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CONVERTIBLE PLAYGROUND APPARATUS

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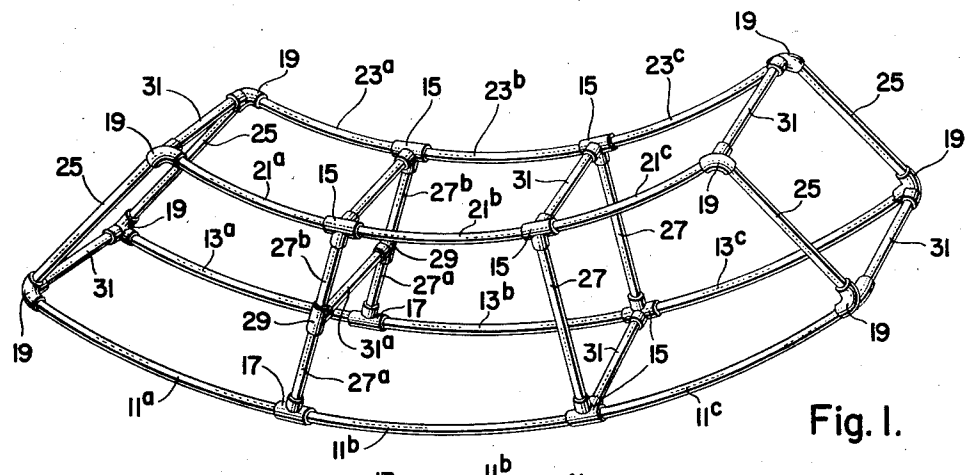


Fig. 1.

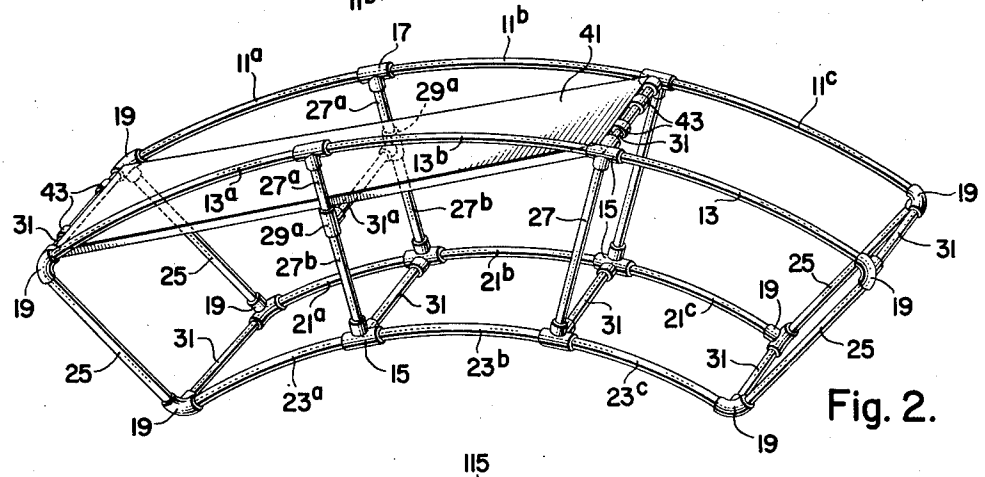


Fig. 2.

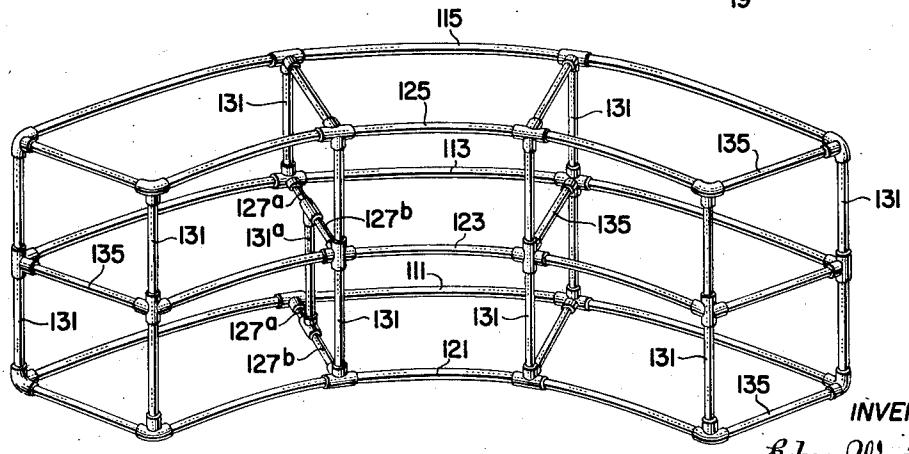


Fig. 3.

