

July 12, 1932.

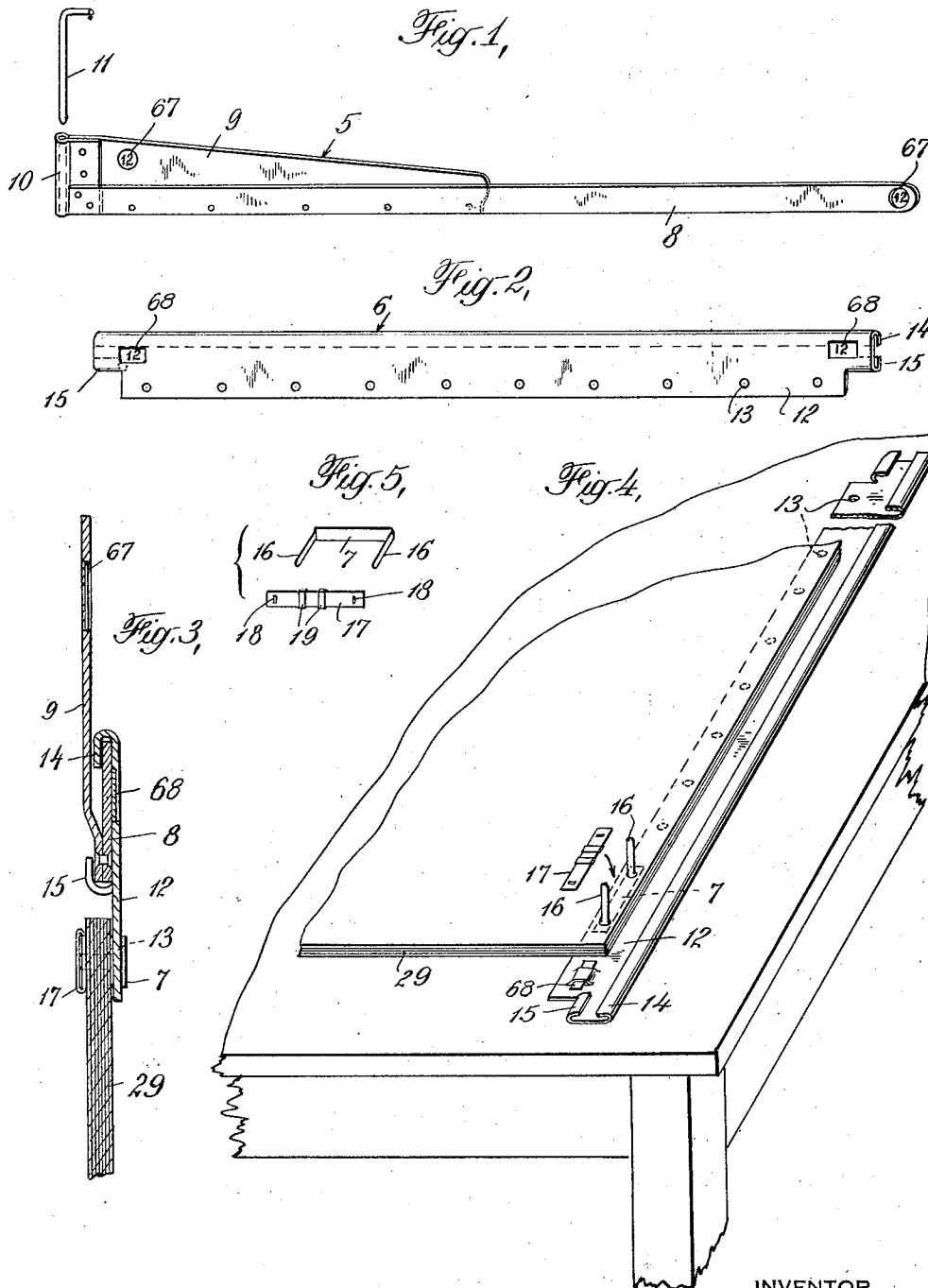
F. J. KLINE

1,867,158

FILING DEVICE

Filed Feb. 11, 1931

4 Sheets-Sheet 1



INVENTOR

Fred J. Kline

BY

Reuben Davis, Marvin & Edmunds
ATTORNEY

July 12, 1932.

