March 19, 1957 E. E. SCHAEFER 2,785,503

INFANT EXERCISER AND TOY

Filed Nov. 18, 1953

Fig. 1.

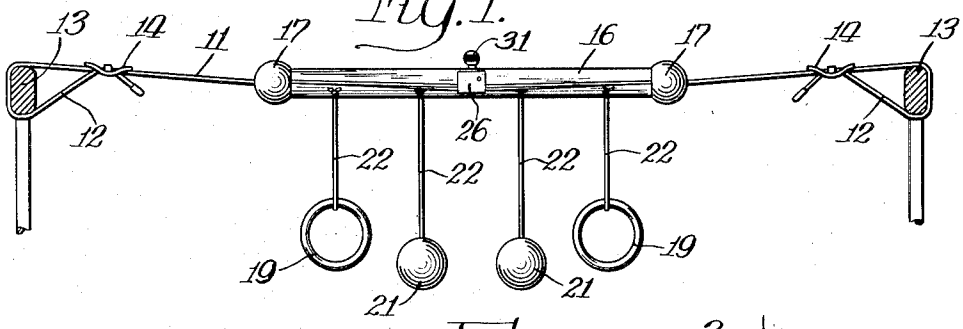


Fig. 2.

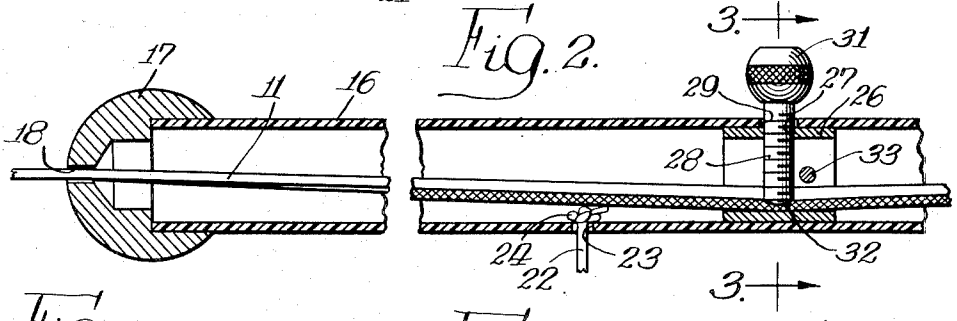


Fig. 3.

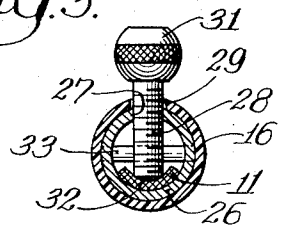


Fig. 4.

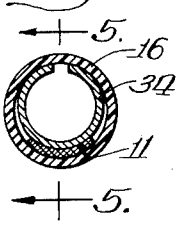


Fig. 5.

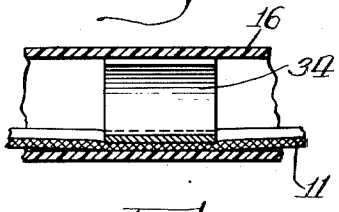


Fig. 6.

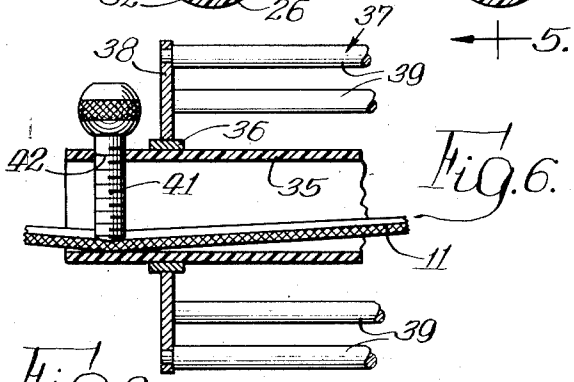


Fig. 7.

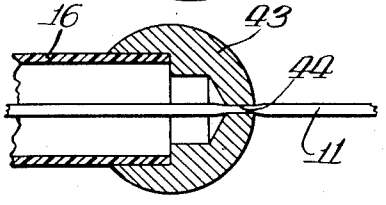
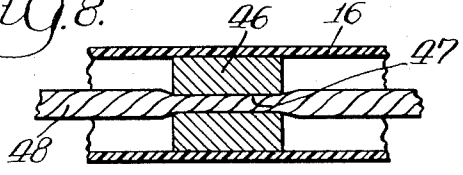


Fig. 8.



