Aug. 4, 1931. E. W. DAVIS 1,817,073

RECORD TRAY

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Fig. 1.

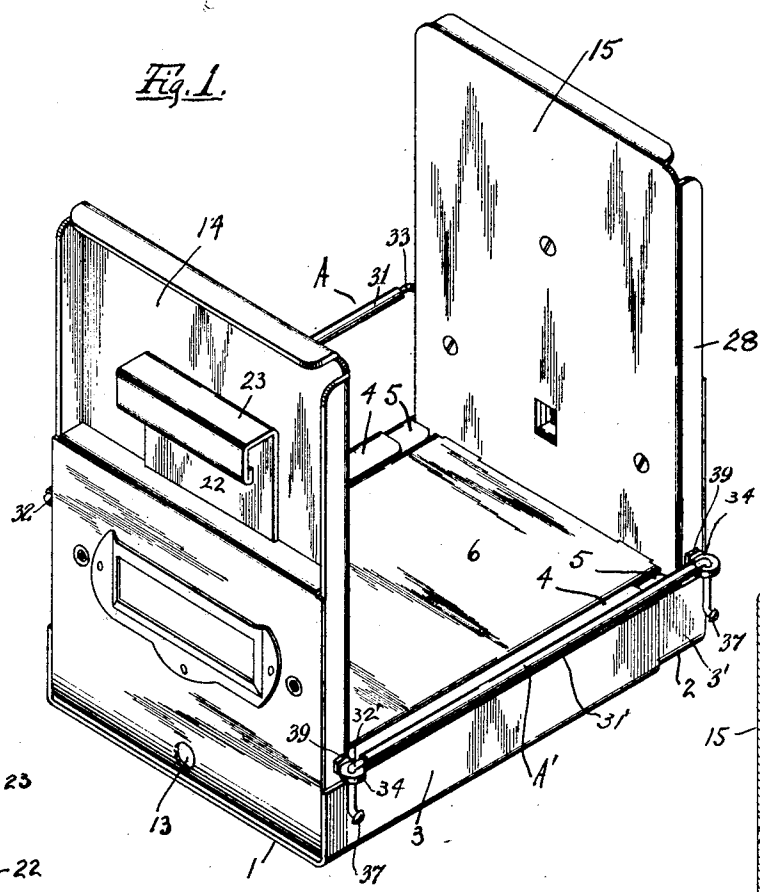
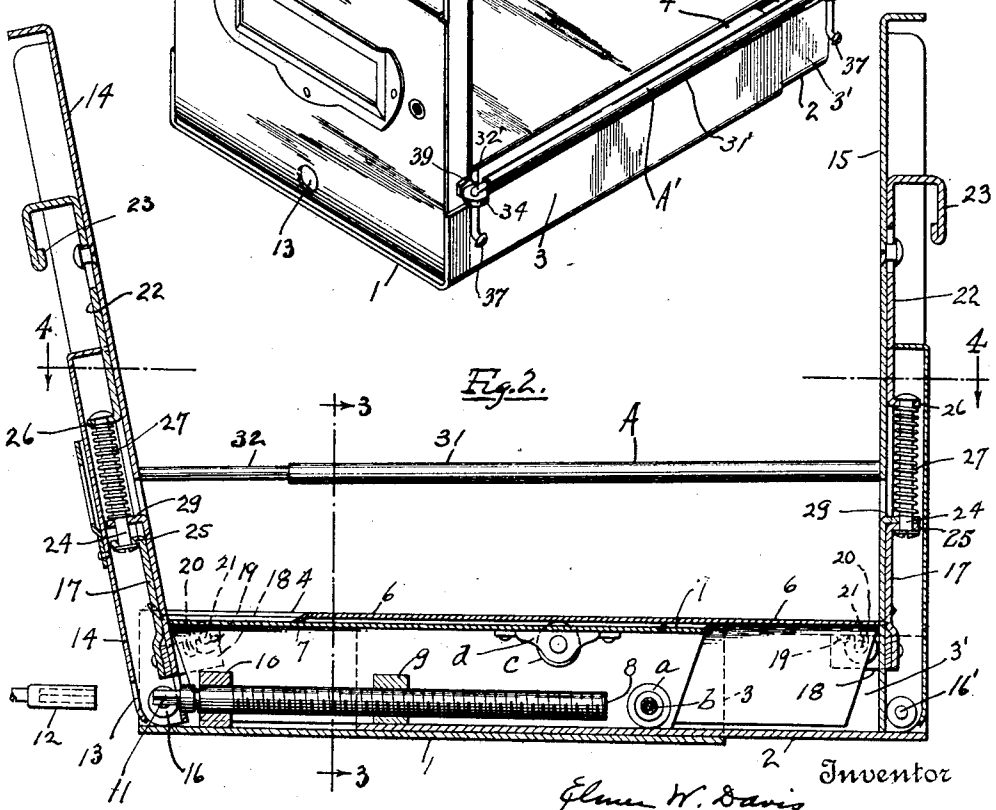


Fig. 2.



