

No. 691,844.

Patented Jan. 28, 1902.

H. E. DADE.  
BINDER.

(Application filed Oct. 20, 1899.)

(No Model.)

Fig. 1.

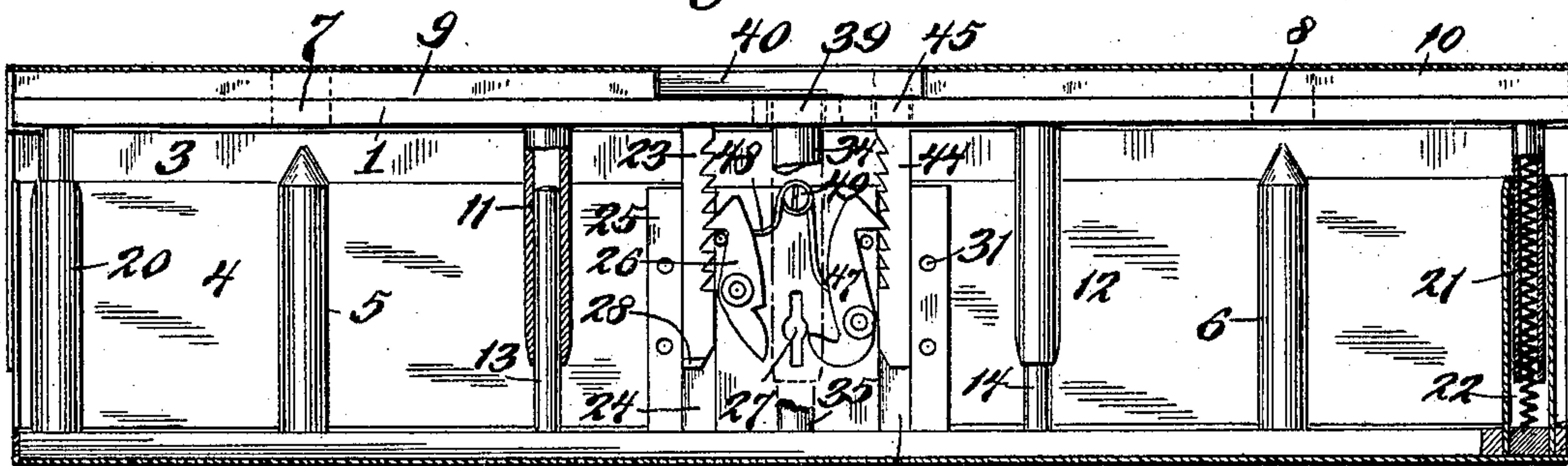


Fig. 2,

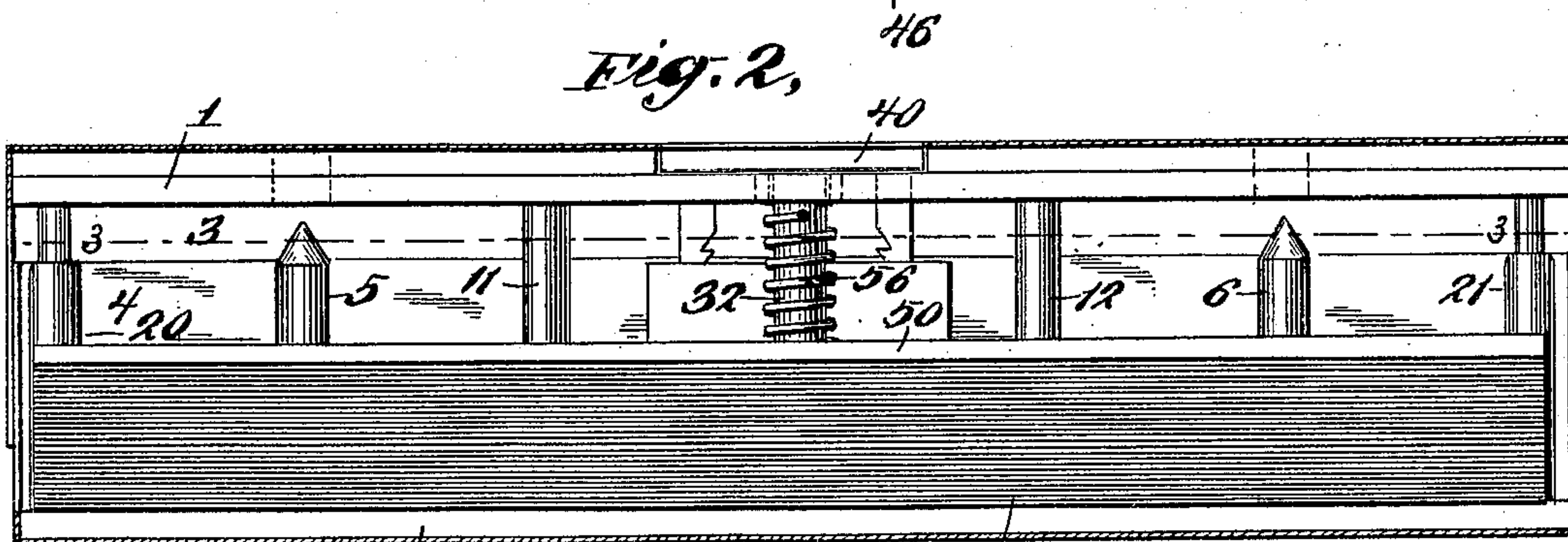


