Nov. 4, 1952 H. R. ROBBINS 2,616,485

CONVERTIBLE SWING STRUCTURE

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FIG 1

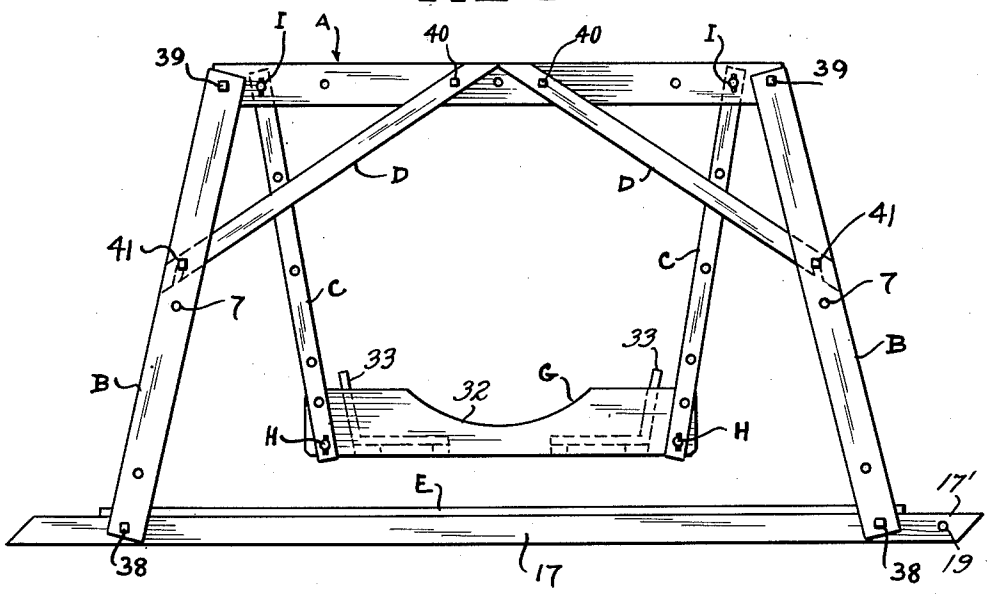


FIG 2

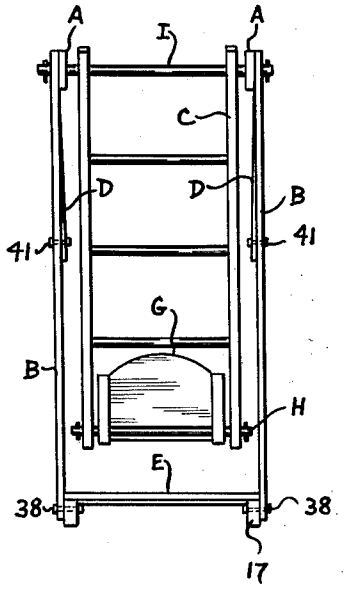
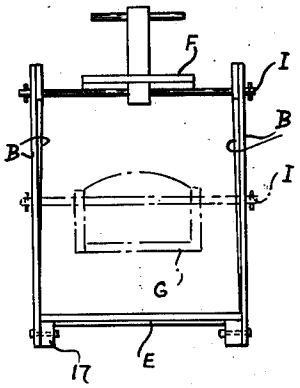


FIG 10



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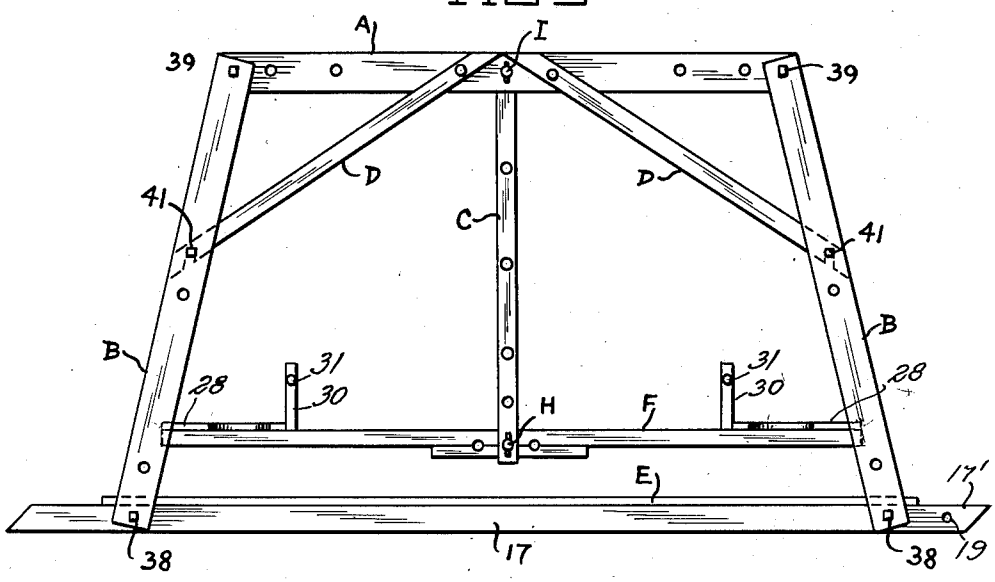
Attorneys

