

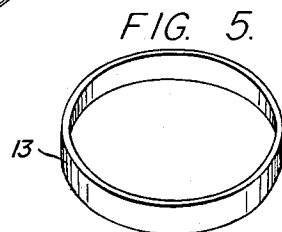
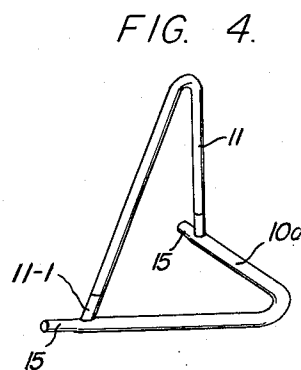
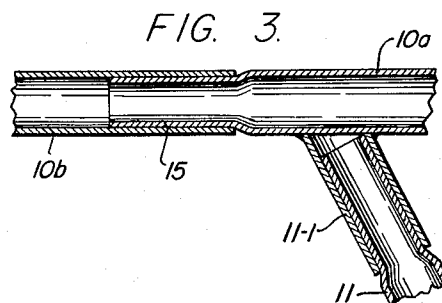
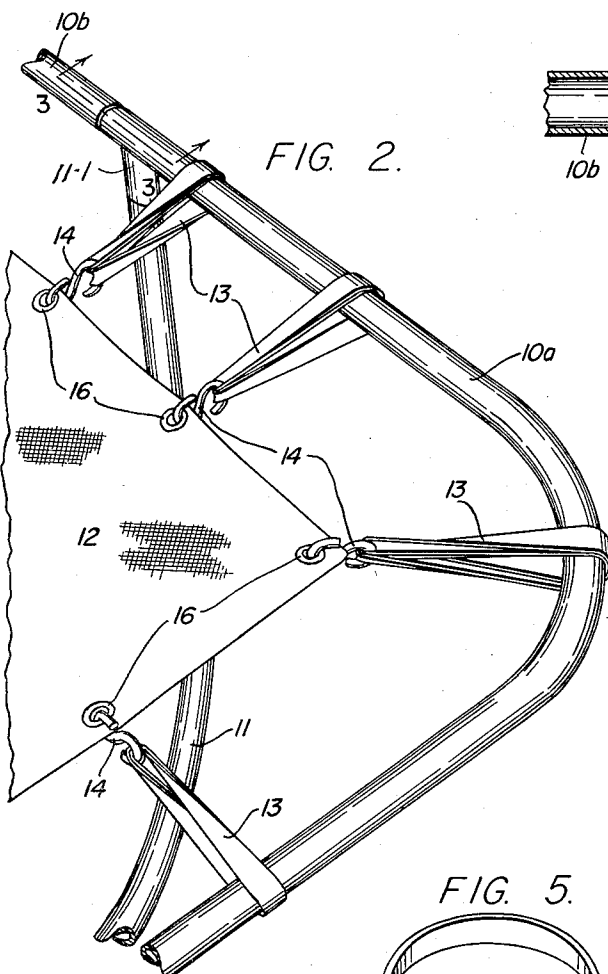
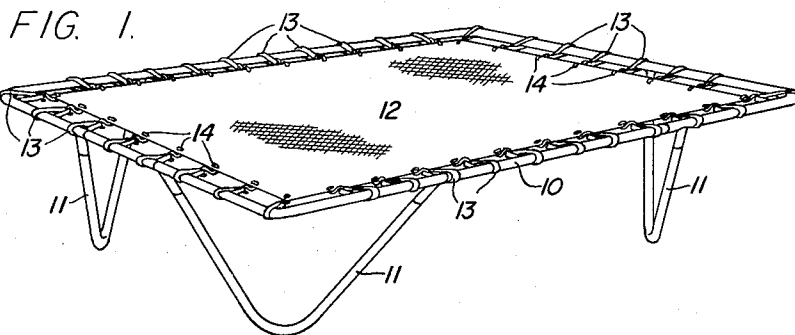
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B. E. SAMPSON ET AL
BOUNCING APPARATUS FOR CHILDREN

