April 3, 1956 B. L. WARD 2,740,165

CONVERTIBLE STAGE

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Fig. 1.

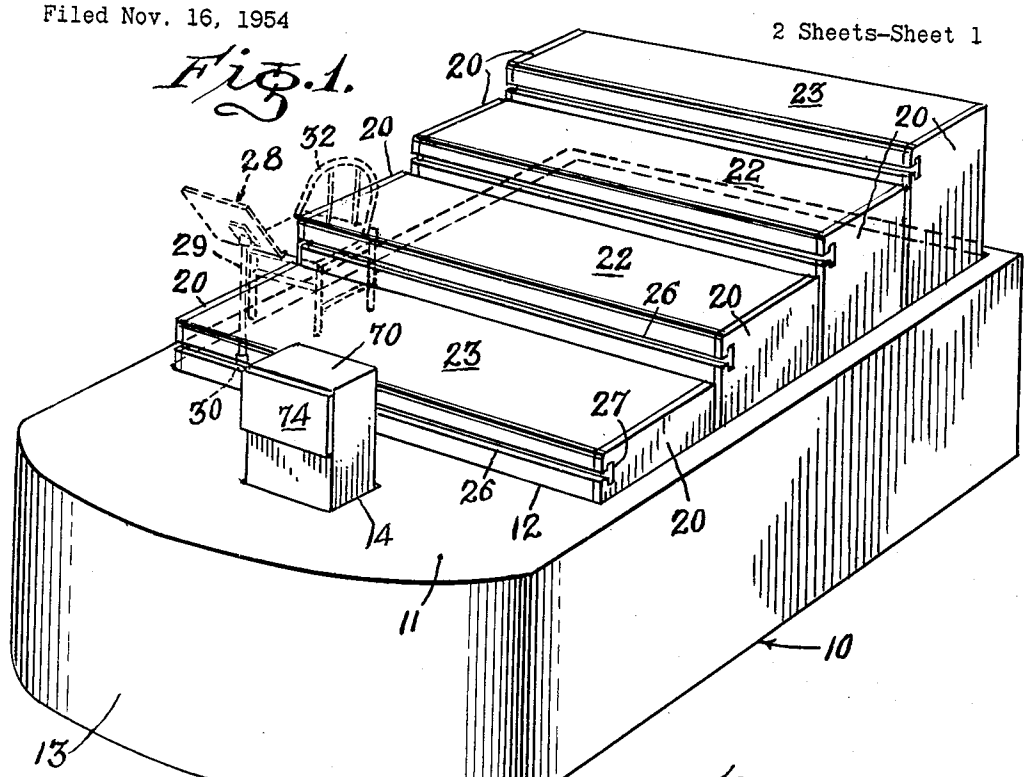
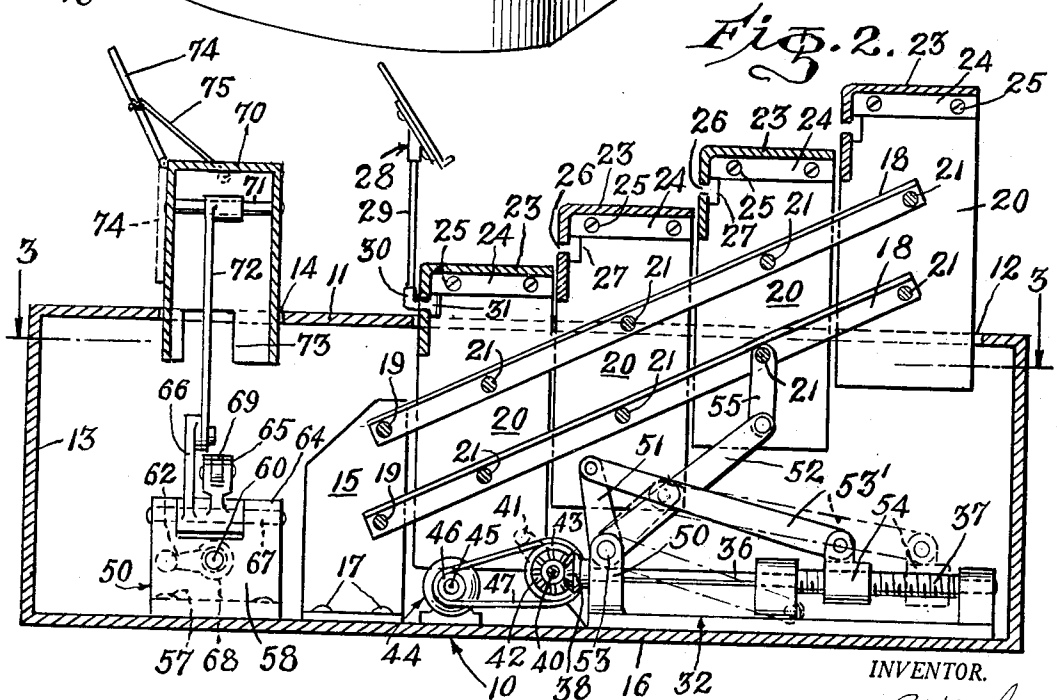