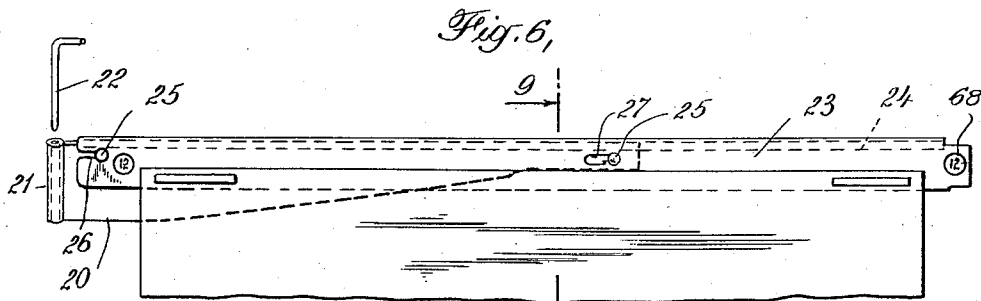
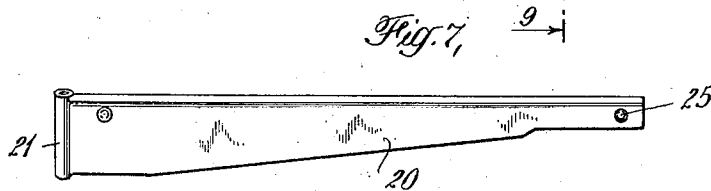
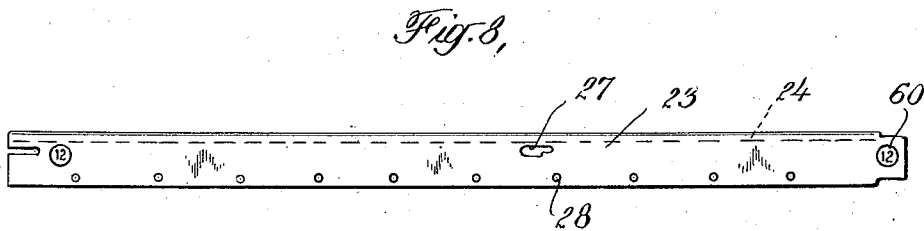
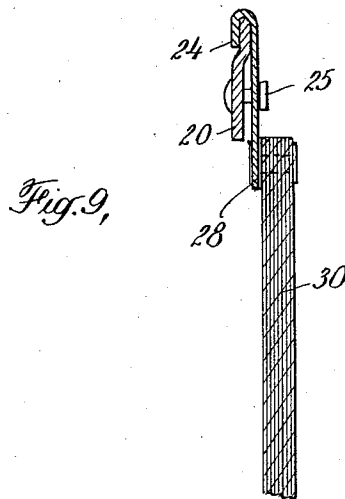
F. J. KLINE

1,867,158

FILING DEVICE

Filed Feb. 11, 1931

4 Sheets-Sheet 2



INVENTOR
Fred J. Kline
BY
Perrine Davis Deane & Edwards
ATTORNEY

July 12, 1932.

