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MULTIPLE WINDOW SASH UNIT OR ASSEMBLY

Filed July 24, 1952

2 Sheets-Sheet 1

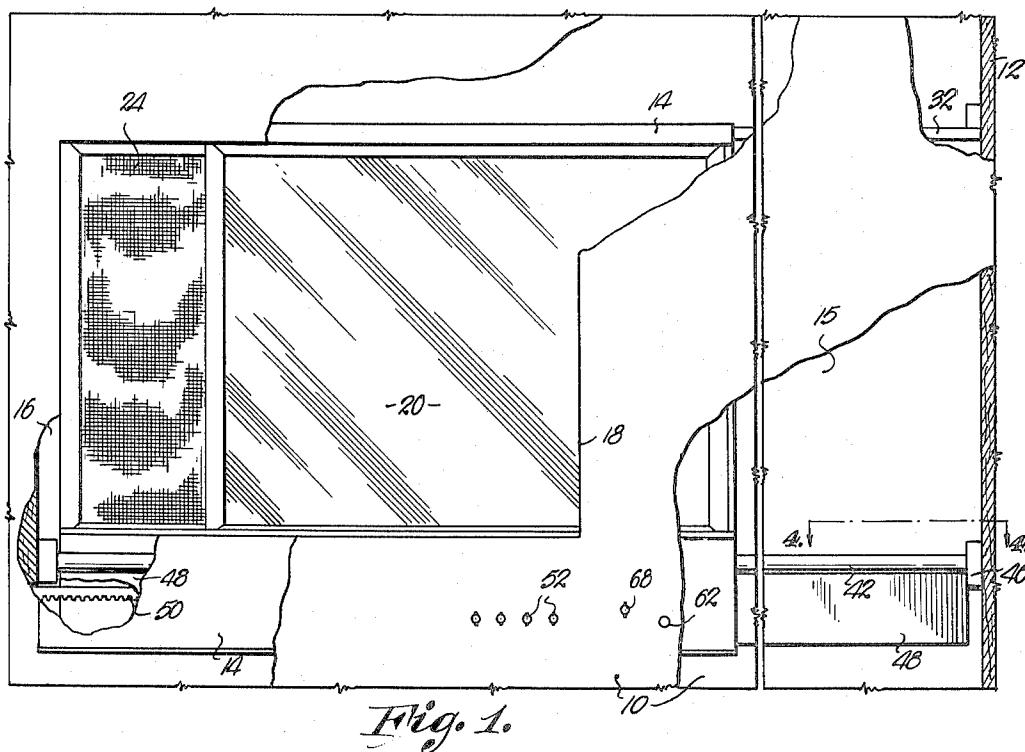
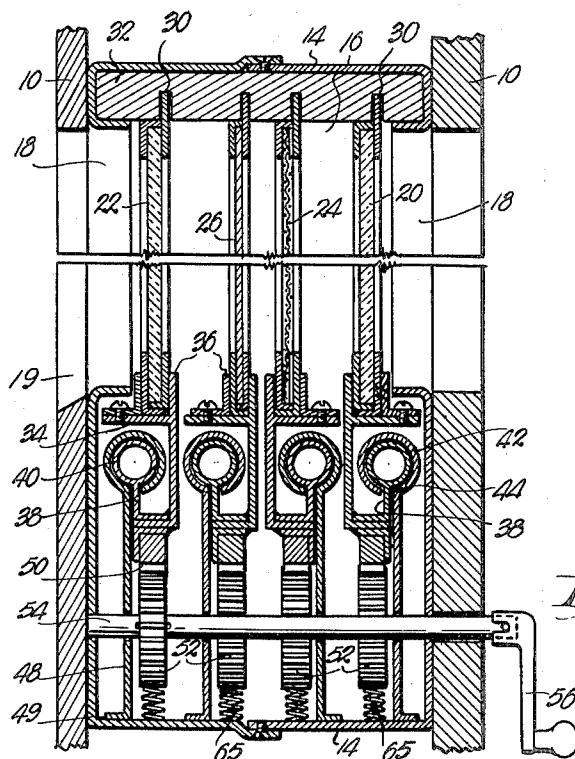
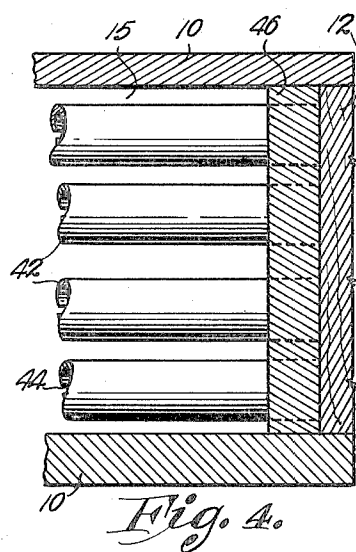


