Aug. 25, 1953

O. H. SMITH ET AL

LETTER SAFE

2,650,150

Filed Jan. 2, 1951

2 Sheets-Sheet 1

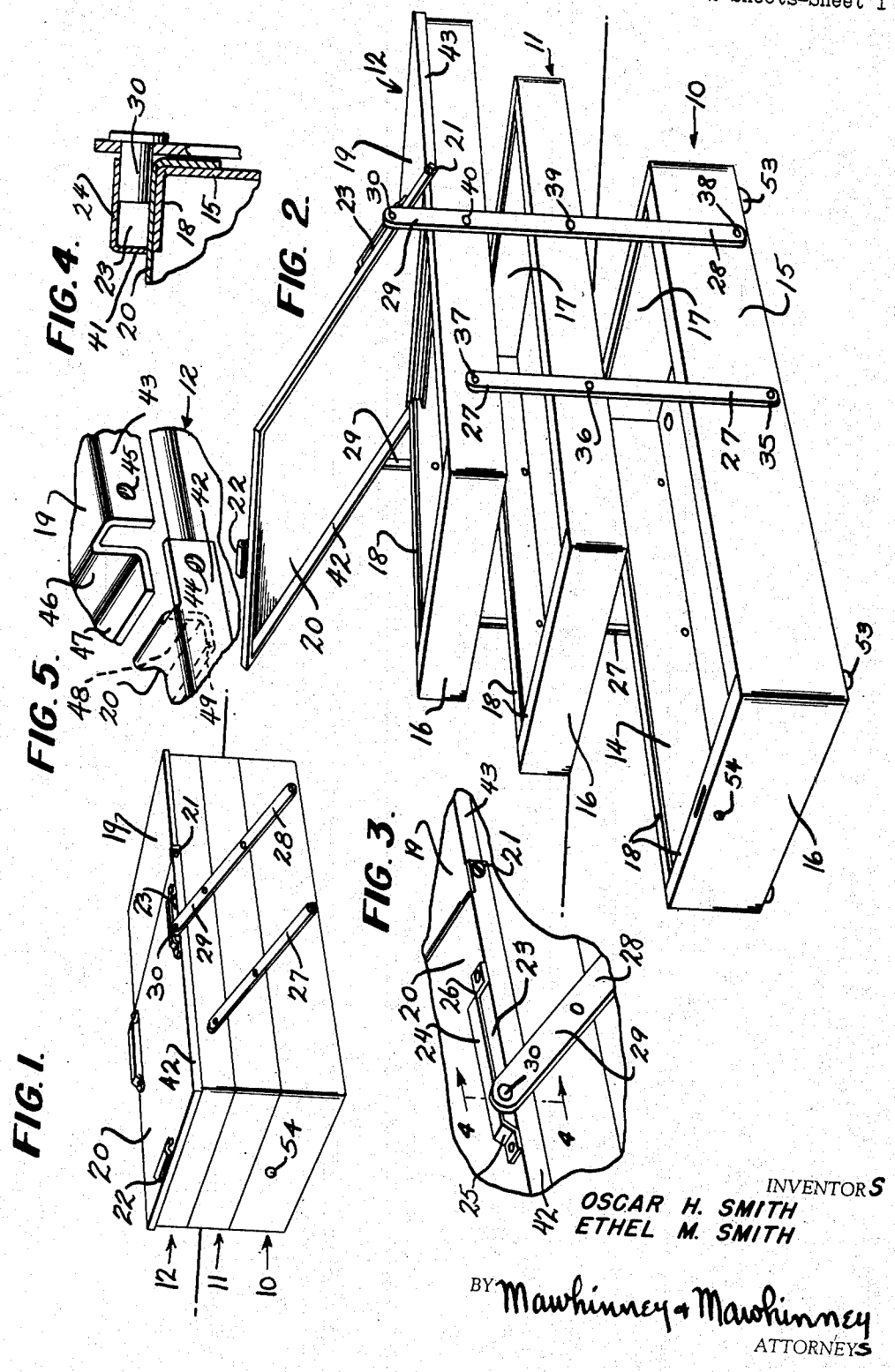


FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.

