Jan. 13, 1931. J. W. SHAW 1,788,960

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Filed Dec. 3, 1926 2 Sheets-Sheet 1

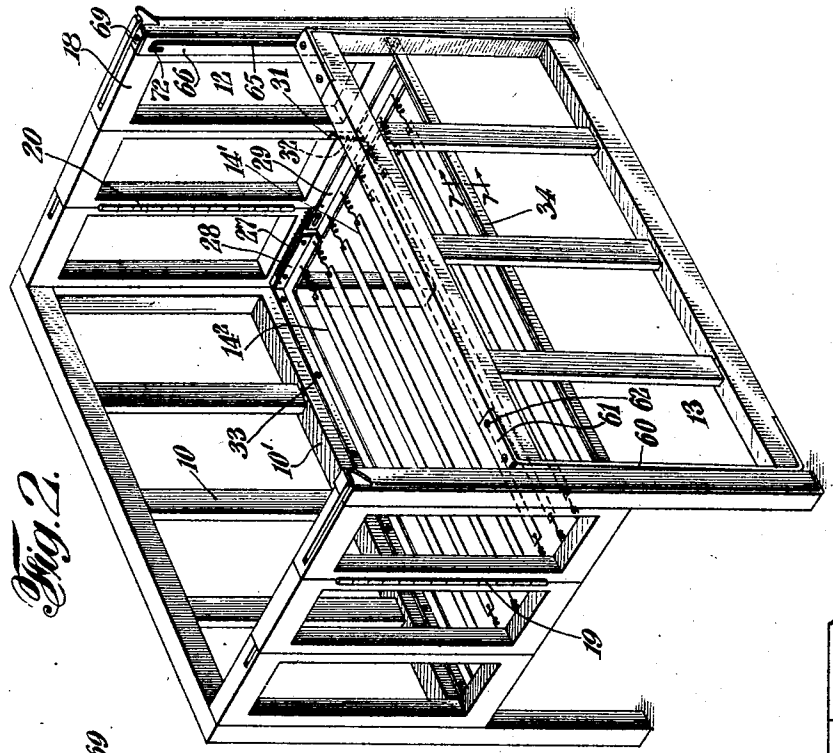


Fig. 2.

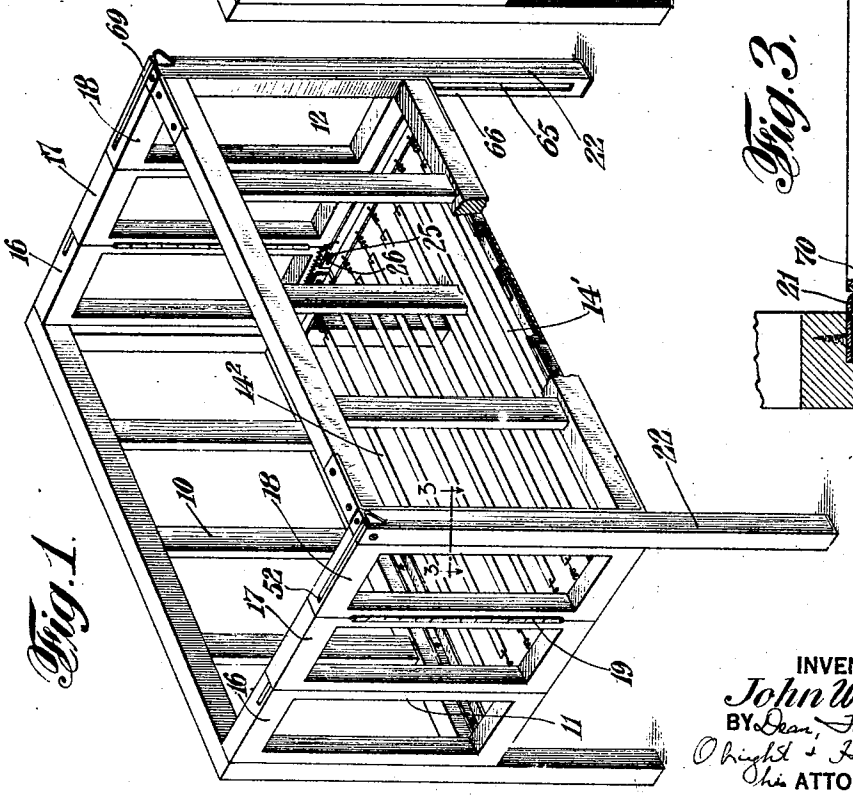


Fig. 1.

