

May 12, 1925.

1,537,167

C. R. HADLEY

TRAY BINDER

Filed Aug. 29, 1923

2 Sheets-Sheet 1

Fig. 1.

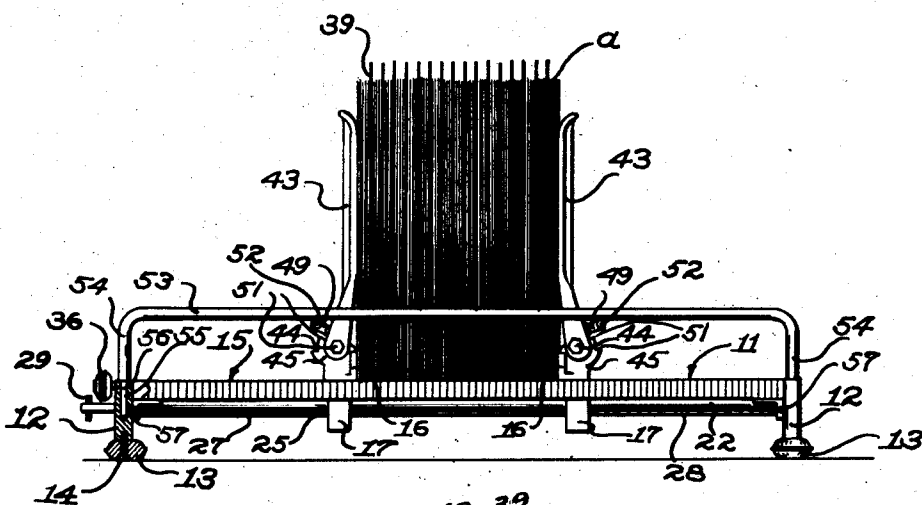


Fig. 2.

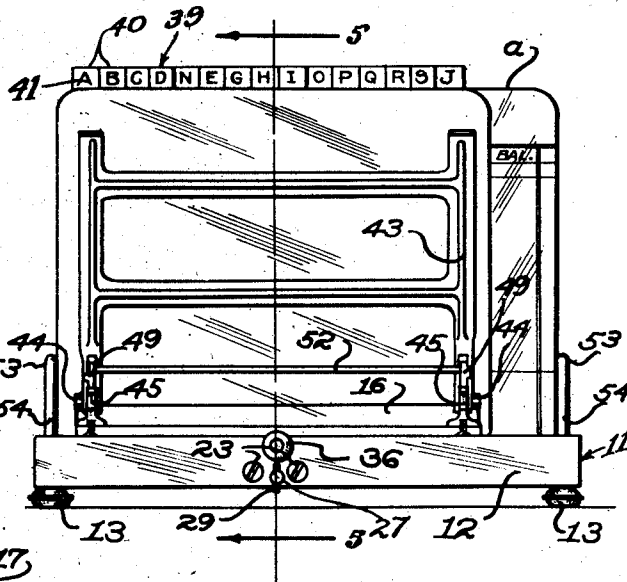
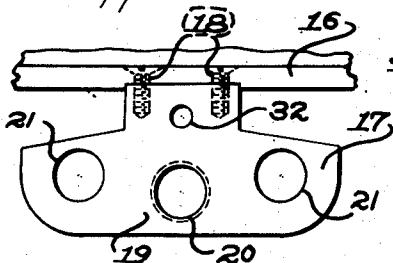


Fig. 3.