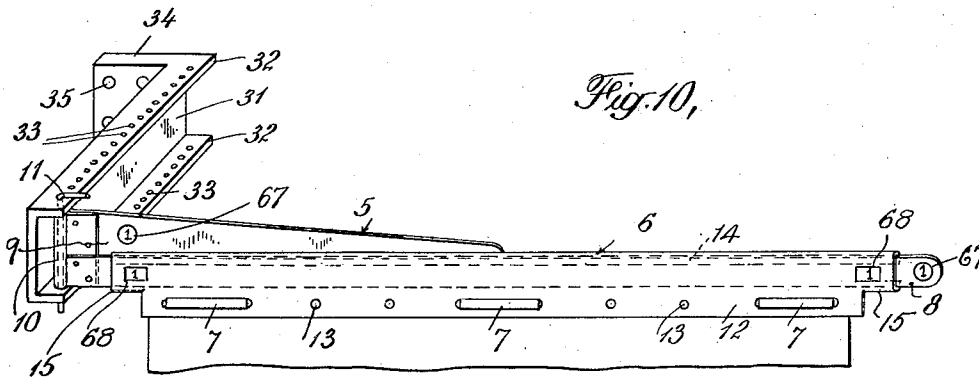
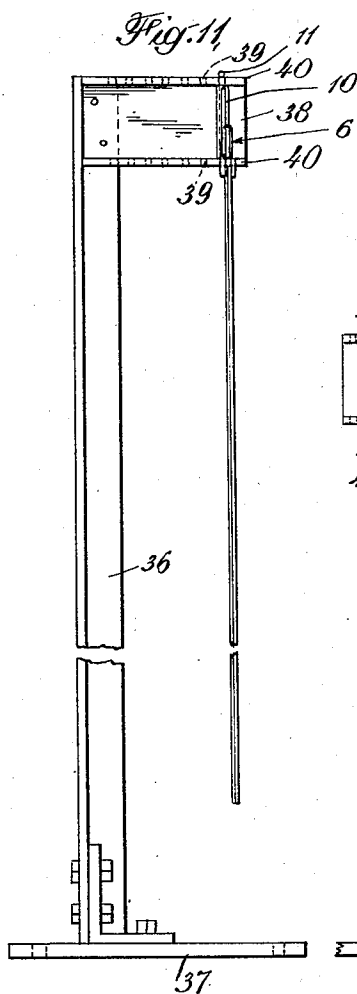
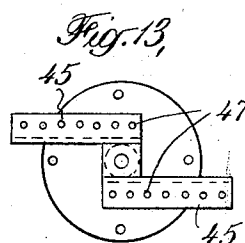
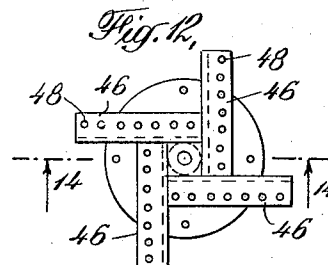
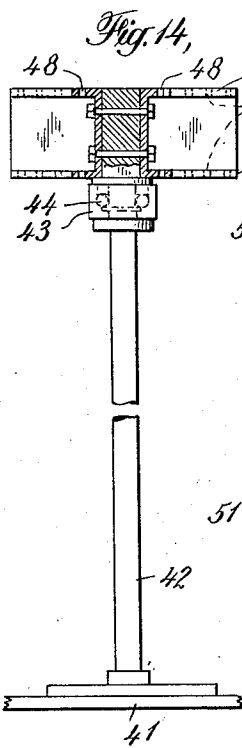
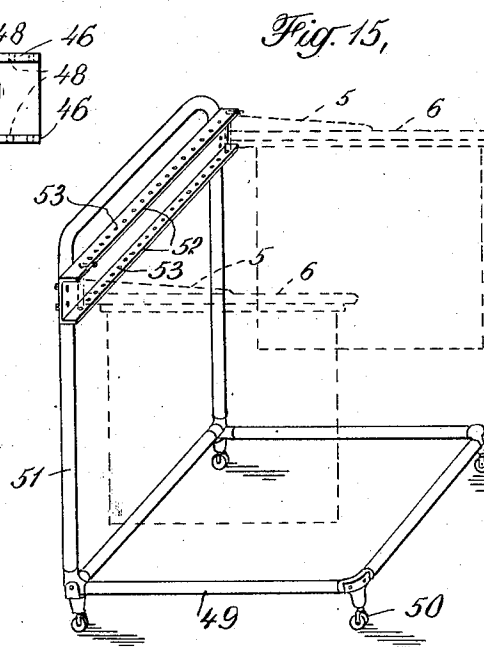
F. J. KLINE

1,867,158

FILING DEVICE

Filed Feb. 11, 1931

4 Sheets-Sheet 3



INVENTOR
Fred J. Kline
BY
Perrin Davis & Edwards
ATTORNEY

July 12, 1932.