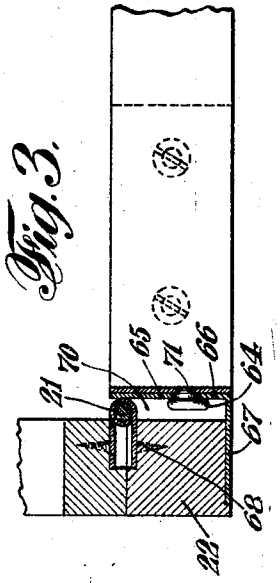


Fig. 3.

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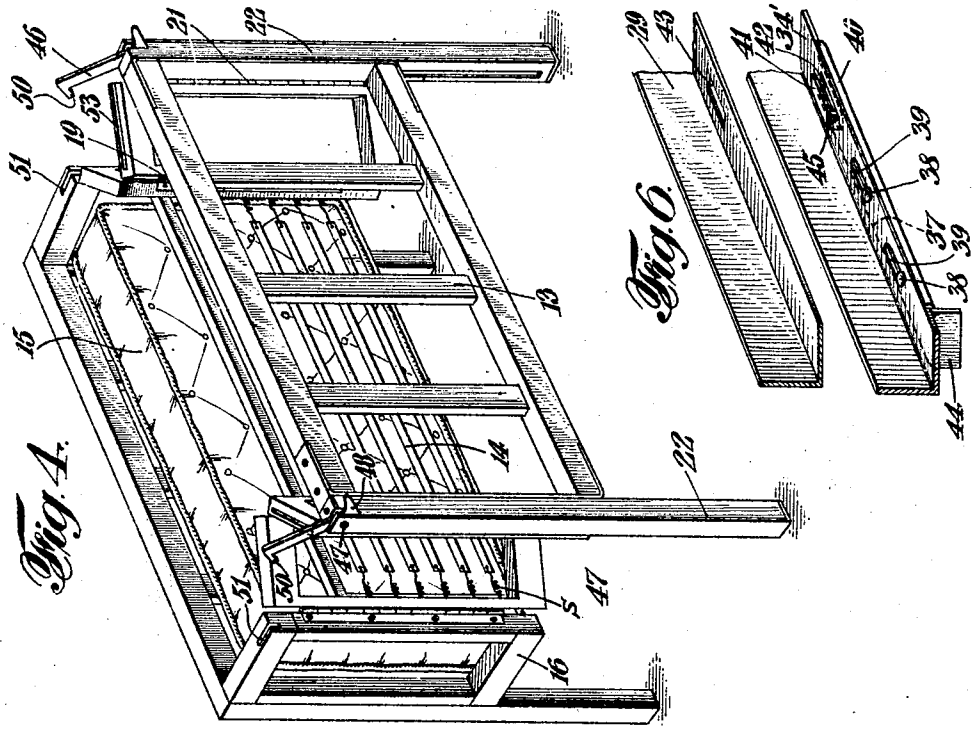


Fig. 4.

Fig. 6.