Fig. 3,

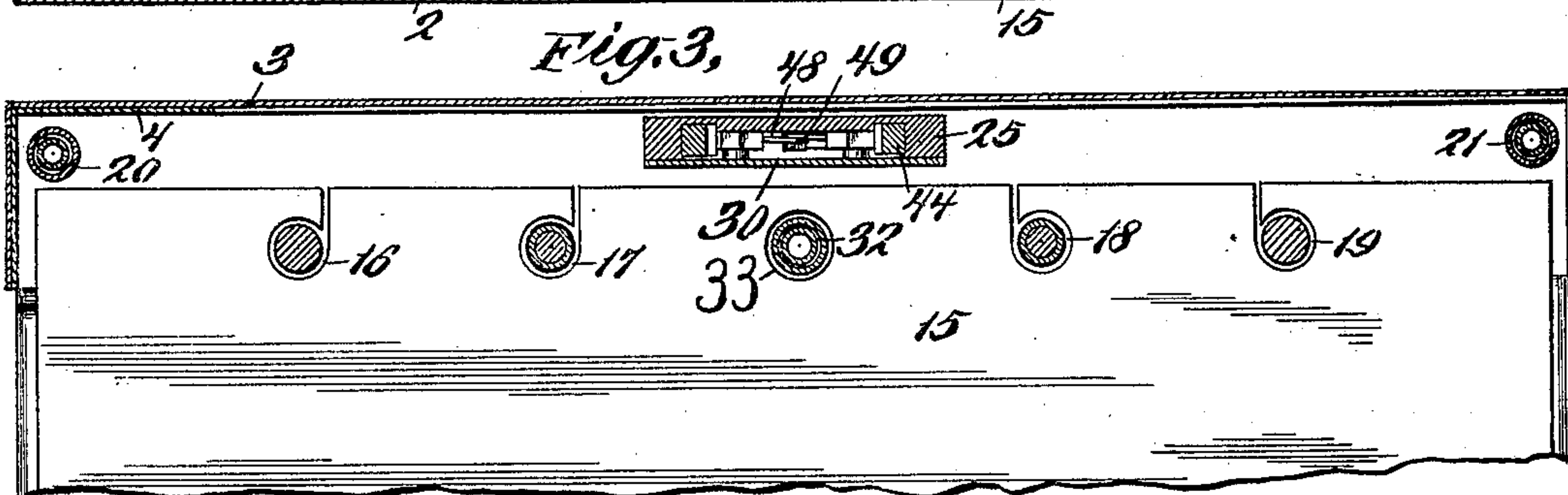


Fig. 5,

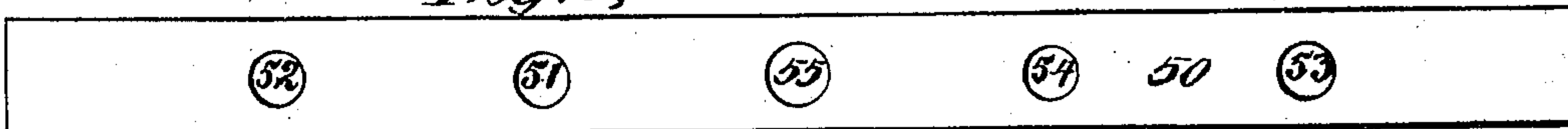


Fig. 6,

34  
32  
42  
43  
35

WITNESSES:

*Geoffrey M. Gifford*  
*Sidney Mann*

Fig. 4.

