Sept. 6, 1949. V. I. ZUCK 2,481,186

ORGAN CABINET

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Fig. 1.

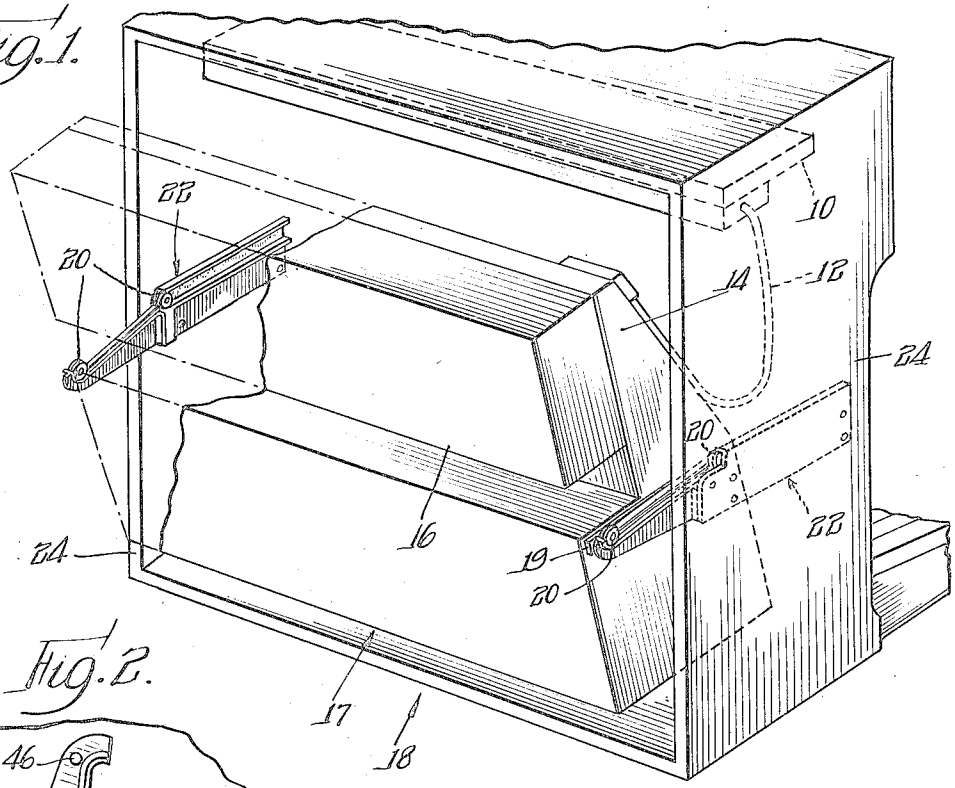


Fig. 2.

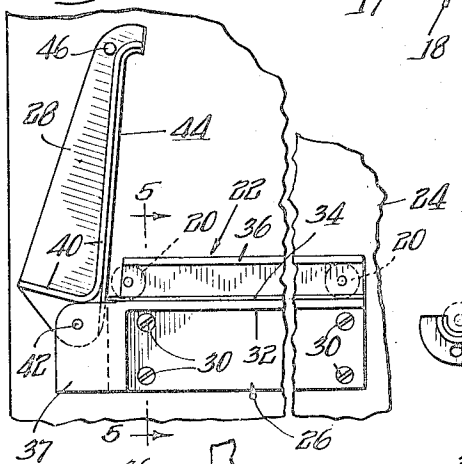
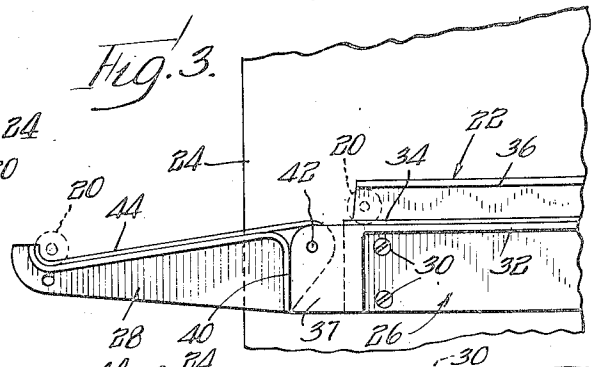


Fig. 3.



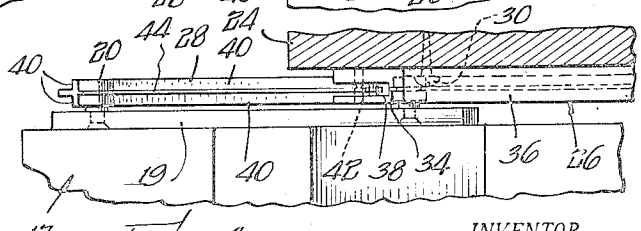


Fig. 4.