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CONVERTIBLE SWING STRUCTURE

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FIG 3



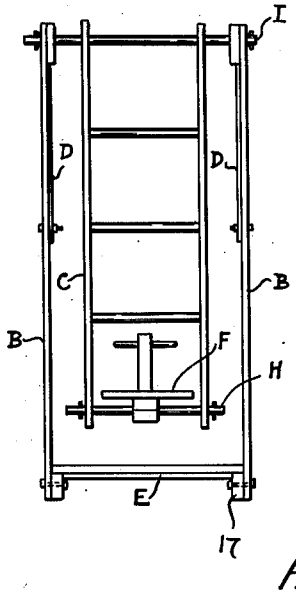


FIG 4

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CONVERTIBLE SWING STRUCTURE

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FIG 5

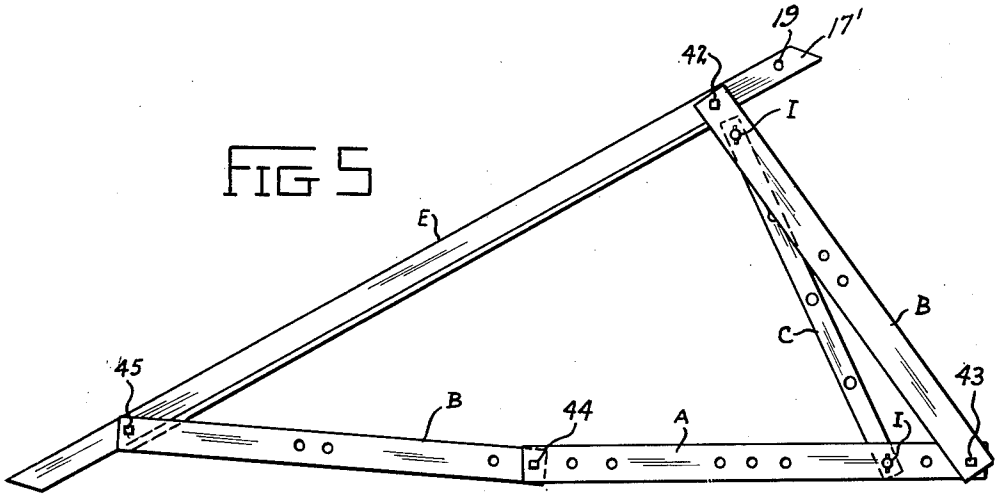


FIG 6

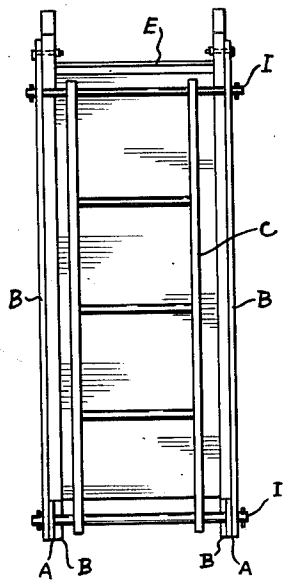
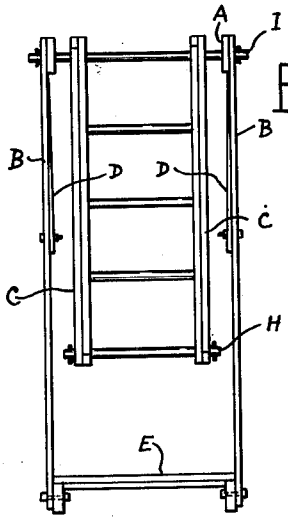