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Fig. 3.

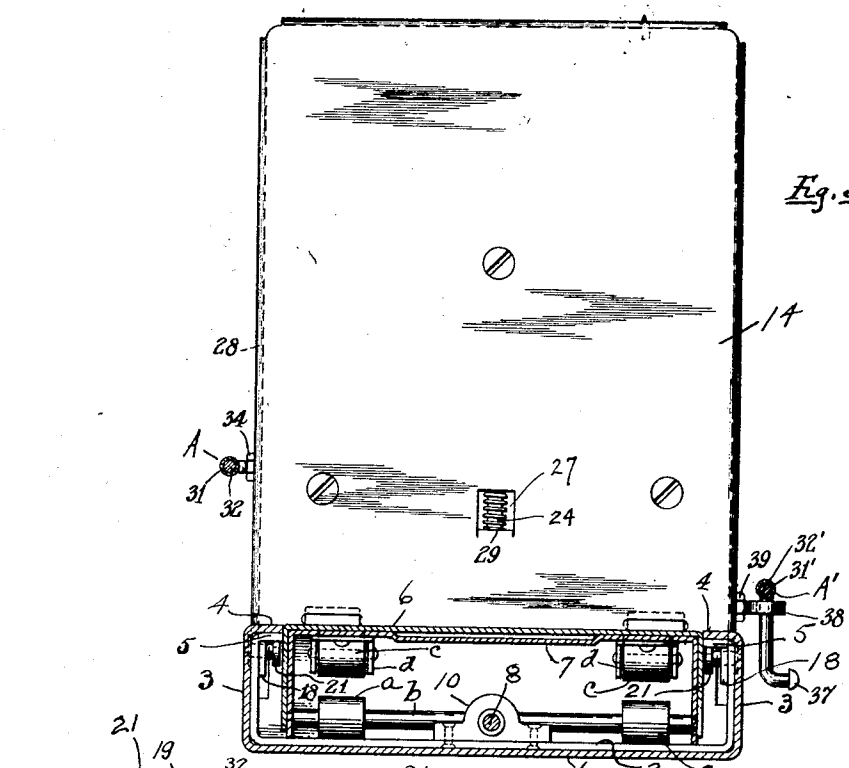


Fig. 4.

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RECORD TRAY

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Fig. 5.