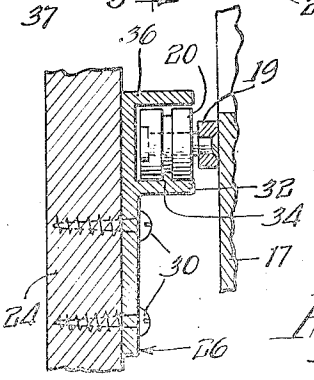


Fig. 5.

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ORGAN CABINET

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11 Claims. (Cl. 84—177)

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The present invention pertains in general to organs of the type wherein the note-producing apparatus is operatively connected to the keyboard through electric wiring, and in particular to means for mounting the note-producing apparatus in the organ cabinet.

Maintenance of organs frequently is a time-consuming and inconvenient operation due to the inaccessibility of many parts of the note-producing apparatus. Usually the apparatus for producing hundreds of notes must be confined in a relatively small space, and this tends to complicate the work of repairing and adjusting the instrument.

An object of the present invention is to facilitate the maintenance of organs by providing improved means for mounting the note-producing apparatus in an organ cabinet whereby the apparatus may be wholly or partially removed from the cabinet with very little effort.

A further object of the invention is to provide a mounting means of the type described which is arranged to hold the note-producing apparatus in a position that facilitates maintenance thereof while it is partially withdrawn from the organ cabinet.

A further object of the invention is to provide a mounting means of the type described which may be swung into the cabinet when not in use so as not to detract from the appearance of the organ.

A still further object of the invention is to provide a novel means for mounting the note-producing apparatus in an organ cabinet in such manner that it may conveniently be withdrawn from the cabinet when desired, and be held securely in place at other times.

Still another object is to obviate or minimize the litter and disorder that workmen ordinarily cannot avoid when servicing organs because of the small amount of space in which they can work effectively.

A further object is to provide means enabling the note-producing apparatus to be removed completely from the cabinet (without dismantling any portion thereof) for servicing it, operating it through an extension cable, or for returning it to the factory for major repair or replacement.

Various other objects, advantages and features of the invention will be apparent from the following specification when taken in connection with the accompanying drawing wherein a selected embodiment is set forth for purposes of illustration.

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In the drawing, wherein like reference numerals refer to like parts throughout:

Fig. 1 is a perspective view of an organ cabinet utilizing the mounting means of the present invention, with a portion of the note-producing apparatus shown broken away to more clearly illustrate the disposition of the mounting means with respect thereto;

Fig. 2 is a side elevational view of the mounting means as it appears when retracted;

Fig. 3 is a side elevational view, similar to Fig. 2, showing the mounting means when extended;

Fig. 4 is a plan view of the mounting means; and

Fig. 5 is a transverse sectional view of the mounting means taken along the line 5—5 of Fig. 2.

The organ indicated schematically in Fig. 1 is an air-driven reed type of electric organ in which the keys are mechanically coupled to a coupler board 10 which is electrically connected by flexible cables 12 to the operating magnets of various valve pallets disposed within a wind chest 14. The pallets control the flow of air from the wind chest to reeds which are disposed within a reed frame 16. The wind chest 14 and reed frame 16 are carried by a supporting framework or housing 17 for the note-producing apparatus. An air compressor, for supplying air to the wind chest 14, and an amplifier, for amplifying the electrical signals generated by the vibration of the reeds, are located in the lower part of the framework 17.

The flexible cable 12 enables the whole note-producing apparatus to be removed from the organ cabinet 18 as a unit without interrupting any of the electrical connections necessary for operation thereof. Such remote operation of the note-producing apparatus may be required if the compressor noise proves objectionable, or where the weight of the console must be reduced to facilitate moving it about.

As the note-producing apparatus is quite heavy and bulky, it is very desirable to mount it in such manner as to permit it to be either wholly or partially removed from the cabinet 18 with very little effort in order to preclude any danger of injuring the mechanism. This feature enables minor repairs or adjustments to be made readily by a serviceman at the site of the organ and also facilitates return of the unit to the factory for major repair or replacement.

In order to attain the foregoing object, the framework 17 is provided at each end thereof with fixed bars 19, horizontal when in normal position, each of which carries a pair of rotatably mounted

rollers 20 which rest on guide rails formed in mounting devices 22 which are secured to sidewalls 24 of the organ cabinet 18.

As may best be seen in Figs. 2 through 5, the mounting devices 22 are formed in two parts 26 and 28. The members 26 are secured to the sidewalls of the cabinet by screws 30. Each member 26 may be formed in one piece as a plate having a pair of spaced-apart parallel flanges 32 and 36 extending normally therefrom. The lowermost flanges 32 form tracks, or guide rails, on which the rollers 20 rest. These flanges preferably are provided with longitudinally extending ribs 34 which engage grooves in the rollers 20 to assist in guiding the rollers along the tracks when the framework 17 is withdrawn from or replaced in the cabinet. The uppermost flanges 36 serve as guard rails which cooperate with the rollers 20 to prevent the frame 17 of the note-producing apparatus from being lifted completely away from the mounting devices 22 so long as any of the rollers 20 is resting on its track 32.

