March 29, 1955 G. W. HULSE 2,704,901

SLIDE FILE

Filed Aug. 25, 1953 2 Sheets-Sheet 1

Fig. 1.

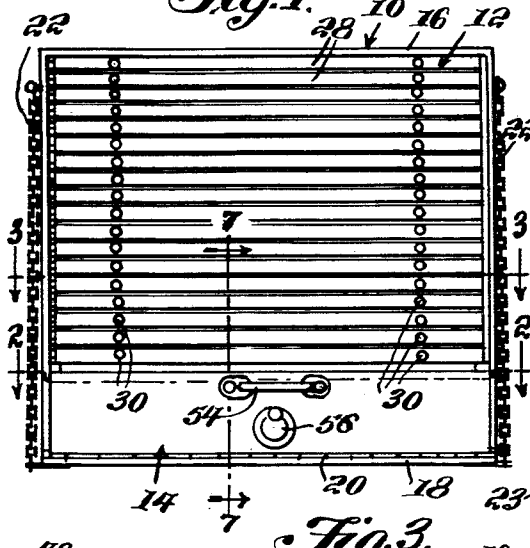

Fig. 2.

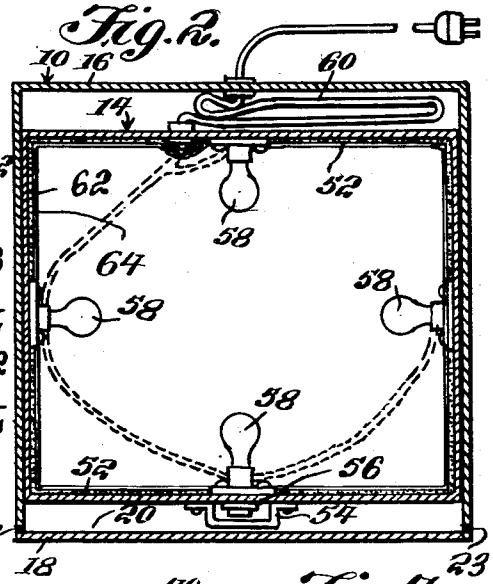

Fig. 3.

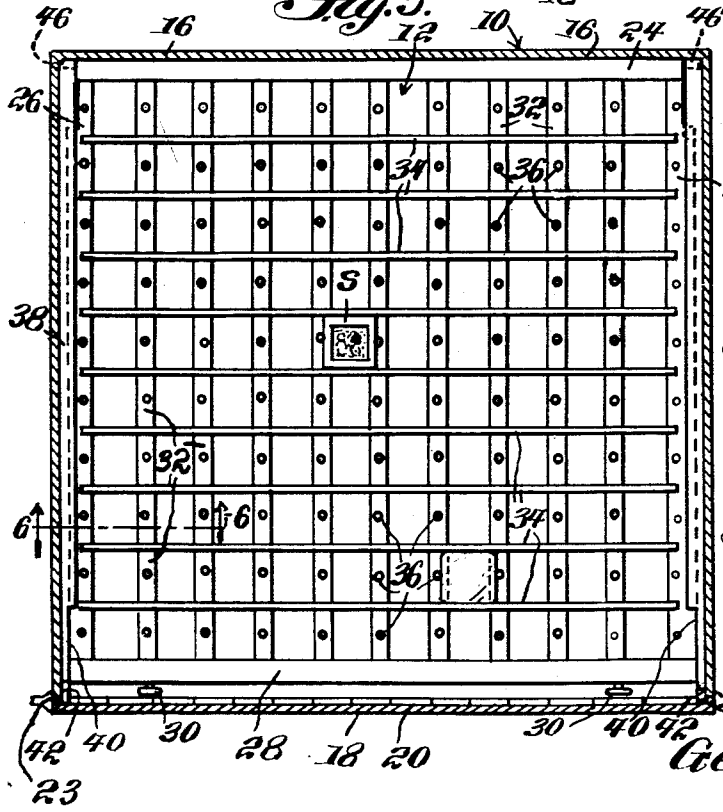

Fig. 4.