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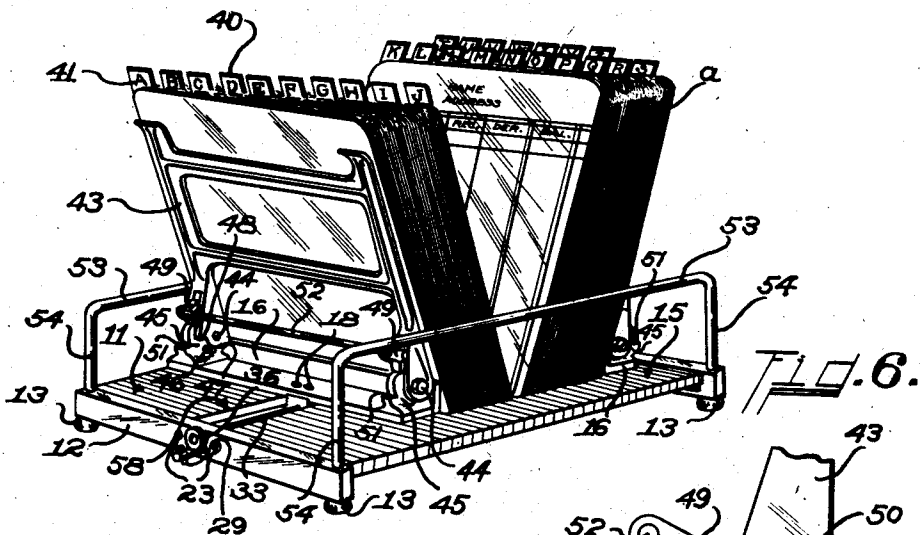
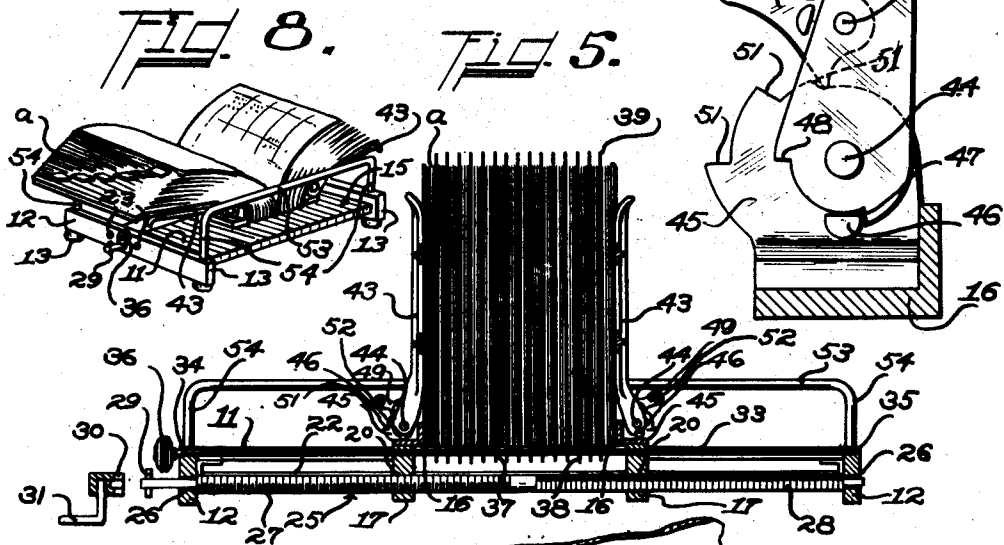
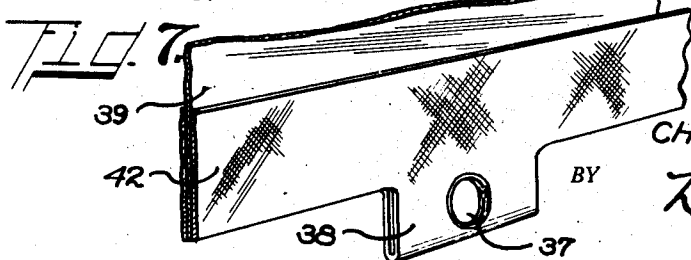
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**2 Sheets-Sheet 2**

Fig. 4



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## UNITED STATES PATENT OFFICE.

CHARLES R. HADLEY, OF LOS ANGELES, CALIFORNIA; FRANK D. BARNHILL AND PACIFIC-SOUTHWEST TRUST & SAVINGS BANK, EXECUTORS OF SAID CHARLES R. HADLEY, DECEASED, ASSIGNORS TO CHARLES R. HADLEY COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

## TRAY BINDER.

Application filed August 29, 1923. Serial No. 659,905.

*To all whom it may concern:*

Be it known that I, CHARLES R. HADLEY, a citizen of the United States, residing in the city of Los Angeles, county of Los Angeles, and State of California, have invented a new and useful Tray Binder, of which the following is a specification.