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INFANT EXERCISER AND TOY

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12 Claims. (Cl. 46—32)

This invention relates to an infant exerciser or toy of the type adapted to be suspended across a crib or the like for use by infants.

Infant exercisers and amusement devices of the foregoing character are widely used for attachment to a baby crib or play-pen or the like. Such a device usually consists of a bar having a plurality of toys or exercising elements suspended therefrom, and the bar is mounted across the crib by a pair of flexible straps or tapes connected to the ends of the bar and adapted to be tied or otherwise fastened to the top opposite side bars of the crib. The infant lying in the crib can play with the suspended toys or exercising elements using either his hands or his feet or both, thereby providing entertainment for the child and also contributing to muscular growth and development.

However, in articles of this type as heretofore known, difficulty is frequently encountered in positioning the device at a desired location between the sides of the crib. The end straps or tapes are usually permanently attached to the suspension bar and any adjustment of the bar between the sides of the crib to correspond to the position of the infant in the crib must be accomplished by manipulating the straps at the points of attachment to the sides of the crib. Obviously, this is a clumsy and inconvenient procedure.

Accordingly, a primary object of my invention is to provide an infant exerciser and toy of the class described having novel adjustable means for positioning the device at any predetermined location between the sides of the crib.

A further object of the invention is to provide a toy and exercising device for infants having novel adjustable means for suspending the device across a crib or the like.

Another object of the invention is to provide an improved toy and exercising device for infants which can be secured between the sides of a crib or the like and which can thereafter be shifted in a simple and convenient manner to any desired position between the sides of the crib without the necessity of manipulating the connections at the sides of the crib.

Still another object of the invention is to provide a novel toy and exercising device for use on an infant's crib which is provided with novel means for releasably retaining the device at any desired position between the sides of the crib.

Other objects and advantages of the invention will become evident from the subsequent detailed description taken in conjunction with the accompanying drawing, wherein:

Fig. 1 is a front elevational view of one specific embodiment of the invention as attached to the opposite sides of a crib or the like;

Fig. 2 is a fragmentary longitudinal sectional view on an enlarged scale of the device shown in Fig. 1;

Fig. 3 is a transverse sectional view taken along the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary transverse sectional view showing a modified form of the invention;

Fig. 5 is a longitudinal sectional view taken along the line 5—5 of Fig. 4;

Fig. 6 is a fragmentary longitudinal view of another modification of the invention;

Fig. 7 is a fragmentary longitudinal sectional view of an end portion of still another modification of the invention; and

Fig. 8 is a fragmentary longitudinal sectional view showing an additional embodiment of the invention.

Broadly speaking, the foregoing objects of the invention are realized by providing an elongated continuous flexible supporting element, such as a tape, strap, rope, or the like, which is secured to the opposite sides of the crib and which has mounted thereon in slidable relation an amusement or exercising device, e. g. a suspension bar from which a plurality of toys or exercising elements of various types may be suspended over the infant in the crib. Because of this sliding relationship between the suspension bar and its supporting element, the bar can be readily positioned at any desired location between the sides of the crib, and a frictional retaining means is also provided for holding the suspension bar in the desired location along the supporting element.

In Figs. 1 to 3 of the drawing, the flexible supporting element is in the form of an elongated strap or tape **11** extending across a crib or the like and having its opposite end portions looped, as at **12**, around the top opposite side bars of the crib, designated at **13**, and secured by a pair of buckles **14** of the usual type. The suspension bar, in this case, is in the form of an elongated hollow tube **16** mounted on the strap **11** which extends axially through the tube. This hollow tubular member **16** may be made of any suitable light weight material such as the transparent plastic material shown in the drawing which is particularly useful and attractive. Although a round tube is shown in the drawing, it will be evident that a tube having a square or other suitable cross-sectional shape could also be used. The tube **16** is supported on the strap **11** by means of a pair of end closures which in this instance are in the form of caps **17** secured to the opposite ends of the tube **16** and having enlarged slots or apertures **18** through which the strap **11** extends in freely slidable relation. The end caps **17** may also be made of plastic or any other suitable material which may be attractively formed and decorated. As shown in Fig. 2, the caps **17** are cemented or otherwise more or less permanently connected to the ends of the tube **16** in order to prevent inadvertent detachment of the caps from the tube. However, it will be understood that a detachable relationship may be provided when desired such as by a tight frictional fit or a threaded fit of the caps on the end portions of the tube. Of course, instead of caps **17** the ends of the tube **16** could be provided with internally fitting apertured plugs.

