Nov. 22, 1955 S. M. H. LUBLIN 2,724,150

FOLDABLE GRANDSTAND

Filed April 21, 1949 2 Sheets-Sheet 1

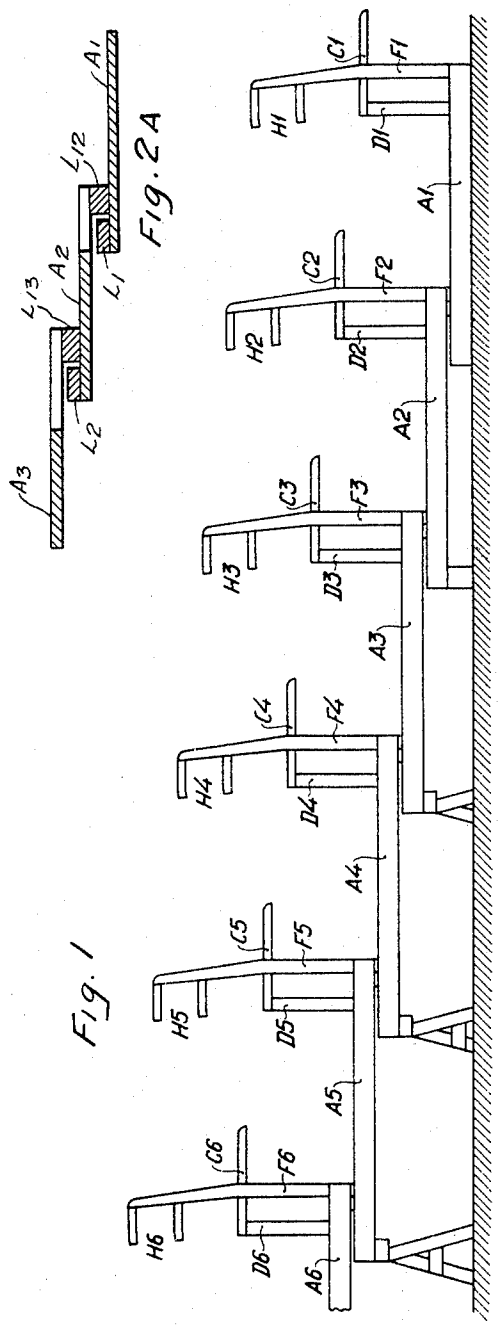


Fig. 2A

Fig. 1

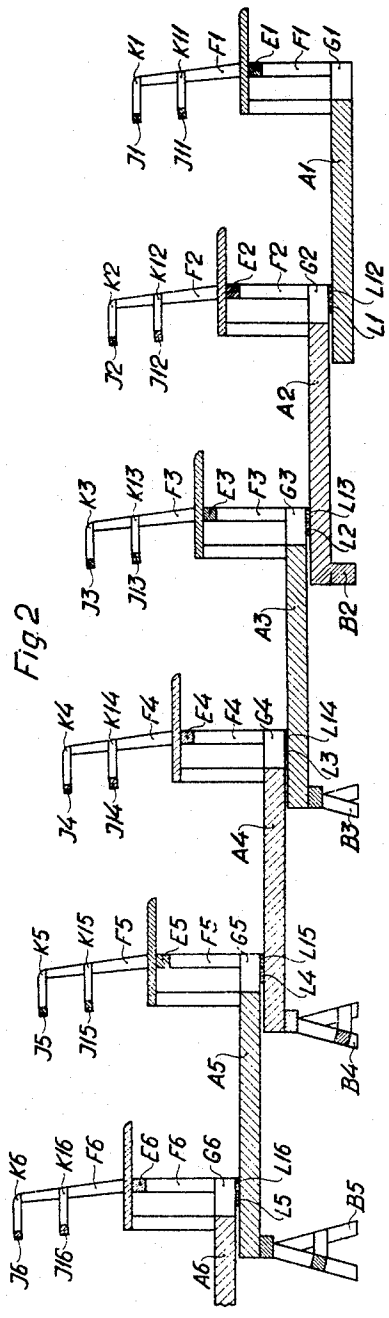


Fig. 2

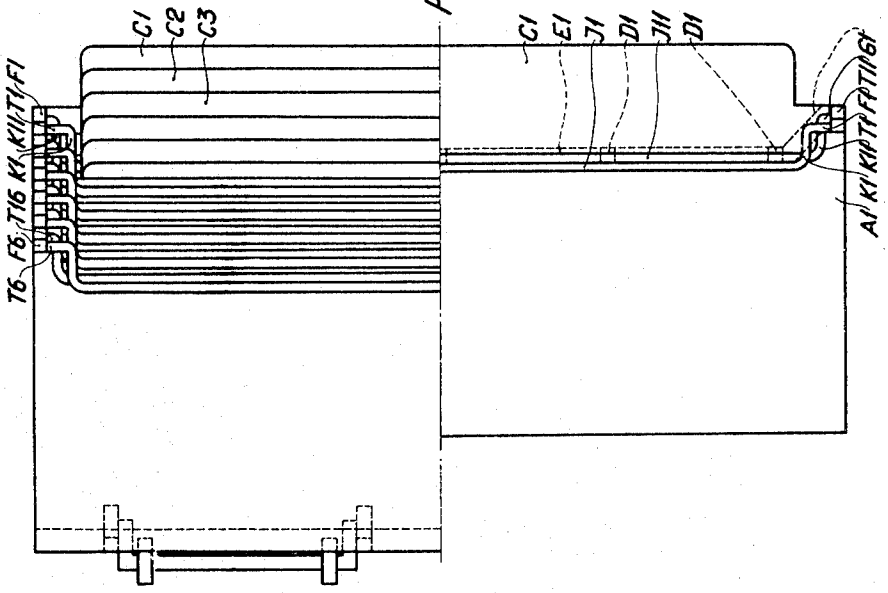
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Fig. 5



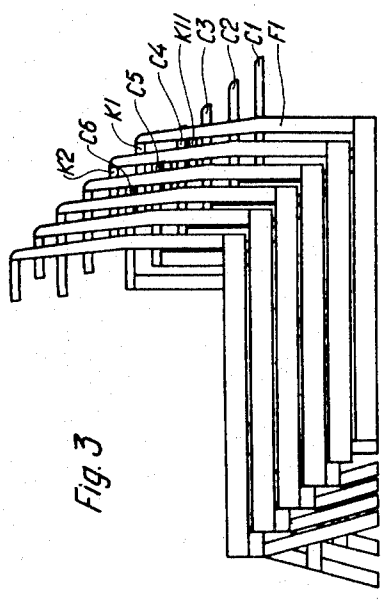


Fig. 3

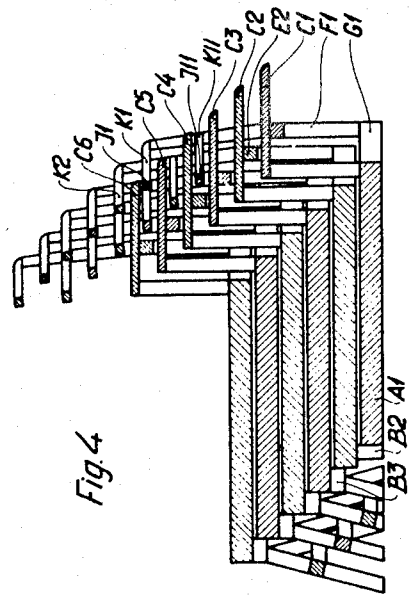


Fig. 4

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FOLDABLE GRANDSTAND

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Claims priority, application Sweden April 23, 1948

2 Claims. (Cl. 20—1.126)

The present invention relates to an arrangement of seats in rows one behind the other in meeting places and the like and is of particular utility where such places are to be used alternately with and without seats. Heretofore it has been common practice to use individual chairs or benches which have been pushed together or piled up in a corner when it was necessary to clear the floor. This has, however, involved a considerable amount of work and required a relatively long time.