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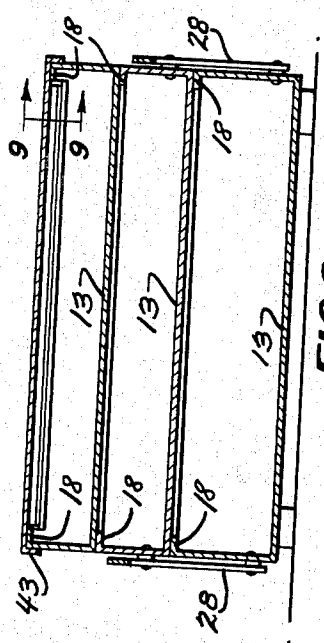


FIG. 8.

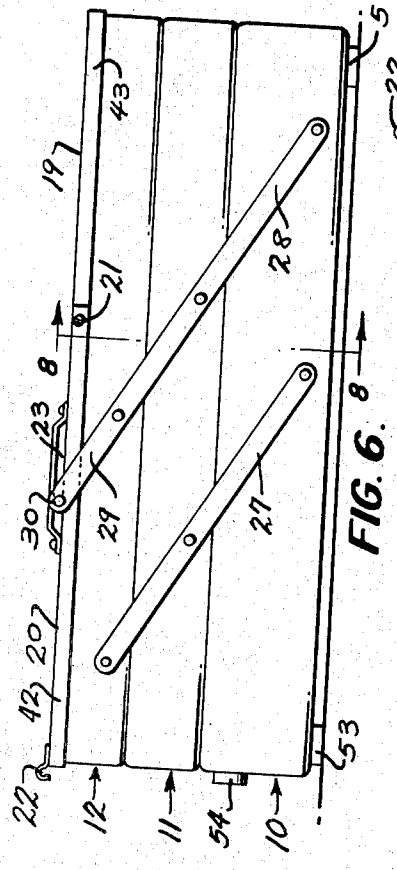


FIG. 6.