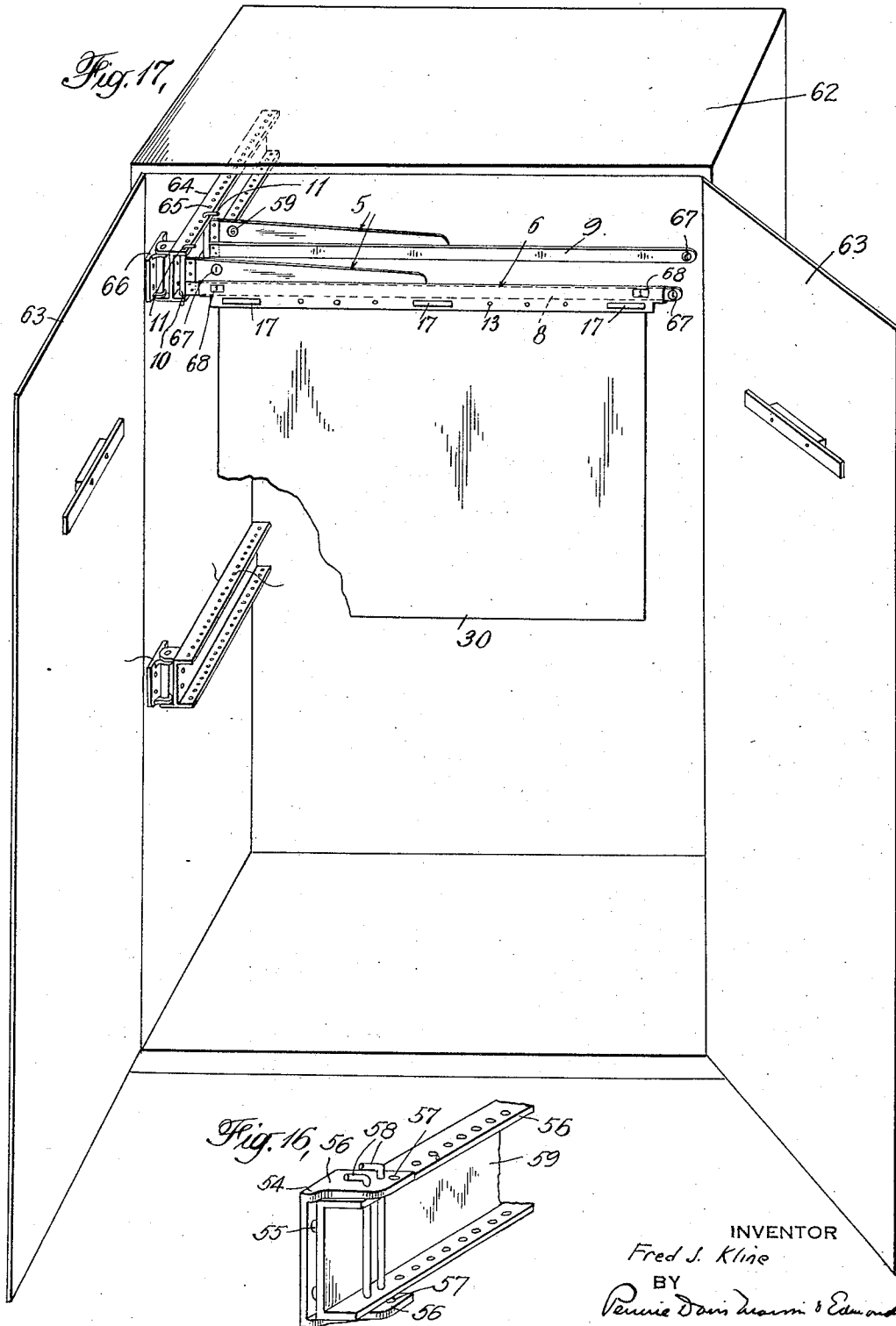
F. J. KLINE

1,867,158

FILING DEVICE

Filed Feb. 11, 1931

4 Sheets-Sheet 4



UNITED STATES PATENT OFFICE

FRED J. KLINE, OF BAYVILLE, NEW YORK, ASSIGNOR TO ACCO PRODUCTS, INC., OF LONG ISLAND CITY, NEW YORK, A CORPORATION OF NEW YORK

