

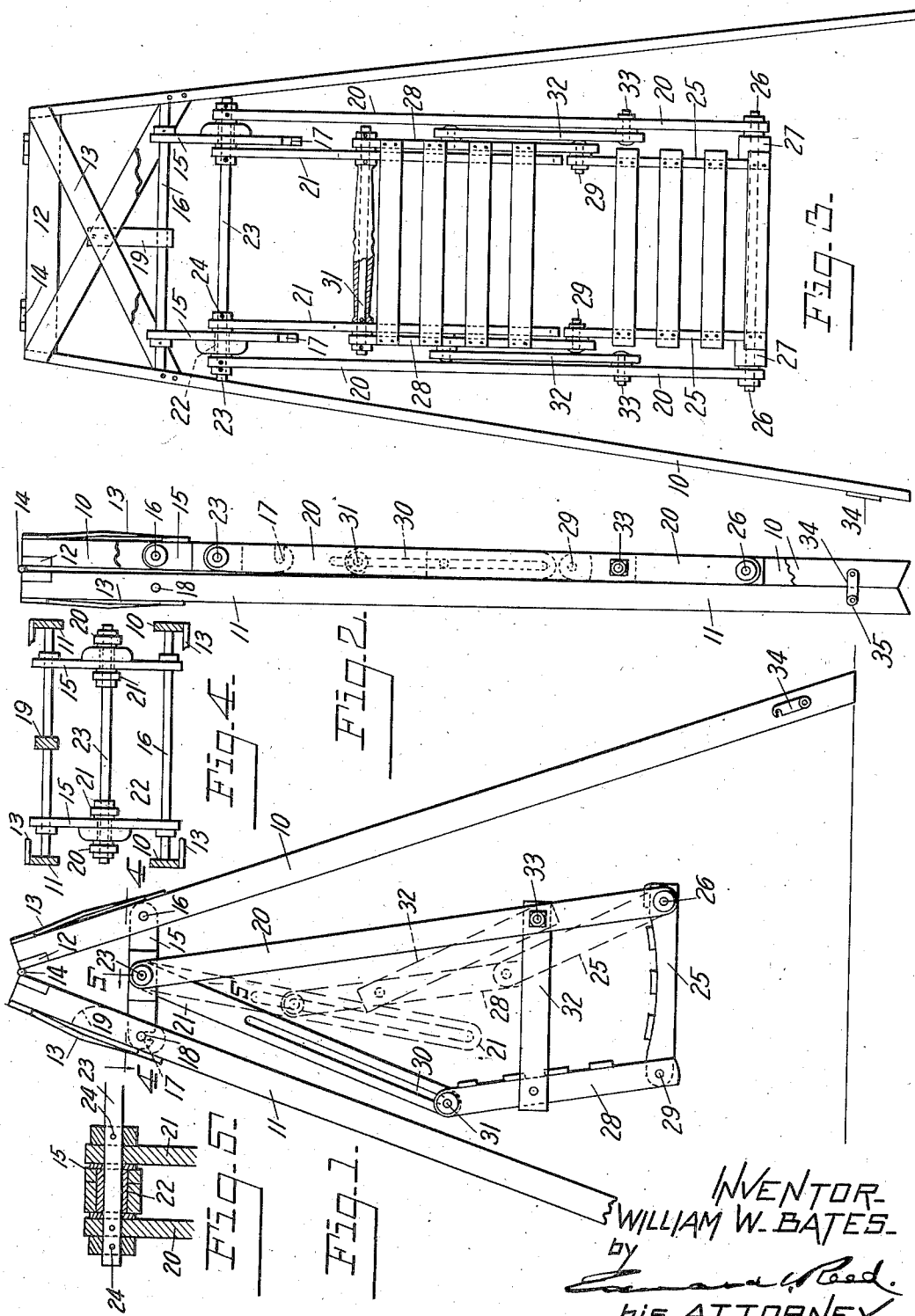
June 23, 1936.