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CONVERTIBLE PLAYGROUND APPARATUS

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The present invention relates to playground apparatus and related exercising, gymnasium and/or amusement and physical development equipment. It is particularly adapted for giving exercise and physical development to school children, though it can be used also for playground and gymnasium amusement, for physical therapy of the handicapped, etc.

In the prior art numerous types of playground and related equipment have been provided commercially and much has been devised locally for the diversion as well as physical exercise of school students and other gorups, on schoolgrounds, public parks, playgrounds, etc. Equipment such as see-saws, slides, climbing and exercising bars, and the like, have been constructed in numerous forms and are perennially popular. They are usually subjected to heavy use and must be very rugged in construction. For this reason such apparatus is usually heavy and is commonly fixed in place so that it cannot be moved without considerable difficulty. It is often highly desirable to make such equipment light in weight, so that it can be moved periodically to new locations on dry ground, on unworn grass or the like, but most of the prior equipment, where sufficiently rugged for long service, has not been portable. One object of the present invention is to design equipment that is both rugged and light in weight so as to be easily portable.

Another object of the invention is to design playground equipment that not only is rugged while being light in weight but is also versatile so that it can be used for various purposes by inverting it or turning it on its side. A particular object is to design a simple, light-weight playground apparatus that can be used as a see-saw in one position, as a climbing and/or exercising apparatus in another, and for still other uses in other positions, e. g., as a support for a slide or the like. Still another object is to design such apparatus so that it can be constructed of simple, inexpensive, interchangeable structural elements.

Still another object of the invention is to construct a rigid and lightweight arcuate framework of such curvature and design as to serve as a group see-saw in the convex-down position and as a climbing apparatus and slide support in the convex-up position. The framework is made up of light, strong metal tubing, in the preferred embodiment, joined by suitable T's and other coupling members of standard design. The tubular parts, some straight and some curved, and of varying lengths but generally of uniform diameters, are thus combined into a single, unitary frame work. It is sufficiently rigid and strong to fulfill its purpose, but it has some flexibility, under severe strain, so as to be substantially unbreakable. The components may be joined by threaded screw connections but it is usually preferred that they be welded together for maximum strength and minimum weight. The size and complexity of the apparatus may vary between wide limits, depending upon the number and average size of its users and the variety of uses to which it may be put.

The above characteristics and objects of the invention and others not mentioned in the foregoing general statements, will be more clearly understood by referring to a detailed description of a preferred embodiment illustrated in the accompanying drawing. For this purpose, reference will next be made to the drawing wherein:

Fig. 1 is a perspective view of a simple form of the invention in position for use as a see-saw or rocker;

Fig. 2 is a similar perspective view of the apparatus of Fig. 1 inverted for use as a slide or slide support and as a climbing or exercising apparatus;

Fig. 3 is a perspective view of a modified form of apparatus turned on its side for use as a climbing or exercising apparatus, this form shows an added tier of bars enlarging the device and increasing its utility, especially for larger children.

The apparatus shown in Figs. 1 and 2 is about the simplest and most elementary form of the invention and it will be understood that in many, perhaps most, cases the apparatus will comprise a larger number of sections and/or of component parts. In general, it is preferred that the apparatus have an arcuate extent of about 50 to 100 degrees, specifically about 60 to 90 degrees or one sixth to one quarter of a complete circle. The upright and transverse bars, as seen in Fig. 1, which determine the height and width of the apparatus, may vary in length, but are preferably long enough that the device will not tip or turn over easily, even when heavily loaded on one side or end or corner. With an arc of 60 to 90 degrees, the device, as set up in Fig. 1, forms an excellent see-saw for children. They stand on the lower end bars or on the side bars near the ends, holding with hands to the upper bars, and the apparatus rocks upon the ground on the lower curved bars. The arrangement is such that the apparatus tends to reach equilibrium with about the middle of the lower longitudinal bars supporting the weight. The apparatus shown will now be described in detail.

For the position shown in Fig. 1, the lower longitudinal bars are formed of tubular sections **11***a*, **11***b*, **11***c*, and **13***a*, **13***b*, **13***c*, three sections of each being shown. These bars are of sufficient strength to support whatever weight may be put upon the apparatus, steel or iron pipe or tubing of about one-inch or larger usually being adequate. If the sections are long or the load heavy, tubing or pipe up to about two inches diameter may be required. The number of joints or sections **11***a*, **13***a*, etc., may be much greater than three in some cases, three, four or five usually being preferred.