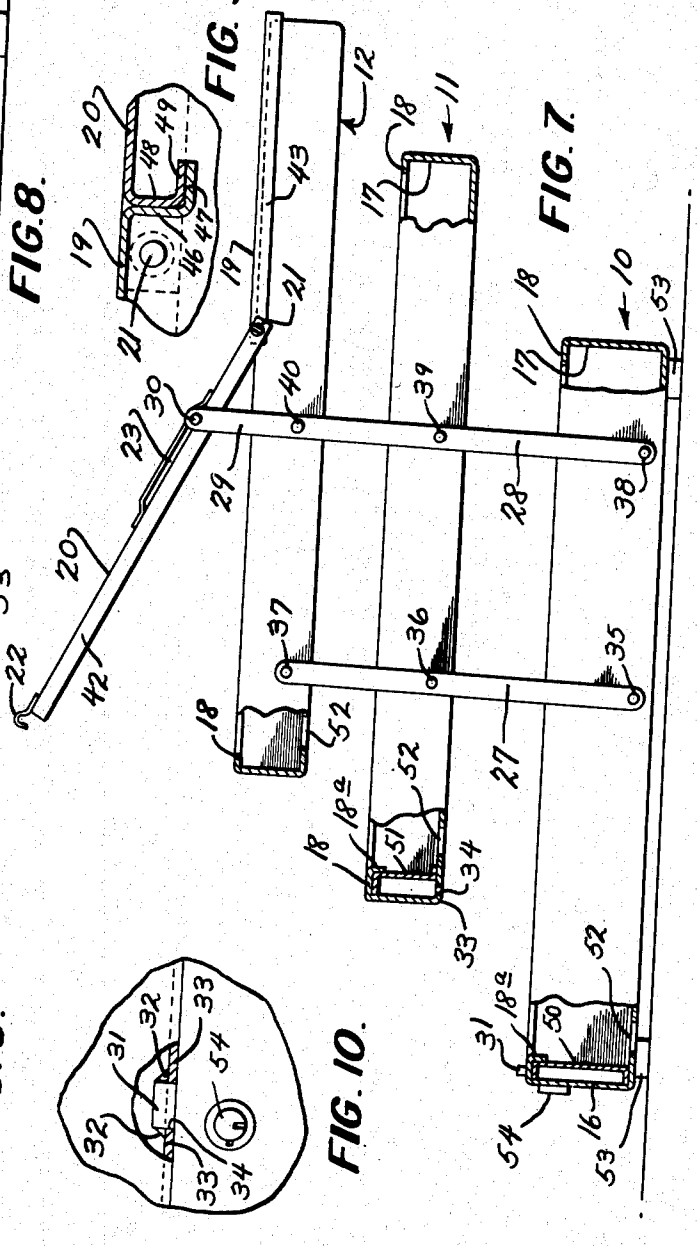


FIG. 9.

FIG. 7.

FIG. 10.

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LETTER SAFE

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Application January 2, 1951, Serial No. 204,027

4 Claims. (Cl. 312—201)

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The present invention relates to improvements in letter safes and has for an object to provide an improved arrangement of interconnected trays with a cover for the top tray having provision for the storage and carrying of valuable papers and documents, which trays may be moved to a closed position where the same are locked to provide an effective safe; the trays being openable when unlocked to an offset terraced condition in which the trays are readily accessible for introducing or removing papers and documents.

Another object of the invention is to provide an improved letter safe which may be made from any desired material, for instance metal or plastic in which the several trays are so constructed and arranged and so related that they provide when closed an exceedingly strong integrated construction proof against the removal or theft of any of the contents thereof, which safe in the closed and locked condition may be readily transportable.

A further object of the invention is to provide an improved letter safe of a character to rest upon a desk and which will possess all of the rigidity and strength of a safe while offering, when open, all of the advantages of letter trays.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein the symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a perspective view of an improved letter safe according to the present invention illustrated in a closed and locked position.

Figure 2 is a perspective view of the improved letter safe, taken on an enlarged scale, with the trays and the cover in the open terraced condition.

Figure 3 is a fragmentary sectional view of the top tray showing a form of cover operator employed.

Figure 4 is a vertical fragmentary section taken on the line 4—4 in Figure 3.

Figure 5 is an exploded fragmentary perspective view showing the joint between the pivoted cover and the permanent top wall of the top tray.

Figure 6 is a side elevational view of the improved letter tray in the closed position.

Figure 7 is a similar view in the open position of the trays and cover and with parts broken away and parts shown in section.

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Figure 8 is a vertical transverse section taken on the line 8—8 in Figure 6.

Figure 9 is a fragmentary vertical longitudinal sectional view taken on the line 9—9 in Figure 8 and,

Figure 10 is a fragmentary front elevational view of the bottom and intermediate trays with parts broken away to show the locking device.

Referring more particularly to the drawings, 10 designates a base tray, 11 one or more intermediate trays and 12 a top tray. Each tray preferably comprises a bottom 13, side walls 14 and 15, a front wall 16 and a rear wall 17. All of said walls are desirably provided with inturned flanges 18.

The top tray 12 is closed at its rear portion by a permanent rear top 19. A cover 20 is disposed over the front portion of the top tray 12, such cover being pivoted, as at 21 to the top tray. A hand-hold 22 is affixed to the forward portion of the pivoted cover 20. At its side portions the cover 20 carries slotted guides 23 having top walls 24, front end walls 25 and rear end walls 26.

The trays are connected together by rigid links or arms of which 27 are the front pair of links and 28 a rear pair of links. The rear links 28 have upward extensions 29 carrying lateral projections or pins 30 fitted slidably in the slotted guides 23.

A lock 54 is mounted on the front wall 16 of the base tray 10. As shown more particularly in Figure 10 the locking bolt 31 is equipped with expanding locking tongue 32 adapted to overlap the striker plate 33 which is in effect a portion of the bottom wall 13 of the superposed tray 11. Such striker plate 33 is provided with a bolt opening 34 through which the bolt 31 is movable.

The front links 27 are pivoted at 35 to an intermediate portion of the base tray 10, at 36 to a more forward portion of the intermediate tray 11, and at 37 to a still more forwardly advanced portion of the top tray 12.

