

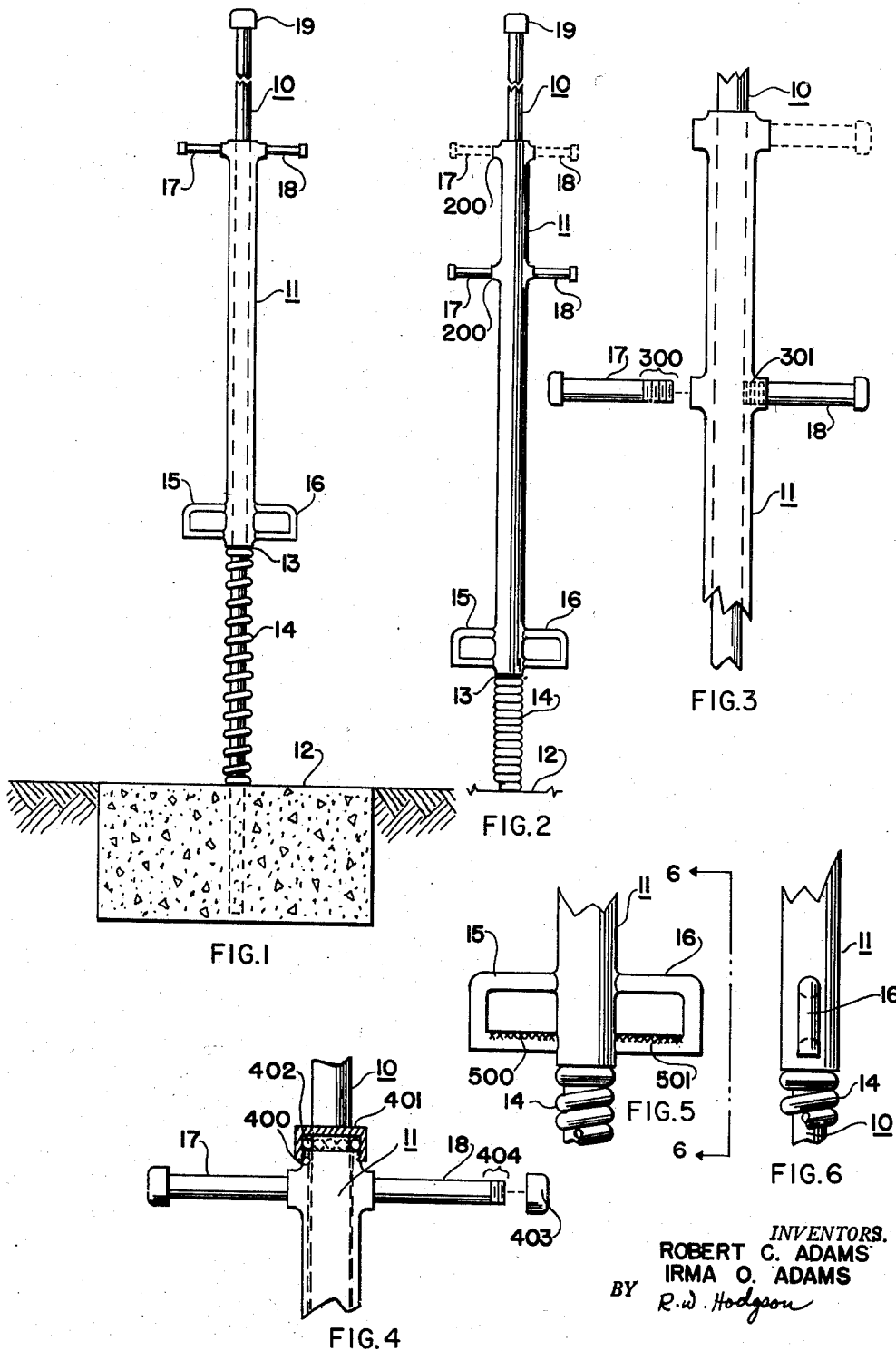
Aug. 12, 1958

R. C. ADAMS ET AL

2,847,217

JUMPING DEVICE

Filed Feb. 13, 1956



INVENTORS.
ROBERT C. ADAMS
IRMA O. ADAMS
BY *R.W. Hodgson*

1

2,847,217

JUMPING DEVICE

Robert Clinton Adams and Irma O. Adams,
Escondido, Calif.