FIG 8



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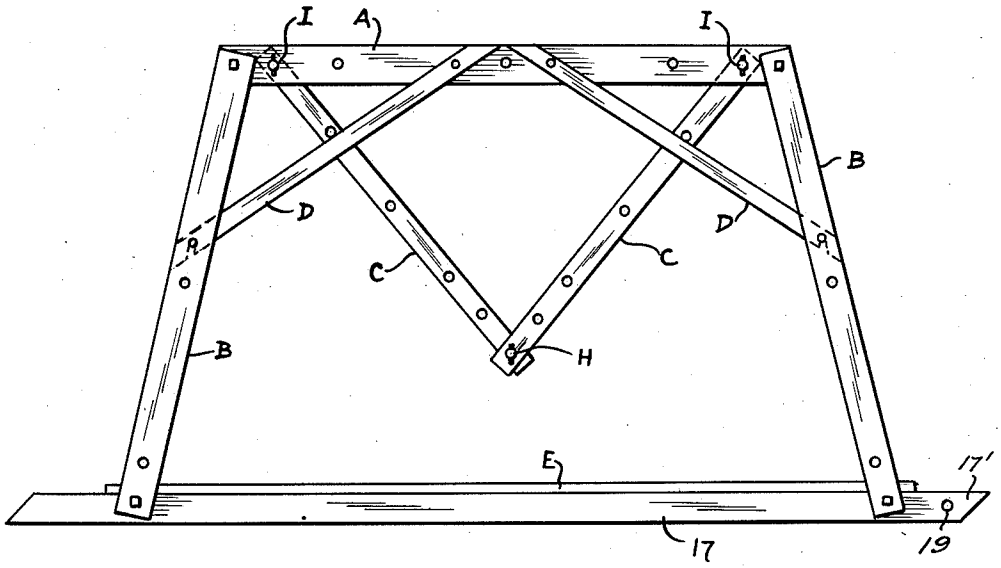
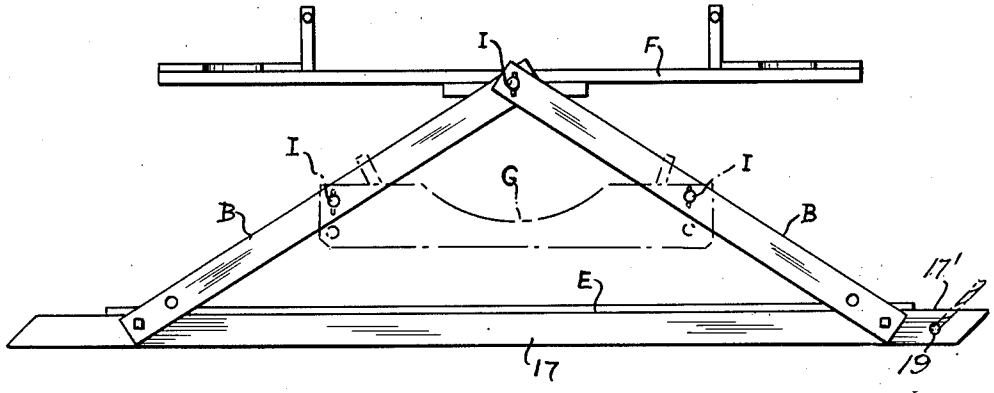


FIG 7

FIG 9



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CONVERTIBLE SWING STRUCTURE

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FIG. 13

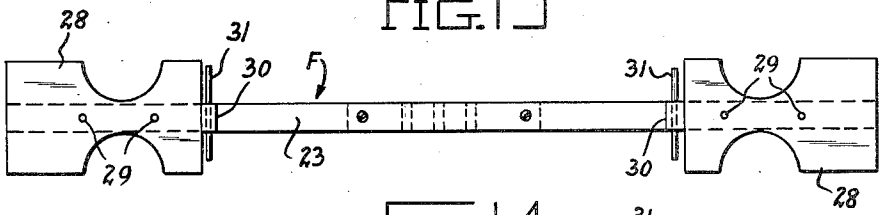
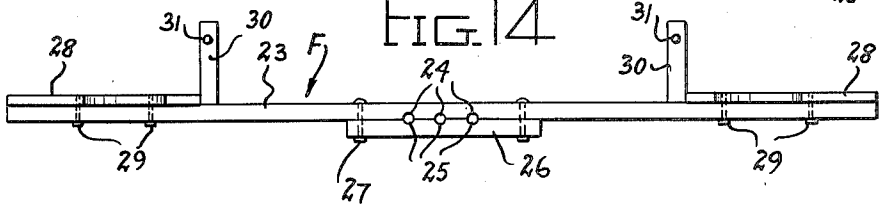


