March 8, 1960 D. W. GILL 2,927,628

FOLDING BABY JUMPER

Filed July 28, 1958 2 Sheets-Sheet 1

Fig. 1

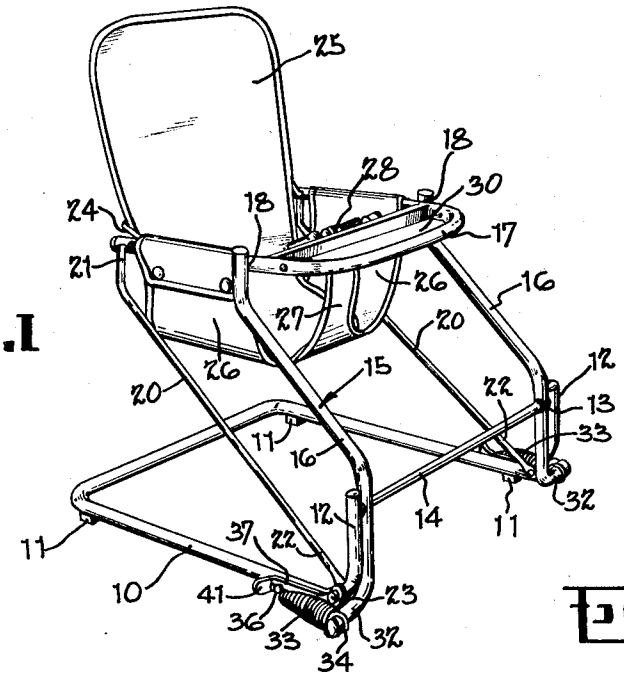


Fig. 2

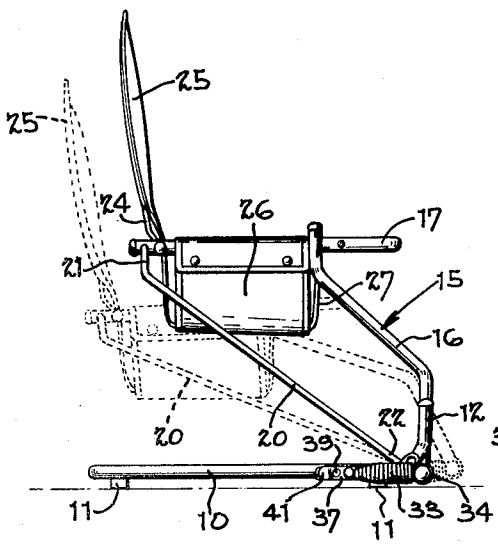
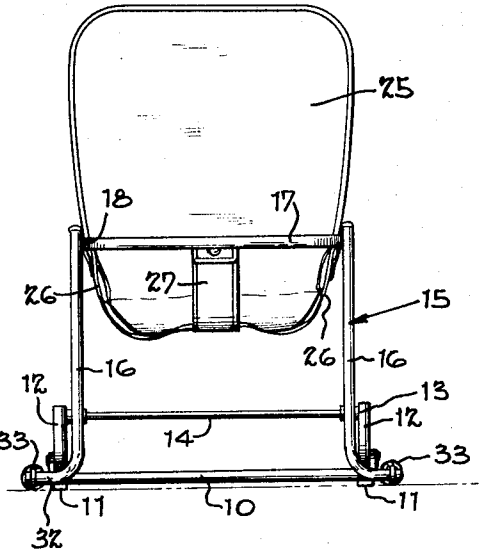


Fig. 3



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Filed July 28, 1958 2 Sheets-Sheet 2