Fig. 3.

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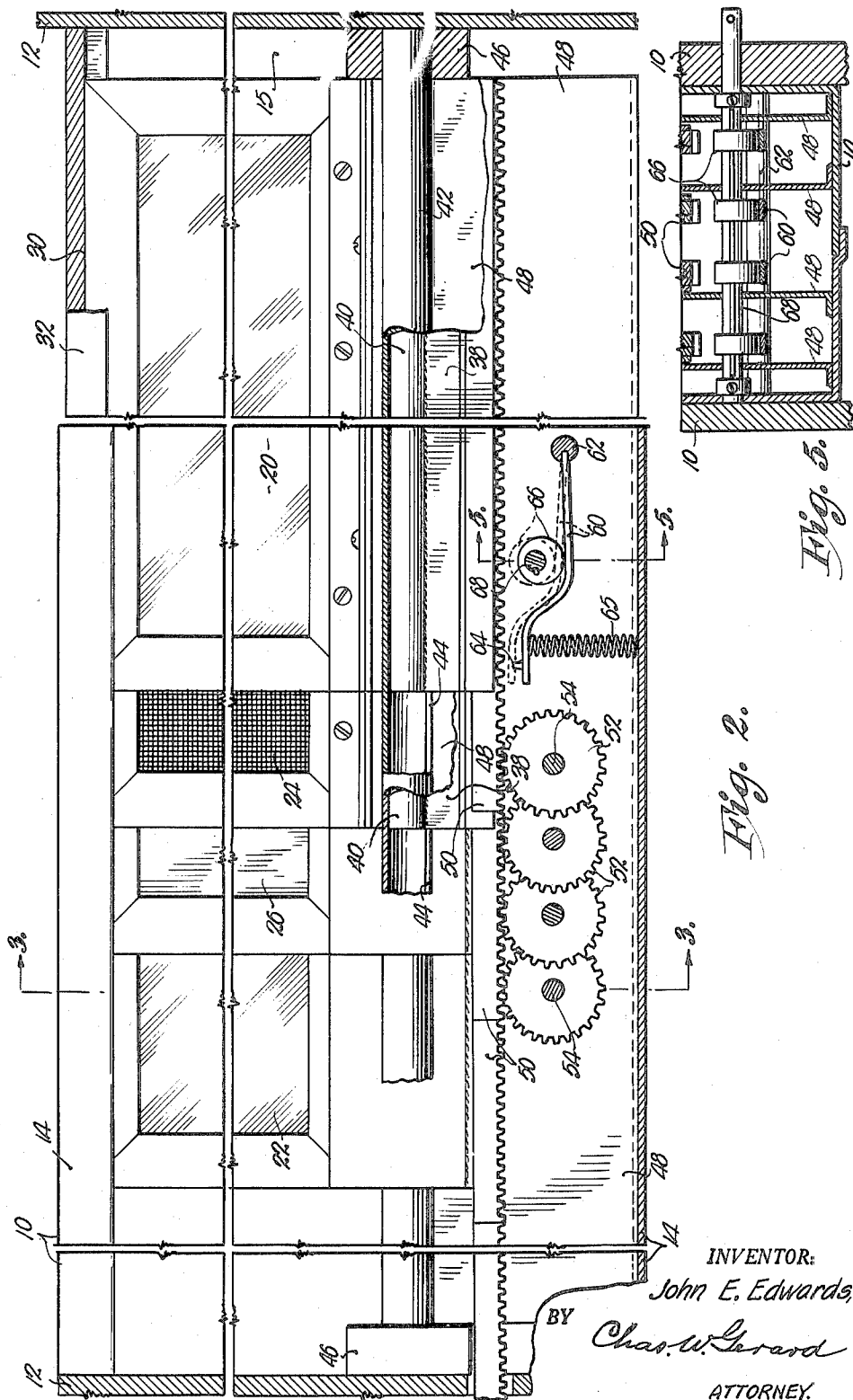
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2 Sheets-Sheet 2