In this embodiment of the invention, a plurality of toys or exercising elements of any one of a number of types, such as the rings **19** and the balls **21**, are suspended from suitable strings **22** which are connected to the tube **16**. In this instance, the wall of the tube **16** is formed with a plurality of small apertures **23** through which the strings **22** extend, the strings being knotted, as at **24**, for attaching the same to the tube. It will be understood that any suitable toys or exercising elements for manipulation by the hands or the feet of the infant may be suspended from the tube **16**.

As will be apparent from the foregoing construction, the tube **16** can be shifted axially along the supporting strap **11** by reason of the slidable relation of the strap in the apertured caps **17**. For retaining the tube **16** in any desired location along the strap **11**, I provide a suitable retaining means which in this embodiment of the invention is in the form of a releasable locking device carried

in the tube **16** and coacting with the strap **11**. Thus, a tubular bushing **26** of metal or the like is fitted more or less centrally between the ends of the tube **16** with the tape **11** extending axially through the bushing. A threaded aperture **27** is provided in the wall of the bushing **26**, and a threaded locking element or screw **28** extends radially through an unthreaded opening **29** in the tube **16** and also through the threaded opening **27** in the bushing **26** so that the inner end of the screw **28** can engage the tape **11**. The outer end of the screw **28** has a knurled enlargement or finger piece **31** for manipulating the screw.

As will be readily understood, by screwing the locking member **28** inwardly relative to the tube **16** and the bushing **26**, the tape **11** can be frictionally clamped between the bottom wall of the bushing **26** and the inner end, designated at **32**, of the screw for locking the tube **16** in position longitudinally of the tape **11**. By loosening the locking element **28**, the frictional retaining pressure on the tape **11** is released and any desired adjustment in position of the tube **16** along the tape **11** can readily be made. Because the tape **11** is flat and is appreciably wider than it is thick, a transverse pin **33** extends diametrically across the bushing **26** in order to prevent lateral folding, rolling, or bunching of the tape **11**. As best seen in Fig. 3, the tape **11** is thereby maintained in laterally spread out relation across its width so that it can be properly clamped against the underlying surface of the bushing **26** by engagement of the inner end **32** on the screw **28**. The bushing **26** is held in fixed position between the ends of the tube **16** by the retaining action of the radial locking pin **28** which extends through the aperture **29** in the tube **16** and engages the threaded aperture **27** in the bushing.

In Figs. 4 and 5 a different frictional retaining means is shown. Thus, the plastic tube **16** is fitted internally with a split resilient sleeve or generally C-shaped clamp **34** which is preferably made of spring metal or the like. The tape **11** is interposed in frictional clamping relation between the resilient sleeve **34** and the tube **16**, the split sleeve **34** being designed so that it is in a somewhat compressed or contracted condition when inserted in the tube **16** so as to exert the desired frictional clamping pressure against the tape **11**. In this form of the invention, the split sleeve or clamp **34** is selected to provide a degree of frictional pressure sufficient to hold the tube **16** against inadvertent longitudinal movement along the tape **11** as a result of any forces applied to the tube by the infant during normal use of the device. However, the clamping pressure exerted on the tape **11** between the sleeve **34** and the wall of the tube **16** is limited so that an adult can readily overcome the normal frictional retention and shift the tube **16** along the tape **11** to any desired position.