Fig. 4

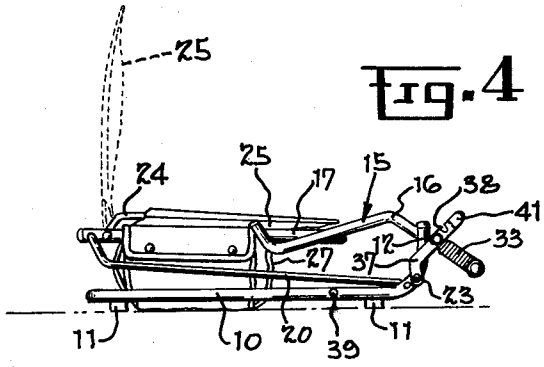


Fig. 7

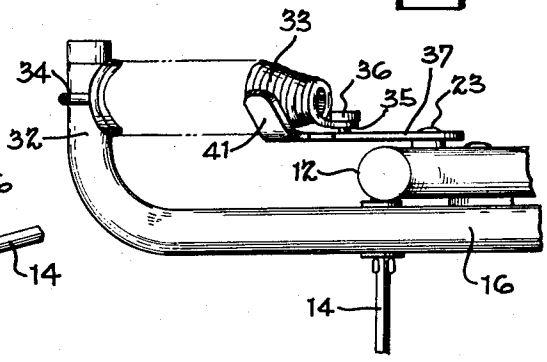
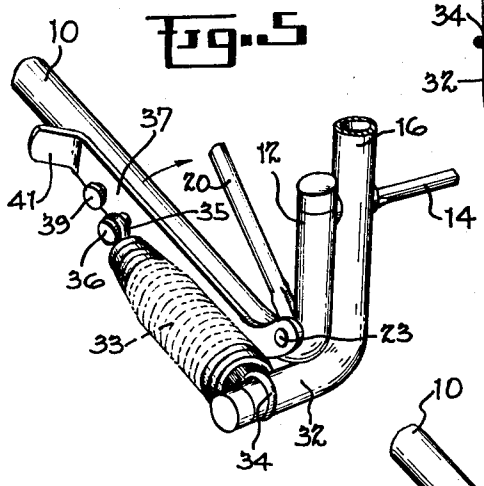


Fig. 5



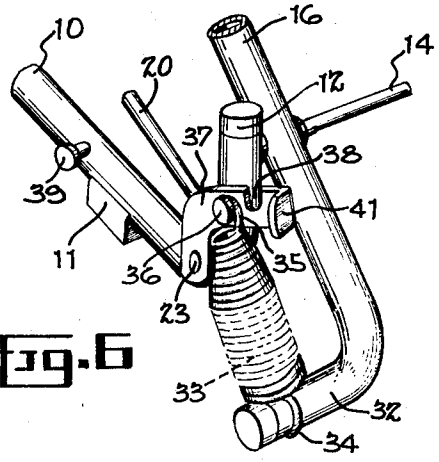


Fig. 6

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FOLDING BABY JUMPER

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Application July 28, 1958, Serial No. 751,549

5 Claims. (Cl. 155—18)

This invention relates to a collapsible baby jumper, more particularly to a jumper resiliently supported in elevated position by a coil spring, the spring cooperating with frame members and a toggle latch to stress or relax the spring for raising or collapsing the jumper.

There are a number of practical problems attending the design of the baby jumper. The jumper must be of rugged construction as well as being comfortable so that a parent will feel secure in the fact that his child is reasonably safe from harm while occupying the jumper. Another desirable attribute of a jumper is its portability; the portability of the jumper being increased if it is collapsible. However, collapsibility of the jumper is most feasible when the jumper is easily erected and collapsed.

The present invention is not only easy to erect but can be erected and collapsed through the use of the foot of the person holding the child. By this design a parent can, for example, take his child to the beach, carrying the child in one arm and the collapsed baby jumper in the other, set the jumper up while holding the child, and then place the child in the jumper without having to set him in the sand while erecting the jumper. On the return from the beach, the child can be lifted out of the jumper and the jumper collapsed, again without having to set the child on the sand to manipulate the mechanism.

It has been an objective of this invention to provide a collapsible, resilient baby jumper which is of rugged construction, easy to erect, and easy to collapse for storage or packing in an automobile or the like.

It has been another objective of the invention to provide a collapsible, resilient baby jumper which is simple to erect and to collapse, the jumper being maintained in an erect position by a spring and toggle or overcenter latch combination requiring only one movement applied to the latch for either erecting or collapsing the jumper.

It has been another objective of the invention to provide a collapsible, resilient baby jumper which is maintained in its operable, erect position by a tension coil spring that is a generally helical-type tension spring.

It has been yet another objective of the invention to provide a jumper having a toggle latch cooperating with a coil spring to maintain the jumper in resilient, erect position, but which permits the collapse of the jumper merely by operating the latch without disconnecting the spring.

It has been still another objective of the invention to provide a baby jumper which can be collapsed by kicking a latch with a foot while an infant is held in the arms.