Application February 13, 1956, Serial No. 565,031

2 Claims. (Cl. 272—57)

Generally speaking, the present invention is related to children's jumping devices adapted for permanent or semi-permanent installation either at playgrounds or at home; more particularly, the present invention is directed toward the providing of a novel jumping device for children's use which, by means of a compression spring and associated apparatus, will operate so as to propel a child high into the air (within chosen limits of safety) while at the same time exhibiting rigidity of construction and safety in operation.

In the past, there have been many types of devices designed for children's use to serve as jumping sticks or the like. The name "Pogostick" has been applied to a number of jumping devices achieving considerable present-day popularity, and the operation of which is familiar. In such devices a tubular member surrounds a rod-like member and the two are interjoined at the lower end of each by means of a compression, expansion spring. The outer tubular member is provided with foot supports so that as the operator jumps upon these supports the spring is made to compress and finally to expand, thereby propelling not only the operator but the entire jumping stick unit in an upward direction so that the unit physically leaves the ground. By such a device one is enabled to translate himself by means of successive jumps in a direction in which he chooses to travel. While the present invention might upon a cursory examination be believed to resemble in marked degree the aforementioned type of device, yet it has a distinct difference from the same, both in construction and in operation. The present invention contemplates a permanent or semi-permanent installation of the jumping device in which the central rod is made stationary and substantially longer than the tubular member within which the rod is disposed. In addition, the spring employed serves as a compression spring only; that is, there is no physical interconnection between the spring and the associated end of the tubular member. Thus, by jumping upon the foot supports associated with the outer tubular member, the operator is at once propelled high into the air as the outer tubular member travels upward along the rod member. Increasingly higher propulsions into the air may be achieved by successive jumps by the operator (and consequent successive compressions of the compression spring employed).

Therefore, it is an object of the present invention to provide a new and useful jumping device for children's use at play.

It is a further object of the present invention to provide a new and useful jumping device which will be a more or less permanent installation.

It is an additional object of the present invention to provide a new and useful jumping device for propelling a child forceably into the air, with greater degrees of propulsion being achieved by successive jumps by the child operator, and yet which will be entirely safe in operation.

According to the present invention, a jumping device

2

includes an outer tubular member, a long rod member disposed within said tubular member and adapted for permanent or semi-permanent installation to a support means, a compression spring disposed about said rod member between said support means and a respective end portion of said tubular member, at least one foot support associated with said outer tubular member, and at least one hand rung also associated with said tubular member. In a preferred embodiment of the present invention, first and second foot supports and first and second hand rungs are employed together with first and second pluralities of threaded apertures vertically disposed on either side of the aforementioned tubular member and adapted for selective cooperation with the aforementioned hand rungs. The slidable cooperation of the tubular member with the central rod member may be bearinged in an appropriate manner, if desired.

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may best be understood by reference to the following description, taken in connection with the accompanying drawings, in which:

Figure 1 is a front elevational view of a jumping device together with its mounting.

Figure 2 is a front elevational view of the apparatus of Figure 1, showing the spring employed to be in a compressed condition.

Figure 3 is a partial, front elevational view of the apparatus of Figures 1 and 2, illustrating the versatility of hand rung mounting as is contemplated by the present invention.

Figure 4 illustrates one type of bearinged intercooperation between the central rod member and the outer tubular member which is feasible.

Figure 5 illustrates the foot supports of the outer tubular member of the present invention.