2,991,841

Filed May 25, 1959

2 Sheets-Sheet 1



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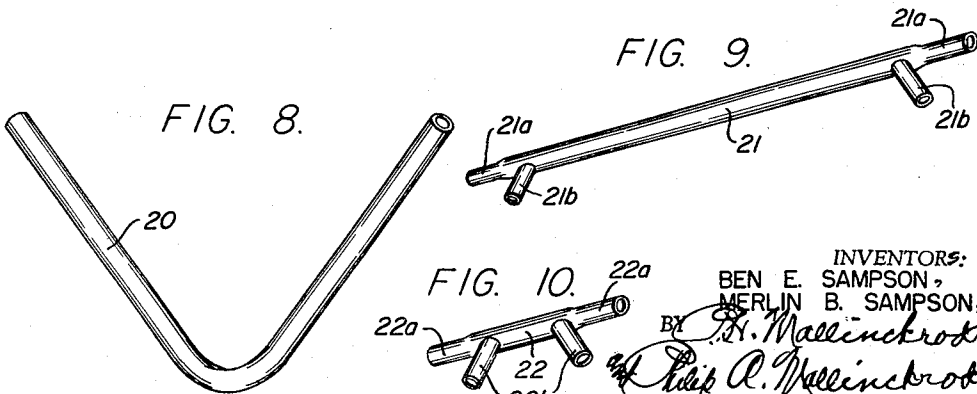
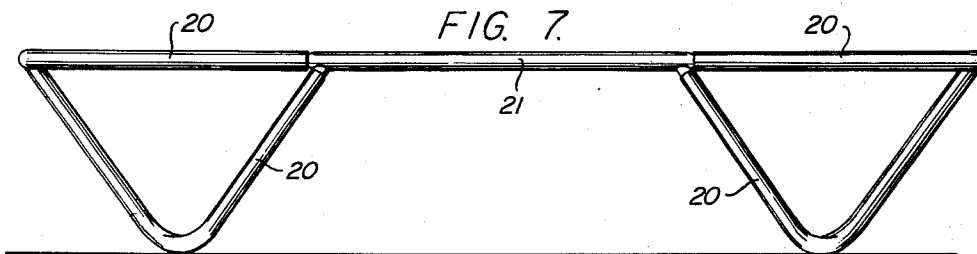
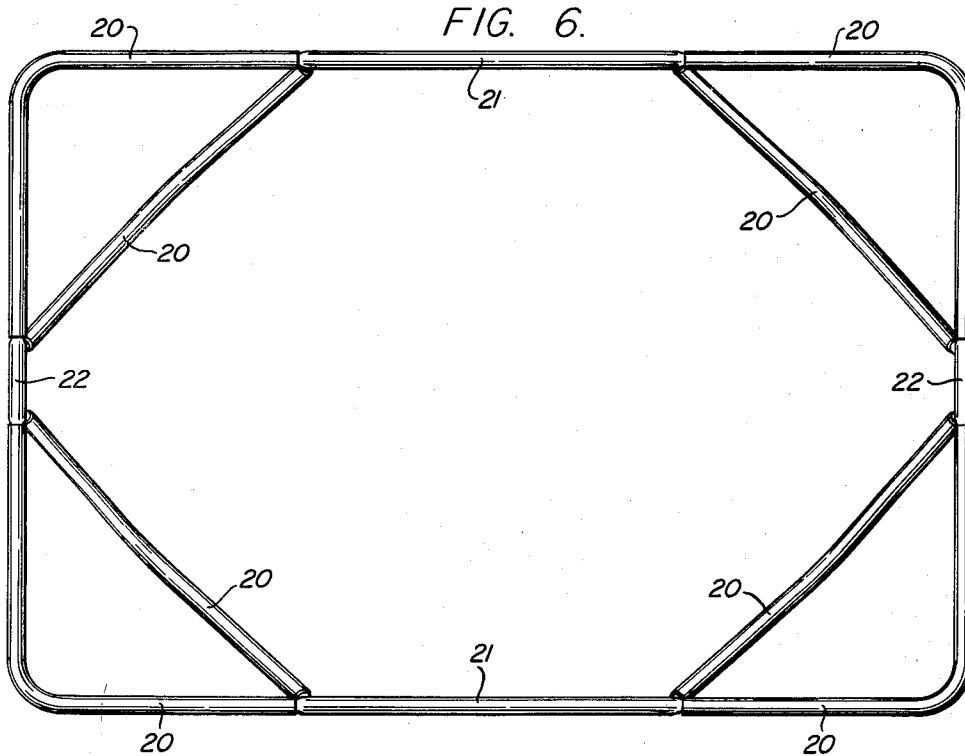
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2,991,841

BOUNCING APPARATUS FOR CHILDREN
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1 Claim. (Cl. 182-139)

The present application is a continuation-in-part of application Serial No. 643,650, filed March 4, 1957, entitled "Bouncing Apparatus for Children," and now abandoned.

This invention relates to children's play equipment, and particularly to an apparatus of the type known generally as a "trampoline."

