

J. A. HORNSBY.

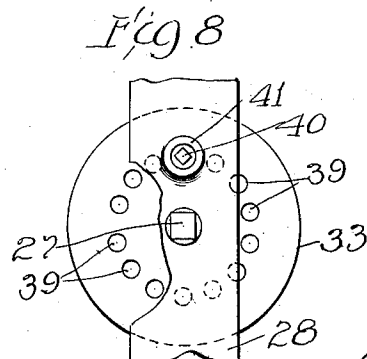
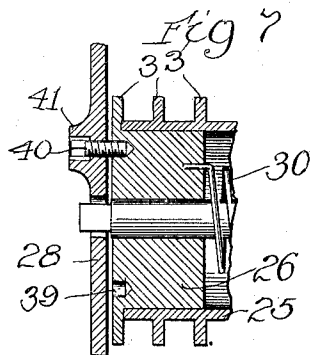
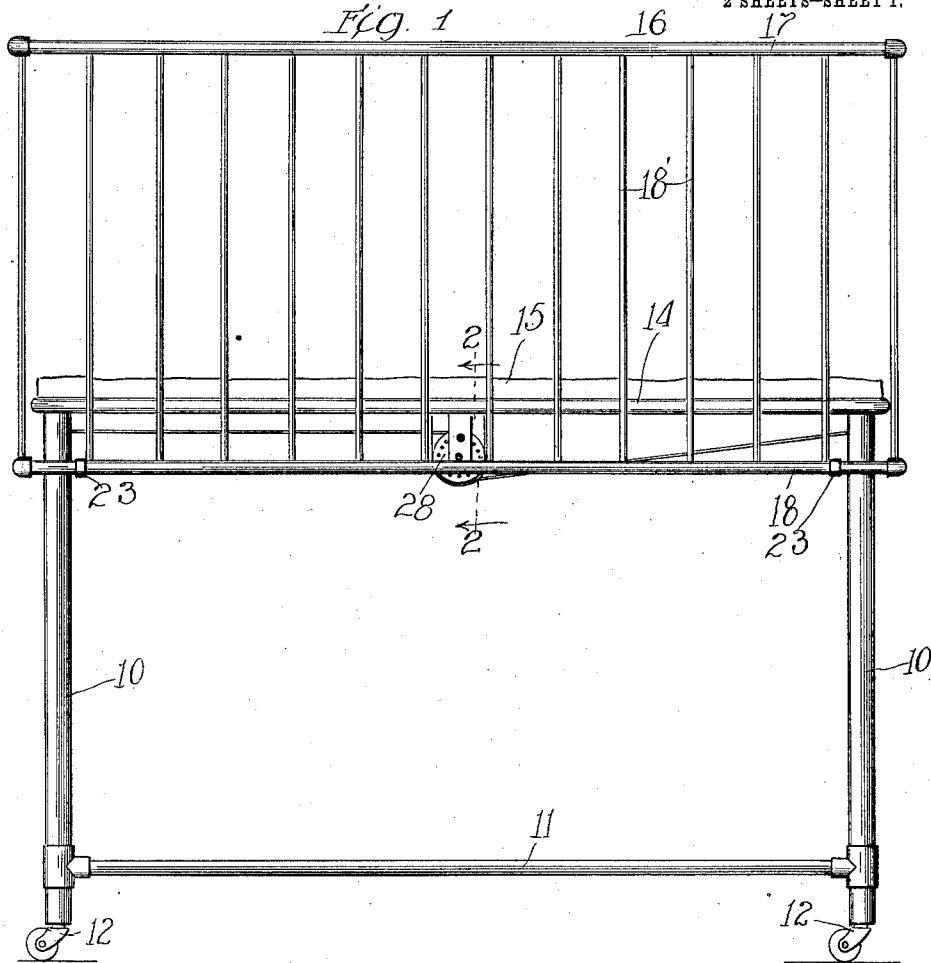
BED.

APPLICATION FILED APR. 1, 1910.

1,043,701.

Patented Nov. 5, 1912.

2 SHEETS-SHEET 1.



Witnesses:
H. R. L. White
R. A. White.

Inventor:
John A. Hornsby.