Fig. 2.



INVENTOR.

Bryant L. Ward

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Fig. 3.

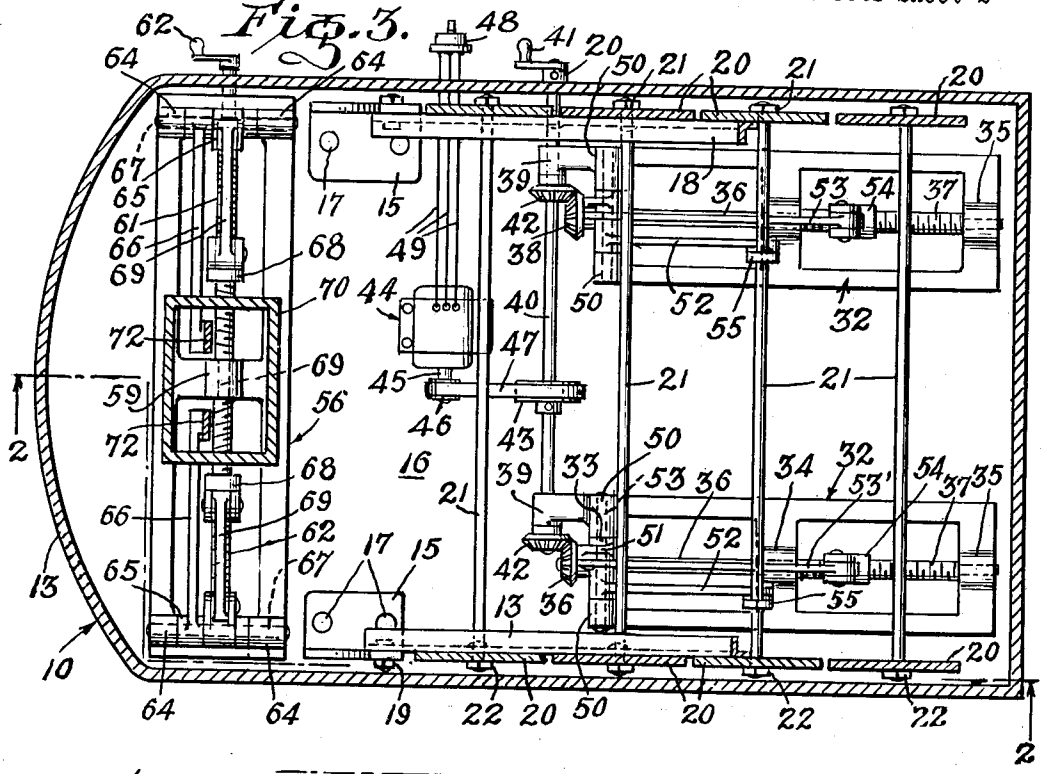
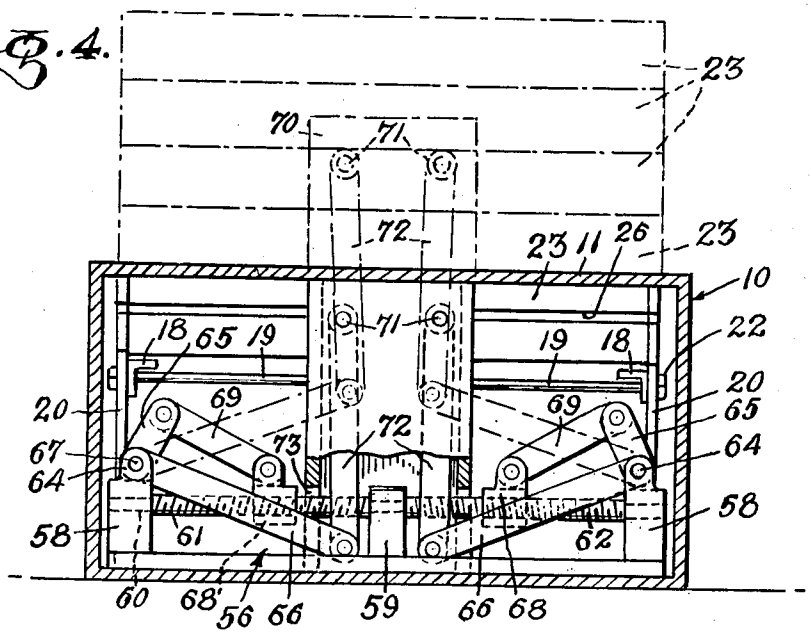