W. W. BATES

2,044,964

COLLAPSIBLE SWING

Filed June 19, 1935



INVENTOR.
WILLIAM W. BATES.
by *James Red.*
HIS ATTORNEY.

UNITED STATES PATENT OFFICE

2,044,964

COLLAPSIBLE SWING

William W. Bates, Dayton, Ohio

Application June 19, 1935, Serial No. 27,407

13 Claims. (Cl. 155—58)

This invention relates to a collapsible swing and one object of the invention is to provide a swing which may be folded into a compact form requiring a minimum of space for storage or shipment.

A further object of the invention is to provide such a swing which may be collapsed without disassembling any part of the structure, thus enabling the swing to be quickly and easily folded or extended.

A further object of the invention is to provide such a swing having a chair-like seat which, when folded, will be supported wholly within the folded main frame.

A further object of the invention is to provide a strong durable swing of this type which will be simple in construction and may be produced at a low cost.

Other objects of the invention may appear as the swing is described in detail.

In the accompanying drawing Fig. 1 is a side elevation of a swing embodying my invention, showing the same in its extended position and partly broken away; Fig. 2 is a side elevation of the swing in its collapsed position, partly broken away; Fig. 3 is a front elevation of the swing in its collapsed position, partly broken away; Fig. 4 is a transverse section taken on the line 4—4 of Fig. 1; and Fig. 5 is a detail section taken on the line 5—5 of Fig. 1.

In the drawing I have illustrated one embodiment of my invention and have shown the same as comprising a main frame and a seat structure pivotally suspended from said main frame, both the main frame and the seat structure being foldable into substantial parallelism. The main frame is preferably in the form of an A-frame and is here shown as comprising upwardly converging front and rear frame members, 10 and 11, pivotally connected at their upper ends. Each frame member consists of two uprights spaced laterally one from the other and rigidly connected at their upper ends by cross bars 12 and diagonal braces 13. The cross bars 12 are, in the present instance, arranged at the inner edges of the uprights and are pivotally connected one to the other, as by hinges 14, thus permitting the two frame members to be extended, as shown in Fig. 1, or to be moved into parallel positions as shown in Fig. 2. I have not found it necessary, particularly in the smaller size swings, to brace the lower ends of the uprights of the two frame members but obviously these could be connected by cross bars should this be desirable.

The two frame members are held in their ex-

tended positions by a spacing device which is movable to permit the frame members to be folded. In the present instance the spacing device comprises two spacing bars 15 which are pivotally connected with one frame member and detachably connected with the other frame member. In the arrangement shown the front ends of the spacing bars are arranged between and pivotally connected with the uprights of the front frame member 10, as by a rod 16 extending through the uprights, and these bars are provided at their rear ends with hook shaped portions 17 to engage over a cross rod 18 carried by the uprights of the rear frame member. When the spacing bars are disconnected from the rear frame member they will swing downwardly and may assume positions between and parallel with the two uprights of the front frame member, as shown in Fig. 2. If desired, one or both of the rods 16 and 18 may be reinforced by a brace member 19 connected therewith between its ends and secured to the brace bars 13 or other part of the main frame.

The seat structure comprises front supporting members 20 and rear supporting members 21, which are mounted on the main frame for swinging movement with relation thereto. Preferably these supporting members are mounted on the spacing bars 15 and, as here shown, each spacing bar is provided with a bearing 22 and mounted in these bearings is a shaft 23 on which the upper ends of the two supporting members are mounted so that they will swing about a common axis. Each supporting member comprises two parallel parts spaced laterally one from the other and in the arrangement shown the two parts of the front supporting member are mounted on the shaft 23 on the outer sides of the respective spacing bars 15 and the two parts of the rear supporting member are mounted on the shaft 23 on the inner sides of the respective spacing bars. The two parts of the rear supporting member are rotatably mounted on the shaft 23 so that they may be moved into positions between and parallel with the two parts of the front supporting member. I prefer, however, that the two parts of the front supporting member shall be rigidly secured to the shaft, as by pins 24, so that the shaft itself will rotate when the seat structure swings.