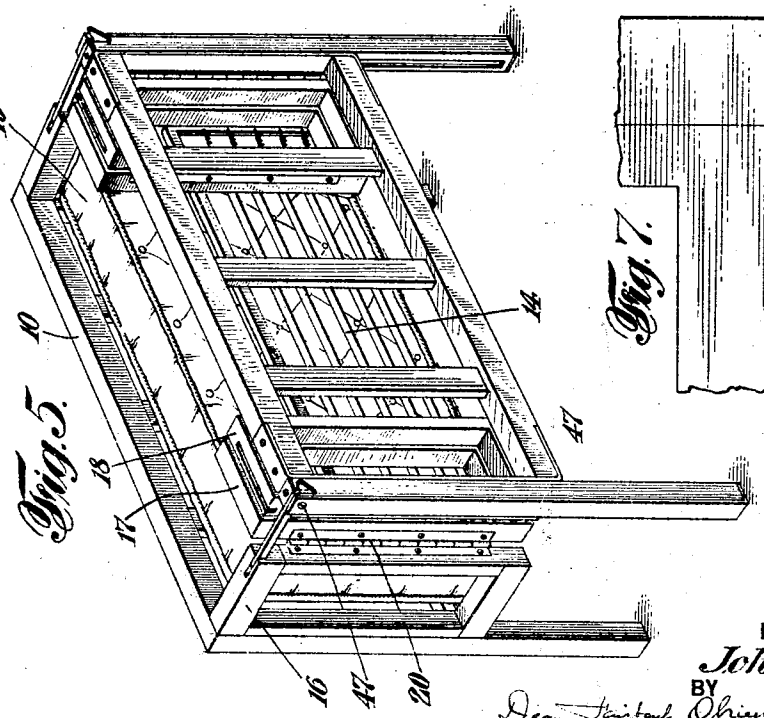


Fig. 5.

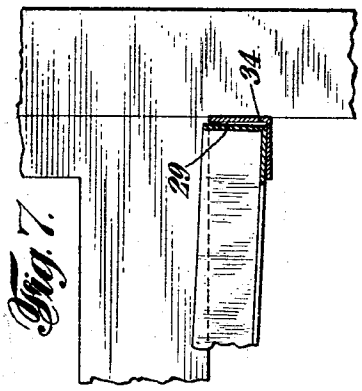


Fig. 7.

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Patented Jan. 13, 1931 1,788,960

UNITED STATES PATENT OFFICE

JOHN W. SHAW, OF NORWOOD, NEW JERSEY

CRIB

Application filed December 3, 1926. Serial No. 152,319.

Among the objects of the present invention are to provide an infants' crib of rugged construction which is readily collapsible into a compact volume taking up a minimum of space for convenience in handling, storage, or transportation and accommodating the crib mattress in protected position in a unitary assembly with the collapsed crib without distortion or excessive compression of said mattress, regardless of the construction or thickness of the latter.

Other objects are to provide a crib of the character mentioned which can be collapsed or distended with a minimum of effort, and without the need for any tools whatsoever, and which requires no removable rods, frames, or other parts that become separated from the completed structure either in collapsing or distending the same, and which in use has the appearance of the familiar modern crib and involves no sacrifice of security or comfort as compared with conventional infants' cribs.

Another object is to provide an infants' crib, the drop side of which is easily manipulated and avoids the use of small removable latch bars, rods, springs, or the like.

To carry out the foregoing objects, I provide a crib having a fixed side frame of usual construction, a drop side frame and end frames, the latter of collapsible construction to permit the side frames to be moved toward each other to a degree such as to afford a storage space therebetween in collapsed state for accommodating the mattress in flat undistorted upstanding position. To this end I prefer to provide a bed spring which will readily tilt upward about a hinge near one of the side frames to permit the collapse of the crib, and to leave free the space in which the mattress is accommodated.

In a preferred construction, the end frames of the crib comprise each a fixed section rigid with the fixed side frame, and inturning or infolding segments connected between the edges of said fixed sections, and the drop-side frame. Preferably the bed spring frame aids to maintain distended the infolding segments in the operative state of the crib.

Latching means is preferably provided for locking the posts of the drop-side frame with respect to the fixed end sections in the collapsed state of the crib, and in a preferred embodiment these latches alternatively coact each with a corresponding infolding segment of the end frame in the operative state of the crib.

In the accompanying drawings in which is shown one of various possible embodiments of the several features of the invention

Fig. 1 is a perspective view of one embodiment of the crib in operative state showing parts broken away, to better reveal details of the construction.

Fig. 2 is a view similar to Fig. 1 showing the crib with the drop side lowered,

Fig. 3 is a fragmentary sectional detailed view on a larger scale taken on line 3—3 of Fig. 1,

Fig. 4 is a perspective view similar to Fig. 1 showing the crib in process of being collapsed,

Fig. 5 is a view similar to Fig. 4 showing the crib in completely collapsed state,

Fig. 6 is a fragmentary detailed view on a larger scale indicating the construction of latching means for the spring, and;

Fig. 7 is a fragmentary detailed view on a larger scale indicating a detail of the spring construction.