This invention relates to loose leaf binders of the, so termed, "tray" type and an object of the invention is to provide a binder of this character that will be convenient to refer to and that at the same time securely holds the loose leaves against displacement.

Another object is to construct the tray so that the light can play on the loose leaves from the side as well as the top.

Another object is to provide a construction which will economize space.

Another object is to provide conveniently operated means for clamping the loose leaves in the binder.

A further object is to insure against slipping and buckling of the loose leaves when the clamping members are released therefrom.

A still further object is to provide a construction of loose leaf guides that will insure against slipping of the loose leaves from between said guides when the guides and loose leaves are clamped in the binder.

Other objects and advantages will appear hereinafter.

The accompanying drawings illustrate the invention.

Figure 1 is a side elevation, partly in section, of a tray binder constructed in accordance with the provisions of this invention. The parts are shown in the positions they occupy when the binder is closed.

Fig. 2 is an end elevation from the left of Figure 1, one of the leaves being offset from the others.

Fig. 3 is an enlarged detail of one of the shifting blocks for effecting the clamping action, a fragment of the associated clamping member also being shown.

Fig. 4 is a perspective view of the tray binder, the parts being shown in the positions they occupy when the end members are in partly open position.

Fig. 5 is a sectional elevation on the line indicated by 5—5, Figure 2, the crank be-

ing detached from the clamp-operating screw.

Fig. 6 is an enlarged fragmental detail of the means for holding one of the end members in various positions.

Fig. 7 is a perspective view of a fragment of one of the guides, showing particularly the friction strip along the lower margin of the guide.

Fig. 8 is a perspective view of the binder open for reference.

There is provided a flat support 11 having cross members 12 at its opposite ends. The members 12 are preferably provided with cushioning feet 13 of rubber or other suitable non-metallic material, said feet in this instance being secured by screws 14 to the lower edges of the members 12. The upper face of the support 11 is grooved, as indicated at 15, the grooves running transversely of the support. Preferably the grooved face 15 is formed of suitable material such, for example, as corduroy. The grooved face 15 is adapted to engage the lower edges of the loose leaves  $\alpha$  that are placed in the binder.

The loose leaves  $\alpha$  are placed between clamping members 16 which are adjustably mounted on the support. The adjustable mounting, in this instance, is constructed as follows: Each of the clamping members 16 has a block 17 secured to it by suitable means such, for example, as screws 18. The blocks project through a slot 58 extending longitudinally at the median line of the support. The central portion of each block 17 constitutes a nut 19, the threaded orifice of which is indicated at 20. The blocks 17 are provided on opposite sides of the orifices 20 with holes 21 which slidably fit rods 22 extending lengthwise of the support 11 beneath the slot 58. The rods 22 are secured at their opposite ends by screws 23 to the members 12. Only the screws 23 at one end of the support can be seen in the drawings because of the nature of the views. Though the rods 22 could be omitted, it is preferable to employ them to make the operation of the blocks 17 easier.

Means are provided for holding the blocks at different positions along the rods, said means operating to force one of the

clamping members toward the other to clamp the loose leaves between said clamping members. The means at present provided also operate to simultaneously move the clamping members toward or from each other, and these means are constructed as follows:

Engaging the threaded orifices 20 of the blocks 17 is a screw 25 rotatably mounted at its opposite ends in bearings 26 in the cross members 12. The screw 25 is provided at one end with a threaded portion 27 and at its opposite end with a threaded portion 28. One of the threaded portions has left-hand threads and the other right-hand threads so that, when the screw is turned in one direction, it will cause the clamping members to approach one another and, when turned in the opposite direction, will cause the clamping members to travel away from one another. One end of the screw 25 is provided with a transversely extending pin 29 adapted to be engaged by the notches 30 of a detachable crank 31 which facilitates turning of the screw.

The blocks 17 are also provided above the level of the threaded orifices 20 with holes 32 through which extends a rod 33 that also passes through a hole 34 in one of the cross members 12. The rod 33 is detachable from the support since it is screw-threaded at 35 into the other cross member 12. The end of the rod 33 opposite to that which is screw-threaded, is preferably provided with a head 36 to facilitate turning and removal of said rod.