Fig. 4.



INVENTOR.

Bryant L. Ward

United States Patent Office

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CONVERTIBLE STAGE

Bryant L. Ward, Philadelphia, Pa.

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1 Claim. (Cl. 20—1.123)

This invention relates to stages.

It is an object of the present invention to provide a convertible stage which is adapted to be used in schools, hotels, theaters, or any other place requiring the use of stair steps, stages for choirs, singing groups and orchestras, or the like.

It is another object of the present invention to provide a stage which includes a stepped portion adapted to support thereon members of an orchestra or the like and which may be collapsed into the platform when not in use in a novel manner and raised upwardly therefrom in a striking manner when the performance is about to begin, thus increasing the showmanship of the production.

It is still another object of the present invention to provide a stage of the above type which includes a leader's rostrum or speaker's rostrum which is adapted to be raised upwardly from the stage in a novel and striking manner and which may be as easily and readily collapsed into the stage so as to present a flat upper surface thereon.

Other objects of the present invention are to provide a convertible stage bearing the above objects in mind which is of simple construction, inexpensive to manufacture, has a minimum number of parts, is easy to use and efficient in operation.

For other objects and a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Figure 1 is a preferred embodiment of the invention shown in perspective and which has the rostrum and band supporting portions in a raised operative position;

Fig. 2 is a longitudinal vertical sectional view thereof taken along the line 2—2 of Fig. 3;

Fig. 3 is a horizontal sectional view taken along the line 3—3 of Fig. 2; and

Fig. 4 is a front view shown partly in elevation and partly in section of the rostrum raising mechanism.

Referring now more in detail to the drawing, 10 indicates generally a hollow platform having a top wall 11 adapted to serve as a stage, substantially as illustrated.

The top wall 11 is provided with a rectangular opening 12 therethrough spaced rearwardly from the front wall 13 of the platform. The top wall 11 is also provided with a relatively small rectangular opening 14 spaced forwardly of the opening 12.