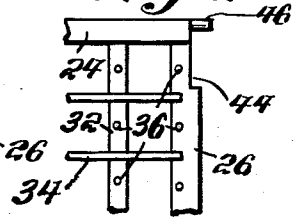

Fig. 5.

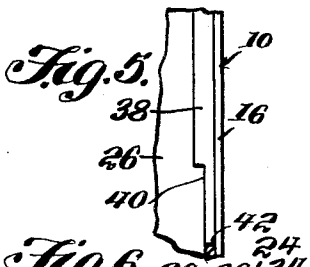

Fig. 6.

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Fig. 7.

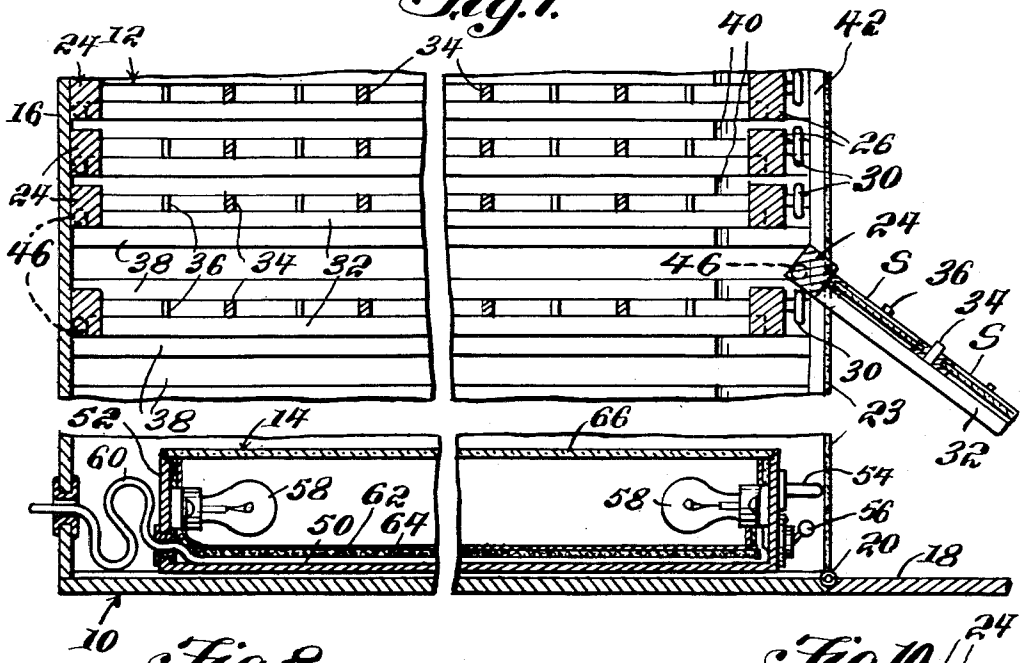


Fig. 8.