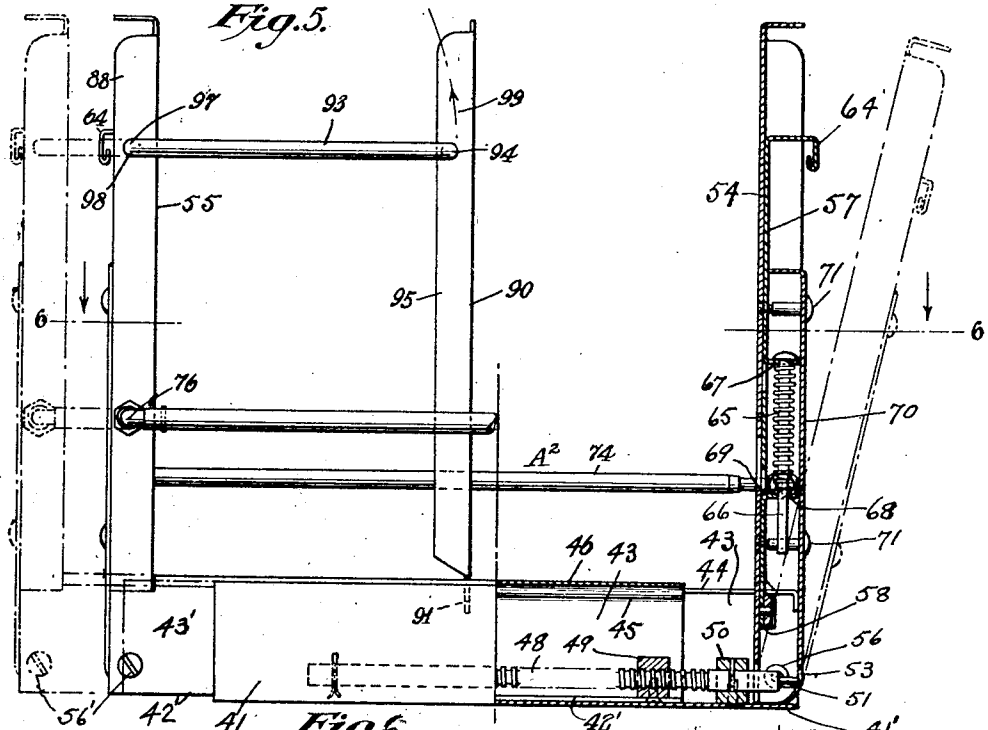
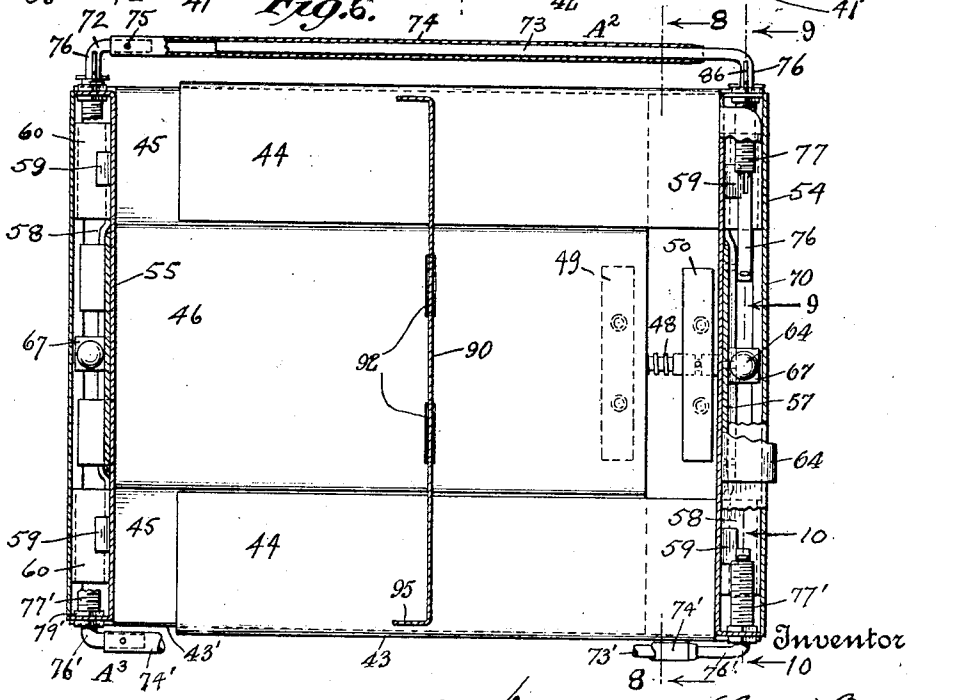


Fig. 6.



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RECORD TRAY

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Fig. 8.