A pair of oppositely disposed angle plates or brackets 15 (Fig. 3) are secured to the bottom wall 16 of the platform 10 by means of the bolts or rivets 17, each of the brackets 15 serving to pivotally mount a pair of vertically spaced elongated angle bars 18 by means of the bolts 19 (Fig. 2).

A plurality of vertical, longitudinally spaced side plates 20 are pivotally connected to the bars 18 by means of the rods 21 provided at their ends with the nuts 22, the side plates 20 being adapted for sliding vertical displacement within the opening 12 upon movement of the bars 18 about their pivots 19. The upper and forward vertical

edges of oppositely disposed pairs of side plates 20 are connected by the floor portions 23 of L-shaped cross section (Fig. 2) secured thereto by flanges 24 integrally formed at the opposite ends of the supports 23 and secured to the inner faces of the side plates 20 by screws 25. The supports 23 may be of any suitable material, for example screen grills or the like. The forward vertical portion of each of the supports 23 is provided with a longitudinal slot 26 therethrough, the side plates 20 each being provided with T-shaped cut outs 27 which are aligned with the ends of the slots 26. The music stand indicated generally at 28 of conventional design and including a standard 29 is provided at its lower end with an L-shaped member 30 which slides longitudinally within the slots 26 and formed at the inner end with an enlargement 31 (Fig. 2) which retains the portion 30 in engagement therewith. Thus, the music stands 28 may be removed entirely to permit the depression of the supports 23 in a manner which will hereinafter be described, the music stands 28 likewise being adjustable longitudinally within the slot 26.

A plurality of chairs 32 will be disposed across the supports 23 behind each of the stands 28, seating a plurality of musicians or the like.

In order to raise and lower the supports 23, a pair of frames indicated generally at 32' are mounted on opposite sides of the floor 16 in suitable manner below the opening 12, each of the frames 32' including the longitudinally aligned bearing portions 33, 34 and 35 (Fig. 3). A shaft 36 is journalled in the bearing portions 33, 34 and 35 and includes an externally threaded portion 37 intermediate the bearing portions 34 and 35. The shaft 36 extends forwardly beyond the bearing member 33 and has secured thereon a bevel gear 38.

Each of the frames 32' includes the forwardly extending bearing portions 39 which cooperate to rotatably mount a transverse shaft 40, one end of the shaft 40 terminating adjacent the bevel gear 38 while the other end extends outwardly through platform 10 and has secured thereon a crank arm 41 for supplying manual power, when desired. Bevel gears 42 are keyed onto the shaft 40, each of the bevel gears being in mesh with one of the bevel gears 38 whereby to rotate the shafts 36 upon rotation of shaft 40, as will be obvious.

A pulley 43 is keyed onto the shaft 40 intermediate its bevel gears 42.

A reversible motor 44 is mounted on the bottom wall 16 forwardly of the pulley 43 and includes a drive shaft 45 on which is keyed a pulley 46, the pulley 46 being connected to the pulley 43 by means of a belt 47.

A three-way switch 48 controls the operation of motor 44 by means of conductors 49, the switch 48 permitting the operation of the motor 44 in reverse directions or in an intermediate position the motor is at a standstill.

A bearing member 50 is provided in frame 32' and extends upwardly above the bearing member 33 to rotatably mount a bell crank consisting of arms 51 and 52 by means of a pin 53 (Fig. 2). A link 53' pivotally connects the end of the arm 51 to an internally threaded collar 54 adjustable along the externally threaded portion 36, the arm 52 of the bell crank being pivotally connected to one of the rods 21 by means of the link 55.