Figure 6 is a view taken along the line 6—6 in Figure 5.

In Figure 1, rod member 10 is shown disposed within tubular member 11 and is adapted for permanent securement (if desired) in concrete block 12. It will be understood that other types of support means might have been employed in lieu of cement block 12. Disposed about rod member 10 to cooperate selectively with concrete block 12 and end portion 13 of tubular member 11 is compression spring 14. It should be understood that at all vents compression spring 14 will not be physically connected to tubular member 11. Tubular member 11 is provided with foot supports 15 and 16 on either side thereof in a region adjacent end portion 13. Preferably, supports 15 and 16 will take the form (as shown) of U-shaped stirrups, so as to assure maximum safety for children using the present jumping device. By the employment of stirrups, the feet of the operator will be retained within supports 15 and 16, even during the downward movements of tubular member 11. Hand rungs 17 and 18 are provided tubular member 11 and may be threaded into appropriate apertures provided therefor. Rod member 10 may be capped at the upper extremity thereof by means of cap 19 so as to limit the possible upward travel of tubular member 11. It will of course be understood that rod member 10 will be unusually long with respect to the length of tubular member 11 so that maximum vertical travel by the operator in an upward direction is assured.

The operation of the jumping device shown in Figure 1 is as follows. The operator merely places his feet within stirrup-shaped foot supports 15 and 16 and clasps hand rungs 17 and 18 with his left and right hands, respectively. The body weight of the operator will thus tend to compress spring 14. An upward jump by the

operator will cause tubular member 11 to progress upwardly, which progression will be aided by the expansion of spring 14 to its normal condition (as shown). It has been noted that the compression spring is not physically attached to tubular member 11. Thus, by successive jumps the operator is able to achieve greater propulsions in the air and is limited only by the spring parameters and by cap 19 disposed upon rod member 10.

Figure 2 illustrates the compression of spring 14 and also illustrates that one or more sets of threaded aperture ports 200 may be employed to accommodate the cooperation therewith of hand rungs 17 and 18. Thus, hand rungs 17 and 18 may be removed from their dispositions shown in dotted line configuration and instead threaded into the lower threaded aperture ports.

Figure 3 illustrates that hand rungs 17 and 18 may have threaded end portions 300 and 301, respectively, each end portion being adapted for threading into a respective threaded aperture port provided in tubular member 11.

Figure 4 illustrates that tubular member 11 may be provided with threaded end portion 400 which is adapted to cooperate with internally threaded cap 401. Cap 401 will of course be provided with a central admittance aperture adapted for slidable or relief cooperation with rod member 10. With some clearance existing between the inner portion of cap 401 and end portion 400, there may be disposed between the same ball bearings 402 which, being so entrapped, will provide for the slidable cooperation of tubular member 11 with respect to rod member 10. Figure 4 also illustrates that if it is desired that tubular construction be preserved throughout, including hand rungs 17 and 18, that internally threaded caps 403 may be provided to cooperate with threaded end portions 404 of hand rungs 17 and 18.

Figure 5 illustrates that lower portions 500 and 501 of foot supports 15 and 16 may have the upper surfaces thereof knurled so as to provide the requisite friction between the foot supports and the soles of the operator's shoes.

Figure 6 is a view taken along the line 6-6 in Figure 5 showing a representative disposition of the foot supports relative to the tubular member to which they are attached.

Numerous modifications and variations of the present invention will occur to those skilled in the art after a careful study hereof. All such, properly within the basic spirit and scope of the present invention are intended to be included and comprehended herein as fully as if specifically described, illustrated and claimed herein.

The exact compositions, configurations, constructions, relative positionings, and cooperative relationships of the various component parts of the present invention are not critical, and can be modified substantially within the spirit of the present invention.

The embodiments of the present invention specifically described and illustrated herein are exemplary only, and are not intended to limit the scope of the present invention, which is to be interpreted in the light of the prior art and the appended claims only, with due consideration for the doctrine of equivalents.