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MULTIPLE WINDOW SASH UNIT OR ASSEMBLY

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1 Claim. (Cl. 20—52.1)

The present invention relates to window construction, and the primary object in view is to devise a novel and improved form of multiple sash or panel assembly adapted for locating or positioning any one of the several sash or panel units of the assembly in either operative, or in inoperative, or storage position.

Accordingly, the improved construction comprises a compact and self-contained type of window sash or panel assembly of the character described and which is adapted to be installed in place for forming a part of a building wall construction, and thereby incorporated as a part of the main or permanent structure comprising said building wall construction.

To this end the improved window sash or panel assembly is made up in the form of a compact structural unit including a window opening and an adjacent sash storage chamber for housing a plurality of the desired types of window sash or panel members adapted to be separately and independently moved or shifted from said storage chamber or compartment into or out of operative position, across the said window opening.

The invention further consists in the provision of improved means for slidably supporting the several window sash or panel units of the assembly, for their necessary operative or shifting movements, as well as appropriate means for latching or securing the said window sashes or panels in any desired position.

With the foregoing general objects in view, as well as minor objects and advantages as will be noted in the course of the accompanying detail specification, the invention will now be more particularly described by reference to the accompanying drawings illustrating one preferred form of construction which I have devised for embodying the proposed improvements, after which those features and combinations deemed to be novel and patentable will be particularly set forth and claimed.

In the drawings—

Figure 1 is a front elevation, with portions indicated as broken away, illustrating a multiple window sash or panel assembly embodying the present features of improvement;

Figure 2 is a similar view in front elevation but on a larger scale and omitting portions of the exterior construction, said view representing different positions of the several window sash or panel units and also disclosing further details of the interior construction of the improved assembly;

Figure 3 is a transverse sectional view, representing a section taken on the line 3—3 of Figure 2;

Figure 4 is a detail sectional view, representing a section taken on the line 4—4 of Figure 1; and

Figure 5 is a detail sectional view, representing a section taken on the line 5—5 of Figure 2.

The object of my invention being to devise a compact window sash or panel assembly providing for the storage of a group of window sash or panel units as well as an appropriate secondary window opening, together with means for selectively positioning any one of said sash

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or panel units in operative position across said opening, I accordingly illustrate in the accompanying drawings a structure comprising suitable spaced frame members 10 connected with transverse end pieces 12 for enclosing a sectional housing 14 providing a storage chamber 15 for accommodating a plurality of sash or panel units, as well as a space 16 (as illustrated in Figure 3) into which the said sash or panel units may be projected into position opposite openings 18 designed to be located adjacent to a window opening 19 of the building—when properly installed in a building construction.

Within said housing structure 14 is provided a set of different types of window sash or panel units, such as inner and outer glass panels 20 and 22 respectively, a screen panel 24, and also a panel 26 of more or less solid design—for which sash or panel units suitable upper guideways or channels 30 are provided in transversely extending frame portions 32 of the structure—as represented in Figure 3.