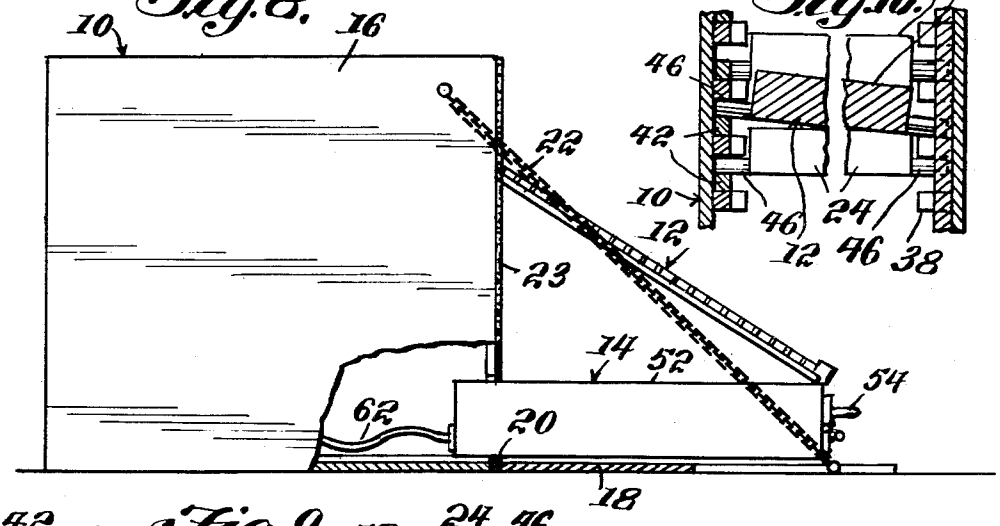


Fig. 10.

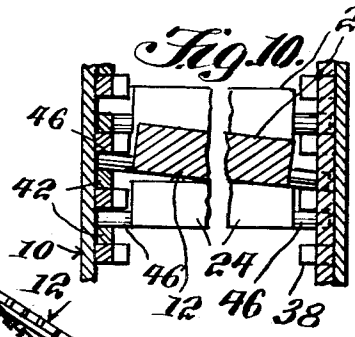
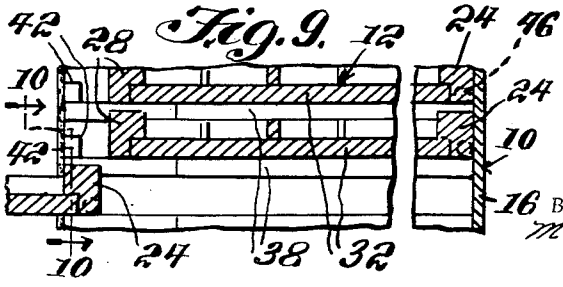


Fig. 9.



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SLIDE FILE

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Application August 25, 1953, Serial No. 376,385

4 Claims. (Cl. 40—130)

This invention relates to a device in the nature of a file cabinet for transparency slides.

Ordinarily, it is the practice to file transparencies in ordinary file drawers, one behind the other, and it will be readily appreciated that this arrangement makes it very difficult for one to note the content of particular transparencies, when selecting transparencies for projection. Much time is lost, as will be readily appreciated, during the removal of different transparencies from a file drawer, study of the removed transparencies before a light source, and return to the drawer of those transparencies which are not to be projected. Further, when the present practice of selecting transparencies for projection is followed, it is necessary that each transparency be individually handled, and as a result, the transparencies tend, over a period of time, to wear out or become soiled.

The main object of the present invention, in view of the above, is to provide a filing device which will store any desired number of transparencies, up to a structural maximum, while at the same time enabling the user to find any desired slide or slides in a minimum of time, without the necessity of manually handling any of said slides. It is proposed, by designing a generally improved slide file of the type stated, to save a substantial amount of time in the process of locating desired slides, and it is further proposed to provide for said saving of time without causing the slides to be soiled or otherwise touched by the user's fingers.

Another object of importance is to provide, in a slide file of the type stated, means for facilitating the depositing or removal of individual transparencies, without affecting in any way transparencies adjacent to that being removed or inserted.

Another object of importance is to provide, in a slide file of the character referred to, an improved tray construction, each tray being characterized by its compactness, thereby to permit a maximum number of trays to be contained within a single, relatively small cabinet, each tray further being characterized by a construction wherein all the transparencies thereof will be simultaneously illuminated when the tray is disposed above a suitable source of light.

Another object of importance is to provide, in an improved slide tray construction, an inexpensive arrangement of strips wherein one series of strips is disposed at right angles to the strips of a second series, so as to define a large number of small, rectangularly spaced areas each of which is adapted to receive a transparency, the transparencies being supported at their sides upon the strips of one of said series, with the transparency supporting strips having pin means for holding the transparencies against movement from their proper positions.