The swing seat is carried by the lower portions of the two supporting members and is of such a character that it may be folded to a position substantially parallel with the two supporting members when the latter are in their parallel posi-

tions. Preferably the seat is chair-like in form and comprises a bottom 25, the front end of which is arranged between and pivotally connected with the lower portions of the two parts of the front supporting member 20, as by a cross rod 26. In the arrangement shown the seat bottom is of a width somewhat less than the distance between the two parts of the front supporting member and is spaced from these parts by spacing members 27. A seat back 28 is pivotally mounted at its lower end on the rear portion of the bottom 25 and, as here shown, the side members of the back are arranged on the outer sides of the bottom and connected therewith by pivot bolts 29. The seat back is connected with the rear supporting member in such a manner that it will be supported at a fixed elevation thereby when the swing is in an extended position but may be moved upwardly when the seat bottom is moved about its pivotal connection with the front supporting member, to bring the seat back and the bottom into substantially parallel positions between the two parts of the front supporting member. In the present construction the two parts of the rear supporting member are slotted, as shown at 30, to receive a cross rod 31 mounted in the upper part of the seat back. The seat back is also connected with the front supporting member by side bars 32 pivotally connected at their rear ends with the seat back and having their front ends arranged on the inner sides of and pivotally connected with the respective parts of the front supporting member, as shown at 33. These side bars are thus so arranged that they may assume positions between the two parts of the front supporting member and parallel both with that supporting member and with the bottom and back of the seat. The side bars 32 thus serve both to support the back against pivotal movement when the swing is in its extended position and to form arm rests.

When the swing is in its extended position ready for use, as shown in Fig. 1, the front and rear members of the A-frame are held rigidly in their properly spaced relation by spacing bars 15 and the front and rear seat supporting members diverge downwardly and support the seat in its extended position, the whole seat structure swinging about the axis of the shaft 23 on the spacing bars 15. When the swing is to be folded, or collapsed, the spacing bars are disconnected from the rear frame member 11 and permitted to swing downwardly so that when the two frame members have been moved in parallelism the spacing members and the front supporting member 20 will lie between and parallel with the two uprights of the front frame member 10. The seat back 28 is then pushed upwardly, as shown in dotted lines in Fig. 1, to move the several parts of the seat into parallelism and to locate these parts and the rear supporting member 21 between the two parts of the front supporting member 20, as shown in Figs. 2 and 3. Thus the whole seat structure is arranged between and parallel with the uprights of the main frame. In the arrangement shown the seat structure lies wholly between the two uprights of the front frame member but this is not essential as the same compactness may be secured by any arrangement which will confine the seat structure between the uprights of the two frame members when the latter are in their folded positions. If desired, one of the frame members may be provided with a latch 34 to en-

gage a stud 35 on the other frame member to retain the two frame members in their folded positions. I have not found it necessary to provide any means for retaining the seat structure in its folded position. In this manner the whole swing structure is folded into a very compact arrangement which occupies but little space for storage or shipment. The swing may be made in various sizes for either outdoor or indoor use but is particularly adapted for small sizes to be used indoors because of the ease with which it may be folded and stored in a closet or other suitable place. The swing here illustrated is built for the most part of wood but metal could be substituted for the wood without material change in the design.

While I have shown and described one embodiment of my invention I wish it to be understood that I do not desire to be limited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a collapsible swing, a main frame comprising front and rear members connected at their upper ends for movement from extended position to a collapsed position in which said members are substantially parallel one with the other, front and rear seat supporting members mounted on said frame for swinging movement about a common axis and diverging downwardly, one of said seat supporting members being movable on said axis to a collapsed position substantially parallel with the other seat supporting member, a seat supported normally in a substantially horizontal position by said supporting members, and means for pivotally connecting said seat with one of said supporting members for movement to a collapsed position substantially parallel therewith.