The rod 33 projects through holes 37 in ears 38 that project into the slot 58 in the support. The ears 38 project from the lower margins of guides 39 into the slot 58. From this it will be seen that the guides 39 are movably secured in place in the binder. The guides 39 may be provided at their upper edges with tabs 40 containing alphabetical or other index characters 41. Preferably the guides 39 are mainly constructed of a relatively heavy, smooth and tough paper.

It is important that, when the clamping members have been forced as closely together as possible, the loose leaves be held against slipping out of place so as to maintain alinement of the loose leaves. For this reason there are provided friction strips 42 which are joined integrally in a fold at the bottom of the ear 38 and secured by glue or other suitable means, not shown, to the faces of the guides adjacent the lower margins thereof, as clearly shown in Figure 7. The friction strips are made of a suitable fabric such, for example, as linen and, besides increasing the strength of that portion of the guides through which the rod 33 extends, the friction strips also serve to increase the hold of the guides upon the loose leaves to

prevent the loose leaves from shifting or being moved out of place when the clamping members have been operated into clamping position.

Hingedly connected to the clamping members 16 are end members 43 which are provided to properly support the upper portions of the loose leaves, either in the closed position illustrated in Figures 1 and 5 or in the open positions illustrated in Figures 4 and 8. The end members 43 are hingedly connected with the clamping members by cap screws 44 which pass through the members 43 and into standards 45 of the clamping members. Each of the standards 45 is provided with a stop 46 adapted to engage a shoulder 47 on the member 43, when said member 43 is in vertical or closed position, and adapted also to engage another shoulder 48 on the member 43 when the end member is lowered to a position nearer the horizontal, as in Fig. 8.

Cooperating means are provided on the end members and clamping members to hold the end members in positions intermediate of the two positions above referred to and, for this purpose, the members 43 are each provided with a pair of dogs 49 pivoted at 50 to the member 43. The dogs 49 are adapted to selectively engage series of teeth 51 formed on the periphery of the standards 45. In order that each pair of dogs may be readily operated simultaneously, the dogs 49 of each pair are connected by a rod 52 which the operator will grasp to move the dogs out of engagement with the upper teeth 51 when he desires to swing the end member to a lower position, gravity normally holding the dogs 49 in position to engage the teeth 51.

The opposite ends and sides of the support 11 are open, there being merely guide rods 53 at the sides having downwardly bent ends 54 suitably secured to the cross members 12. In this particular instance the cross members 12 are provided with sockets 55 in which the reduced ends 56 of the rods 53 are inserted. Said reduced ends 56 are engaged by screws 57 which are screwed into the members 24 thus holding the rods 53 in place. The purpose of the guide rods 53 is to effect alining of the loose leaves. That is to say all of the leaves may be positioned in register as in Figure 8 against one of the guide rods 53, or some of the leaves may be offset from the others as in Figure 2, the other guide rod serving to limit movement of the offset leaves away from the other leaves and to aline the offset leaves.

The foregoing description will make clear how the invention is constructed and used, and a further brief description of the operation is as follows: Ordinarily the binder tray parts will be in the positions shown in Figure 1 of the drawings. In other words,

the screw 25 will be turned to a position to hold the clamping members securely against the adjacent leaves, and the end members will be in their vertical positions with reference to the support 11. The loose leaves, when the binder is thus closed, will be protected against dust and dirt. Assuming that the loose leaves *a* are ledger sheets, the credit manager of the firm employing the invention can readily refer to any one of the ledger sheets, without misplacing the same, by simply releasing the dogs 49 from the uppermost teeth 51 and swinging the end members 43 downwardly to seat the shoulders 48 against the stops 46, thus opening the binder, as in Fig. 8.