I claim:

1. Vertically fixedly mounted jumping apparatus comprising: a hollow longitudinal vertical tubular member; a vertical longitudinal rod member substantially longer than said tubular member partially disposed relatively slidably within said tubular member; said tubular member having first and second end portions; said rod member having a first end portion positioned below said first end portion of said tubular member and having a second end portion positioned above said second end portion of said tubular member; fixed underlying support means affixed to and carrying said first end portion of said rod member embedded therein and fixedly positioning said rod

member in upstanding vertical disposition extending upwardly from said underlying support means; said tubular member being provided with laterally aligned oppositely positioned horizontal first and second foot support stirrups in the region of said first end portion of said tubular member, said tubular member also being provided, in the region of said second end portion thereof, with a first pair of threaded apertures laterally aligned and oppositely positioned with respect to said tubular member and also being provided with a second pair of threaded apertures laterally aligned and oppositely positioned with respect to said tubular member, said first pair of threaded apertures and said second pair of threaded apertures being vertically spaced along the tubular member; first and second threaded hand rungs selectively threadable into the threaded apertures of said first pair of threaded apertures or said second vertically spaced pair of said threaded apertures and horizontally aligned and oppositely directed on each side of said tubular member; and a free coil compression spring disposed about said vertical rod member between said underlying support means and said first end portion of said tubular member and co-operable therewith for compression only by and between said first end portion of said tubular member and said underlying support means.

2. Vertically fixedly mounted jumping apparatus comprising: a hollow longitudinal vertical tubular member; a vertical longitudinal rod member substantially longer than said tubular member partially disposed relatively slidably within said tubular member; said tubular member having first and second end portions; said rod member having a first end portion positioned below said first end portion of said tubular member and having a second end portion positioned above said second end portion of said tubular member; fixed underlying support means affixed to and carrying said first end portion of said rod member embedded therein and fixedly positioning said rod member in upstanding vertical disposition extending upwardly from said underlying support means; said tubular member being provided with laterally aligned oppositely positioned horizontal first and second foot support stirrups in the region of said first end portion of said tubular member, said tubular member also being provided, in the region of said second end portion thereof, with a first pair of threaded apertures laterally aligned and oppositely positioned with respect to said tubular member and also being provided with a second pair of threaded apertures laterally aligned and oppositely positioned with respect to said tubular member, said first pair of threaded apertures and said second pair of threaded apertures being vertically spaced along the tubular member; first and second threaded hand rungs selectively threadable into the threaded apertures of said first pair of threaded apertures or said second vertically spaced pair of said threaded apertures and horizontally aligned and oppositely directed on each side of said tubular member; a free coil compression spring disposed about said vertical rod member between said underlying support means and said first end portion of said tubular member and co-operable therewith for compression only by and between said first end portion of said tubular member and said underlying support means; exterior thread means carried by said second end portion of said tubular member; a cap member internally threaded and threadably co-operable with said exteriorly threaded end portion of said tubular member; and a plurality of ball bearings disposed between said cap element and the annular end of said second end portion of said tubular member, said cap member being provided with a vertical relief aperture admitting therethrough said vertical rod member.

5

References Cited in the file of this patent

UNITED STATES PATENTS

2,025,721	Broulhiet -----	Dec. 31, 1935	
2,032,574	Handley -----	Mar. 3, 1936	
2,223,309	Swanson -----	Nov. 26, 1940	5
2,709,079	Bubb et al. -----	May 24, 1955	
2,723,855	McKee -----	Nov. 15, 1955	
2,712,443	Hohberger -----	July 5, 1956	

195,228
376,924
197,884
834,823

6

FOREIGN PATENTS

Great Britain -----	Mar. 29, 1923
Germany -----	June 7, 1923
Germany -----	May 31, 1938
Germany -----	Feb. 21, 1952