2. In a collapsible swing, a main frame comprising front and rear members connected at their upper ends for movement from extended position to a collapsed position in which said members are substantially parallel one with the other, front and rear seat supporting members mounted on said frame for swinging movement about a common axis and diverging downwardly, each seat supporting member comprising two parts spaced laterally one from the other and one of said supporting members being movable to a position between and substantially parallel with the two parts of the other supporting member, a seat supported normally in a substantially horizontal position by said supporting members, and means for pivotally connecting said seat with one of said supporting members for movement to a position between and substantially parallel with the two parts of the same.

3. In a collapsible swing, a main frame comprising front and rear members connected at their upper ends for movement from extended positions to collapsed positions substantially parallel one with the other, front and rear seat supporting members mounted on said frame for swinging movement about a common axis and diverging downwardly, at least one of said seat supporting members being movable on said axis to a collapsed position substantially parallel with the other seat supporting member, a seat having a bottom pivotally connected at one end with one of said supporting members and having a back pivotally connected with the other end of said bottom, and means for so connecting said

back with the other supporting member that it may move upwardly with relation thereto when said bottom is folded about its pivotal connection with the first mentioned supporting member.

4. In a collapsible swing, a main frame comprising front and rear members connected at their upper ends for movement from extended positions to collapsed positions substantially parallel one with the other, front and rear seat supporting members mounted on said frame for swinging movement about a common axis and diverging downwardly, at least one of said seat supporting members being movable on said axis to a collapsed position substantially parallel with the other seat supporting member, a seat having a bottom pivotally connected at one end with one of said supporting members and having a back pivotally connected with the other end of said bottom, and also having side members substantially parallel to and pivotally connected with said back and with the supporting member with which said bottom is connected, and means for so connecting said back with the other supporting member that it may move upwardly with relation thereto when said bottom is folded about its pivotal connection with the first mentioned supporting member.

5. In a collapsible swing, a main frame comprising front and rear members connected at their upper ends for movement from extended positions to collapsed positions substantially parallel one with the other, front and rear seat supporting members mounted on said frame for swinging movement about a common axis and diverging downwardly, each seat supporting member comprising two parts spaced laterally one from the other and one of said supporting members being movable to a position between and substantially parallel with the two parts of the other supporting member, a seat having a bottom one end of which is arranged between and pivotally connected with the two parts of said front supporting member, and a back pivotally connected with the other end of said bottom, and means for slidably connecting said back with said rear supporting member.

6. In a collapsible swing, a main frame comprising upwardly converging front and rear members pivotally connected at their upper ends, a spacing device connecting said frame members and movable with relation thereto to permit said frame members to be moved one toward the other, front and rear seat supporting members mounted on said spacing device between said frame members for swinging movement about a common axis with relation to said main frame and having their lower ends normally spaced one from the other, one of said supporting members being movable to a collapsed position substantially parallel with the other supporting member, a seat, and means for supporting said seat in a substantially horizontal position on said supporting members when the latter are in their normal spaced positions and for pivotally connecting said seat with one of said supporting members for movement into a collapsed position substantially parallel with said supporting members when the latter are in their parallel positions.

7. In a collapsible swing, a main frame comprising upwardly converging front and rear members pivotally connected at their upper ends, spacing members pivotally mounted on one of said frame members and movable to a collapsed position substantially parallel therewith, means

for detachably connecting said spacing members with the other frame member, front and rear seat supporting members pivotally mounted on said spacing members on a common axis and diverging downwardly, one of said supporting members being movable to a collapsed position substantially parallel with the other supporting member, a seat, and means for supporting said seat in a substantially horizontal position on said supporting members when the latter are in their diverging positions and for pivotally connecting said seat with one of said supporting members for movement into a collapsed position substantially parallel with said supporting members when the latter are in their parallel positions.