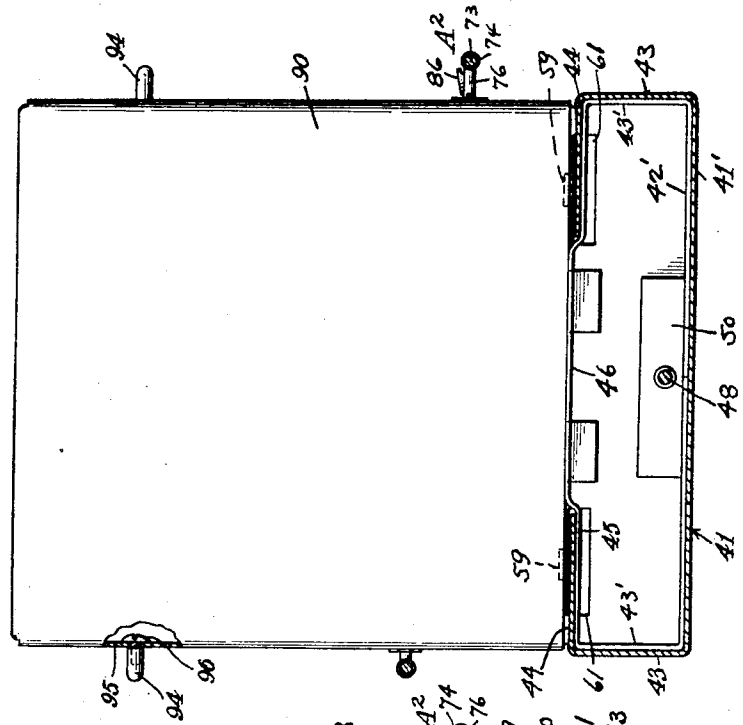
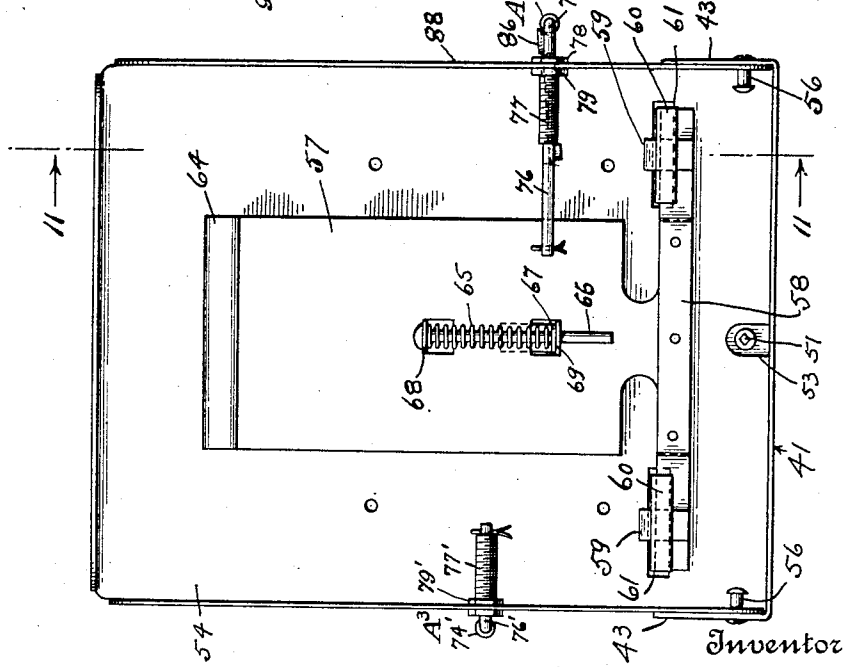


Fig. 7.



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RECORD TRAY

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Fig. 9.

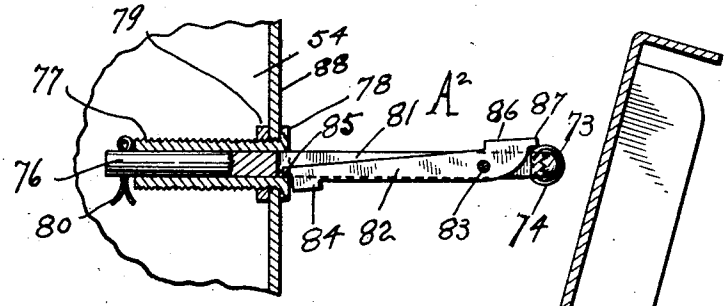


Fig. 10.

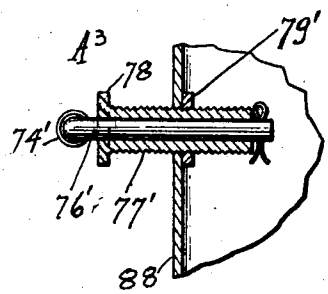


Fig. 11.

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UNITED STATES PATENT OFFICE

ELMER W. DAVIS, OF NEWTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO REMINGTON RAND INC., OF BUFFALO, NEW YORK, A CORPORATION OF DELAWARE

RECORD TRAY

Application filed December 8, 1928. Serial No. 324,745.

This invention relates to trays for record files, and has for its general object the provision of an expansible tray adapted to hold varying quantities of record cards, folders or the like.

Among other objects of the invention is the provision of an expansible tray having adjustable or telescoping base members with means to permit ready adjustment in the length of the tray to accommodate different quantities of the record members and means to hold the telescoping members in adjusted position; also means to accommodate the width of the tray to different widths of record members, and to permit lateral displacement of the record members to a predetermined extent for purposes of posting, etc.

Still other objects of the invention include the provision of end members supported pivotally upon the base members so that the end members can be swung into inclined or upright position readily, to permit tilting the record members for ready consultation of the records, and to hold the records compactly in upright position for storage, when not in use; also means to lock the ends in their desired tilted and upright positions respectively; and the provision of handles by which the locking devices may be operated manually and by which the tray may be lifted conveniently for conveyance to and from the place for storage.

Additional objects will appear from the following description, appended claims, and accompanying drawings, in which

Figure 1 is a view in perspective of a record tray in the construction of which this invention has been embodied.

Figure 2 is a view in vertical section taken on a medial, longitudinal plane on the line 2—2 of Figure 4.

Figure 3 is a view in transverse vertical section on the line 3—3 of Figure 2.