Another object is to provide, in a slide file as stated, a means whereby each tray will be slidably adjusted to recessed and extended positions, respectively, each tray being provided with a hinge device which functions when the tray is drawn out of its recessed position, said hinge device adapting the extended tray for vertical swinging movement to an inclined position in which it is supported upon a light box mounted in the lower end portion of the filing structure.

Yet another object is to provide, in a slide file of the character referred to, an improved light box construction which will insure that all the transparencies of a single tray will be properly illuminated, to facilitate the study of the contents of said transparencies.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawings, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a front elevational view of a filing device formed in accordance with the present invention, the closure at the front of said device being swung to an open position;

Figure 2 is a sectional view taken substantially on line 2—2 of Figure 1, showing the interior construction of the light box;

Figure 3 is an enlarged sectional view on line 3—3 of Figure 1, showing in top plan one of the slide supporting trays;

Figure 4 is an enlarged, fragmentary, plan view showing the rear corner construction of one of said trays;

Figure 5 is an enlarged, fragmentary, plan view showing the front end portion of one of the tray-supporting runners of the cabinet;

Figure 6 is a detail sectional view on line 6—6 of Figure 3, showing the slidable mounting of the trays;

Figure 7 is a greatly enlarged sectional view, portions being broken away, showing the cabinet in longitudinal section, the view being taken substantially on line 7—7 of Figure 1, one of the trays being drawn to an extended position;

Figure 8 is a side elevational view of the cabinet in which part has been broken away, the light box and one of the trays being extended and the closure or door of the cabinet being swung to an open position;

Figure 9 is a greatly enlarged, detail sectional view, portions being broken away, taken longitudinally through the cabinet and the supported trays, and illustrating the hinge and stop means of the trays; and

Figure 10 is a fragmentary, detail sectional view taken substantially on line 10—10 of Figure 9, one of the trays being illustrated in position to remove the same from the cabinet.

The slide file constituting the present invention can be considered as comprising three main units or assemblies, namely, a cabinet designated generally at 10, a tray series designated generally at 12, and a light box designated generally by the reference numeral 14. Each of these will be described in turn hereinafter.

Considering first the details of the construction of the cabinet 10, this is formed as a rectangular container 16 permanently closed at its top, bottom, sides, and back, but formed with a wholly open front that is normally closed by a door 18 hinged along its lower edge by a piano hinge 20 to the front edge of the container bottom. The door 18 is thus swingable between a vertical, closed position in which it completely closes the cabinet at its front, and a horizontal, open position shown to particular advantage in Figure 8, in which open position it wholly exposes the interior of the cabinet.

The closure 18, when in its open position, is supported horizontally by means of chains 22 or equivalent flexible elements, said chains being connected at one end to the free edge portion of the closure 18, at the opposite sides of said closure, and being connected at their other ends to the side walls of the container 16. Suitable latch means can, of course, be embodied in the structure to releasably hold the closure in its normally closed position.

It is also desirable that when the closure is in its closed position, it be adapted to sealingly engage the edge portion of the opened front of the container, and to this end, I provide a peripheral sealing strip of sponge rubber or the like, which sealing strip has been designated by the reference numeral 23 and is secured to the periphery of the closure 18. The sealing strip 23, when the closure 18 is swung upwardly to its closed position, engages tightly against the edge portion of the open front of the container, thus to prevent the admission of dust or the like.

Considering now the construction of each tray, it may be noted that the several trays of the series are spaced vertically of one another, and are formed identically, each tray being adjustable independently of the remaining trays to recessed and extended positions respectively. The construction of a single tray is shown to particular advantage in Figure 3, and as will be noted, the tray includes a rectangular frame composed of a back strip

24, side strips 26, and a front strip 28. These are all fixedly connected to one another, and attached to the front strip and projecting forwardly from the front strip are spaced knobs 30, which can be graspsed whenever a selected tray is to be shifted inwardly or outwardly relative to the cabinet.

Each tray includes a plurality of parallel, relatively flat, transparency support strips 32, said support strips 32 being in parallelism with the side strips 26 of the tray frame. The support strips 32 are fixedly secured at their opposite ends to the back and front strips 24, 28 respectively, and extending at right angles to the transparency support strips are divider strips 34.