Thus, upon operation of the motor 44, the pulley 45 and belt 47 will drive pulley 43 and shaft 40, the rotation of which will be transmitted to the shafts 36 by the bevel gears 42, 38. Rotation of shafts 36 will cause the longitudinal adjustment of the internally threaded collars 54 along the externally threaded portions 37 thereof, which longitudinal movement will be transmitted as vertical displacement to the rods 21 through the links 53' and 55 and bell crank 51, 52, whereby to raise and lower the supports 23. It will be noted that they are all con-

nected to the unitary angle bars 18 which will retain the same in proper spaced relationship to each other. Thus, when the collars 54 are in the position of Fig. 2, the supports 23 will be raised to provide a stepped structure adapted to support thereon the members of the orchestra or the like, this stepped structure rising up out of the platform 10 in a striking and showmanship-like manner upon operation of switch 48. When it is desired to lower the supports 23, the motor 44 will be operated in a reverse direction to move the collars 54 to the dotted line position of Fig. 2, causing the lowering of the supports until they lie flush with the upper surface of the platform 10. This arrangement is shown in full lines in Fig. 4.

A frame indicated generally at 56 is secured to the bottom wall 16 below the opening 14 by means of bolts 57 (Fig. 2) and includes longitudinally aligned bearing portions 58 at opposite ends thereof which cooperate with a central bearing portion 59 to rotatably mount a shaft 60, the shaft 60 intermediate the central bearing portion 59 and each of the end bearing portions 58 being provided with externally threaded portions 61 and 62. The threaded portions 61 and 62 are in opposite directions for a purpose which will hereinafter become clear. The shaft 36 at one end extends outwardly through the side of the platform 10 and has secured thereto a crank 62' (Fig. 3). The frame 56 at opposite ends above the bearing portions 58 is integrally formed with the transverse bearing portions 64 which serve to rotatably mount the bell cranks consisting of arms 65 and 66 by means of pins 67. The arms 65 of the bell cranks are pivotally connected to internally threaded collar 68 adjustable along each of the externally threaded portions 61 and 62 by means of the links 69.

A hollow rectangular rostrum or pulpit 70 open at the bottom is adapted for vertical displacement through opening 14 and includes a rod 71 fixedly connecting the front and rear sides thereof (Fig. 2). The arms 66 of each of the bell cranks are pivotally connected to one of the rods 71 (two being provided) by means of the links 72. The rostrum 70 in the opposite sides thereof is provided with rectangular cutouts 73 which receive therewithin the externally threaded portions 61 and 62 when the rostrum rests on base of frame 56, as shown in full lines in Fig. 4. It will be noted that in this position the collars 68 are displaced inwardly along their respective threads. Upon rotation of the shaft 60 by means of the crank 62' (or electric motor means similar to that employed above), the collars 68 will be displaced outwardly to move the bell cranks to the dotted line positions of Fig. 4 and the full line positions of Fig. 2, to thus raise the rostrum 70, as will be obvious.

A collapsible music support or the like 74 is hingeably connected to the upper forward edge of the rostrum 70 and is adapted to be retained in the raised operative position of Fig. 2 by means of the pivot arms 75 which releasably engage the opposite sides of the rostrum. Upon release of the arms 75, the support 74 will be rotated downwardly against the front face of the rostrum 70, to be retracted therewith.

The side supports 20 will vary in size according to the size of the stage.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claim.

What I claim as new and desire to protect by Letters Patent of the United States is:

A stage comprising a hollow, raised platform having a substantially horizontal top wall, said top wall having a relatively large opening therethrough, a plurality of substantially parallel, independent steps, adjustable vertically through said opening, means for raising and lowering said steps from a flattened position flush with said top wall to a stepped arrangement, said steps being raised to increased heights rearwardly, said top wall forwardly of said steps having a second relatively small opening, a second platform adjustable vertically through said second opening, and means for raising and lowering said second platform, each of said steps along its forward vertical side having an elongated slot, said side plates having substantially T-shaped slots aligned with said elongated slots, a music stand, a substantially L-shaped extension at the lower end of said music stand fitting and slidable longitudinally within said elongated slots, each of said extensions having an enlarged inner end adapted to fit through said T-shaped slots and to abut the inner face of said steps whereby to retain said extension within said slots.

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