

[54] **PLAYGROUND JUMPING DEVICE**

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95482

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[51] **Int. Cl.<sup>2</sup>** ..... **A63B 25/08**

[58] **Field of Search** ..... 272/57 E; 267/60

[56] **References Cited**

**UNITED STATES PATENTS**

2,847,217 8/1958 Adams et al. .... 272/57 E

**FOREIGN PATENTS OR APPLICATIONS**

1,028,416 5/1953 France ..... 272/57 E

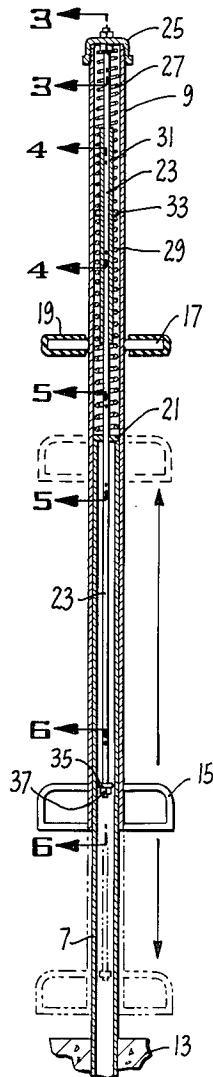
353,614 2/1922 Germany ..... 272/57 E

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Mitchell & Anderson

[57] **ABSTRACT**

The device includes a fixed vertical base pipe and a capped vehicle pipe telescoping thereover. Two axially aligned compression springs mounted within the telescoping pipes consist of an upper light spring and a lower heavy spring. A downstop pipe is mounted within the springs and has a fixed member separating the springs attached thereto. The downstop pipe has a length exceeding the combined length of the springs when closed and serves to limit the compression of the light spring. Upon engagement of the top of the downstop pipe with a cap on the upper end of the vehicle pipe further downward movement of the vehicle pipe causes compression of only the heavy lower spring which in turn is limited by engagement of the bottom of the downstop pipe with the top of the base pipe.

**1 Claim, 6 Drawing Figures**



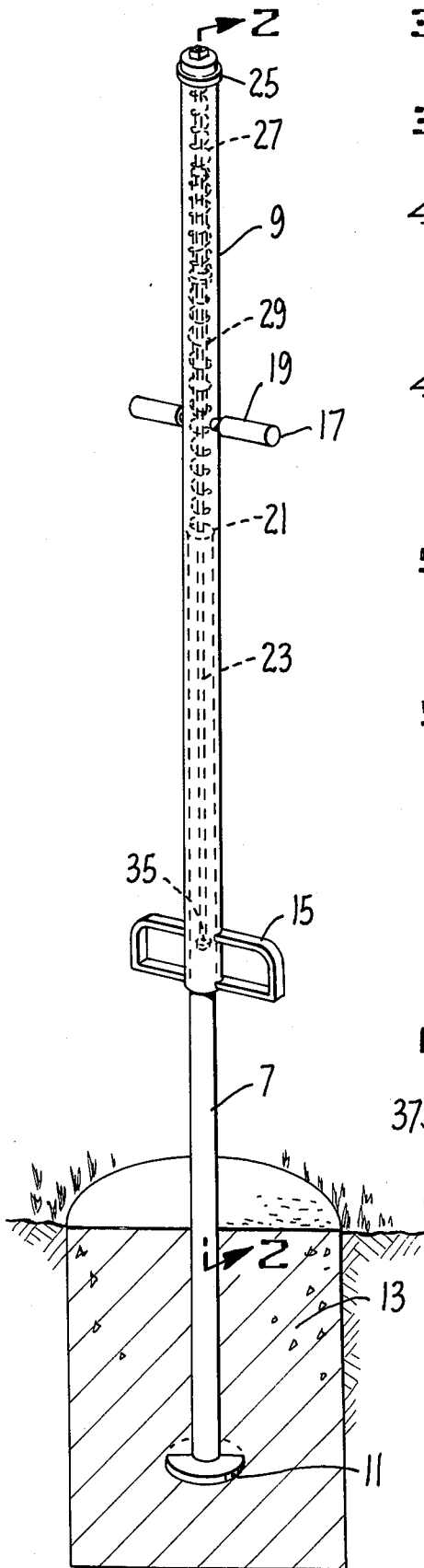


FIG. 1.