FILING DEVICE

Application filed February 11, 1931. Serial No. 514,957.

This invention relates to filing devices and more particularly to convenient and inexpensive equipment for filing drawings, blueprints, maps and the like, and for displaying these and various other sheets bearing information or exhibits.

The devices, hereinafter described, are particularly useful for storing and exhibiting drawings. They may be used advantageously in school rooms to display sheets with problems and other information and also to display merchandise.

It is the object of the present invention to provide a simple and effective filing device in which the sheets are suspended and from which they can be removed quickly and conveniently.

Another object of the invention is to provide a convenient filing device consisting of suitable units which can be assembled easily to provide filing systems of different capacity, such systems being capable of expansion to meet the requirements of the user.

Another object of the invention is the provision of a filing device adapted for use in storage vaults, drafting rooms, shops, school rooms, etc., and for display purposes where it is desired to have materials readily available for examination.

Other objects and advantages of the invention will be apparent as it is better understood by reference to the following specification and accompanying drawings, in which

Fig. 1 is an elevation showing one of the elements of the filing device;

Fig. 2 is a similar view of another element adapted to co-operate with the element shown in Fig. 1;

Fig. 3 is an enlarged sectional view illustrating the two elements in co-operative relation;

Fig. 4 is a view in perspective illustrating the procedure in fastening materials to the element as shown in Fig. 2;

Fig. 5 is a view in perspective of a fastener employed as indicated in Fig. 4;

Fig. 6 is an elevation showing a slightly modified form of the filing device;

Fig. 7 is an elevation of one of the elements of the device as shown in Fig. 6;

Fig. 8 is an elevation of the other co-operating element;

Fig. 9 is an enlarged sectional view on the line 9—9 of Fig. 6;

Fig. 10 is a view in perspective illustrating the filing device supported adjustably in a bracket;

Fig. 11 is an elevation showing the filing device supported in another type of bracket;

Fig. 12 is a plan view of a type of swivel bracket adapted to support the filing device;

Fig. 13 is a plan view of a similar bracket;

Fig. 14 is a section on the line 14—14 of Fig. 12;

Fig. 15 is a view in perspective of a support for the filing device;

Fig. 16 is a view in perspective of a simple type of adjustable wall bracket for the filing device; and

Fig. 17 illustrates the application of the filing device in a suitable cabinet.

In carrying out the invention, I provide a filing unit consisting of a supporting arm 5 and a removable member 6 to which the sheets or other materials are secured by means of fasteners 7, as indicated in Fig. 4 of the drawings. The supporting arm 5 comprises a flat strip 8 of suitable material, preferably a metal of relatively light weight, which is secured by riveting, welding or otherwise to a member 9 having an eye 10 at one end to receive a pin 11. It is to be understood that a plurality of these units may be mounted on any suitable support, for example such as those hereinafter described, the pin 11 forming a hinge which permits each of the assembled devices to swing on a vertical axis so that all of them are readily accessible. The member 6 is provided with an apron 12 having a plurality of openings 13 therein. The upper edge is turned downwardly to form a flange 14 which is adapted to engage the strip 8 and preferably at the opposite ends flanges 15 are turned upwardly. Thus the member 6 engages slidably the strip 8, and when so engaged is securely held thereon but is readily removable to permit access to the sheets or other material secured thereto.