FIG. 14



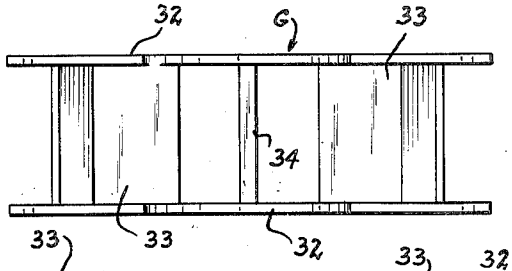


FIG. 15

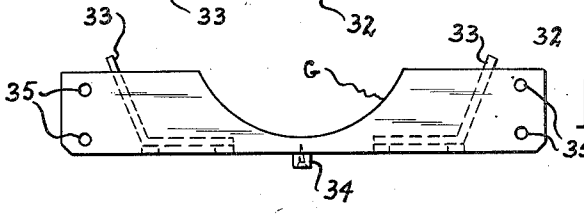


FIG. 16

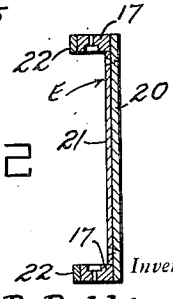


FIG. 12

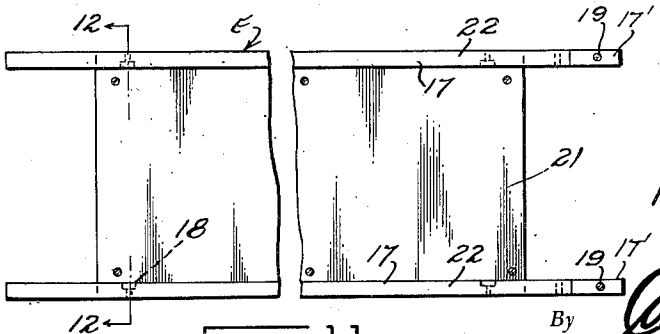


FIG. 11

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UNITED STATES PATENT OFFICE

2,616,485

CONVERTIBLE SWING STRUCTURE

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Application September 5, 1946, Serial No. 694,982

4 Claims. (Cl. 155—62)

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This invention relates to amusement and exercising apparatus, such as are used by children at playgrounds and the like.

More particularly, the present invention consists of equipment composed of a number of separate units and parts, certain ones of which may be selected and assembled to form any desired one of a number of different devices commonly used by children for amusement and exercising purposes at playgrounds and the like.

The invention consists in certain novel details of construction and combinations and arrangements of parts, hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings:

Figure 1 is a side elevational view of a swing constructed of certain units and parts of the present equipment;

Figure 2 is an end elevational view thereof;

Figure 3 is a side elevational view of a swinging teeter-totter assembly constructed of a number of units and parts of the present equipment;

Figure 4 is an end elevational view thereof;

Figure 5 is a side elevational view of a slide chute device constructed of selected units and parts of the present equipment;

Figure 6 is an elevational view looking toward the left of Figure 5;

Figure 7 is a side elevational view of a ladder climbing assembly constructed of certain units and parts of the present equipment;

Figure 8 is an end elevational view of the device shown in Figure 7;

Figure 9 is a side elevational view of a see-saw assembly constructed of certain units and parts of the present equipment;

Figure 10 is an end elevational view of the device shown in Figure 9;

Figure 11 is a plan view, partly broken away, of a base or chute unit included in the present equipment;

Figure 12 is a transverse section taken on line 19—19 of Figure 11;

Figure 13 is a top plan view of a teeter unit forming part of the present equipment.

Figure 14 is a side elevational view of the unit shown in Figure 21;

Figure 15 is a top plan view of a double seat forming part of the present equipment, and

Figure 16 is a side elevational view thereof.

Referring in detail to the drawings, the several units and parts which comprise the present equipment, consist of perforated strips or bars A and B of different lengths; a ladder unit C, a brace

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bar D; a base or chute unit E; a teeter unit F, a seat unit G; and dowels H and I of different lengths. The equipment includes two of the bars A, four of the bars B, two of the ladder units C, four of the braces D, two each of the dowels H and I, and one each of the remaining parts or units.

Each strip or bar A has a series of three transverse apertures or openings 5 through the central portion thereof, and a series of three spaced transverse openings 6 through each end portion thereof, to facilitate connection of the bar to other structural elements.