These and other objectives of the invention will become more readily apparent from a consideration of the following detailed description taken in conjunction with the accompanying drawings in which—

Fig. 1 is a perspective view of the invention;

Fig. 2 is a front elevational view thereof;

Fig. 3 is a side elevational view thereof;

Fig. 4 is a side elevational view thereof showing the jumper in collapsed position;

Fig. 5 is a fragmentary perspective view showing the latch mechanism in "latched" position;

Fig. 6 is a fragmentary perspective view showing the latch mechanism in "collapsed" position; and

Fig. 7 is a fragmentary top plan view of the latch mechanism in "collapsed" position.

To effect the objectives of the invention, the jumper is constructed as shown in the drawings. The jumper is supported by a U-shaped base frame **10** mounted on rubber or plastic support blocks **11** to avoid scuffing wood surfaces on which it is set. The forward ends of the U-shaped base frame are terminated in upwardly projecting fulcrum members **12** having pivot holes **13** in the upper ends thereof to receive a pivot rod **14**. The pivot rod **14** forms part of a support frame **15** having a pair of generally vertically directed legs **16** normally disposed above and below the pivot rod **14** so that the support frame is pivoted to the base frame intermediate the ends of the support frame.

A U-shaped seat support **17** is pivoted at **18** to the upper extremity of the legs **16** of the support frame. The rear portion of the seat support **17** is braced to maintain a generally horizontal attitude by a pair of brace rods **20** having the upper ends **21** thereof journalled in suitably formed holes in the seat support, and having the lower ends **22** thereof pivotally connected to a pin **23** attached to the base frame at approximately the bend which joins the vertical fulcrum portion **12** to the horizontal portion.

A U-shaped wire frame **24** is pivoted to the rear of the seat support **17** just forward of the upper end **21** of brace rod **20**. A fabric seat having a back portion **25** formed as a pocket is slipped over the back frame. The side panels **26** of the seat are folded and snapped over the seat support **17** while the forward portion of the seat is supported by a fabric strip **27** snapped onto a cross rod (not shown) extending between the two rearwardly projecting legs of the seat support. The cross rod may also support beads as at **28** and the rear portion of a tray **30**, the tray being supported at its forward edge by the bight portion of the seat support.

The mechanism which maintains the jumper in its erect position, which provides resiliency to the jumper, and which permits the ease of erecting and collapsing is shown in Figs. 1 and 3 but in greater detail in Figs. 5–7. The forward ends of the legs **16** and base support frame terminate in outwardly projecting stubs **32** to which are attached tension coil springs **33** at one end of the spring **34**. The other end **35** of each spring is attached to a pin **36** fixed to a latch or toggle link **37**, the latch being pivotally mounted on pin **23**.

The latch **37** has a slot **38** along one edge thereof which cooperates with a pin **39** fixed to the base frame. The combined latch and spring have an over-center toggle action with respect to the pivot pin **23** to which the latch **37** is pivotally mounted. The slot **38** and the pin **39** provide cooperating latching surfaces normally maintained in engagement by the action of the spring **33** when the latch **37** has been pivoted to bring the line of the spring below the pivot pin **23**, as shown in Figs. 1, 2, 3, and 5. The latch **37** is turned outwardly at its end remote from the pivot **23** to form a projection **41** which may be engaged by the foot or the hand of the user to shift the latch **37** between the latched and unlatched positions.

In operation, let it be assumed that the device is in its latched erect position shown in Figs. 1, 2, and 3. The baby jumper is resiliently supported in this attitude by the spring **33** which tends to urge the support frame **15** in a clockwise direction as viewed in Fig. 3. The brace rod **20**, forming a quadrangle with the seat support **17**,

support frame 15, and the fulcrum portion 12 of the base frame maintains the seat in a horizontal attitude as the baby, exercising in his seat, moves the jumper between the positions shown in full lines and broken lines in Fig. 3. Referring particularly to Fig. 3, it should be noted that the spring 33 is extended when the jumper is resiliently depressed to the broken line position, thus demonstrating the resiliency of the jumper imparted by the spring 33.