Figure 4 is a view in horizontal longitudinal section on the line 4—4 of Figure 2.

Figure 5 is a view in side elevation, partly in vertical section, of a modification.

Figure 6 is a view in horizontal section on the line 6—6 of Figure 5.

Figure 7 is a view in end elevation of said modification with the face plate removed.

Figure 8 is a view in vertical section on the line 8—8 of Figure 6.

Figure 9 is a fragmentary detail view in section on the line 9—9 of Figure 6.

Figure 10 is a similar view on the line 10—10 of Figure 6.

Figure 11 is a vertical sectional view on the line 11—11 of Figure 7.

Referring now to the drawings in which like reference characters designate like parts, the reference characters 1 and 2 designate respectively base members formed of metal, preferably aluminum, and having upright side walls 3 and 3′ with inturned flanges 4 and 5 of such proportions as to fit snugly when the base members are assembled telescopically, as shown, whereby the base may be extended or contracted as desired to furnish a base of the proper length for any suitable quantity of record cards, folders or the like, the latter being massed in upright position with their lower edges resting on the flanges 4 and 5.

Preferably, the central space between the flanges is bridged by a false bottom comprising two inverted channel-shaped members 6 and 7 arranged to slide one above the other, so that record members which are not in a position to be supported by the flanges 4 and 5 will be supported at the same level by the members 6 and 7.

Various means may be provided for effecting the telescopic adjustment of the base members mechanically. In the drawings, and especially Figures 1 to 4 inclusive, there is illustrated means to attain this purpose comprising a lead-screw 8 cooperating with threaded lugs 9 and 10 on the base members.

The screw has a squared end 11 adapted to receive a key 12 (see Figure 2) which may be inserted through a hole 13 in the end member 14 for the purpose of effecting the desired adjustment.

At the outer ends of the base members 1 and 2 are provided end members 14 and 15 which are mounted pivotally at 16 and 16′ respectively upon the base members, whereby said end members can be swung respec-

tively around the pivots into an upright position, as shown at the right-hand side of Figure 2, or into an inclined position, as shown at the left-hand side of Figure 2, it being understood that the record members stacked therebetween can be tilted back against the end members when so inclined for purposes of ready consultation.

In further pursuance of the invention means are provided for locking the end members in their several positions, and as a convenient means for this purpose each end member is shown as provided with a pair of latches 17 at the lower corners thereof, each latch having a foot 18 with notches 19 and 20 adapted to be engaged selectively with a stop pin 21 extending inwardly from one of the sides 3 or 3'.

Each latch is preferably provided with a suitable actuating device, which may conveniently take the form illustrated, comprising a slide 22 having an operating handle 23 and connected operatively with the latch 17 by a bolt 24 traversing apertured lugs 25 and 26 on the latch and handle-slide respectively and a similar lug 29 on each end member.

In order to hold the parts normally in position, a coil spring 27 surrounds each bolt 24 and is held under compression between the lugs 26 and 29, so that the tendency of the spring is to draw the foot 18 up against the stop pin 21. When the handle 23 is depressed manually, the bolt 24 and latch 17 are also depressed and the foot 18 drops away from the pin 21 permitting the end to be swung back until the foot portion having the shallow notch 19 is swung up into engagement with the stop 21.

In Fig. 2 the end 14 is shown in its angular or open position. To raise the end to its vertical position, the end and included latch and foot members are swung inwardly about the pivot 16, such movement disengages or cams out the shallow notch 19 from the stop 21 against the pressure of the spring 27. When the vertical position is reached, the stop 21 registers with the deep notch 20 of the foot 18, and the tensed spring 27 immediately lifts the slide 22 and the latch 17 and accompanying foot 18. Such movement is allowed by the entry of the deep notch 20 on the stop 21. To reverse this operation, it is necessary to thrust down the handle 23 thus disengaging the notch from the stop 21, and to pull outwardly to swing the end member to its angular position, wherein it is fixed by the subsequent registry of the shallow notch 19 with said stop. The end 15 operates similarly and is shown in Fig. 2 in its vertical locked position.

In pursuance of still another object of the invention, means are provided to confine the record members at the sides of the tray, such means preferably taking the form of devices by which the width of the tray is accommodated to cards or other record members of different lateral extent, so that the tray is extensible both in length and breadth.