In a similar way the rear links 28 are pivoted at 38 to a rear portion of the base tray 10 and at 39 and 40 to successively more forward portions of the intermediate tray 11 and top tray 12.

As appears more clearly in Figure 4 the slotted guides 23 may be closed at their inner sides by the vertical inner walls 41. The top surface of the pivoted cover 20 may serve as the bottom walls for the slotted guides 23.

The cover 20 is also preferably formed at its front and side edges with downturned flanges 42, best seen in Figures 3 and 5. The permanent top

19 is also preferably formed with a downturned flange 43. Portions of the flanges 42 and 43 are overlapped to enable the pivots 21 to be inserted in registering openings 44 and 45.

The permanent cover 19 at its forward free edge is advantageously formed with a downwardly depending flange leg 46 and an outwardly extending or horizontal flange foot 47 extending forwardly from the lower edge of the flange leg 46. This construction is shown more particularly in Figures 5 and 9, in which the rear edge of the cover 20 is shown as provided with a downturned vertical flange leg 48 and a forwardly extending flange foot 49 projecting forwardly from the lower edge of the flange leg 48 substantially horizontally or at right angles to the vertical plane of the flange leg 48.

As shown more particularly in Figure 7 the front wall 16 of the base tray is reinforced by a channel member 50 having its flanges turned forwardly and engaging the tray bottom 13 and the flange 18 respectively, the flanges of the channel 50 being preferably directed forwardly so as to provide double spaced walls 16, 50 in which the lock 54 may be accommodated and which will otherwise strengthen and reinforce the front portion of the base tray 10. The channel member 50 and its flanges may be united to the parts of the base tray 10 with which it contacts by welding, brazing or other suitable methods. Preferably a downturned flange 18a from the rear edge of the horizontal flange 18 extends in back of the upper portion of the channel member 50.

In like manner a Z-plate 51 may be incorporated in the front portion of the intermediate trays 11.

Finger holes 52 may be made in the bottoms 13 of all of the trays, preferably near the forward portions thereof.

The entire safe may be supported upon rubber or other feet 53.

In the use of the device, the safe will be ordinarily in the closed position shown in Figures 1, 6 and 8, the same being locked in the manner indicated in Figure 10.

The proprietor or some authorized person in possession of a key may insert the same in the lock 54 for the purpose of first withdrawing the tongues 32 into the lateral confines of the locking bolt 31 and thereafter moving the lock bolt 31 downwardly through the opening 34 so as to be entirely free of the striker plate 33.

All parts of the safe are preferably of metal appropriately finished to impart an attractive appearance. By locking any two trays together the entire safe will be locked against unauthorized entry, due to the fact that in the closed position the trays are all in vertical registry with the bottom of one tray seated upon the inturned flanges 18 of the next lower tray. The edges all about the trays when in closed position interpose effective barriers against the abstraction of papers from the trays.

After the safe is unlocked, the device may be moved to the open position illustrated in Figures 2 and 7 as by lifting the handhold 22 due to the entrainment of all of the trays through the rigid arms or links 27 and 28 and the link extension 29. Or the trays may be opened by moving any of the trays to swing the links 27 and 28 to the substantially vertical position shown in Figures 2 and 7. In the closed position the rigid arms or links 27, 28 will be in diagonal position illustrated in Figures 1 and 6. Therefore in opening the trays will be lifted one above the other by the vertical distance between the pivots 35, 36, 37 and 38, 39, 40. Also due to the connection of the several pivots at the points indicated on the several trays, such trays will be moved into an offset or terraced position with each tray having its front wall set backwardly relatively to the adjacent lower tray. Such arrangement will leave the front portions of all of the trays freely accessible to the hand of the proprietor in inserting or removing valuable papers or documents. In removing papers the finger holes are readily accessible in the open terraced position of the trays. By inserting a finger upwardly through a finger hole 52 the front portions of papers or documents in any particular tray may be pushed upwardly to a position where the papers may be more readily grasped in the other hand and removed from the tray.