Apparatus of this type has long been used by professional acrobats and by schools and gymnasiums for athletic tumbling purposes. As such, the apparatus has been cumbersome and expensive in construction.

A principal purpose of the present invention is to provide an economical construction for apparatus of this type, so that it may be made and sold for a price well within the means of an average family. Another purpose is to provide a lightweight and easily disassembled construction capable of being conveniently transported and stored.

While the trampoline has offered definite possibilities as a play device for children, the cost of construction and the difficulties of handling and storage have been so great as to limit its use to professional acrobats and to institutions, such as school or commercial gymnasiums. Children have been forced to use family bed springs and mattresses to obtain an approach to the jumping and bouncing thrills offered by this type of equipment.

Heretofore, it has been thought necessary to employ heavy springs or elasticized straps or cables for suspending the canvas or other bounce sheet of such apparatus from the supporting frame thereof. This has been expensive, both for material and for the labor involved in fabricating and assembling the apparatus.

In accordance with this invention, we provide a very inexpensive and easily set up suspension assembly for the bounce sheet, which assembly includes a knock-down frame made up of telescopically joined parts held together largely by the resilient parts of the suspension assembly.

An outstanding feature of the invention is the use, for the suspension system, of rubber bands and hook-on attachment fittings of very simple type.

A feature making for exceptional ease of transportation and storage, plus economy, is the provision of a readily demountable frame assembly made up of telescoping frame members, including, in one form, corner leg sections that will net together when the frame is disassembled for storage or for carrying from place to place. Such leg sections are advantageously themselves made up of telescoping members, enabling the entire apparatus to be initially packaged in an exceptionally small carton, considering the size of the assembled structure, for example, a corrugated paperboard shipping carton measuring 30 x 30 x 6 inches.

Further objects and features of the invention will become apparent from the following detailed description of the particular preferred specific embodiment illustrated by way of example in the accompanying drawings.

In the drawings:

FIG. 1 represents a top perspective view of the apparatus set up and ready for use;

FIG. 2, a fragmentary perspective view of one corner portion of the apparatus of FIG. 1, looking from above, the view being drawn to an enlarged scale;

FIG. 3, a fragmentary vertical section taken on the

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line 3-3 of FIG. 2 and showing, in detail, one of the telescopic joints between component frame members:

FIG. 4, a perspective view of one of the corner leg sections of the frame as it appears in inverted, storage position when the frame is disassembled;

FIG. 5, a perspective view of one of the rubber bands per se;

FIG. 6, a top plan of another embodiment of frame construction;

FIG. 7, a side elevation of the same; and

FIGS. 8, 9, and 10, detail perspective views of the respective component parts of such frame construction.

Referring to the drawings:

In the form illustrated in FIGS. 1-4 of the drawings, a rectangular frame 10 is supported in elevated position by means of legs 11, and a bounce sheet 12 is resiliently suspended in taut condition within the frame 10 by means of a multiplicity of rubber bands 13 and readily detachable, hook-on type of attachment fittings 14.

As mentioned previously, a feature of the invention is the ready demountability of the entire structure for transportation and storage, along with ease of setting up the disassembled structure for use. To this end, the frame 10 and legs 11 are preferably fabricated from metal tubing in a number of sections arranged to telescope together.

Thus, in the construction illustrated in FIGS. 1-4, each of the legs 11 is a piece of tubing bent to a wide-spread and rounded V-formation and having its opposite ends reduced in diameter so as to snugly telescope into receiving sockets 11-1 welded to respectively opposite end portions of a corner member 10a of the frame, see FIG. 4. Opposite ends 15 of the resulting corner leg sections are reduced in diameter so as to telescope within corresponding ends of rectilinear intermediate sections 10b of the frame. The widespread V-formation of such legs 11 corresponds in general with the formation of the respective corner frame members 10a. The result is a cradle formation for each of the leg sections, permitting compact nesting of such sections for transportation and storage.

Such leg sections are telescopically joined at their ends 15 to the adjoining rectilinear frame sections 10b by telescoping snugly into the open ends of such frame sections 10b, see FIG. 3. Along the longitudinal sides of the frame 10, mutually adjoining rectilinear frame sections 10b are secured together in similar telescoping fashion.

Steel tubing having wall thickness of 0.054 of an inch and outside diameter of 1.163 inches has proven very satisfactory for the frame 10 and legs 11.

The bounce sheet 12 may be made of any suitable materials, normally canvas, for example, #6 duck. It is provided about its peripheral margins with a multiplicity of eyelets 16.