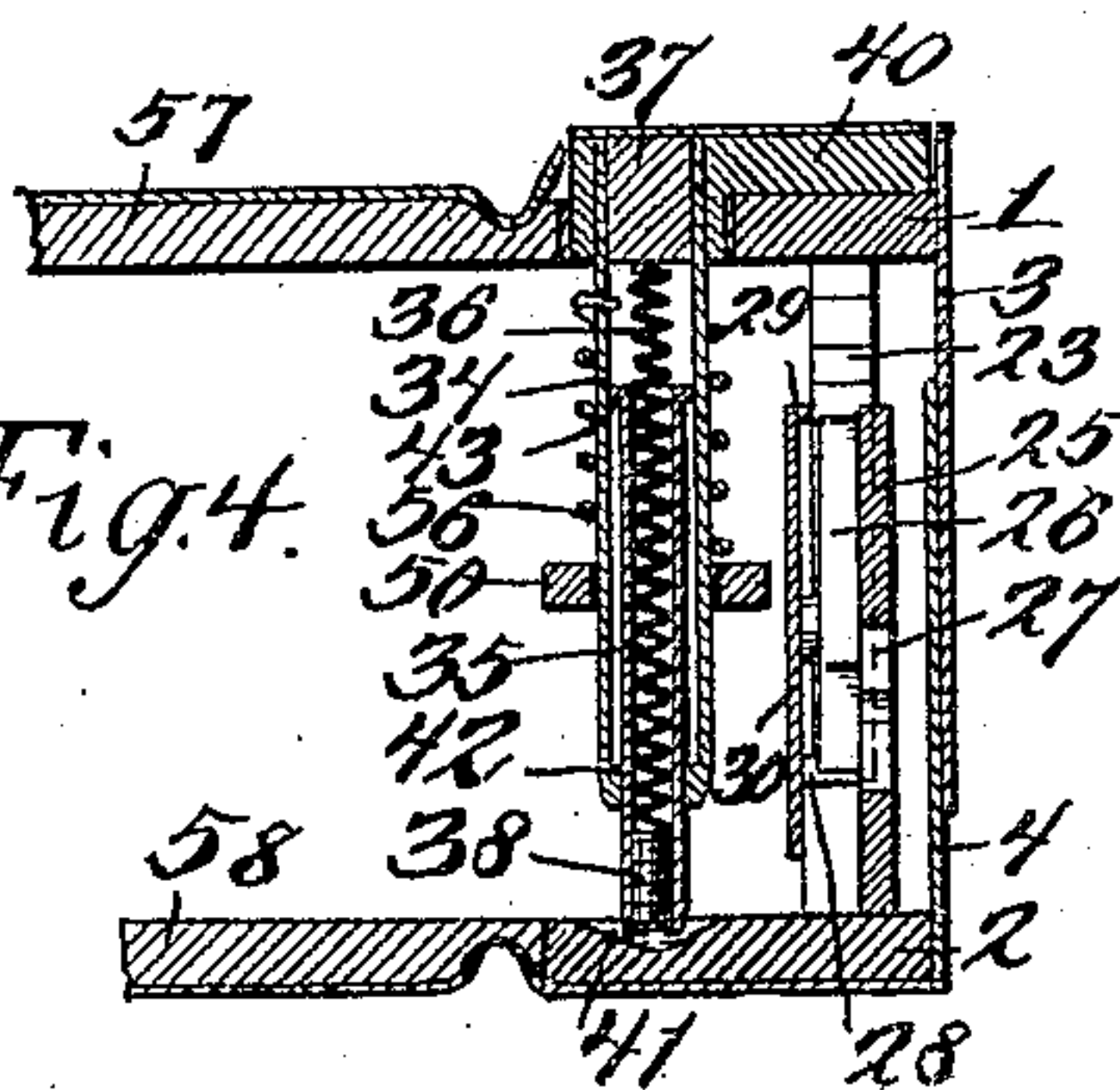


Fig. 7,

29  
23  
28  
30  
INVENTOR

Harry E. Dade

BY

*Nicholas M. Goodlett*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

HARRY E. DADE, OF MOUNT VERNON, NEW YORK.

## BINDER.

SPECIFICATION forming part of Letters Patent No. 691,844, dated January 28, 1902.

Application filed October 20, 1899. Serial No. 734,209. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY E. DADE, a citizen of the United States, and a resident of Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Binders, of which the following is a specification.

This invention relates to binders of that class wherein the sheets are held removably in place by posts.