Each strip or bar B has two transverse openings 7 intermediate its ends, one transverse opening 8 near one end, and two transverse openings 9 through the other end portion thereof.

Each ladder unit C comprises a pair of spaced parallel stiles 10 rigidly connected by rungs 11, each stile 10 having a transverse opening near one end thereof as at 12 and two transverse openings near the other end thereof as indicated at 13.

Each brace D comprises a strip or bar beveled at the ends as at 14 and provided near one end with a transverse opening 15 and near the other end with an oblique open ended slot 16.

The base or chute unit E, which is common to the several devices constructed by use of the present equipment, comprises a pair of spaced parallel sled runners 17, each having a transverse aperture 18 near one end and a pair of spaced transverse apertures 19 near the other end to facilitate connection of the unit E to other elements of the equipment and to facilitate connection of a rope to one end of the unit for pulling the same when used as a sled. The unit E further includes an elongated board or plate 20 which spans and is rigidly secured to the runners 17. The board or plate 20 has a sheet metal facing 21 on the surface thereof from which the runners 17 project. The opposite ends 17' of the runners project beyond the opposite ends of the board 20, and the free longitudinal edges of runners 17 may be equipped with runner shoes 22.

The teeter unit F comprises an elongated bar 23 provided in the underside of its intermediate portion with a series of transverse grooves 24 which mate with a similar series of transverse grooves 25 provided in the upper surface of a short bar 26 bolted at 27 to the teeter bar 23. The mating grooves 24 and 25 are adapted to selectively receive a pivot pin for tiltably mounting the teeter unit upon a support as will be later described. At each end, the teeter bar 23 is pro-

vided with a suitable seat plate 28 which is bolted or otherwise suitably secured thereon as at 29. Fixed to and rising from the teeter bar 23 at the inner end of each seat plate 28 is a post 30 provided at its upper end with a cross bar or handle bar 31.

The unit G is a double seat unit adapted to accommodate two children facing each other, and it consists in spaced parallel side boards 32 rigidly connected near their opposite ends by seats 33, each composed of boards respectively forming the seat bottom and back rest of the seat. Midway between the seats 33, the boards 32 are connected by transverse foot rest bar 34 having its ends secured to the lower edges of the boards 32. The ends of the boards 32 project outwardly beyond the seats 33, where they are provided with spaced transverse openings 35 disposed one above the other.

Each dowel H has a transverse opening 36 at each end, and each dowel I has a similar transverse opening 37 near each end.

In constructing the swing of Figures 1 and 2, the lower end of a strip or bar B is bolted as at 38 to each end of each runner 17 of the base unit E so as to provide a pair of spaced uprights at each end of the unit E. Each pair of uprights is connected at their upper ends by a strip or bar A, the adjacent ends of the bars A and B being bolted together as at 39. Braces D are then provided between each bar B and the bar A at each side of the structure, bolts 40 being passed through the apertures 15 of the braces D and the end ones of the intermediate series of apertures 5 of the bars A. The slotted ends of braces D are engaged over bolts 41 passed through one of the intermediate apertures 7 of the each bar B. A ladder unit C is pivotally suspended from each of the opposite ends of the bars A by means of dowels I, and the lower ends of the ladder units C are pivoted to opposite ends of the seat unit G by means of dowels H.

In constructing the swinging teeter-totter assembly of Figures 3 and 4, the same supporting structure is used as described in connection with Figures 1 and 2, such supporting structure being that which remains upon removal of the ladder units C and the seat unit G of Figure 1. A single ladder unit C is then pivotally suspended from the bars A intermediate the ends of the latter by a dowel I, and the teeter unit F is pivoted upon a dowel H passed through the lower end of this ladder unit. The dowel H passes through the desired pair of mating grooves 24 and 25 of the teeter unit to balance or unbalance the latter as desired according to the respective weights of the occupants of the teeter unit.

In constructing the slide chute device of Figures 5 and 6, the base or chute unit E is supported at an inclination by means of a pair of the bars B, with the runners 17 projecting upwardly with respect to the board 20. This disposes the sheet metal facing 21 uppermost to form a slippery slide surface. As shown, the upper ends of the bars B are bolted at 42 to the higher end of the unit E, and the upper end of a ladder unit C is connected to the bars B by means of a dowel I. The lower ends of the bars B and ladder unit C are respectively connected to corresponding ends of a pair of bars A by bolting at 43 and use of a dowel I, respectively. The other ends of the bars A are connected to the lower end portion of the unit E by means of a pair of the bars B respectively bolted at 44 to the adjacent ends of the bars A and at 45 to the lower ends of the runners of the unit E. This disposes the bars B and ladder unit C at a downward and rearward inclination which is maintained by connection of these bars and the unit C with the lower end of the chute unit E by means of the bars A and B.