To attain the above purpose, there is provided a pair of telescopic abutments A and A' each consisting of a two-part rod comprising the members 31, 32 and 31', 32' respectively. The member 31 of A is connected to the end 15 by a threaded angle bracket 33 which has a nut 34 adapted to engage an upright flange 28 of the end member to limit inward movement of the abutment. A coil spring 36 cooperating with the flange 28 and a nut 35 tends constantly to hold the abutment in place. The nut 35 can be adjusted to regulate the tension of the spring. The member 32 of the abutment A' may be connected to the end member 14 in the same manner as the member 31 above described, that is, a threaded end portion 33' thereof may be bent at right-angles and connected to the end member 14 through the upright flange 28'. Nuts 34' and 35' and a spring 36' are provided to maintain and adjustably position the abutment. By changing the position of the nuts 34 and 35, the degree of projection of the abutment A can be varied to accommodate record members of different lateral extent.

It will be noted that the abutment A' is preferably arranged at a lower height than that of the other abutment, being only at a sufficient height to prevent accidental displacement of the record members laterally but permitting any selected record members to be drawn readily out beyond the tray for purposes of posting, etc. After this operation, the record members can be pushed in laterally until they engage the abutment A, and the record members so returned will drop down behind the abutment A' without the need for any special care in manipulation, as the abutment A is high enough to prevent over-running by the record members when so returned.

As above described, the abutment A' also has a two-part rod comprising members 31' and 32'. Headed angle pieces 37 provided on each member 31' and 32' are fitted loosely in threaded eye-bolts 38 mounted in the end flanges 28 and held adjustably by nuts 39 and 39'. By this arrangement the abutment A' can be swung outwardly to permit the cards to be shifted into offsetting position. Also, by changing positions of the nuts 39, 39' the degree of projection of the abutment A' may be varied.

To facilitate smooth telescopic adjustment of the parts of the tray, I have shown in Figures 2 and 3 roller-bearing devices. These comprise rolls *a* mounted on a shaft *b* carried by one of the sliding members 7 of the false bottom and running on the base member 2. Other rollers *c* are provided mounted in bearings *d* on the upper part of member 7 and ex-

tending into position adjacent to the cooperating sliding member 6 of the false bottom, thus avoiding any friction between the members.

In the modified embodiment of the invention illustrated in Figures 5 to 11 inclusive, the parts designated by the reference numerals 41 and 42 respectively are telescoping base members formed of sheet-metal, preferably aluminum, the former comprising an elongated box-like structure of rectangular transverse section. The sheet-metal is shown as bent longitudinally to form a bottom wall 41′, side walls 43 and upper wall portions 44 which constitute parts of the base on which the lower margins of the record members are supported. The other base member 42 is also rectangular in cross-section, the sheet-metal being bent longitudinally to form a bottom wall 42′, side walls 43′ and a top wall 45 which also serves as part of the base to support the record members. At 46 the metal of the top wall 45 is raised to about the level of the overlapping portions 44 of the first described base member so that, when the telescoping base members are extended, the record members are supported at a substantially uniform level.

To permit ready and positive movement of the base members longitudinally relatively to each other, there is provided a lead screw 48 having threaded engagement with block 49 fixed to the base member 42, and having swivelled engagement with block 50 fixed to base member 41. At 51 the lead screw has a squared end adapted to be fitted with a key 12 (see Figure 2) for the purpose of effecting the desired adjustment, this key being insertable through a suitable aperture 53 at the lower end of one of the end members now to be described.

End members 54 and 55 are provided, formed of sheet metal preferably, and connected pivotally at 56 and 56′ to the side walls 43 and 43′ of the base members respectively. The end member 54 is pivoted on the base member 41 and the end member 55 is pivoted on the base member 42. In Figure 5 the end member 54 is shown in full lines in an upright position and in dot and dash lines in a forwardly inclined position.

In pursuance of the invention, means are provided to maintain the end members in the upright position, said means comprising a sliding latch device for each of the end members. Each of these devices includes a sliding plate 57 with a transverse bracket 58 (see Figure 7) carrying latches 59 which project upward and are adapted to cooperate with lugs 60 formed on the adjacent end of the top portions 44 of the base member 41. These lugs 60 project through holes 61 (see Figure 11) in the end member and have downwardly extending flanges 62. They are also provided with openings 63 to receive the latches 59 as indicated in the dot-and-dash line position of the end member 54 shown in Figure 11. The end member is thereby held in its upright position until the slide 57 is depressed, carrying down with it the latches 59 when the end member may be swung around its pivot 56 until the latch 59 abuts against the flange 62, and the end 54 is thereby held against further movement.

To facilitate manual actuation of the latches, each slide 57 is preferably provided with a handle 64 (see Figures 5 and 7) and these handles serve as means to lift the tray bodily. When so lifted, the tendency of the upward draft is to swing the ends around their pivots 56 and to cause the latches 59 to enter the holes 63, the latches being beveled to aid such entry.