The invention seeks to provide in such a binder a follower for holding the sheets compactly together however few may be their number. It also seeks to provide a lock of improved construction and arrangement and in general to improve the various features of such binders for the purpose of attaining simplicity, durability, security, and compactness, with economy of manufacture.

In the drawings forming part of this specification, and in which like reference-numerals designate corresponding parts, I have shown an expansible binder in which my invention is embodied.

Figure 1 is a front elevation of the binder with the covers and sheets removed, parts being in section and removed. Fig. 2 is a similar view, the sheets and follower being in place. Fig. 3 is a horizontal section of Fig. 2 on line 3-3 with certain parts omitted for the sake of clearness. Fig. 4 is a central transverse section of Fig. 2. Fig. 5 is a plan view of the follower. Figs. 6 and 7 are fragmental details in section.

Referring now to the particular embodiment of the invention shown in the drawings, 1 and 2 are respectively the upper and lower strips of an expansible binder, between which the sheets are held in place, and carrying, respectively, telescoping back-sections 3 and 4. The strip 2 has the posts 5 and 6 secured thereto at their lower ends, their upper ends being free and extending toward the strip 1, in alinement with the apertures 7 and 8, formed in the strip 1 and in the filling-strips 9 and 10, fixed upon the strip 1. The free ends of the posts 5 and 6 are preferably tapered, so as to find their way the more readily through the holes in the sheets. The strips 1 and 2 have also telescoping extensible posts, of which the posts 11 and 12 are secured to the strip 1 and the posts 13 and 14 are secured

to the strip 2. By making the posts 11 and 12 each of substantially uniform circumference throughout its length and securing them to one strip and by making the posts 5 and 6 each of substantially uniform circumference throughout its length and securing them to the opposite strip, as shown, I am enabled to make the posts 5 and 11 as one pair of sheet-engaging posts, the posts 6 and 12 as another pair of sheet-engaging posts, and subserve the useful purpose of keeping the sheets 15 at all times in accurate alinement. The sheets 15 have open apertures 16, 19, 17, and 18, which respectively snugly fit the posts 5, 6, 11, and 12, and as a result of the construction described each sheet will always be engaged by at least two posts snugly fitting its apertures, and the sheets will thus be kept in accurate alinement. The sheets near the top strip will be engaged by the posts 11 and 12, and the sheets near the bottom strip will be engaged by the posts 5 and 6, while the sheets near the middle will be engaged by all four posts if the strips are, as shown in the drawings, in such near approach so as to make the posts 5 and 6 overlap the posts 11 and 12.

In the preferred construction, as herein shown and to be presently described, the expansibility of the binder is preferably limited, so that when the strips 1 and 2 are at their extreme limit of separation the posts 5 and 6 will to some extent at least still overlap the posts 11 and 12, thus insuring at all times the engagement of the middle sheets by at least the upper or lower posts.

20 and 21 are extensible telescoping posts secured to the opposite strips and designed, primarily, as means for connecting the strips and to steady the strips in their movement to and from each other and to give rigidity to the structure. They preferably are provided with coiled springs 22, which tend to keep the strips apart. These springs 22 are omitted from Fig. 3 for the sake of clearness.

In the construction of the lock I provide a toothed arm 23, secured to the strip 1 and arranged to slide in a recessed slideway 24, formed in the lock-casing 25, which is secured to the lower strip 2. The pawl 26 is pivoted on the casing 25 with its head arranged near the top of the casing to engage the arm 23 and its tail toward the bottom of the casing



