral movement through the notches 5 and 12. When it is desired to remove the follower from the posts 3 the button 21 is moved to the position shown in Figs. 3 and 5, in which position the plate 22 will swing the levers 8 so that the rolling wedges 7 are freed from locked engagement with the posts 3 and abutments 6 at which time, the arms 23 will be moved transversely across the notches 5 and 12 to positions in which these notches will not be bridged by said arms 23. This condition of affairs is shown in Fig. 5. With the parts positioned as shown in the last named figure, the follower may be readily removed by lateral withdrawal of the posts 3 through the notches 5 and 12.

The follower having been removed from the posts 3 the loose leaves 24, each having two perforations 25 adapted to receive the posts 3, are slipped on the posts 3, after which the posts are inserted laterally through the notches 5 and 12 of the follower, and the button 21 is then moved to the position shown in Figs. 2 and 4, thus, as has been described, swinging the levers 8, through the intermediacy of the reciprocating member 22, and thereby forcing the rolling wedges 7 into the notches 5 in contact with the posts 3 and inclined abutments 6. The degree of inclination of the abutments 6 relative to the posts 3 is such that any upward movement of the follower plate 4 will cause the rollers 7 to tightly wedge between the abutments 6 and the posts 3 and will hold the follower against any further upward movement. At the same time the follower plate 4 may be forced downward without difficulty, and when so forced the resilient reciprocating member 22 will swing the levers 8 so as to retain the

rollers 7 in contact with the posts 3 and abutments 6.

It has been determined by practical demonstration that an inclination of about ten degrees is the proper inclination for the abutments 6 relative to the posts 3.

Various modifications of the invention, within the scope of the appended claims, may be made without departing from its spirit.

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

1. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower on said post, and a roller movable to and from a position in which it will lock the follower against movement from but will permit its movement toward the base.

2. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower on said post provided with an abutment inclined toward the post, and a wedge movable to and from a position in which it will have contact with said inclined abutment and said post, the inclination of the abutment being toward the end of the post which is secured to said base.

3. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower on said post having an abutment inclined toward the end of the post secured to the base, and a roller movable to and from a position in which it will have contact with said inclined abutment and said post.

4. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower on said post, a rolling wedge and a lever carrying said wedge and movable to and from a position in which the rolling wedge will lock the follower against movement on the post from said base but will permit its movement toward the base.

5. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower on said post having an abutment inclined toward the end of the post which is secured to the base, a wedge, and a lever carrying said wedge and movable to and from a position in which the wedge will have contact with said inclined abutment and said post.

6. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower on said post having an abutment inclined toward the end of the post which is secured to the base, a rolling wedge, and a lever carrying said rolling wedge and movable to and from a position in which the wedge will be intermediate of and have contact with said inclined abutment and said post.

7. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower on said post, a rolling wedge, a lever

carrying said wedge and movable to and from a position in which the wedge will lock the follower against movement on the post from the base but will permit its movement toward the base, and means for moving said lever.

8. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower on said post, a rolling wedge, and a wedge carrying member supporting said rolling wedge and movable to and from a position in which the rolling wedge will lock the follower against movement on the post from the base but will permit its movement toward the base.

9. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower on said post having an abutment inclined to said post, a rolling wedge, and a wedge carrying member supporting said rolling wedge and movable to and from a position in which the rolling wedge will be moved intermediate said post and inclined abutment and in contact therewith.

10. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower having a lateral notch to receive said post, one side of said notch being inclined to said post, and a wedge movable to and from a position in which it will have contact with said post and said inclined side of said notch.

11. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower having a lateral notch to receive said post, one side of said notch being inclined to said post, and a rolling wedge movable to and from a position in which it will have contact with said post and with the inclined side of said notch.

12. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower on said post, a rolling wedge, a wedge carrying member, movable to and from a position in which the wedge will roll into contact with the post and follower, for locking the follower against movement in one direction relative to the base, and means for so moving said wedge carrying member.

13. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower having in one edge a notch having two opposing sides between which said post is located, one of said two sides being inclined toward the post, a wedge movable to and from a position in which it will have contact with said post and with the inclined side of said notch, and means for moving said wedge to said position and for bridging said notch outside of said post.

14. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower having in one edge a notch for receiving therethrough said post, a wedge

movable to and from a position in which it will lock said follower against movement in one direction on said post relative to said base, a member movable to and from a position in which it will bridge said notch at the outer side of said post, and means by which when said member is moved to and from said position said wedge will be moved to and from the position in which it will have locked engagement with said post and said follower.

15. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower having in one edge a notch having two opposing sides between which the post is located, one of said two sides being inclined toward the post, a rolling wedge movable to a position intermediate said post and said inclined side and in contact therewith, a member movable to and from a position bridging said notch at the outer side of said post, and means by which, when said member is moved to and from, said rolling wedge will be moved into and out of engagement with said inclined side and said post.

16. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower movable on said posts toward and from said base, and two rolling wedges movable to and from positions in which they will respectively lock the follower against movement on said posts from said base but will permit its movement toward the base.

17. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower having two lateral notches through which said posts extend, each of said notches having one side inclined to the adjacent post, and two wedges movable respectively to and from positions in which they will have contact with said posts and the inclined sides of said notches.

18. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower movable lengthwise on said posts and having two abutments inclined respectively toward said posts, and two roller wedges movable to and from positions intermediate of and in contact with said posts and said abutments.

19. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower movable lengthwise on said posts and having two abutments inclined respectively toward said posts, two rolling wedges movable to and from positions intermediate of and in contact with said inclined abutments and said posts, and means for simultaneously moving said roller wedges.

20. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower movable lengthwise on said

posts and having two abutments inclined respectively toward said posts, two rolling wedges movable into and out of contact with said inclined abutments and said posts respectively, a reciprocative member, and means by which, when said member is reciprocated, said rolling wedges will be respectively moved into and out of contact with said posts.

21. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower having two lateral notches through which said posts extend, each notch having an inclined side, rolling wedges movable to and from positions in which they will lockingly engage said posts and said inclined sides respectively, two wedge carrying members, and means for simultaneously moving said wedge carrying members so as to move said rolling wedges into locked engagement with said posts.

22. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower having two lateral notches through which said posts extend, each notch having an inclined side, two rolling wedges, two levers respectively carrying said rolling wedges, and means for simultaneously swinging said levers to and from positions in which said rolling wedges will have locked engagement with said posts and said follower.

23. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower mounted on said two posts and having two abutments inclined toward said posts respectively, two rolling wedges, two levers carrying said rolling wedges respectively and movable to and from positions in which the rolling wedges will be moved into and out of contact with said posts and said abutments, and a reciprocating member for simultaneously swinging said levers.

24. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower having in one edge two notches for receiving therethrough said two

posts, said follower having two abutments inclined toward said posts respectively, two rolling wedges, two wedge carrying members movable to and from positions in which said rolling wedges will lockingly engage said posts and said inclined abutments, and a reciprocating member for simultaneously moving said wedge carrying members, said reciprocating member having means for bridging said two notches at the outer sides of said posts when said roller wedges are in locked engagement with the follower and said posts.

25. In a loose sheet binder, the combination with a base, of a post secured thereto, a follower mounted on said post and having an abutment inclined to said post, a rolling wedge, and means for moving said rolling wedge into a position intermediate said post and abutment and in contact therewith.

26. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower mounted on said posts and having two abutments inclined to said posts, two rolling wedges, two wedge carrying members movable to and from positions in which said rolling wedges will be intermediate said posts and abutments respectively and in contact therewith, and means for forcing said wedge carrying members into the said positions.

27. In a loose sheet binder, the combination with a base, of two posts secured thereto, a follower mounted on said posts and having two abutments inclined to said posts, two rolling wedges, two levers carrying said wedges and movable to and from positions in which the rolling wedges will be intermediate said posts and abutments respectively and in contact therewith, and means for swinging said levers.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

WILLIAM P. PITT.

Witnesses:

E. B. HOUSE,

FRANK L. SEVERANCE.