In order to insure such entry and to hold the latches in this position, the latch plates 57 are preferably provided with means tending normally to press them upward. A convenient device for this purpose is shown in the compression springs 65 coiled upon posts 66 which extend between lugs 67 and 69 formed upon the end member and slide respectively, the action of the spring against the lug 67 being normally to force the slide upward. The post also traverses another lug 68 upon the slide and aids to maintain the slide in position upon the end and also to guide it in its sliding movement. These parts are preferably enclosed by a face plate 70 secured to the end member by screws 71.

The modified form of the invention includes also the provision of improved abutment devices for limiting the lateral shifting of the record members. At the respective sides of the tray I have shown telescopic devices A^2 and A^3 comprising for the device A^2 a rod 73 and sleeve 74 having elbows 76 connecting them with the tray ends 54 and 55 respectively. The preferred structure of the elbow connections is shown best in Figures 9, 10 and 11. For the device A^2 they comprise the elbow proper 76 and a threaded bushing 77 which is screwed into the wall of the end member and is held by a nut 79 either in the position shown in Figure 9 or in a more extended position such as that shown in Figure 10, where a similar bushing 77′ is provided for the device A^3. Figure 9 shows the elbow connection for the abutment device A^2 as having also a latch 82 mounted in a slot 81 of the elbow 76 by which the elbow and its connected rod and sleeve abutment members may be retained in a position sufficiently extended to permit the record members to be shifted laterally for offsetting. This latch is mounted on a pivot 83 and has a shoulder 84 which prevents the abutment from moving inward accidentally, another shoulder 85 limiting the swinging of

the latch. A thumb piece 86 permits easy actuation of the latch to release the abutment for inward movement, when desired. A shoulder 87 limits the downward movement of the thumb piece.

When the abutment device A^2 is in the position shown in Figure 9, the record members may be shifted laterally to contact with the sleeve 74 and rod 73, such members serving to insure uniform lateral positioning of the record members so shifted. The elbow connections for the abutment device A^3, shown in detail in Figure 10, are similar in general construction to those for the abutment device A^2 but lack the means for shifting laterally. The device A^3 having a sleeve 74′ and elbows 76′ may, however, be adjusted by screwing the bushings 77′ in or out, as desired, and turning the nuts 79′ into position to hold it firmly.

In Figures 5, 6 and 8 I have shown a form of device for adapting the tray to receive a relatively small number of record members. This device comprises a partition 90 having at its bottom projections 91 adapted to enter suitable slot 92 in the base member 46. To hold the partition 90 in upright position, arms 93 are provided having elbows 94 connected with the flanges 95 as shown in Figure 8 by screws 96. The arms 93 have also elbows 97 entering suitable apertures 98 in the flanges 88 of the end member 55.

When not in use the partition 90 may be swung up and out of the tray as indicated by the arrow 99 in Figure 5. When the end member 55 is tilted, the partition 90 will be tilted with it so that the record members between the partition 90 and the end member 54 may be tilted for observation in the usual manner.

It will be clear from the above description in connection with the drawings that the expansible tray forming the subject of this description is strong, light, compact, easily adjusted and operated, and lends itself to rapid use and ready transportation to and from the points of consultation and storage.

Since it is obvious that various changes may be made without departing from the invention, it is to be understood that the invention is not limited to the specific details above described except as set forth in the appended claims.

I claim:

1. An extensible tray for record files, said tray comprising a plurality of base members assembled in telescopic relation and adapted to support varying numbers of record members, means to move said base members telescopically to vary the length of said tray and to hold said base members in selected relative position, end members each mounted pivotally on one of said base members, and devices to lock said end members in upright and inclined positions respectively.

2. An extensible tray for record files, said tray comprising a plurality of base members assembled in telescopic relation and adapted to support varying numbers of record members, means to move said base members telescopically to vary the length of said tray and to hold said base members in selected relative position, end members each mounted pivotally on one of said base members, and devices to lock said end members in upright and inclined positions respectively, said end members having lifting handles connected operatively with said locking devices.

3. An extensible tray for record files, said tray comprising a plurality of base members assembled in telescopic relation and adapted to support varying numbers of record members, means to move said base members telescopically to vary the length of said tray and to hold said base members in selected relative position, end members each mounted pivotally on one of said base members, and devices to lock said end members in upright and inclined positions respectively, said end members having lifting handles connected operatively with said locking devices and yielding means tending normally to move said locking devices into their respective locking positions.