In constructing the ladder climbing assembly of Figures 7 and 8, the same structure is used as shown in Figures 1 and 2, except that the seat unit G is eliminated, and the lower ends of the ladder units C are connected together by the use of a single dowel H, as shown. This disposes the ladder units C at a greater inclination for use in climbing exercises.

In constructing the see-saw assembly of Figures 9 and 10, the lower ends of two pairs of the bars B are bolted at 45 to opposite ends of the unit E, and the upper ends of the two pairs of bars B are connected by a transverse dowel I upon which the teeter unit F is pivoted by passing the dowel I through the desired one of the mating pairs of grooves 24 and 25 of the unit F. By eliminating the unit F, the supporting structure remaining, of the device shown in Figures 9 and 10, may be used in constructing a sled. This is done by merely suspending the seat unit G from the bars B of the said remaining supporting structure by use of dowels I passing through end apertures of the unit G and intermediate apertures of the bars B as indicated by dotted lines in Figures 9 and 10. When this is done, the outer ones of the apertures 19 of the runners 17, and on the forward ends thereof, may be used for attachment of the ends of a rope to the runners 17 for use in pulling the sled thus constructed.

As will be understood, the equipment consists of a number of separate units and parts, certain ones of which may be selected and assembled to form any desired one of the number of different devices used for amusement and exercising purposes. While the equipment may be employed to construct other devices, those shown by way of example will be sufficient to disclose the principle involved.

What I claim is:

1. An amusement or exercising device, comprising a base unit in the form of a slide chute adapted to serve as a ground engaging support for said device, said base unit including a pair of spaced parallel runners, each having a transverse aperture near each end, and an elongated board spanning and rigidly secured to said runners, the opposite ends of the runners projecting beyond the opposite ends of the board, pairs of upright perforated bars secured at their lower ends to opposite ends of the runners, a further pair of longer perforated bars rigidly connecting the upper ends of the first named bars, angle braces connecting the intermediate portions of the first named bars with the intermediate portions of the second named bars, ladder units pivotally suspended from the second named bars near the opposite ends thereof, and a seat unit, said ladder units being pivoted at their lower ends to opposite ends of the seat unit.

2. An amusement and exercising apparatus having portions convertible to form differently useable units, said apparatus including a base in the form of a slide chute adapted to serve as a ground engaging support for certain of said units, said base comprising a pair of spaced parallel elongated runners, each having a transverse aperture near each end, an elongated board spanning and rigidly secured along its side edges upon longitudinal edges of said runners, means for facilitating connection of a rope to the ends of

the runners at one end of the base for pulling the same, a sheet metal facing on the surface of said board from which the runners project, the opposite end portions of the runners projecting beyond the opposite ends of the board and having the ends thereof rearwardly inclined, and runner shoes secured to the outer longitudinal edges and the ends of the runners.

3. In an amusement and exercising apparatus having portions convertible to form differently useable units, a base in the form of a slide chute adapted to serve as a ground engaging support for certain of said units, said base including a pair of spaced parallel runners, each having a transverse aperture near each end to facilitate connection of other structural elements thereto, an elongated board spanning and rigidly secured to said runners, the opposite ends of the runners projecting beyond the opposite ends of the board, a plurality of other perforated mechanical elements adapted for detachable connection to said runners to form a superstructure on said base, and means engaging the perforations of said base and said other elements for detachably fastening ends of said elements to the ends of said runners.

4. In an amusement and exercising apparatus having portions convertible to form differently useable units, a supporting base for certain of said units in the form of a slide chute adapted to form a part of a slide chute unit, said base including a pair of spaced parallel runners, each having a transverse aperture near each end, and

an elongated board spanning and rigidly secured to said runners, the opposite ends of the runners projecting beyond the opposite ends of the board, pairs of perforated bars detachably secured at corresponding ends to the opposite ends of the runners by means engaging the apertures of the runners and perforations of the bars, a pair of elongated perforated bars detachably connected at their ends to the upper ends of the first named bars by means engaging perforations of the bars, angle braces detachably connected at their ends to the intermediate portions of the last named bars and the intermediate portions of the first named bars by means engaging perforations of said bars.

HOMER R. ROBBINS.

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