8. In a collapsible swing, a main frame comprising upwardly converging front and rear members pivotally connected at their upper ends, spacing members pivotally mounted on one of said frame members and movable to a position substantially parallel therewith, means for detachably connecting said spacing members with the other frame member, bearings carried by said spacing members, a shaft mounted in said bearings, front and rear seat supporting members mounted on said shaft, one of said supporting members being rigidly secured to said shaft and the other supporting member being movably mounted on said shaft, a seat, means for pivotally connecting said seat with said front supporting member for movement to a position substantially parallel therewith, and means for connecting said seat with said rear supporting member for upward movement with relation thereto when said seat is moved about its pivotal connection with the first mentioned supporting member.

9. In a collapsible swing, a main frame, comprising two upwardly converging members pivotally connected at their upper ends, and each having two uprights spaced one from the other, spacing members arranged between and pivotally mounted on the uprights of one of said frame members, means for detachably connecting said spacing members with the other frame member, front and rear seat supporting members mounted on said spacing members for movement about a common axis, each supporting member comprising two laterally spaced parts and one of said supporting members being mounted between the two parts of the other supporting member for movement to a position parallel therewith, a seat having a bottom pivotally mounted on said front supporting member and having a back pivotally mounted on said bottom, and means for slidably connecting said back with said rear supporting member.

10. In a collapsible swing, a main frame comprising upwardly converging front and rear members pivotally connected at their upper ends, a spacing device connecting said frame members and movable with relation thereto to permit said frame members to be moved one toward the other, a seat supporting structure mounted on said spacing device for swinging movement about a single axis between said frame members, said spacing device, said supporting structure and said frame members being movable into folded positions in which they are substantially parallel one with the other, a seat, and means for supporting said seat normally in a substantially horizontal position on said supporting structure and for connecting the same with said structure for movement to a folded position substantially parallel therewith.

11. In a collapsible swing, a main frame comprising upwardly converging front and rear members pivotally connected at their upper ends for movement into positions substantially parallel one with the other, spacing members pivotally mounted on one of said frame members, means for detachably connecting said spacing members with the other frame member, a seat supporting structure pivotally mounted on said spacing members on a single axis between said frame members, said spacing members and said supporting structure being movable to folded positions substantially parallel with said frame members, a seat comprising a bottom and a back, and means for pivotally connecting said bottom and said back one to the other and with said seat supporting structure for movement to a folded position substantially parallel with said supporting structure.

12. In a collapsible swing, a main frame comprising front and rear members connected at their upper ends for movement from an extended position to a collapsed position in which said members are substantially parallel one with the other and each including two uprights spaced laterally one from the other, rigid front and rear supporting members supported at their upper ends on said main frame for swinging movement about a single axis arranged between said frame members, said supporting members being movable into positions between and substantially parallel with the uprights of said frame members when the latter are in their collapsed position, a seat supported at its front and rear ends by the respective supporting members, and means

for connecting said seat with said supporting members for movement into a substantially horizontal position or into a position between and substantially parallel with the uprights of said frame members when the latter are in their collapsed positions.

13. In a collapsible swing, a main frame comprising front and rear members connected at their upper ends for movement from an extended position to a collapsed position in which said members are substantially parallel one with the other and each including two uprights spaced laterally one from the other, rigid front and rear seat supporting members supported at their upper ends on said main frame for swinging movement about a single axis arranged between said frame members, said supporting members being movable into positions between and substantially parallel with the uprights of said main frame members when the latter are in their collapsed position, each supporting member having two laterally spaced parts and one supporting member being movable to a position between and substantially parallel with the two parts of the other supporting member, a seat arranged between and supported at its respective ends by said front and rear supporting members, means for connecting said seat with said supporting members for movement into a position between and substantially parallel with the two parts of one of said supporting members when the latter are in their parallel positions and for supporting said seat in a substantially horizontal position when the supporting members are in their normal positions.

WILLIAM W. BATES.