4. An extensible tray for record files, said tray comprising a plurality of base members assembled in telescopic relation and adapted to support varying numbers of record members, means to move said base members telescopically to vary the length of said tray and to hold said base members in selected relative position, end members each mounted pivotally on one of said base members, and devices to lock said end members in upright and inclined positions respectively, said end members having lifting handles connected operatively with said locking devices and means tending normally to move said locking devices into their respective locking positions, said handles being adapted for manual actuation to release said locking devices and permit said end members to swing into inclined position, whereby said record members may be separated at their upper margins for inspection.

5. A extensible tray for record files, said tray comprising a plurality of base members assembled in telescopic relation and adapted to support varying numbers of record members, means to move said base members telescopically to vary the length of said tray and to hold said base members in selected relative position, end members each mounted pivotally on one of said base members, and devices to lock said end members in upright and inclined positions respectively, said end members having lifting handles con-

nected operatively with said locking devices and means tending normally to move said locking devices into their respective locking positions, said handles being adapted for manual actuation to release said locking devices and permit said end members to swing into inclined position, whereby said record members may be separated at their upper margins for inspection, said handles acting when said tray is lifted to move said end members into their upright positions automatically.

6. An extensible tray for record files, said tray comprising a base adapted to support varying numbers of record members, and end members, mounted at the ends of said base and normally retaining said record members in a vertical position, one of said end members mounted pivotally on said base and adapted to swing into an inclined position to permit said record members to be tilted for consultation, and a handle on said pivoted end member acting when said tray is lifted to move said pivotally mounted end member into an upright position automatically.

7. In an extensible tray for record files, a plurality of base members assembled in telescopic relation and adapted to support varying numbers of record members, means to move said base members telescopically to vary the length of said tray, and means extending along each side of said tray and adjustable to vary the effective width of the tray.

8. In an extensible tray for record files, a plurality of base members assembled in telescopic relation and adapted to support varying numbers of record members, means to move said base members telescopically to vary the length of said tray, and means to vary the effective width of said tray including telescoping abutment devices supported extensibly along each side of said base members.

9. An extensible tray for record files, said tray including a plurality of base members assembled in telescopic relation and adapted to support varying numbers of record members, means to move said base members telescopically to vary the effective length of said tray, and means to vary the width of said tray including telescoping abutment devices supported for lateral adjustment along each side of said base members, said abutments being respectively adapted to hold said record members in a predetermined position relatively to said base members, and one of said abutment devices being so located as to permit optional lateral movement of said record members to one side beyond the same.

10. An extensible tray for record files, said tray comprising a plurality of base members assembled in telescopic relation and adapted to support varying numbers of record members, means to move said base members telescopically to vary the length of said tray and to hold said base members in selected relative position, end members each mounted pivotally on one of said base members, and telescoping abutment devices supported for lateral adjustment by and between said end members extending along each side of said base members.

11. An extensible tray for record files, said tray comprising a plurality of base members assembled in telescopic relation and adapted to support varying numbers of record members, means to move said base members telescopically to vary the length of said tray and to hold said base members in selected relative position, end members each mounted pivotally on one of said base members, and telescoping abutment devices mounted on said end members and extending along each side of said base members, and means to vary the lateral position of said abutments relatively to said end members.

12. An extensible tray for record files comprising a base, end members connected to said base, abutment devices extending along the sides of the base, means to connect said abutment devices to said end members, said connecting means being adjustable to vary the distance between said abutments whereby the effective width of the tray may be varied.

13. An extensible tray for record files comprising a plurality of base members arranged in adjustable relation with each other, means to move said members to vary the length of said tray, end members connected to said base members, abutment devices extending along the sides of the base members and connected to said end members, and means to adjust said abutment devices laterally to vary the distance therebetween.

14. An extensible tray for record files comprising a plurality of base members arranged in adjustable relation to each other, means to move said base members to vary the length of said tray, end members connected to said base members, abutment devices connected to said end members, said abutments being coextensible with said base members and laterally adjustable to vary the distance relative to each other.

15. An extensible tray for record files comprising a base, end members connected to said base, abutment devices carried by said end members at each side of said tray, and means permitting one of said abutment devices to be extended outwardly to permit offsetting the sheets for posting.

16. An extensible tray for record files comprising a plurality of base members arranged in adjustable relation to each other, means to move said members to vary the length of the tray, abutment devices disposed on each

side of said tray, means to adjust said abutment devices laterally to vary the effective width of the tray, one of said abutment members being slidably mounted for lateral movement relative to the sides of said tray.

In testimony whereof, I have affixed my signature to this specification.

ELMER W. DAVIS.