The members 26 are provided at their rear ends with thick bifurcated portions 37 having vertically extending slots 38 therein. The member 28 of each mounting device 22 constitutes a rockable arm which is pivoted to the member 26 at the rear end 37 thereof. The arms 28 may each be formed as a substantially triangular plate having flanges 40 extending from either side thereof along nearly the whole extent of the end leg of the triangle and thence across the top leg of the triangle adjacent the end portion 37 of member 26. The portions of the flanges 40 which extend along said top leg of the triangular plate form extensions of the track or guide rail 32 in the fixed member 26. The portions of the flanges 40 which extend across said end leg of the triangular plate form shoulders which abut against the bifurcated end 37 of member 26 when each arm 28 is rotated to its fully extended position as shown in Fig. 3. The triangular plate or web portion of the arm 28 extends beyond the flanges 40 to fit snugly in the slot or bifurcation 38 in the end portion 37 of member 26. The arms 28 are pivoted on the fixed member 26 by means of pins 42 which are threaded or press-fitted in the end portions of the fixed members and pass through clearance openings in the arms 28. These arms 28 preferably are provided with ribs 44, which extend lengthwise of the track portion of the arms in alignment with ribs 34 in members 26, to guide the rollers 20 during the movement thereof along such track portions.

When the note-producing apparatus is first installed in the organ cabinet, the pivotal arms 28 are lowered to the position shown in Fig. 3. The framework 17 is then raised over the arms 28 until the front set of rollers 20 rests on the arms 28 with the ribs 44 engaging the grooves in such rollers. The note-producing apparatus is then rolled along the tracks until the rear set of rollers 20 may be positioned on the arms 28. At this time the framework 17 and the note-producing apparatus of the organ carried thereby will be supported in an inclined position, as has been illustrated in Fig. 1. The slope of the track portions of arms 28 may be in the order of twenty degrees, but this may be altered as desired. In this position, ready access may be had to the reeds housed in the reed frame 16 and to the pallet mechanism contained in the wind chest 14. Also, sufficient clearance is provided to enable plug-in connectors provided at either end of the flexible cable 12 to be attached to the coupler board 10 and to the wind chest 14. After the cable has been attached and all necessary adjustments have been made, the note-producing apparatus is pushed forward until both the front and rear rollers 20 rest on the flanges 32. The pivotal arms 28 may then be raised to the position indicated in Fig. 2. If desired, the arms 28 may be locked in their raised positions as shown in Fig. 2 by suitable means such as pins 46 to prevent the note-producing apparatus from moving about in the cabinet during shipment thereof.

If at any future time it becomes necessary to work on the note-producing apparatus, the arms 28 are rotated to the position shown in Fig. 3 and the framework 17 is withdrawn from the cabinet until the rear rollers 20 reach the free ends of the arms 28. The track surface of these ends are turned upwardly to provide stops which prevent further movement of the rollers 20 without lifting the note-producing apparatus from the arms 28. The spacing of the rollers 20 preferably is such that only the rear pair of such rollers rests on the arms 28 when the framework 17 is pulled out, while the forward pair of rollers rests on the fixed members 26 beneath the guard rails 36. The note-producing apparatus is supported at a desired inclination from vertical whereby the upper end of the apparatus extends a substantial distance beyond the rear of the cabinet 19, thus affording access to the forward side of the wind chest 14.

From the foregoing it should be apparent that, by reason of the novel construction of the mounting means herein disclosed and described, an organ has been provided wherein the note-producing apparatus may be conveniently withdrawn therefrom when it is desired to service the same. Furthermore, the mounting means permits a relatively cumbersome apparatus to be partially withdrawn from the cabinet by one person without the exercise of any great effort and without endangering the apparatus. The mounting means also holds the partially withdrawn apparatus in such a position as to enable all parts thereof which may require adjustment or replacement to be reached with ease.

It is obvious that various changes may be made in the specific embodiment set forth for purposes of illustration without departing from the spirit of the invention. The invention is accordingly not to be limited to the specific embodiment shown and described, but only as indicated in the following claims.

The invention is hereby claimed as follows:

1. In an organ having a key mechanism a cabinet and a retractible note-producing apparatus adapted to be disposed within said cabinet and actuated by said key mechanism, mounting devices disposed interiorly of said cabinet and adapted normally to support said apparatus within said cabinet, said devices having extensible portions for supporting said apparatus with a portion thereof extending outside of said cabinet.