Incident to the opening of the tray and due to the extensions 29, pins 30 and the slotted guides 23, the pivoted cover 20 will also be swung upwardly to give free access to the contents of the top tray 12.

As shown more particularly in Figure 7 in the completely open position of the safe, the pins 30 will encounter the rear guide walls 26 which will act as stops to prevent the further opening movement of the safe. This will occur preferably when the rear links 28 have moved just past the vertical dead center to avoid the trays and the lid 20 collapsing in a forward motion to the closed position of the tray when the hands are removed.

In the closed position of the tray the pins or projections 30 preferably stop short of the forward end walls 25 of the slotted guides 23 in order to give ample clearance so that these parts will not interfere with the full closing of the trays in which the bottoms of the trays rest upon flanges 18 of under trays.

When in the closed position the flanges 46, 48 and 47, 49 of the permanent top 10 and pivoted cover 20 will fit closely together and prevent the insertion of any instrument which might be used in an attempt to withdraw valuable papers from the safe. In the same way the cover flange 42 guards against any attempts at theft or abstraction of papers.

The entire safe is reinforced in a lateral direction by the channel and Z-plates 50, 51 and also by the flanges 18; and also further by the flanges 46, 48 and 47, 49. The safe is reinforced against any lateral motion which might uncover any of the trays by reason of the longitudinal flanges 18 and the attachment of the rigid links 27 and 28. These links 27, 28 are preferably straight flat bars of substantially heavy metal which may be aluminum treated, chrome finished or otherwise heated or finished in matching or contrasting colors with the walls of the trays which are preferably of relatively heavy gauged sheet steel.

The links 27 and 28 are preferably straight bars acting as a series of levers between the trays and also the extensions 29 with the projections 30 cooperate with the slotted guides 23 to form levers for lifting and lowering the lid 20 in accompaniment to the opening and closing movements of the trays.

In the single embodiment of the invention illustrated in the accompanying drawings the links 27 are pivoted at 35 to substantially middle points of the base tray 10, at 36 to the intermediate tray 11 and at a point approximately one-third the length of the tray measuring from the front wall thereof, and the pivots 37 are affixed

to the sides of the top tray 12 at points which are approximately one-sixth of the length thereof measured from the front wall.

The rear pair of links 28 are of greater length than the front links 27 and pivoted at 38 to a rear portion of the base tray 10, for instance approximately one-sixth of the length of the tray measured from the rear wall 17. The links 28 are pivoted at 39 to the intermediate tray 11 approximately two-thirds of the length of the tray measured from the front end. The rear links 28 are pivoted at 40 to the top tray 12 at approximately the median line thereof.

Although we have disclosed herein the best form of the invention known to us at this time, we reserve the right to all such modifications and changes as may come within the scope of the following claims.

What we claim is:

1. A letter safe comprising a plurality of trays including base and top trays, a cover pivoted to said top tray, a slotted guide on said cover forward of the pivot and having a rear end wall, pairs of parallel spaced rigid links pivoted to and interconnecting said trays on opposite sides of said trays to support the trays in vertically spaced terraced relation and adapted to swing down to permit lowering of the trays in vertical register upon one another to effect closing of an under tray by superimposed upper tray, one of said links having an upward extension with a lateral projection entered and sliding in said guide, said one link being pivoted to the tray carrying said cover forwardly of the pivot of said cover and being adapted to raise the pivoted cover of said top tray incident to the opening of the trays into

the spaced and terraced position and to automatically close the cover in a locked relation with said top tray when the trays are lowered into mutually closing condition, said projection adapted to encounter the rear end wall of the slotted guide as a stop in the fully open position of the trays and cover.

2. A letter safe as claimed in claim 1 further including a lock between two of the trays which through the rigid links will prevent opening of any and all trays to and including the hinged cover.

3. A letter safe as claimed in claim 1 wherein the cover is disposed only at the front portion of the top tray, a permanent top wall being provided for the rear portion of the top tray to which said cover is hinged.

4. A letter safe as claimed in claim 1 in which two slotted guides are provided in combination with two link extensions and projections, said projections being rounded to rotate in the guides incident to the sliding movement therein while the links and cover relatively rotate.

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