Any suitable fastening means may be em-

ployed to hold the sheets or other material on the member 6, but I prefer the fastener 7 having tongues 16 which are adapted to pass through the openings 13 and through similar
 5 perforations in the sheets. A keeper 17 with openings 18 and locking slides 19 may be used to hold the sheets in assembled relation.

In Figs. 6 to 9 of the drawings, I have
 10 illustrated a slightly modified form of the filing device, including a supporting member 20 having an eye 21 at one end to receive a pin 22. This supporting member may be made of a single piece of material stamped
 15 or otherwise bent to the required form. A member 23 is adapted to engage slidably the supporting member 20 and is provided with a downwardly turned flange 24 which rests upon the upper edge of the supporting member 20. To hold the elements in assembled
 20 relation I may employ pins 25, one of which is adapted to engage a slot 26 at one end of the member 23 while the other engages an opening 27 in the member 23, the opening
 25 being enlarged at one end so that it will pass readily over the head of the pin 25. The member 23 is thereby locked in assembled relation with the supporting member 20 when it is moved inwardly to the position indicated in Fig. 6. The member 23 is provided
 30 with a plurality of openings 28 adapted to receive suitable fastening devices such as those indicated in Fig. 5. Thus the sheets or other material 29 and 30 may be secured
 35 readily to the device. As in the preceding embodiment of the invention, the member 23 can be released readily and withdrawn to permit examination and removal or replacement of any of the sheets, or the latter may
 40 be examined while suspended in the device.

In order that a plurality of the filing devices may be mounted securely in readily accessible position, I provide suitable brackets which in their preferred form comprise
 45 a channel member 31 having flanges 32 with openings 33 in the opposed flanges to receive the pins 11 and 22. The bracket may be secured in any suitable manner to a support, and as indicated in Fig. 10 may have a flange
 50 34 with openings 35 to receive lag screws whereby the bracket may be mounted upon the wall of a building or otherwise.

In another form of the device, I provide an upright support 36 secured to a base 37
 55 and carrying a channel 38 similar to the channel 31. Openings 39 in the flanges 40 of the channel are adapted to receive the pins 11 and 22 and thus to secure the filing units to the bracket so that they are readily accessible to the user.

In Figs. 12, 13 and 14, I have illustrated another form of support comprising a base 41 with an upright member 42. Upon this upright I provide a suitable bearing such as
 65 indicated at 43, including preferably balls

44, and mount thereon a bracket having two or more arms 45 and 46 as indicated in Figs. 13 and 14, each comprising a channel with openings 47 and 48 in the flanges thereof to receive the pins 11 and 22. Thus the filing
 70 units can be assembled readily on the support which is rotatable so that all of the units are easily accessible. Such a file enables a large amount of material to be arranged in a relatively small space, and all
 75 of the material can be moved so that any selected unit can be observed from the same position.

Another form of support is illustrated in Fig. 15, comprising a rectangular frame 49
 80 mounted, for example, on casters 50 so that it can be moved easily to any desired location. An upright frame 51 carries a channel 52 with openings 53 with flanges thereon to receive the pins 11 and 22, so that a plurality of filing units can be mounted in accessible position on the frame.

In Fig. 16, I have shown a bracket comprising a member 54 having openings 55
 90 for screws whereby it may be fastened to a wall or other support. Spaced flanges 56 have openings 57 to receive pins 58 which pass through corresponding openings in a channel member 59 which thus may be
 95 mounted in the member 54 and held in pivotal relation thereto. The filing units are pivotally supported on the channel member 59 by pins 11 or 22 and are capable of independent swinging movement thereon. The group of filing units may be moved also by
 100 swinging the channel member 59 on its pivot.