The rubber bands 13 are each of elongate closed-loop formation, see FIG. 5. They are made from cured natural gum rubber. Thus, they have adequate strength, resiliency, and durability for the purpose. Closed-loop rubber bands seven inches in diameter and three-quarters of an inch in width, cut off from rubber tubing having a sheet thickness of one-eighth of an inch, have proven very satisfactory for the purpose.

The hook-on attachment fittings 14 are preferably of S-formation, so as to provide a readily demountable connection between the bands 13 and the respective eyelets 16.

In assembling the apparatus, the component parts of the frame 10 are telescoped together into set-up condition for receiving the bounce sheet 12. Corresponding hook ends of the attachment fittings 14 are inserted through respective eyelets 16 of the bounce sheet as indicated in FIG. 2. The rubber bands 13 are looped lengthwise

around the frame 10, and the opposite loop ends of each are hooked over the opposite hook end of the corresponding attachment fitting 14, as indicated in FIG. 2. This is all that is necessary to assemble the apparatus for use. The rubber bands hold the frame together under tension, without requiring the use of bolts, screws, or other fastening devices, although these may be used to secure the joints, if desired.

In the event that a rubber band 13 breaks during use, it can be easily and quickly replaced from a stock of extras kept by the owner of the apparatus.

It will be realized that the rubber bands and hook-on attachment fittings utilized for suspension purposes are exceptionally economical in cost and yet function most effectively for the purpose.

It is important to note that the leg 11 of each corner leg section of the frame is initially somewhat more widespread in its V-formation than the spacing between the receiving sockets 11-1 of the corresponding frame corner member 10a, whereby the inherent resiliency of the tubing from which the leg is made will serve to frictionally lock the leg in its telescoped position with respect to the receiving sockets when assembled.

Constructed in this way, the individual corner sections of the frame may be shipped in disassembled condition in the relatively small carton mentioned hereinbefore. Following the assembly of the apparatus, the cradle-like formation of the assembled frame corner sections makes it unnecessary to disassemble such corner sections for convenient storage and transportation of the apparatus. Such assembled corner sections nest compactly for the purpose.

Another embodiment of frame construction, which is advantageous from the standpoints of both manufacture and packaging, is illustrated in FIGS. 6-10. In this embodiment, formations for telescopically mating with the legs are attached to the rectilinear frame sections rather than to the corner members. This enables the legs and the corner members to be identical and to be easily and economically bent to formation from respective lengths of tubing without any special forming of their ends. It also facilitates packing of the knocked-down frame structure in a merchandise carton.

The frame illustrated in FIGS. 6 and 7 has identical corner members and leg members 20, see also FIG. 8, bent to the widespread V-formation of the first embodiment from identical lengths of metal tubing. These corner members and leg members 20 telescopically connect with intermediate, rectilinear, side members 21, see also FIG. 9, and with intermediate, rectilinear, end members 22, see also FIG. 10, it being unnecessary to form the ends of such corner members and leg members in any way, since they serve as sockets for telescopically receiving, respectively, reduced opposite ends 21a and 22a and corre-

sponding mating formations 21b and 22b of the end and side members 21 and 22.

In this embodiment, as in the first, the resilient suspension of the jump sheet (not shown in this embodiment) with respect to the frame serves to pull the peripheral frame members together into a tightly integrated unit and to maintain the integrity of such unit during use.

It should be realized that, while the particular method of anchoring the suspension rubber bands 13 to the jump sheet 12 by means of eyelets and S-shaped fittings has proven very successful in practice, other anchoring fittings may also be utilized.

Whereas this invention is here illustrated and described with respect to specific embodiments thereof, it should be realized that changes may be made within the scope of the following claim, without departing from the essential contributions to the art made by the teachings hereof.

We claim:

Bouncing apparatus for children, comprising a frame having legs supporting it in elevated position; a bounce sheet having a multiplicity of eyelets formed about its peripheral margin; a corresponding multiplicity of S-shaped attachment fittings having one set of ends thereof anchored in the respective eyelets; and a corresponding multiplicity of individual rubber bands looped around said frame and having their ends anchored to the other ends of said S-shaped fittings, respectively, each of said bands being of integrally endless, flat strip formation, the frame being made up of telescopically joined sections which are held together primarily by the tension of said rubber bands, said sections including corner sections which are each made up of an individual corner member and an individual leg, the corner member being provided with mutually spaced, depending socket members for receiving respective opposite ends of said leg in telescopic relationship, so that the leg sections may be initially shipped in disassembled condition, and the leg of each corner section being more widespread than the mutual spacing of said socket members, so that it will be frictionally locked in telescopic position by the inherent resiliency of the material from which it is made.

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