By *Jessie Bain* and *May Atkins*

J. A. HORNSBY.

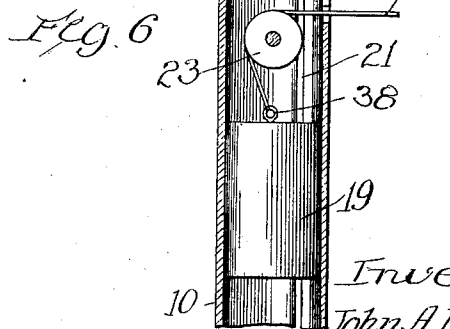
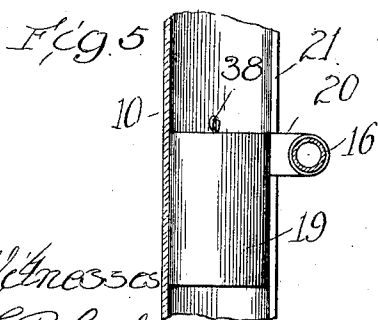
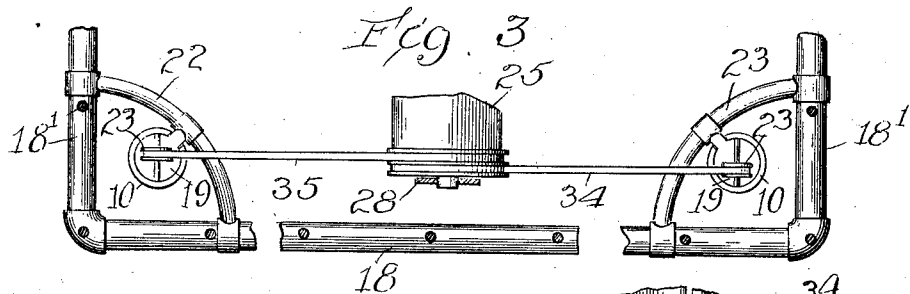
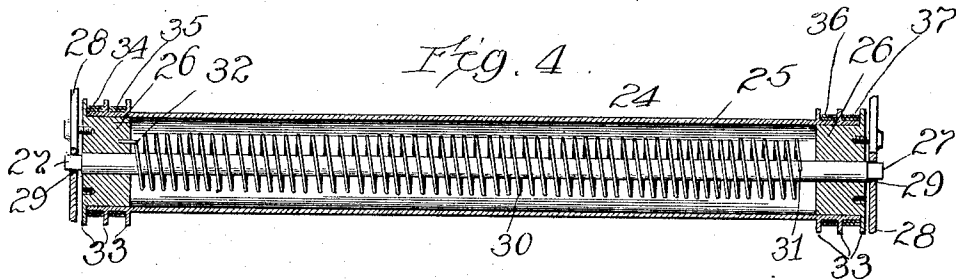
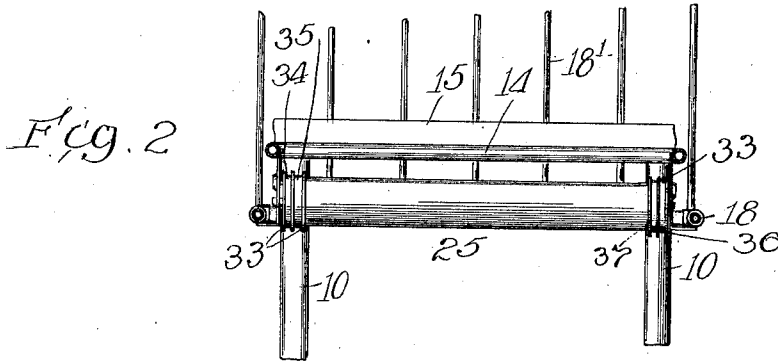
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2 SHEETS—SHEET 2.



Witnesses
H. R. White
R. G. White.

Inventor:
John A. Hornsby
By Fannie Bain and Mary Alley's

UNITED STATES PATENT OFFICE.

JOHN A. HORNSBY, OF CHICAGO, ILLINOIS.

BED.

1,043,701.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed April 1, 1910. Serial No. 552,869.

To all whom it may concern:

Be it known that I, JOHN A. HORNSBY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Beds, of which the following is a specification.

My invention relates to improvements in beds, and more particularly to beds for infants.

One of the objects of my invention is to provide in a bed for infants a vertically movable retaining cage, which may be vertically elevated, or depressed so that its top surface will not be above the mattress of the bed.