The several supporting devices as hereinbefore described are intended more particularly for the storage and display of sheets or other materials which are used frequently,
 105 and are adapted particularly for use in shops, schoolrooms, drafting offices and the like. For the storage of drawings and similar materials, I prefer to employ a cabinet 62 of any suitable material. It may be provided with swinging or other suitable doors 63 opening sufficiently to permit access to the interior. In this cabinet the filing units may
 110 be mounted on channels 64 having openings 65 in the flanges thereof to receive the pins 11 or 22. These channels may be mounted rigidly on the walls of the cabinet, but I prefer to support them on hinges 66. Thus the units may be swung upon the pivots provided by the pins 11 or 22, so as to permit
 115 access to the sheets or other material in the cabinet or the channels 64 may be swung outwardly on their hinges 66, thus moving all of the units to the front of the cabinet where the several units can be examined
 120 readily.

As hereinbefore indicated, the drawings, sheets or other material suspended from each of the individual filing units can be removed
 125 readily by withdrawing the slidable member

from the supporting member. The supporting members are likewise removable and any number thereof, within the capacity of the bracket, may be added thereto as the file expands to accommodate additional material. Each individual filing unit will receive and hold a considerable number of sheets, varying with the thickness thereof. The sheets are stored flat, and being suspended they will remain flat. The sheets are protected from injury, and when required can be examined by simply withdrawing the sliding member from the support or by swinging the individual filing element to a position in which the separate sheets supported thereon can be turned backwardly over the top thereof.

To make the sheets more readily accessible, I may provide index members 67 and 68 as shown in Fig. 10, the supporting and sliding members being thus individually identified. Any suitable index will indicate upon which of the filing units a particular drawing or other sheet is to be located.

It will be readily understood that the filing system as described is extremely flexible in that any number of filing units may be provided and that suitable brackets of any desired capacity and adapted to be conveniently mounted may be supplied to the user. Thus if the user is provided with a bracket having the capacity of ten filing units, he may, if he requires greater capacity, merely purchase a new bracket with space for say twenty units, and then purchase the additional filing units to add to his bracket. Or, he may simply purchase an additional bracket with the necessary units and secure it to a wall or other support adjacent the original file or elsewhere. Also, although I prefer to employ a filing cabinet as indicated in Fig. 17 for the storage of drawings and like materials, the brackets with the filing units thereon can be mounted in any suitable closet which is of sufficient size to receive them. Consequently the filing system can be installed at a minimum expense to utilize the available filing space without the necessity for purchasing any equipment other than the filing units, the brackets therefor, and suitable fasteners.

Among the advantageous applications of the invention is the replacement of blackboards in schoolrooms. The problems or illustrative material of any kind which are usually written on a blackboard by the teacher can be prepared in permanent form on sheets which are filed by means of the device as described. All of the sheets so prepared are readily available for display in the classroom. Thus the materials used by teachers can be standardized to embody the best teaching practice and more uniform results in teaching can be obtained than is now possible.

Various changes may be made in the details of construction and arrangement of the parts

without departing from the invention or sacrificing any of the advantages thereof.

I claim:

1. In a filing and display device, a unit comprising a supporting arm having means at one end to provide a pivotal support therefor, said arm including a flat strip at its upper edge spaced from the body of the arm and a member slidably mounted on the flat strip and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member.

2. In a filing and display device, a unit comprising a supporting arm having means at one end to provide a pivotal support therefor and a member slidably mounted on the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member, and means for locking the member on the arm.

3. In a filing and display device, a unit comprising a supporting arm having an eye and co-operating pin at one end to provide a pivotal support therefor, and a member slidably mounted on the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member.

4. In a filing and display device, a unit comprising a supporting arm having an eye and co-operating pin at one end to provide a pivotal support therefor, a member slidably mounted on the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member, and means for locking the member on the arm.

5. In a filing and display device, a unit comprising a supporting arm having means at one end to provide a pivotal support therefor and a member provided with a down-turned flange at its upper edge adapted to engage the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member.

6. In a filing and display device, a unit comprising a supporting arm having an eye and co-operating pin at one end to provide a pivotal support therefor and a member provided with a down-turned flange at its upper edge adapted to engage the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member.

7. In a filing and display device, a unit comprising a supporting arm having means at one end to provide a pivotal support therefor and a member provided with a down-turned flange at its upper edge adapted to engage the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured

to the member, and means for locking the member on the arm.