It has also been proposed to arrange the seats in each row or group of rows on a supporting platform and the different platforms at different levels in stepped arrangement. In this case the platforms and seats have been provided with collapsible supports whereby the platforms and seats may be stored in dismounted condition in a relatively small space. However, the mounting and dismounting have required much time and labour and was not practical except for relatively important occasions.

The present invention has for its object to facilitate a rapid placing of the seats in their proper positions and rapid removal thereof and consists in providing a series of platforms which, except for the foremost one, are provided with an underlying space which is unobstructed in the forward direction and adapted to receive the platform next in front thereof and further, that the different platforms are shiftable in relation to one another along a plane parallel with the floor or the like so that they form, in contracted position, a pile or stack of superposed platforms.

The upper side of each platform should be unobstructed toward the rear and adapted to receive the next rearwardly disposed platform. Each platform, with the exception of the foremost one, is then preferably supported at its front edge by the next platform in front thereof. On the other hand, each platform may, at its rear edge, be supported from the floor or other surface. The seats are preferably arranged along the front edge of each platform and the front edge of each seat protrudes above the next platform in front thereof. Each seat is preferably so arranged relative to the adjacent platform in front thereof that the latter provides a foot support for a person occupying the seat.

The invention will be more fully described with reference to the accompanying drawings in which Fig. 1 illustrates a device according to the invention as viewed from the side in extended operative condition.

Fig. 2 illustrates the same arrangement in longitudinal section.

Fig. 2A is a fragmentary sectional view showing the platforms and stop means for limiting relative movement thereof toward extended position.

Fig. 3 shows the same arrangement in retracted or storage position whereas Fig. 4 is a longitudinal section of the arrangement shown in Fig. 3.

Fig. 5 illustrates in the upper portion of the figure the arrangement according to Fig. 3, as viewed from above, whereas the lower half of the figure illustrates in similar

manner an individual platform with the corresponding row of seats.

In the embodiment shown in Figs. 1 to 5 there are provided a number of platforms A1 to A5, a platform A6 being partially shown. Each platform is relatively offset vertically so that different platforms extend along different levels in stepped relation. The platform A1 rests in its entirety on a floor or the like. The platform A2 is supported at its front edge on the platform A1 and at its rear edge from the floor by means of a support B2. The platform A3 is supported at its front edge on the platform A2 and at its rear edge from the floor by means of a support B3, which may, if desired, be in the form of a trestle. In similar manner the platforms A4 and A5 rest on the platforms A3 and A4 respectively and on the supports B4 and B5 respectively. On the drawing there are shown five complete platforms with an equal number of seating rows although if desired a less number or a greater number of platforms and seating rows may be utilized. Each platform is provided with corresponding seating rows C1 to C5. Each seat has rear supports or uprights D1 to D5 secured to the front edge of the corresponding platform A1 to A5. Each seat will therefore extend forwardly of the corresponding platform and will be disposed directly above such platform only along its rear edge. Between its rear and front edges each seat rests on a front support E1 to E5 secured by means of uprights F1 to F5 to at least one projection G1 to G5 extending forward from the front edge of each platform. With particular reference to Fig. 5 it is here assumed that the seating rows have substantially the same lengths, the projection G1 being outside the corresponding outermost rear support D1. The front support E1 etcetera is assumed to take the form of a bar running along the seating row and supported at its ends by means of the uprights F1 etcetera extending upwardly from the projections G1 etcetera at each end of the seating row C1 etcetera. As is clearly seen from Fig. 4 the relative height of each platform is so selected with relation to the combined height of the seat C1 etcetera, and the bar E2 etcetera that the lower edge of the bar E2 is slightly above the upper surface of the next preceding seat C1 to permit retraction of the platforms and seats as shown in Figs. 3 and 4.