2. In an organ having a key mechanism a cabinet and a retractible note-producing apparatus adapted to be disposed within said cabinet and actuated by said key mechanism, rollers on the sides of said apparatus, fixed members on the sides of the cabinet, runways on said fixed members cooperating with said rollers normally to support said apparatus within the cabinet, movable members extending from said fixed members, and runways for said rollers on said movable members.

3. In combination, an organ cabinet, a key

mechanism carried thereby, a note-producing apparatus actuated by said key mechanism, and mounting means for supporting said apparatus in a level position in said cabinet, said mounting means having inclined retractable extensions to support said apparatus in an inclined position when said apparatus is partially withdrawn from said cabinet.

4. In combination, an organ cabinet, a key mechanism carried thereby, a note-producing apparatus actuated by said key mechanism, supporting rollers attached to the sides of said apparatus, members secured to the sidewalls of said cabinet and having horizontally extending tracks on which said rollers normally rest, and arms pivotally secured to said members having tracks on which said rollers rest when said apparatus is rolled from said cabinet, said arms being pivotal to dispose them within said cabinet when not in use.

5. In combination, an organ cabinet, a key mechanism carried thereby, a note-producing apparatus actuated by the key mechanism, supporting rollers secured to said apparatus, members disposed interiorly of said cabinet and having horizontally extending tracks on which said rollers normally rest, and arms having tracks on which said rollers rest when said apparatus is withdrawn from the cabinet, said arms being pivoted on said members to rotate substantially in a vertical plane whereby said arms may be swung into the cabinet when not in use or may be swung out of the cabinet to provide extended tracks which enable said apparatus to be rolled out of the cabinet.

6. In combination, an organ cabinet, a key mechanism carried thereby, a note-producing apparatus actuated by said key mechanism, supporting rollers secured to said apparatus, members disposed interiorly of said cabinet and having horizontally extending tracks on which said rollers normally rest, and arms having tracks on which said rollers rest when said apparatus is withdrawn from the cabinet, said arms being pivoted on said members to shift substantially in a vertical plane whereby said arms may be swung into the cabinet when not in use or may be swung out of the cabinet to provide extended tracks which enable said apparatus to be rolled out of the cabinet, the portion of the extended tracks provided by said arms being inclined when said arms are disposed out of the cabinet so that said note-producing apparatus is tilted when it rests thereon.

7. In combination, an organ cabinet, a key mechanism carried thereby, a note-producing apparatus actuated by said key mechanism, supporting rollers secured to said apparatus, members disposed interiorly of said cabinet and having horizontally extending tracks on which said rollers normally rest, arms having tracks on which said rollers rest when said apparatus is withdrawn from the cabinet, said arms being pivoted on said members to shift substantially in a vertical plane whereby said arms may be swung into the cabinet when not in use or may be swung out of the cabinet to provide extended tracks which enable said apparatus to be rolled out of the cabinet, and stops at the free ends of said arms for preventing said rollers from leaving their supporting tracks.

8. In combination, an organ cabinet, a key mechanism carried thereby, a note-producing apparatus, means for operating the note-producing apparatus from the key mechanism including an elongated flexible interconnecting cable supporting rollers secured to said apparatus at the sides thereof, members secured to the sidewalls of said cabinet having horizontally extending tracks on which said rollers normally rest, fixed guard rails extending parallel to and spaced above said horizontal tracks to limit vertical movement of said rollers, and arms having tracks on which said rollers rest when said apparatus is withdrawn from the cabinet, said arms being pivoted on said members to shift in a plane parallel to the sidewalls of said cabinet whereby the arms may be swung into the cabinet when not in use or may be swung out of the cabinet to provide extended tracks which enable said apparatus to be rolled out of the cabinet, the portion of the extended tracks provided by said arms being inclined when they are swung out of the cabinet so that said note-producing apparatus is tilted when it rests thereon.

9. The combination set forth in claim 8, in which said arms have abutment means cooperating with said members to hold said arms in the inclined positions thereof, and stops at the free ends of said arms to cooperate with certain of said rollers for holding said apparatus in the inclined position thereof, and wherein others of said rollers are laterally spaced from said stop engaging rollers to remain seated on said horizontal tracks beneath said guard rails when said stop engaging rollers are arrested by said stops.

10. In combination, an organ cabinet, a key mechanism carried thereby, a note-producing apparatus operated by said key mechanism, rollers secured to said apparatus at the sides thereof, and track means secured to the sidewalls of said cabinet for supporting said rollers, said track means including horizontal and inclined portions in longitudinal continuation for supporting said apparatus in a level position when it is disposed fully within the cabinet and for supporting said apparatus in a tilted position when it is withdrawn from the cabinet.

11. The combination set forth in claim 10, wherein the inclined portions of said track means are retractable into the cabinet when not used to support said apparatus.

VICTOR I. ZUCK.

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