Another object of my invention is to provide a means for suspending and balancing the retaining cage, to be capable of automatic movement to its highest position when the cage is released.

Another object of my invention is to provide a locking device which will positively lock the cage in any position within its vertical path of movement.

Still another object of my invention is to provide a device of the character described, which shall be cheap of construction; simple in design and operation; which will be sanitary in all respects; and which is so constructed as to occupy a minimum floor space without expanding wings or pivoted sides that require space within which to complete their movements.

Other and further objects of my invention will become apparent to persons skilled in the art from a consideration of the following description taken in conjunction with the drawings, wherein—

Figure 1 is a side elevation of my bed, as it appears complete; Fig. 2 is a fragmentary section taken on line 2—2 of Fig. 1; Fig. 3 is a broken-away plan view, showing a spring drum or barrel, and its means of connection with the vertically moving cage of the bed; Fig. 4 is a central longitudinal section of the spring drum, for containing the spring, which serves to automatically balance the bed cage throughout its vertical movement; Fig. 5 is a detail broken-away enlarged section of one of the posts of the bed, showing a plunger capable of vertical movement therein connected to the cage of the bed, and the means for guiding the cage

in its vertical movement; Fig. 6 is a section through one of the posts, showing the ribbon of the spring roller connected to the plunger to which the bed cage is attached; Fig. 7 is a detail of a locking device, for locking the bed cage in any desired vertical position, showing the means for locking the bed and a portion of the spring drum or barrel, in cross section; and Fig. 8 is an end view of the drum and a face view of the lock.

In all of the views, the same indicating characters refer to similar parts.

The bed proper is composed of two relatively movable parts, a platform having four posts, 10, joined at their bottoms by reach rods, 11, as usual, and a cage. Each post 10 is provided with casters, 12, by means of which the location of the bed may be changed. The four posts are joined by a mattress-supporting structure, 14, of any suitable height upon which the mattress, 15, is to be placed. Each of the posts, 10, is slotted in a longitudinal vertical direction, as clearly shown in Figs. 3 and 5.

The bed cage, indicated generally by 16, is composed of two quadrilateral frames, 17 and 18, spaced apart, preferably composed of tubing or pipe and joined by vertical slats or tubes, 18', separated at suitable distances, and for the purposes intended. The bed cage as described is a separate and independent entity of the bed platform. It is, however, of such size as to completely encompass or surround the bed platform, and is capable of vertical movement thereon. In each of the slotted bed posts, 10, is a plunger, or guide, 19, which is capable of free vertical movement therein. Each guide is provided with a projection, 20, which extends through the slot 21 of the bed post. At each corner of the lower frame, 18, of the cage is a bracket 22, to which the projection 20 of the plunger 19 is connected as shown in section in Fig. 5. At the top of each bed post is an easy-running flanged pulley, 23.

Located near the center of the bed and immediately below the top horizontal frame thereof, is a spring roller, generally indicated by 24. This roller, or drum, is composed of a tube, 25, having rather heavy or thick ends, 26, at each of its terminals. It is supported on a shaft, 27, which in turn

is held in position with reference to the top of the bed by brackets, 28. Each end of the shaft 27 is squared, as shown at 29, the squared ends being held from turning in a similarly shaped perforation in the bracket, 28.

Surrounding the shaft 27 and extending from end to end of the inclosing cylinder, is an open helical spring, 30, one end of which is connected to the shaft, as at 31, the other end being connected to one of the ends, 26, of the drum 24, as at 32. The ends of the roller or cylinder, 24, are employed as drums for the ribbon to be wound thereon. The respective drums are separated by flanges, 33. Ribbons 34, 35, 36, and 37, are each connected, by one end, to the drum or cylinder, 25, in such a way that when the cylinder is turned in one direction, the ribbons will be wound upon the drum, and when the drum is turned the other way, the ribbon will all be unwound from the drum. This arrangement provides that the ribbon on one side of the drum shall lead to the upper surface of the drum, and those on the opposite side shall lead to the lower surface of the drum, as clearly indicated in Fig. 1. Each of the ribbons is connected to respective plungers, 19, as at 38, Figs. 5 and 6.