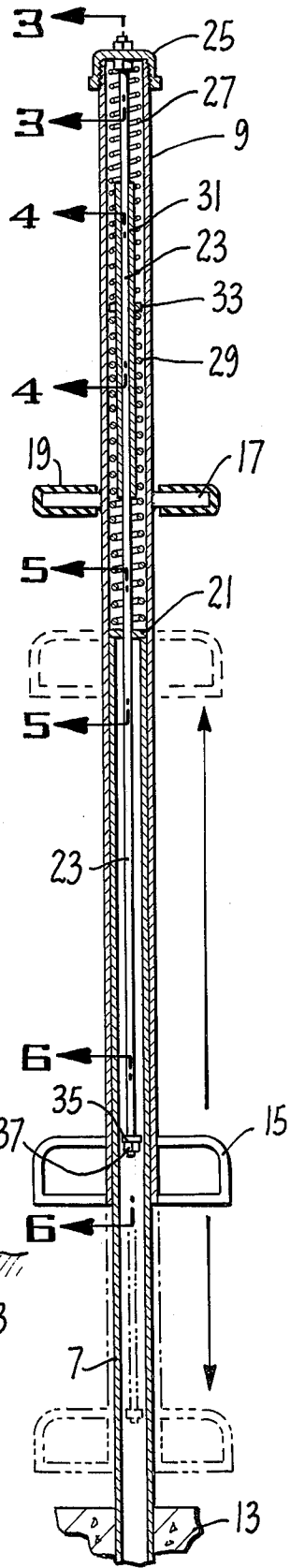


FIG. 2.

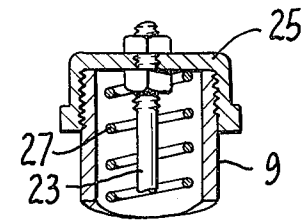


FIG. 3.

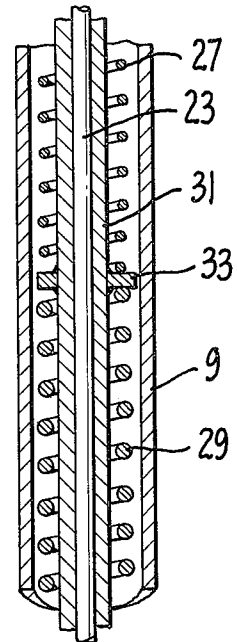


FIG. 4.

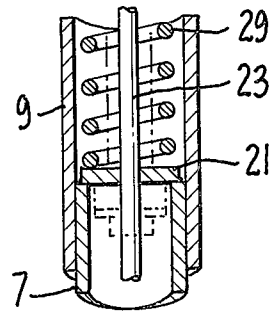


FIG. 5.

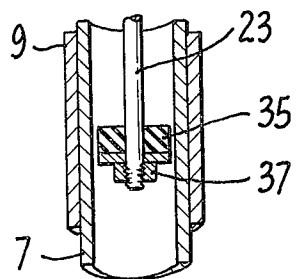


FIG. 6.

## PLAYGROUND JUMPING DEVICE

## SUMMARY OF THE INVENTION

The present invention relates to a generally improved structure similar to that shown in our previous U.S. Pat. No. 2,847,217. That patent described and claimed a playground jumping device which was satisfactory in many respects but which had certain deficiencies which are remedied by the device of the present invention. For one thing, the previous device had an exposed spring subject to deterioration and also a child could get his fingers pinched. Further, the top of the base pipe was exposed to allow the entrance of water into the inside of the pipe which could cause rusting. Here again, a child could get his fingers pinched between the top car and the vehicle.

In accordance with the present invention, an improved jumping device is provided wherein the springs are completely enclosed so that they are not subject to deterioration from exposure to the elements, nor do they provide a place where a child might get his fingers caught. Further, the device of the present invention has a sealed top structure which contributes both to the safety and durability of the device since rain cannot enter the top.

A particularly desirable feature of the device of the present invention is that in a preferred embodiment, springs of two different weights are provided so that the device can be enjoyed by children of greatly different weights.

Another feature of the present invention is that an effective downstop arrangement is provided for each of the springs so that the springs cannot completely close, thus preventing breakage of the springs.