When the parent wishes to collapse the jumper, the child is lifted out and held in one arm, while the jumper is steadied by the other arm, the parent can, with his foot, kick the projection 41 of the latch 37 in the direction of the arrow shown in Fig. 5 to bring the spring 33 over center with respect to pivot pin 23. The spring will then continue pulling the latch on around until the latched position is as shown in Fig. 6. By repeating this operation on the other side of the jumper, the jumper is permitted to collapse as shown in Fig. 4. Thereafter the seat back 25 may be folded forward from the broken line position to the full line position of Fig. 4.

In setting up the jumper, the reverse procedure may be followed. The parent stands in front of the stroller and grasps the bight portion of the U-shaped seat support 17 and lifts the structure to the erect position shown in Fig. 1. Thereafter the projections 41 on the latch 37 may be engaged one after the other, by the foot of the parent and pivoted from the position shown in Fig. 6 in the over-center latched position of Fig. 5. Nothing more is required for setting up the jumper.

It can be seen from the foregoing description that the latch and spring connection of the support frame to base frame provides resilient support for the jumper, provides a simple-to-operate mechanism for erecting and collapsing the jumper, and provides a mechanism whose ruggedness and portability offer substantial advantages.

Having described my invention, I claim:

1. In a collapsible baby jumper, a frame comprising a horizontal base frame terminating at the forward end thereof in upwardly projecting fulcrum members, a generally vertical support frame pivoted intermediate its ends to said fulcrum member, a seat support pivotally mounted at the forward end thereof to the upper end of said support frame, a brace pivoted to the rear of said seat support and to said base frame to complete a quadrangle between said seat support, base frame and support frame, spring means connected at one end to the lower end of the said support frame, a toggle latch pivoted at one end on said base frame and connected at the other end to the other end of said spring means, means for fixing said latch in a latched position with respect to said base frame to place said spring means under tension, said latch being pivotable to a collapsed position in which said latch is pivoted toward said support frame to relax said spring means and to permit said support frame to be collapsed toward said base frame.

2. In a collapsible baby jumper, a frame comprising a horizontal base frame terminating at the forward end thereof in upwardly projecting fulcrum members, a generally vertical support frame pivoted intermediate its ends to said fulcrum member, a seat support mounted at the forward end thereof to the upper end of said support frame, spring means connected at one end to the lower end of said support frame, a toggle latch pivoted at one end on said base frame and connected at the other end to the other end of said spring means, means for fixing said latch in a latched position with respect to said base frame to place said spring means under tension, and said latch being pivotable to a collapsed position in which said latch is pivoted toward said support frame to relax said spring means and to permit said support frame to be collapsed toward said base frame.

3. In a collapsible baby jumper, a frame comprising a horizontal base frame terminating at the forward end thereof in upwardly projecting fulcrum members, a generally vertical support frame pivoted intermediate its end to said fulcrum member, a seat support pivotally mounted at the forward end thereof to the upper end of said support frame, a brace pivoted to the rear of said seat support and to said base to complete a quadrangle between said seat support, base frame and support frame, spring means connected at one end to the lower end of said support frame, a toggle latch pivoted at one end of said base frame and connected at the other end to the other end of said spring means, a pin on said base frame, said latch having a slot engageable with said pin to secure said latch in a latched position in which said latch is fixed with respect to said base frame placing said spring means under tension, said latch having a collapsed position in which said latch is pivoted toward said support frame to relax said spring means and to permit said support frame to be collapsed toward said base frame.

4. In a collapsible baby jumper, a frame comprising four support elements, means pivotally joining said elements together to form a quadrangle for collapsibly supporting a seat above the ground, at least one spring connected at one end to one of said elements, a toggle link pivoted at one end to an adjoining element, the other end of said spring being connected to the other end of said toggle link, and stop means cooperating with said spring and said toggle link for fixing said link relative to the adjoining element when said spring is stressed to maintain said jumper in an erect position.

5. In a collapsible baby jumper, a frame comprising four support elements: a generally horizontal base frame, a generally horizontal seat support, a generally vertical support frame, and a generally vertical brace, said four elements being pivotally connected together to form a quadrangle; and spring means connected between two of said elements to maintain said jumper in a resiliently erect position, said spring means being connected directly to one of said elements and through a releasable toggle link to the other of said elements, means pivotally connecting said toggle link on said other element, and stop means cooperating with said toggle link and spring for fixing said link relative to the other element when said spring is stressed to maintain said jumper in erect position.

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