The ends, 26, of the drum 24 are perforated in a circumferential direction, or contain depressions, as shown at 39, into any one of which the screw-threaded bolts, 40, may be inserted so as thereby to lock the spring drum, and thus prevent the rotation thereof and the accidental or unintentional vertical displacement of the surrounding cage. If desired, a hollow boss, as 41, may surround the bolts 40, so that a key will be necessary to move the bolt to unlock the drum; or if necessary the bolts may be each provided with a knurled or thumb-screwed projecting head tip, so that it may be turned in and out without the necessity of a detachable key.

When the cage, 16, of the bed is depressed, carrying down with it the four plungers, which are connected by ribbons 34, 35, 36 and 37 to the drum, the drum 24 is thereby revolved around the shaft, 27, and the spring 30 is tightened or wound up, so to speak. The spring, 30, may be of such strength, with respect to the friction exerted by the moving cage, that the cage will immediately and automatically be raised by means of the spring as soon as it is released, and therefore a latch, shown in Figs. 7 and 8, is provided, whereby the drum may be locked in any given position to positively hold the cage at selected height. To raise the cage, the bolt 40 may be turned so that it no longer makes contact with the end 26 of the drum 24, when the spring, contained within the drum, will be sufficiently tensioned to wind up the ribbons and thereby lift the

respective plungers, 19, and the cage connected therewith. If desired, the tension of the spring may be so adjusted that it will be just sufficient to balance or hold the cage in any given position.

My new bed is especially applicable to use for infants in hospitals, as by its use the occupying infants may be handled and manipulated without the presence of the surrounding cage usual in constructions of this character, where the cage is inseparable from the other portions of the bed. And it is especially valuable for nursing mothers, as the cage may be easily and conveniently depressed, the infant removed and replaced, and the cage then elevated to its normal protecting position, without the instrumentality of any small parts, latches, or the like, necessary to be handled or manipulated for the operation.

My bed is so constructed that pressure at any one point on cage will be sufficient to lower it to any desired position, as the simultaneous movements of the ribbons and the lowering of the respective plungers, practically without any induced friction or cramping action, contributes to the perfect operation of my device. The spring drum is firm and strong, it is durable, and vermin or insect proof, so that it is entirely sanitary; the structure does not offer any harborage for deleterious germs or insects of any character.

Having fully described my invention, what I claim is:

1. In a bedstead of cot type, the combination of a mattress platform, corner posts depending from said platform, a vertically movable cage inclosing said bedstead, and supported by said posts and platform, guides afforded by said posts, and means to hold said cage in any position inclosing said bedstead.

2. In a bedstead of cot type, the combination of a mattress platform, corner posts depending from said platform, each being hollow, a vertically movable plunger in each post, a vertically movable cage inclosing said bedstead, connections between each plunger and the appropriate corner of said cage, and means associated with said plungers to hold said cage in any position inclosing said bedstead.

3. In a bedstead of cot type, the combination with a mattress supporting platform, of four hollow longitudinally-slotted depending legs, a vertically movable cage, guides within said legs connected to the cage, means including a rotatable drum, to hold said cage in any position inclosing the bedstead, and flexible mediums connecting said guides and drum for rotation of the drum upon movement of said guides.

4. In a bed, a platform having four hollow longitudinally slotted posts, movable

guides within said posts, and projecting through said slots, a vertically movable cage, secured to said projections, a spring propelled drum provided with means connected
5 with said guides to raise the cage, and a lock device to positively retain the cage in locked position.

5. In a bed of the character described, a bed platform, and a cage vertically movable
10 with respect thereto, of a spring-driven drum supported by the bed, a stationary shaft around which said drum is revoluble, a spring within said drum connected to said drum and shaft, and lifting means connect-
15 ing said drum and cage.

6. In a bed of the character described, a movable frame, a spring driven drum, closed at both ends, a stationary shaft, fixed to and supported by said bed, transversely of its
20 length, around which said drum is revolu-

ble, connecting means between the cage and drum, and a spring within said drum.

7. In a bed, the combination with a mattress-supporting platform, of four hollow
longitudinally slotted depending legs termi- 25
nating at the platform, a vertically movable cage, and guides within said legs connected to said cage.

8. In a bed, the combination with a mattress-supporting platform, of four hollow 30
longitudinally slotted depending legs, a vertically movable cage, and guides within said legs connected to the cage.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

JOHN A. HORNSBY.

In the presence of—

MARY F. ALLEN,

W. LINN ALLEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."