to be operated by a key inserted in the keyhole 27. By arranging the head of the pawl 26 toward the top instead of toward the bottom of the lock-casing the distance at which the strips 1 and 2 may be separated and yet locked together by the pawl 26 is increased. It will be seen that the strips 1 and 2 may be locked together at any desired point of their separation. To limit the separation of the strips, I provide a projection 28 on the lower end of the arm 23 and a projection 29 on the inner side at the top of the cover 30 of the lock-casing. When the strips have been separated to their limit, these projections come together and act as a positive stop and prevent their complete detachment from each other. The cover 30 is removably held in place by screws entering the screw-holes 31 in the lock-casing 25 and when removed enables the strips to be easily detached from each other and permits access to the interior parts of the lock for repair or otherwise. 32 is a removable sheet-engaging post designed to pass through the closed apertures or holes 33 in the sheets 15. This post is made of two tubular telescopic members 34 and 35, so as to be extensible. Within the post 32 is a spring 36, whose ends rest against the plug 37, secured in the upper end of the member 34, and against the screw-plug 38, screwed into the lower end of the member 35. This spring tends to extend the post. The post passes removably through a hole 39 in the strip 1 and at its upper end is secured to a piece 40, adapted to rest upon the strip 1 in a recess formed between the filling-strips 9 and 10. When the post 32 is in place, its lower end rests in a recess 41, formed on the inner side of the strip 2. The members 34 and 35 of the post 32 are formed with circumferential shoulders 42 and 43 to prevent their separation. In assembling the parts of the post 32 the member 35 is inserted through the upper end of the member 34, and the plug 37 is then secured in place by suitable means. The spring 36 is then inserted and the screw 38 screwed into the end of the member 35. In case the spring 36 wears out or becomes injured it is only necessary to remove the screw 38, when a new spring may be inserted. Secured to the piece 40 is a toothed arm 44, passing freely through an armature 45 in the strip 1 and into a slideway 46 in the lock-casing 25, which it snugly fits. A pawl 47, pivoted in the casing 25 with its head upward and its tail near the keyhole, serves to lock the removable post 32 in place. A key inserted in the keyhole of the lock retracts both of the pawls 26 and 47 from locking position, and the spring 48, fixed at the middle by the screw 49 to the casing 25 and bearing at its ends against the pawls, serves to press them into locking position.

It is sometimes convenient to secure in the binder a less number of sheets than will fill it at its minimum capacity—as, for example, when the binder is used as a transfer-binder.

In such cases it is desirable that the sheets be held compactly together. For this purpose I provide the follower-strip 50, arranged in any suitable manner between the strips and adapted to rest upon the sheets and press them against the strip 2. Suitable means, carried by the removable post 32, and preferably a spring, is employed for holding the follower against the sheets. The follower, as shown in the drawings, is formed with holes 51, 52, 53, and 54, through which the posts 11 to 13, 5, 6, and 12 to 14 pass, and also with a hole 55, through which the post 32 passes. In the preferred construction I employ a coiled spring 56 on the post 32, the upper end of which is detachably secured in a small hole in the post, which hole thus provides a seat for the spring, the lower end of which presses against the follower. When sufficient sheets have from time to time been secured in the binder, the spring 56 for the follower is removed. This may be done by withdrawing the removable post 32, the aperture 39 being of sufficient size to permit the post, with the spring 56, to pass therethrough, then detaching the spring 56 from the post 50. The spring 56 and the follower 50 are omitted from Fig. 3 for the sake of clearness. The strips 1 and 2 of course have covers 57 and 58 hinged to them in the usual manner.

While I have shown the various features and combinations thereof of my invention in their best form and arrangement, it will of course be understood that the precise form and arrangement shown and described may be varied without departing from the scope of the invention. For example, it is not essential that the holes 51, 52, 53, 54, and 55 be formed as shown. They may be formed or arranged in any suitable way; but the hole 55, at least, is preferably formed closed, as shown. It will be noted that the means for holding the follower against the sheets is carried by the removable post. Of course other means than those shown and carried by this post for the purpose may be employed without departing from my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a binder, the combination of upper and lower strips, sheet-engaging posts, of which at least one is removable, extending between the strips, a follower arranged between said strips, and means carried by the removable post forcing the follower toward one of the strips.

2. In a binder, the combination of upper and lower strips, sheet-engaging posts, of which at least one is removable, extending between the strips, sheets provided with open and closed apertures engaged by the posts, a follower arranged between said strips, and means carried by the removable post for holding the follower against the sheets.

3. In a binder the combination of upper and lower strips; posts extending between the strips; a follower arranged between the strips; and a coiled spring mounted on one of said



posts for yieldingly forcing the follower toward one of the strips, said post having a seat for said spring.

4. In a binder, the combination of upper and lower strips, sheet-engaging posts, one of which at least is removable, sheets provided with open and closed apertures engaged by the posts, a follower arranged between said strips, means carried by the removable posts for holding the follower against the sheets, and means for locking the removable post in place.

5. In a binder, the combination of upper and lower strips, sheet-engaging posts of which at least one is removable extending between the strips, a freely-moving follower arranged between said strips, and a coiled spring mounted on a removable post for yieldingly forcing the follower toward one of the strips.

6. In a binder, the combination of upper and lower strips, sheet-engaging posts of which one at least is removable extending between the strips, a freely-moving follower arranged between said strips and having apertures to receive said posts, and a coiled spring mounted on a removable post for yieldingly forcing the follower toward one of the strips.