In Fig. 6, a slightly different embodiment of the invention is illustrated in connection with a rotatable amusement device known as a foot exerciser. An elongated tube **35** has rotatably mounted thereon by suitable bearings, one being shown at **36**, an elongated cage **37** having end walls **38** and a plurality of circumferentially spaced rods or bars **39** extending axially therebetween. Although not necessary, the cage **37** may contain a plurality of balls, marbles, or the like (not shown) which provide added amusement for the infant as the cage is rotated by the feet of the infant in the crib. Also, if desired, the member **37** may have completely closed walls so as to form in effect a rotating drum instead of the cage construction shown in the drawing. The tape **11** extends through the non-rotating tube **35** as before, and a locking screw **41** (similar to the screw **28**) extends radially through a threaded aperture **42** in the wall of the tube **35** adjacent one end of the cage **37**. By tightening the screw **41** the tape **11** is clamped against the inner wall of the tube **35** for holding the device in position longitudinally of the tape **11**, but upon release of the screw **41** the tube **35** and cage **37** mounted thereon can be shifted to any desired

position along the tape **11**. If desired, instead of a continuous tube **35** extending completely through the axis of the cage **37**, it will be understood that a pair of short tubular portions may be provided, one at each end of the cage as bearing surfaces.

In Fig. 7, still another modification of the frictional retaining means is shown. In this case, the plastic tube **16** is provided with a pair of apertured end caps **43** which are generally similar to the caps **17** heretofore described. However, the end apertures or slots, indicated at **44**, in the caps **43** are relatively restricted as compared with the dimensions of the tape **11** so that a limited degree of frictional retaining pressure is exerted by the caps **43** on the tape. The tape **11** is appreciably wider than it is thick and the elongated slot **44**, although wide enough to accommodate the tape **11**, is narrower than the thickness of the tape. Consequently, as will readily be seen from Fig. 7, the portion of the tape **11** which passes through the restricted slot **44** is compressed sufficiently to provide a predetermined degree of tightness of fit at the opposite ends of the suspension bar. This tightness of fit is sufficient to prevent intentional shifting of the tube **16** by the efforts of the infant and at the same time allows the desired adjustment to be made by exerting more than normal forces on the device to move the same along the tape **11**. Obviously, only one of the caps **43** need be provided with a restricted opening **44** if desired.

In Fig. 8 still another modification of the same principle is illustrated. In this embodiment, the plastic tube **16** is rigidly fitted with a plug or bushing **46** having an axial bore **47**. The flexible supporting element in this instance is in the form of an elongated rope or cord **48** which extends through the bore **47** of the bushing **46**. The bore **47** is relatively restricted as compared with the diameter of the cord **48** so as to effect compression of the latter. It will be apparent that the frictional retaining pressure exerted by the bushing **46** on the cord or rope **48** likewise serves to hold the device in predetermined position along the cord **48** while in use by the infant but at the same time permits longitudinal adjustment by the application of above average shifting forces.

From the foregoing, it will be seen that my invention provides a substantial improvement over infant devices of this character as heretofore known in that it permits adjustment of the position of the amusement device between the sides of the crib or the like in a rapid and convenient manner without the necessity of disturbing the connections at the sides of the crib. Moreover, the constructions are relatively simple and inexpensive to manufacture. The retaining means may be in the form of a simple frictional pressure applying means which does not require manipulation or it may take the form of a positive locking device which requires release before the desired adjustment can be made.

Although the invention has been described in connection with certain specific structural embodiments thereof, it will be understood that various modifications and equivalent structures may be resorted to without departing from the scope of the invention as defined in the appended claims.

I claim:

1. An infant exerciser and toy comprising an elongated flexible supporting element of pliable compressible material adapted to be secured at its ends to the opposite sides of a crib, an elongated tube mounted on said supporting element with the latter extending axially through the tube, closure means at the opposite ends of said tube having apertures therethrough for said supporting element, said tube being supported by the apertured closure means in sliding relation on said supporting element and being adapted to support an amusement or exercising means, and means carried by said tube and frictionally engaging and compressing said supporting element for retaining the tube in desired position longitudinally of said supporting element.

2. An infant exerciser and toy comprising an elongated flexible supporting element adapted to be secured at its ends to the opposite sides of a crib, an elongated tube adapted to have amusement of exercising means supported thereon and having an internal sleeve element mounted therein, said supporting element extending axially through said tube and said sleeve element, and threaded locking means projecting radially through said tube and said sleeve element, said locking means being adapted to be screwed inwardly of the tube whereby to clamp the supporting element between said sleeve and the inner end of said locking means for releasably retaining said tube in desired position longitudinally of said supporting element.