8. In a filing and display device, a unit comprising a supporting arm having an eye and co-operating pin at one end to provide a pivotal support therefor and a member provided with a down-turned flange at its upper edge adapted to engage the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member, and means for locking the member on the arm.

9. In a filing and display device, a unit comprising a supporting arm having means at one end to provide a pivotal support therefor, a member provided with a down-turned flange at its upper edge adapted to engage the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member and a bracket co-operating with the pivotal support and adapted to receive a plurality of supporting arms.

10. In a filing and display device, a unit comprising a supporting arm having means at one end to provide a pivotal support therefor, a member provided with a down-turned flange at its upper edge adapted to engage the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member, and a bracket including a channel member with openings in the opposite flanges thereof co-operating with the pivotal support and adapted to receive a plurality of supporting arms.

11. In a filing and display device, a unit comprising a supporting arm having an eye and a co-operating pin at one end thereof to provide a pivotal support therefor, a member mounted on the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member and a bracket co-operating with the pivotal support and adapted to receive a plurality of supporting arms.

12. In a filing and display device, a unit comprising a supporting arm having an eye and a co-operating pin at one end thereof to provide a pivotal support therefor, a member mounted on the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member and a bracket including a channel member with openings in the opposite flanges thereof co-operating with the pivotal support and adapted to receive a plurality of supporting arms.

13. In a filing and display device, a unit comprising a supporting arm having means at one end to provide a pivotal support therefor, a member mounted on the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other

material are secured to the member and a pivotally mounted bracket co-operating with the pivotal support and adapted to receive a plurality of supporting arms.

14. In a filing and display device, a unit comprising a supporting arm having means at one end to provide a pivotal support therefor, a member mounted on the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member and a pivotally mounted bracket including a channel member with openings in the opposite flanges thereof co-operating with the pivotal support and adapted to receive a plurality of supporting arms.

15. In a filing and display device, a unit comprising a supporting arm having an eye and a co-operating pin at one end to provide a pivotal support therefor, a member mounted on the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member and a pivotally mounted bracket co-operating with the pivotal support and adapted to receive a plurality of supporting arms.

16. In a filing and display device, a unit comprising a supporting arm having an eye and a co-operating pin at one end to provide a pivotal support therefor, a member mounted on the arm and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member, and a pivotally mounted bracket including a channel member with openings in the opposite flanges thereof co-operating with the pivotal support and adapted to receive a plurality of supporting arms.

17. In a filing and display device, an enclosure, a bracket pivotally mounted on a vertical axis within the enclosure and a plurality of filing units each pivotally mounted on the bracket with axes parallel to the axis of the bracket and having means thereon to receive and support sheets and like material.

18. In a filing and display device, an enclosure, a bracket pivotally mounted on a vertical axis within the enclosure and a plurality of filing units each pivotally and removably mounted on the bracket with axes parallel to the axis of the bracket and having means thereon to receive and support sheets and like material.

19. In a filing and display device, an enclosure, a bracket pivotally mounted on a vertical axis within the enclosure and a plurality of filing units each pivotally mounted on the bracket with axes parallel to the axis of the bracket and having means removably mounted thereon to receive and support sheets and like material.

20. In a filing and display device, an enclosure, a bracket comprising a channel member

with openings in its opposite flanges pivotally mounted on a vertical axis within the enclosure and a plurality of filing units each having a pin engaging the openings in the opposite flanges of the channel member whereby the filing units are pivotally mounted on the bracket, and having means thereon to receive and support sheets and like material.

21. In a filing and display device, a unit comprising a supporting arm having means at one end to provide a pivotal support therefor and a flat strip with its upper edge spaced from the body of the arm and a member having a down-turned flange to engage the upper edge of the strip, the member being slidably mounted on the strip and having a plurality of spaced openings adapted to receive fasteners whereby sheets or other material are secured to the member.

In testimony whereof I affix my signature.
FRED J. KLINE.

25

30

35

40

45

50

55

60

65