Curved upper members are also formed in sections **21***a*, **23***a*, **21***b*, **23***b*, **21***c*, **23***c*. Four-pipe connectors **15** are shown to connect most of the longitudinal elements together but for a purpose to be described below T's **17** may be used at one or more of the joints in each of the longitudinal members **11***a*, **11***b*, etc., and **13***a*, **13***b*, etc. Corner members **19** may be used to connect the end sections such as **11***a*, **13***a* with upright members **25** and cross members **31**, as shown. Intermediate upright members **27** are similar to members **25** but at least one pair of uprights is divided into two sections **27***a*, **27***b*, connected by a T **29**, the two members **29** which are shown being connected by a cross member **31***a*. The latter may be identical with other transverse members **31** but it serves to support an intermediate part of a slide member **41**. The latter, shown in Fig. 2, is mounted by hook or bracket members **43** on two of the transverse members **31** with an intermediate part resting on the member **31***a*.

Where a steeper slide is desired, the apparatus may, for example, be made in four longitudinal sections or some larger even number, and the slide arranged to extend from one end, where it is low, to the middle point which is highest when the apparatus is inverted as in

Fig. 2. Almost any slope desired may be provided by setting in one or more transverse members like 31*a*, so that the convex longitudinal rails or members form side guides for the slide. The slide member itself may be made detachable (and it is not attached in Fig. 1) or it may be secured to the apparatus so as to stay in place whether the apparatus is rocker (convex) side down (Fig. 1), which is the see-saw position, or in slide position (Fig. 2). The apparatus can be turned on its side to form a rigid non-tilting climbing and exercising structure and the slide can be secured to stay in place or can be detached and removed if desired.

It will be understood that seats may be mounted on the upper bars **31** (Fig. 1) or the lower end bars, or between them, e. g. by attaching to the end uprights **25** or between them where it is desired to provide for seating the users, for instance when the apparatus is used as a see-saw. Foot rests likewise may be attached as will be obvious and hence they are not shown in the drawing. The number of seats and foot rests, etc., will vary with the size, length, weight, etc. of the apparatus. Like the slide **41**, which may be a smooth wide board or equivalent, the seats may either be permanently attached or removable. In many cases they will not be used at all since many children are found to enjoy the apparatus standing on the lower members and holding onto the corner uprights and/or the upper members such as **21***c*, **31**, **23***c*, etc., as they operate the see-saw. The connecting or coupling members **15**, **17**, **19** on the long lower rails or members of Fig. 1, that is members **11***a*, **11***b*, etc., are preferably thin-walled so that these longitudinal rockers can operate substantially smoothly when used as a see-saw. Where the apparatus is to be used on concrete or other hard floor or surface, it may be desirable to make the long rocker members continuous and the connectors **15**, **17** should be formed so that they do not extend below the arc which defines the bottom of these rocker members, as seen in Fig. 1. For use on park grounds and other places where the supporting ground is slightly yielding, the couplings do not interfere appreciably with smooth and easy see-saw operation.

While the construction seen in Figs. 1 and 2 employs only two parallel rocker or convex members **11***a*, **13***a*, etc., and only a pair of parallel upper members **21***a*, **23***a*, etc., it will be understood that three or more rockers and three or more upper bars may be used. Some of them may be discontinuous or extend only part of the full length, for example to provide room for a slide as in Fig. 2. Intermediate arcuate bars may be provided also between the lower rocker members **11***a*, etc., and the upper arcuate members **21***a*, etc. This is particularly desirable where the apparatus is large, e. g. where the upright members **25**, **27**, etc., are relatively long in proportion to the size of the children or others who use the apparatus. A sufficient number bars and a suitable arrangement for climbing must be provided so that the users can readily climb up to the top of the slide, or may climb from one level to the next in making other use of the apparatus. It will be understood that the term "upright" as applied to members **25**, **27**, etc., is relative, since at any moment any or all of them may be disposed at an angle to the vertical.