When any of the ledger sheets are to be removed or inserted in the binder, the screw 25 will be turned to cause the clamping members to travel away from one another, thus releasing the loose leaves, a condition seen in Fig. 4. In this condition the usual accounting operations can be performed. When this release occurs, it will be noted that the loose leaves will not slide upon the support and buckle, thus permitting some of the leaves to slide beneath others, as would be the result if the upper face of the support were smooth. Such sliding and buckling are prevented by the grooved construction of the upper face of the support. When the binder is thus open with the clamping members retracted, any of the ledger sheets can be readily removed from or replaced in the binder and, at the same time, the guides will be held in place by the rod 33. If it be desired to offset any of the ledger sheets, as is done in machine bookkeeping, such sheets will be shifted edgewise into position to engage one of the guide rods 53, as in Figure 2, and the binder may be closed with these sheets thus offset. This offsetting of the leaves is customarily to the right and is for the purpose of taking off the debits and credits. However, the offsetting may also be effected to the left, by removing the left rod 53 from the sockets 55, so that the bookkeeper can in this manner indicate to the credit manager the accounts that are past due.

In the old box type of binders, a space of several inches at each end is required to obtain access to the follower blocks for releasing them. This invention provides for adjusting the end members to the ends of the support, thus economizing space and affording maximum capacity. Also with the old box type of binder, the only way in which the loose leaves could be locked in place was to provide a cover and lock the cover on the tray. With this invention the leaves are locked against removal and at the same time they may be referred to. To effect the locking the crank will be detached after the clamping members are tightened.

The foregoing will make clear that, whereas with the old construction of loose leaf binders it was necessary to use perforated or notched leaves and means to engage the perforations or notches so that the leaves could be referred to without their becoming displaced and liable to be lost, and it was also necessary to provide a posting stand on which the binder, guides and leaves were placed while the bookkeeping operations were performed, this invention provides in a single device for posting and for clamping the leaves so that they may be referred to without their becoming displaced and liable to be lost. This invention eliminates perforating or notching the leaves, thus lessening the cost of manufacture of the leaves and rendering them less liable to be torn when placed in and removed from the bookkeeping machine.

I claim:

1. A tray binder comprising a flat support having a slot, clamping members on the support, index guides between the clamping members having ears projecting into the slot and provided with holes, a rod detachably engaging the support and extending through the holes, and means to force one of the clamping members toward the other to clamp loose leaves between the guides.

2. A tray binder comprising a flat support having a slot, clamping members on the support, index guides between the clamping members having ears projecting into the slot and provided with holes, friction strips on the guides in alignment with the clamping members, a rod detachably engaging the support and extending through the holes, and means to force one of the clamping members toward the other to clamp loose leaves between the friction strips.

3. A tray binder comprising a support, clamping members on the support, means to force one of the clamping members toward the other to clamp loose leaves therebetween, a rod to which the clamping members are slidably attached, and end members hingedly connected to the clamping members.

4. The guide described comprising a sheet of relatively smooth paper, a tab projecting from one margin of the sheet, and friction strips secured to the faces of the sheet adjacent the opposite margin for the purpose described.

5. A tray binder comprising a flat support, clamping members on the support, a screw rotatably mounted in the support and having a right-hand thread at one end and a left-hand thread at the other end, nuts on the respective threaded ends connected with the respective clamping members, an index guide-engaging rod mounted above

the screw and below the upper face of the support, and means to turn the screw.

6. A tray binder comprising a flat support having a slot, clamping members on the support, rods secured to the support beneath the slot, a block slidably mounted on the rods and projecting through the slot and connected with one of the clamping members, and means to hold the block at different positions along the rods.

7. A tray binder comprising a flat support having a slot, clamping members on the support, index guides between the clamping members having ears projecting into the slot and holes in the ears, rods secured to the support beneath the slot, a block slidably mounted on the rods and projecting through the slot and connected with

one of the clamping members and having a hole therethrough, a rod detachably engaging the support and extending through the holes in the guides and block, and means to hold the block at different positions along the rods.

8. A tray binder comprising a flat support having sockets, clamping members on the support, one of said clamping members being adjustable toward and from the other clamping member, guide rods at opposite sides of the support provided with downwardly bent ends seated in the sockets, and screws to clamp said rods in the sockets.

Signed at Los Angeles, California, this 23d day of August, 1923.

CHARLES R. HADLEY.