The divider strips 34 are set edgewise upon the upper surfaces of the transparency support strips 32, and are secured at their oppositie ends to the side strips 26 of the tray frame, the dividers 34 also being secured, in the illustrated example of the invention, to the strips 32 over which they extend.

Projecting upwardly from each strip 32, and spaced equal distances apart throughout the full length of each strip 32, are pins 36, each pin being disposed medially between the divider strips 34 disposed at opposite sides thereof. The pins 36 provide stops limiting the supported transparency slides S against sidewise movement, as will be readily noted from Figure 3.

The illustrated construction causes the strips 32, 34 to cooperate in defining a large number of small, rectangular, open spaces above which the several slides S are supported. It will be understood, in this connection, that each slide is supported at its opposite sides upon adjacent support strips 32, the pins 36 holding the slides against movement from their positions on the strips 32. It will further be noted that when the slides are supported in this manner, the entire area of the transparency of each slide will be located clear of the associated strips 32, 34. As a result, disposition of a tray above a source of illumination will permit ready and accurate observation of the contents of each transparency.

It will also be noted that when a tray does not hold a full supply of transparency slides, blanks of cardboard or the like, formed to the same size and outer configuration as the slides, can be located in the unused, slide-receiving spaces, thus to prevent the light from the source of illumination from shining through and causing discomfort so far as the viewer is concerned.

The several trays are supported upon runners extending horizontally along the inner surfaces of the opposite side walls of the cabinet, the runners constituting part of the cabinet structure. The runners extend fully from front to back of the cabinet, and referring now to Figures 4 and 5, the runners 38 are partially cut away as at 40, at their outer ends, that is, at those ends of the runners disposed adjacent the open front of the cabinet. This forms the runners to a reduced width at their outer ends, and mounted upon the reduced width portions of the runners are upstanding stops 42.

The side strips 26 of each tray are cut inwardly as at 44, at their rear ends (see Figure 4), and projecting outwardly from the reduced width portions of the side strips are combination stops and hinge pins 46.

By reason of the construction illustrated and described, when a tray is pulled outwardly from the cabinet, the hinge pins 46 thereof will ultimately come into engagement with the stops 42, thus preventing complete removal of the tray. At the same time, the reduced width portion of the extended tray is registered with the reduced width portion of the runners supporting said tray, and as a result of this arrangement, the tray can be swung downwardly to the position in Figure 8.

If it is desired to remove a tray completely, it is merely necessary that the tray be shifted to an extended position, after which one side of the tray is lifted above the associated stop in the manner shown in Figure 10. A sufficient space exists between the runners to permit the lifting of the hinge pins over the stops, if necessary when a tray is to be wholly removed. After one side has been lifted in this manner, the other side can be slipped free of the stop, thereby allowing the tray to be removed entirely.

The construction of the light box 14 is also of importance, and is shown to advantage in Figures 2 and 7. The light box is relatively flat, and is slidably mounted upon the bottom of the cabinet. The light box has a flat bottom 50, and extending upwardly from the periphery of said flat bottom is a relatively low wall 52. The wall 52 has a front, back and sides, and projecting forwardly from the front of the wall is a handle 54 facilitating adjustment of the light box to recessed and extended positions. Below the handle 54 is a switch 56, said switch being adapted to control the energizing of a series of light bulbs 58 mounted in sockets provided upon the sides, front, and back of the light box. As will be noted from Figure 2, four bulbs are used in the illustrated example, said bulbs being spaced equal distances apart within the light box. However, more or fewer bulbs can be employed, if desired.

The electrical power used to illuminate the bulbs is directed through a cord 60, the cord having an appreciable amount of slack when the light box is in its recessed position (see Figure 2). The cord extends through a suitable opening provided in the back wall of the cabinet, and a plug is provided upon the cord whereby the cord can be plugged into the ordinary house circuit.