Various other features and advantages of the invention will be brought out in the balance of the specification.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a jumping device embodying the present invention.

FIG. 2 is a section on the line 2—2 of FIG. 1.

FIG. 3 is an enlarged section on the line 3—3 of FIG. 2.

FIG. 4 is an enlarged section on the line 4—4 of FIG. 2.

FIG. 5 is an enlarged section on the line 5—5 of FIG. 2.

FIG. 6 is an enlarged section on the line 6—6 of FIG. 2.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

The device of the present invention consists of two principal parts, namely a base pipe 7 and a vehicle pipe 9. Pipe 9 is slightly larger than 7 so that they form a freely telescoping fit. The base pipe 7 has a steel plate 11 mounted on the bottom thereof and is adapted to be permanently mounted in a base 13 of concrete in the ground. Alternatively, the base pipe might be fastened to a gymnasium floor or even provided with a heavy moveable base so that the device could be moved around to a desired location.

The vehicle tube 9 is provided with suitable stirrups 15 and handles 17. These parts are preferably made of steel and are welded to the tube 9 and the handles may

be provided with an outer covering 19 of rubber or similar material.

The top of the base pipe is provided with a washer 21, attached by suitable means such as welding, the washer 21 having a hole in the center for the passage of the upstop rod 23. Rod 23 is attached to the top of the vehicle pipe 9 by a cap 25.

Mounted within the vehicle pipe and surrounding rod 23 are two compression springs, namely a relatively light spring 27 and a heavy spring 29. Mounted within the springs and around rod 23 is the downstop pipe 31 having a washer 33 welded near the center thereof which separates the heavy spring 29 from the light spring 27. The length of the downstop 31 is such that neither of the springs can completely close out when one pushes downwardly on the vehicle. The length of the downstop is longer than the closed length of both of the springs together, and the distance from washer 33 to the top of pipe 31 is longer than the closed length of spring 27 while the distance from the bottom of pipe 31 to the washer 33 is greater than the closed length of spring 29. Thus, the position of the washer is such that both springs are protected so that no coil of either spring touches another coil while the vehicle travels.

The action is that if a small child gets on the vehicle, there will be no substantial compression of the heavy spring 29 and the child can bounce up and down utilizing the resiliency of the relatively light spring 27. Now, if a heavy child or adult gets on the device, the light spring 27 will be compressed until cap 25 rests on top of pipe 31 but the light spring will not be fully closed. Now the child can jump up and down, essentially using only the resiliency of the heavy spring 29. If the action gets too vigorous, the bottom of the downstop 31 will contact washer 21, protecting the heavy spring. Thus, regardless of whether a light or a heavy child gets on the device, neither the light spring nor the heavy spring will completely close out, thus preventing spring breakage which would otherwise occur if the springs were not protected.

The upstop rod 23 is provided with a resilient washer 35, such as synthetic rubber which is held in place by a nut 37. Thus, if the action gets too vigorous in the "up" direction, the vehicle will be prevented from completely leaving the base pipe 7 and the synthetic rubber washer 35 will cushion the shock. Further, this prevents any part of the device from being stolen.

Although a preferred embodiment of the invention has been described it will be obvious to those skilled in the art that many variations can be made in the exact structure shown without departing from the spirit of this invention. For instance, if children of only a certain weight range are to use the device, a less expensive version employing only a single spring may be made.

We claim:

1. In a playground device including a fixed vertical base pipe and a vehicle pipe telescoping thereover and extending above the base pipe, said vehicle pipe having hand holds and stirrups whereby a child can step in the stirrups and hold onto the hand holds, said device including two compression springs extending downwardly inside the vehicle pipe from a closed cap on the top of the vehicle pipe to the top of the base pipe, including a heavy spring and a light spring whereby children having widely varying weights can use said exercise device, said compression springs being arranged with said light spring above and said heavy spring below

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and having a downstop pipe mounted within said springs, said downstop having a fixed member attached thereto separating said upper and lower springs, said downstop pipe having a length greater than the closed length of the said springs whereby said light spring will

be protected by contact between the top of said downstop and said top cap, and said heavy spring will be protected by contact between the bottom of said downstop and said top of the base pipe.

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