7. In an expansible binder, the combination of upper and lower strips adapted and arranged to move up and down to and from each other, sheet-engaging posts, one of which at least is removable, extending between the strips, sheets provided with open and closed apertures engaged by the posts, a freely-moving follower arranged between said strips, and means carried by the removable post for holding the follower downward toward the lower strip, and means for locking the strips together at any desired point of separation.

8. In an expansible binder, the combination of upper and lower strips adapted and arranged to move up and down to and from each other, sheet-engaging posts of which at least one is removable extending between the strips, a freely-moving follower arranged between said strips, and a coiled spring mounted on a removable post for yieldingly forcing the follower toward one of the strips, and means for locking the strips together at any desired point of separation.

9. In an expansible binder, the combination of upper and lower strips adapted and arranged to move up and down to and from each other, sheet-engaging posts of which one at least is removable extending between the strips, a freely-moving follower arranged between said strips and having apertures to receive said posts, and a coiled spring mounted on a removable post for yieldingly forcing the follower toward one of the strips, and means for locking the strips together at any desired point of separation.

10. In a binder, the combination of upper and lower strips, a removable sheet-engaging post and permanent sheet-engaging posts extending between said strips, a freely-moving follower arranged between the strips and

having a hole to receive the removable post, and a coiled spring mounted on the removable post, for yieldingly forcing the follower toward one of the strips.

11. In an expansible binder, the combination of upper and lower strips movable up and down to and from each other, a removable extensible sheet-engaging post and permanent sheet-engaging posts extending between said strips, a freely-moving follower arranged between said strips and having a hole to receive the removable post, and a coiled spring mounted on the removable post for yieldingly forcing the follower toward one of the strips.

12. In an expansible binder, the combination of upper and lower strips; sheet-engaging posts extending between the strips; a lock for locking the strips together at any desired point of their separation comprising a casing having a slideway and secured to one strip, a toothed arm secured to the other strip and fitting and working in said slideway, and a key-actuated spring-pawl secured to the casing to engage the toothed arm; and an extensible removable post secured to a piece carrying a toothed arm; and a key-actuated spring-pawl adapted to engage the toothed arm.

13. In an expansible binder, the combination of upper and lower strips; sheet-engaging posts extending between the strips; a lock for locking the strips together at any desired point of their separation comprising a casing secured to one strip and having slideways and a toothed arm secured to the other strip and fitting in the slideway, the pawl to engage the arm, the removable cover of the casing, the projections on the arm and cover respectively; the removable extensible spring-post secured to the piece; the toothed arm fitting in the slideway in the casing and secured to the piece; the key-actuated spring-pawl to engage the toothed arm, the pawls being arranged on either side of the keyhole with their heads upward.

14. In an expansible binder, the combination of upper and lower strips; fixed posts extending between the strips; an extensible, removable spring-post comprising the member having the projection, the member having the projection, the internal coiled spring, a fixed plug at one end of the post and a removable screw-plug at the other end to hold the spring in place.

15. In a binder, the combination of upper and lower strips, a removable sheet-engaging post and permanent sheet-engaging posts extending between the said strips, sheets provided with open and closed apertures secured on said posts between the strips, a freely-moving follower between the strips and having a closed hole to receive the removable post, and a coiled spring mounted on the re-



movable post, for yieldingly forcing the follower toward one of the strips.

16. In a binder, the combination of upper and lower strips, sheet-engaging posts, of which at least one is removable, extending between the strips, provided with open and closed apertures, sheets engaged by the posts, non-sheet-engaging spring-posts extending between the strips, a follower arranged between said strips, and means carried by the re-

movable post for holding the follower against the sheets.

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

HARRY E. DADE.

Witnesses:

J. W. BARTRAM,

J. O. GEMPLER.

It is hereby certified that in Letters Patent No. 691,844, granted January 28, 1902, upon the application of Harry E. Dade, of Mount Vernon, New York, for an improvement in "Binders," errors appear in the printed specification requiring correction, as follows: Page 2, line 52, the word "armature" should read *aperture*; page 3, line 9, the word "posts" should read *post*, and page 4, line 7, the word "sheets" should be stricken out and inserted before the word "provided," line 6, same page; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 18th day of February, A. D., 1902.

[SEAL.]

F. L. CAMPBELL,  
*Assistant Secretary of the Interior.*

Countersigned:

F. I. ALLEN,  
*Commissioner of Patents.*