Within the light box, I provide a coating of asbestos or other fireproof material, said coating or layer of fireproof, heat resistant material being extended over the full area of the bottom 50 and the wall 52 of the light box. Overlying the fireproof material is a layer of reflective foil 62, this being adapted to reflect the light beams cast by the several bulbs 58, upwardly through a frosted glass cover 66.

In use of the device, the closure 18 is swung to an open position, after which the light box is pulled outwardly from its recessed position. The light box is shown in its extended position of adjustment in Figure 8. A selected tray is then pulled outwardly, the tray pivoting downwardly on its hinge pins when fully extended, to an inclined position in which the front or free portion of the tray is supported on the front portion of the light box (Figure 8). This disposes the several transparencies of the selected tray above the light box, in positions in which they will be illuminated clearly. The observation of the contents of each transparency is thus measurably facilitated, without requirement of the manual handling of any single slide or slides.

It will be readily perceived that it is a highly desirable characteristic of the invention that it allows the storage of transparency slides in a minimum area, in an arrangement that allows a large number of slides to be inspected in a minimum amount of time. Thus, if one is, for example, giving a lecture at which he or she desires to use a certain group of slides, the selection of the slides is an easy operation.

The exposed surface of each front strip 28, that is, the front edge of each tray, is white, so that the light will be reflected onto the transparencies in the upper portions of the respective trays.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustratied and described, since such construction is only intended to be illustrative of the principles of operation and the means presently devised to carry out said principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. A file for transparencies comprising: a cabinet; a source of light mounted therein for adjustment between recessed and extended positions; and a series of transparency-supporting trays mounted in said cabinet for adjustment independently of one another to extended and recessed positions, respectively, said trays in their extended positions being disposed above said source of light in the extended position of the source of light, thereby to illuminate the transparencies of a selected, extended tray for ready observation of the content of the same.

2. A file for transparencies comprising: an upright cabinet; a light box slidably mounted in the lower portion thereof for adjustment between recessed and extended positions; and a series of vertically spaced, transparency-supporting trays slidably mounted in said cabinet above said light box for adjustment independently of one another to recessed and extended positions respectively, said trays in their extended positions being disposed above said light box, thereby illuminating the trans-

parencies of a selected, extended tray for ready observation of the content of the same.

3. A file for transparencies comprising: an upright cabinet; a light box slidably mounted in the lower portion thereof for adjustment between recessed and extended positions; and a series of vertically spaced, transparency-supporting trays slidably mounted in said cabinet above said light box for adjustment independently of one another to recessed and extended positions respectively, said trays in their extended positions being disposed above said light box, thereby illuminating the transparencies of a selected, extended tray for ready observation of the content of the same, said trays having means extending outwardly from the back portions thereof providing a pivot about which a selected tray may be vertically swung in the extended tray position, for supporting of the front end portion of said selected tray upon the outer edge portion of the extended light box.

4. A file for transparencies comprising: an upright cabinet having an open front; a closure for said cabinet shiftable away from the front to expose the interior of the cabinet; a light box slidably mounted in the lower end of the cabinet for adjustment between recessed and extended positions respectively, said light box being disposed substantially wholly exteriorly of the cabinet when in its extended position; a series of vertically spaced, horizontally extending guide runners secured to opposite side walls of said cabinet and extending from front to

rear of the cabinet; a series of vertically spaced, transparency-supporting trays slidably supported at their opposite sides upon the respective runners, for independent adjustment of the trays to recessed and extended positions respectively, said trays in their extended positions being disposed wholly exteriorly of the cabinet and projecting beyond said open front above the extended light box, each tray having outwardly extended pins at the back end thereof, said pins providing hinge means whereby each tray may be vertically swung when in its extended position, thus to dispose the front end portion of each tray upon the front end portion of said light box and thereby support a selected, extended tray in an inclined position above the light box in which observation of the content of the transparencies supported by the tray may be readily made; and means in each of said trays for supporting a plurality of transparencies in spaced relation upon the tray.

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