The invention may also include a back structure generally designated H1 to H5, such structure being provided for each seating row and carried by the uprights F1 etcetera, secured to the projections G1 etcetera. In this embodiment there are thus used the same uprights F1 etcetera both for the seats and for the backs but if desired separate uprights may be utilized. The backs may be formed by at least one rod J1 to J5 extending along the seating row and connected with the corresponding uprights by means of a strut K1 to K5 extending forwardly from the rod and disposed in a vertical plane between the upright F1 and the outermost lateral edge of the adjacent seat C1. If as shown in Figs. 1 to 5 there are two or more parallel rods J1 etcetera and J11 etcetera these rods may be connected to the same upright F1 each by one strut K1 and K11 etcetera directed forwardly and by laterally extending portions T1 and T11 respectively. As seen from Fig. 4 the rods, such as K1 and K11, are disposed on such levels that they fall in the interspaces between the seats, such as C5 and C6 or C3 and C4 respectively, when in the retracted position of the platforms as shown in Fig. 4.

Between adjacent platforms there are preferably provided stop abutments for limiting relative outward movement of the platforms and such abutments are designated as L1 mounted on the platform A1 and L12 mounted on the platform A2. Between the platforms A2 and A3 and the remaining platforms there are corresponding stop

abutments L2 and L13 etcetera which limit relative outward movement of the platforms as shown in Figs. 1 and 2. The retraction of the platforms is limited as shown in Figs. 3 and 4 by the supports B2 etcetera which will engage the rear edges of the corresponding platforms A1 etcetera. At least the projections G2 etcetera should be disposed above the platform A1 etcetera forwardly thereof to permit the provision of guiding mechanism between adjacent platforms so as to prevent misalignment during relative movement. The supports B2 etcetera and the underside of the foremost platform A1 may, if desired, be provided with rolls or wheels to facilitate movement thereof.

The shifting movement of the platforms may, if desired, be accomplished by means of wires and winches which may be power-driven.

Disposed laterally outside the seating rows there may be provided, at least along one side, a sloping footway, or the like, for persons going to and from the seats. The footway may, if desired, be swingable upwards or otherwise removable when not in use.

If the construction is sufficiently sturdy the uprights D1 etcetera and the lower portion of the uprights FI etcetera may be replaced with single uprights.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is described in the specification and shown in the drawing, but only as indicated in the appended claims.

What is claimed is:

1. In a seating arrangement adapted to rest upon the floor, a first platform resting upon the floor, a second platform having its front edge slidably engaging and resting upon the upper surface of the first platform, a support extending from the rear edge of the second platform to the floor for supporting the rear edge of the second platform, a plurality of other platforms each having its front edge slidably engaging and resting upon the upper surface of the platform immediately therebelow and a rear support for each of said plurality of other platforms extending from the rear edge of each to the floor for supporting the rear edge of each directly from the floor, said platforms being movable to extended condition for use and to a contracted storage condition, first uprights secured to the front of each platform, second uprights positioned rearwardly of and adjacent said first uprights secured to each platform, seats supported on said first and second uprights, the first uprights extending above the second uprights, and a back spaced above said seats and secured to said first uprights the seat and back structure on each platform being substantially identical with the seat and back structure on all other platforms whereby said seat and back structures will occupy a nested relationship when said platforms are in contracted storage condition.

2. A seating arrangement comprising a plurality of platforms positioned one upon another, first uprights positioned adjacent the front edge of each platform, a supporting bar extending between the first uprights of each platform, second uprights positioned rearwardly of said first uprights, seats positioned above each platform and projecting forwardly thereof mounted on said supporting bar and said second uprights, a first stop positioned on the upper surface of each platform adjacent the rear edge thereof, a second stop positioned on the lower surface of each platform adjacent the front edge thereof and adapted to engage said first stop, a third upright positioned adjacent the front edge and one end of each platform and adapted to support a handrail, said platforms being slidable with respect to each other from an extended position wherein said first and second stops engage one another and said seats are in operative position to a contracted position wherein said uprights are positioned closely adjacent one another and said platforms occupy a minimum of floor space the seat structure on each platform being substantially identical with the seat structure on all other platforms whereby said seat structures will occupy a nested relationship when said platforms are in contracted position.

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