For the lower margins of the aforesaid sash or panel units, separate supporting means are also provided by means of suitable bracket-assemblies 34 constructed to provide channel portions 36 in supporting and gripping relation to said lower edges or margins of the said panel units. Moreover, each of said bracket assemblies includes a rigid fin-like extension 38 (see Figure 3) attached to a guide tube 40 which is arranged to operate slidably within a tubular guide support 42 which in turn is formed with a longitudinal slot 44 for passage of the extension 38 connected with the corresponding guide tube 40. The set of tubular guide supports 42 are maintained in proper parallel relation by the mounting of their ends in fixed supporting blocks 46 carried by the transverse end pieces, and also by means of upright supporting fin portions 48 extending throughout the length of said guide tubes 42 and supported by the interior bottom portion of the housing structure 14—as illustrated in Figures 2 and 3.

Each of the bracket assemblies 34 also serves to support a rack-bar 50 in parallel relation to the corresponding guide tube 40, as represented in Figures 2 and 3, and in engagement with each of said rack-bars is arranged a separate actuating gear or pinion 52—the said gears or pinions being in turn secured to and supported by individual transverse shafts 54 extending across the lower portion of the casing or housing structure 14, and having exterior end portions adapted to be operatively engaged by a detachable handcrank 56—as shown in Figure 3.

The said rack-bars 50 are also provided with means for latching and securing the same, with their corresponding window sash or panel units in any desired or given position, by means of a set of arms 60 which are pivotally supported by a transverse bar 62, each of said arms 60 carrying a tooth or detent element 64 adapted for latching engagement with one of said rack-bars 50. As represented in Figure 2, said detent arms are maintained normally in latching engagement with the rack-bars by means of suitable compression springs 65, but may be retracted from such latching engagement by means of a set of cam elements 66 also carried by a transverse shaft 68 in position for engagement with intermediate portions of the arms 60, on rotation of said shaft 68 by a crank (such as the aforesaid handcrank 56) when engaged with the outer end of the shaft 68 for effecting partial rotation thereof, in an obvious manner.

From the foregoing it will be seen that a window sash or panel assembly is thus provided which comprises a housing or storage chamber or compartment for a set or plurality of interchangeable sashes or panels, all mounted upon movable supporting means and adapted to be selectively moved from their inoperative or storage position within said storage compartment into an operative position opposite the window opening 18, or into any

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desired intermediate position, and said operative or shifting movement is facilitated and guided by the tubular telescoping guide means and the supporting connections above described, as the proper gears or pinions corresponding to the sashes or panel units to be moved are operated by means of the crank member 56 for effecting the required shifting movement of the several sash or panel units of the assembly.

The arrangement and construction of the telescoping tubular members 42-44 moreover provide an even and uniform supporting and guiding operation by virtue of the bracket supporting construction embracing the entire lower portions of the sash units, and the supporting and guiding effect provided by said telescoping members being also uniform and continuous to the same extent. The provision of the longitudinal slots 44 in the relation shown also promotes all necessary drainage action, as may be required in connection with the structure comprising said supporting and guiding means.

Furthermore, the sash panels may be readily and instantly released or latched, in any desired position, by the operation of the cam means through the medium of the crank device applied to the outer end of the cam-supporting shaft 68, as above explained, and clearly illustrated in Figure 2.

The entire assembly as shown is obviously of a simple and compact form, designed to be readily installed in proper place, in either a completed building or one in the course of construction, the only requirement being the proper location and support of the assembly in such position as will register its openings 18 in suitable or corre-

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sponding relation to the outside window opening of said building.

What I claim is:

In apparatus of the character described, framework providing space for the shifting of a window panel unit horizontally from one position to another within said space and also providing a guideway for the upper margin of said panel unit, a panel unit adapted for shifting movement within said space, and combined supporting and horizontal shifting means for the lower margin of said panel unit comprising a horizontal sliding tube underneath said unit and having angularly extending connecting means providing supporting means for said panel unit, a fixed horizontal guide tube providing a guide passage for said sliding tube and also having vertical supporting means extending throughout the range of movement of said panel unit, a rack bar carried by said connecting means alongside said vertical supporting means, and gear means mounted in driving relation to said rack bar for actuating said sliding tube horizontally within said guide tube.

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