3. An infant exerciser and toy comprising an elongated flexible supporting element adapted to be secured at its ends to the opposite sides of a crib, an elongated tube adapted to have an amusement or exercising means supported thereon and having a sleeve bushing fixedly mounted in concentric relation within said tube, said supporting element extending axially through said tube and said bushing, said bushing having a threaded radial aperture in the wall thereof, and a threaded locking pin extending radially through the wall of said tube and through the threaded aperture in the wall of said bushing whereby to retain the bushing in fixed relation axially of the tube, said locking pin being adapted to be screwed inwardly of the tube whereby to press the inner end of the locking pin against said supporting element for frictionally clamping the latter against said bushing and thereby releasably locking the tube in desired location along said supporting element.

4. An infant exerciser and toy comprising an elongated flexible supporting element adapted to be secured at its ends to the opposite sides of a crib, an elongated tube adapted to have an amusement or exercising means supported thereon and having an internal sleeve mounted therein, said supporting element extending axially through said tube and said sleeve, a threaded locking member extending radially through said tube and said sleeve for releasably engaging said supporting element and clamping the same against said sleeve, and means extending transversely within said tube across said supporting element and adjacent said locking member for maintaining the supporting element in operative clamping position between the locking member and the sleeve.

5. An infant exerciser and toy comprising an elongated flat flexible tape adapted to be secured at its ends to the opposite sides of a crib, an elongated tube adapted to have amusement or exercising means supported thereon and having an internal sleeve bushing mounted therein, said tape extending axially through said tube and said bushing, a threaded locking member extending radially through the walls of said tube and said bushing for releasably clamping the tape against the bushing, and a transverse pin extending rigidly across said bushing adjacent said locking member for preventing the tape from undergoing lateral folding or rolling whereby to maintain the tape in laterally spread out condition to be clamped between the locking member and the bushing.

6. An infant exerciser and toy comprising an elongated flexible supporting element of pliable compressible material adapted to be secured at its ends to the opposite sides of a crib, an elongated tube mounted on said supporting element with the latter extending axially through the tube, means at the opposite ends of the tube providing restricted openings through which said element extends, said tube being supported at said openings in longitudinally slidable relation on said supporting element and being adapted to mount an amusement or exercising means, and means carried by said tube and frictionally engaging and compressing said supporting element for retaining the tube in desired position longitudinally of said supporting element.

7. The device of claim 6 further characterized in that said last-named means comprises an adjustable locking member adapted to engage the supporting element under predetermined frictional pressure for securely holding the tube in any desired position, said locking member being releasable for permitting longitudinal movement of the tube along said supporting element.

8. An infant exerciser and toy comprising an elongated flexible supporting element of pliable compressible material adapted to be secured at its ends to the opposite sides of a crib, an elongated tubular member having a plurality of apertures in the wall thereof and mounted in axially slidable relation on said supporting element with the latter extending axially through said tubular member, a plurality of flexible strings depending from said apertures for suspending a plurality of exercise and toy elements, said strings having enlarged terminal portions within the tube for securing the strings in said apertures, and means carried by said tubular member and frictionally engaging and compressing said supporting element for retaining the tubular member in desired position longitudinally of said supporting element, said enlarged terminal portions underlying said supporting element so as not to interfere with sliding adjustment of the tubular member along the supporting element.

9. The device of claim 6 further characterized in that said last-named means comprises resilient compressible clamping means mounted within said tube with said supporting element being interposed between said clamping means and the inner wall of the tube.

10. The device of claim 9 further characterized in that said clamping means comprises a resilient split sleeve element fitted within said tube in substantially compressed relation with said supporting element being interposed between the sleeve element and the inner wall of the tube.

11. The device of claim 6 further characterized in that said tube is provided at its opposite ends with a pair of apertured closure members with the opening in at least one of said closure members being sufficiently restricted relative to the size of said supporting element so that said tube is frictionally retained in desired location along said supporting element but is adapted to be shifted thereon by a force sufficient to overcome the frictional resistance at said restricted opening.

12. The device of claim 11 further characterized in that said supporting element comprises a flat tape of greater width than thickness and the opening in said one closure member comprises an elongated slot which is long enough to accommodate the width of the tape but is narrower than the thickness of the tape whereby to exert a constrictive effect on the latter.

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