The apparatus of Fig. 3 is of the same structural characteristics as those previously described, differing mainly in having an additional pair of arcuate members so as to double the height of the device when in a stable non-rocking position on its side. In this position, the apparatus is particularly suitable for climbing and exercising. The structure, as set up in Fig. 3, comprises a pair of arcuate members **111** and **121** serving as the base, and two parallel pair of arcuate bars **113** and **123** and **115** and **125**. There are secured together in spaced, parallel relationship, by means of upright bars **131** and **133**. Some of these members, such as **131***a*, may be set in to provide support for a slide such as **41**, Fig. 2, when the device is turned over with the shortest arcuate members **121**, **123**, **125** down, as in Fig. 2. The pairs of arcuate members are secured together by horizontal members **135**, as seen in Fig. 3. Members **127***a* and **127***b* serve the same purpose as members **27***a* and **27***b* of Figs. 1 and 2.

It will be understood that in all these arrangements the length of the spacing members **25**, **31**, **131**, **133**, **135**, etc. as well as the length and radius of curvature of the arcuate members **11**, **13**, **21**, **23**, **111**, **121**, etc., will be adjusted to suit the average size requirements of the users. The spacing between bars **121** and **123**, and between bars **123** and **125** in Fig. 3, for example, should be such as will suit the climbing and exercising requirements of the children (or others) who will use it. The arcuate length and radius of curvature of the bars **11***a*, *b*, *c*, or **111**, **113**, etc., is chosen to suit the requirements for see-saw action, elevation and length of slide, etc. For small school children, an overall length of 8 to 16 feet, a width of 2 to 3½ feet (when set up as in Fig. 1) and an arcuate extent of about 75 degrees is quite satisfactory. The length of bars **25**, **27**, etc., in this case may be 1½ to 3 feet. The apparatus of Fig. 3 may stand about to six feet or more in height when set up as shown in this figure. In general, it is desirable to have at least four sets of cross linking members, five being preferable. In larger sizes, six or more sets of cross bars may be used.

Obviously, the apparatus may be used for climbing while in the position of Fig. 2, or even in the position of Fig. 1, as well as in position of Fig. 3. To climb up on the slide, when in position as in Fig. 3, or in Fig. 2, additional bars may be interspersed between those shown to form a more convenient "ladder," especially for smaller children. Obviously, the slide may run merely from the top of the structure as shown in Fig. 3, to the ground, from any part, end or mid-portion, of the structure. The general arrangement of Fig. 2 is preferred for the slide, however, since the bars **11** (i. e. **11***a*, **11***b*) and **13** (**13***a* and **13***b*) serve as side guards and afford some protection. The slide board **41** may extend beyond the end member **31** to a point at or near the ground. In this case, the upper end should be fastened securely against lifting up when weight is applied to the lower (cantilever) end.

Various other arrangements and modifications will suggest themselves to those skilled in the art. The apparatus may be augmented in size and versatility by adding extra rows of arcuate members in either or both directions to any extent desired. However, the structures shown have been found to be very useful and very popular with children without further complexity. They are heavy enough to be stable and not too easily displaced, but still can be moved to cleaner or dryer locations without great difficulty. With a little supervision, groups of children can move them, turn them on their sides or invert them without great difficulty and without danger.

What is claimed is:

1. A convertible apparatus of the character described comprising a pair of opposed side frame members each including an elongated arcuate convex rocker member and another elongated member substantially in the same plane as the rocker member with a series of rigid strut elements securing them together, a plurality of transverse strut elements firmly securing the two side frame members together in spaced relationship to form a rigid unitary structure capable of being used in rocker-down position as a see-saw or rocker and in rocker-up position as a slide support, one of said transverse strut elements being located substantially at an end of the rocker members which it joins and at a relatively low point when the apparatus is in rocker-up position, and another transverse strut element joining said rockers at a point substantially higher than said last mentioned transverse strut element so that together they form a sloping support for a slide, and a slide member mounted on the

two last mentioned transverse strut elements, the space above the slide member being substantially free of obstructions so as to permit free sliding when the apparatus is in rocker-up position.

2. A convertible apparatus of the character described comprising a pair of opposed side frame members, each including at least two spaced generally concentric members, one of which is an elongated arcuate convex rocker member, said concentric members being substantially in the same plane and joined by a series of rigid strut elements securing them together, a plurality of transverse strut elements firmly securing the two side frame members together in spaced relationship to form a rigid unitary structure capable of being used in rocker-down position as a see-saw or rocker and in rocker-up position as a slide support, one of said transverse strut elements being located substantially at an end of the rocker members which it joins and at a relatively low point when the apparatus is in rocker-up position, and another transverse strut element joining said rockers at a point substantially higher than said last mentioned transverse strut element so that together they form a sloping support for a slide, and a slide member mounted on the two last mentioned transverse strut elements, the space above the slide member being substantially free of obstructions so as to permit free sliding when the apparatus is in rocker-up position.

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