In the accompanying drawings I have shown a crib including a more or less conventional fixed side frame 10, end wall frames 11 and 12, a drop-side frame 13, a metal strip support or spring 14 and a mattress 15.

In the embodiment shown, the end frames each include a fixed vertically extending section 16 anchored to the fixed side frame 10 and end frames each with two leaves or segments 17 and 18 of equal width having an intermediate hinge 19 to permit infolding movement. The segment 17 is hinged at 20 to the fixed section 16 and the segment 18 at its free edge at 21 to the post 22 of the drop side frame. The two end frames being identical, the same reference characters are employed at corresponding elements thereof.

In the preferred embodiment the bed spring frame is hinged so as to tilt out of the way to permit a collapsing movement of the

crib. The spring is shown in two sections, a wider tilting section 14′ attached to a narrower fixed section 14^2 by screws 25 extending through elongated slots 26 and serving as hinge pins for the tilting section. A coil spring 27 is anchored to the frame 28 of the fixed spring section at one end, and to the frame 29 of the hinged spring section at the other end, said spring thereby tending to tilt upward the hinged part 14′ of the spring to permit collapse of the crib.

The mattress support or spring, as shown, comprises longtitudinal strips or ribbons of metal, supported by coil springs anchored at the spring frame ends.

The end parts of the frame 29 of the hinged spring portion exert outward pressure when in lowermost position, against the extended infolding segments 17—18 of the end frames and thereby aid in maintaining the latter in distended position. For this purpose, there is preferably disposed at the lower end of the median part of each of the end frames, a metal camming lug 31 secured near the median hinge of the infolding segments at leaf 18 thereof, and having an outstanding curved edge 32 along which the edge of the spring frame 29 rides as it is depressed to operative position, thereby to force the infolding segments outward.

The fixed frame 28 of the bed spring is secured as by screws 33 to the rail 10′ of the fixed side frame 10 and the moving or hinged section 29 of the bed spring frame rests in operative position in an angle bar 34 connected at opposite ends to the posts 22 of the drop-side frame a little below the level of the rail 10′. By this arrangement the spring 27 is distended when the frame 29 is snapped into angle bar 34, and the contraction thereof upon mere release of the spring from bar 34 causes automatic upward tilting of the spring 14.

Any suitable latch may be provided at the angle bar 34 to lock the bed spring in operative position. I have illustratively shown a latch comprising a horizontal slidable latch bar 37 secured by studs 38, each to ride in a longitudinal slot 39 through the horizontal web 34′ of the angle bar, said latch having preferably a flange 40 riding along the edge of the angle bar. An upstanding spring latch tongue 41 on the latch bar extends through a corresponding slot 42 in the angle bar and in locked position of the bed spring through a similar slot 43 in the lateral frame bar 29 of the bed spring. The latch bar has a downturned finger piece 44 by which it may be pushed to operative or locking position after the spring has been depressed when the latch tongue 41 will overlie the frame of the bed spring.

In order to collapse the crib the finger piece 44 is simply withdrawn until the tongue 41 is arrested by its shoulder 45 and the bed spring is pushed upward at its free edge past the camming tongues 32. Upon lifting the edge of the mattress slightly, the extended coil spring 27 will now urge the hinged frame 29 of the bed spring upward to vertical position as best shown in Fig. 4 with the mattress standing on its lateral edge upon the fixed section 14^2 of the spring. Thereupon the hinged end sections fold inward to the position shown in Fig. 5 and the bed is collapsed.

Locking or latching means may also be provided to secure the crib in collapsed state. In an illustrative embodiment shown, each of the corner posts 22 of the drop side frame carries a metallic latch bar which may be a lever 46 hinged to the corner post by a cross pin 47 therethrough. The latch lever has a relatively short outer finger operating end 48 at one end and the longer latch arm 46 at its inner end. In the collapsed state of the crib, as shown in Fig. 5, the latch bars are depressed, so that the latching tongues 50 at the free extremity thereof extend into corresponding latching slots 51 in the fixed sections 16 of the end frames, thereby retaining the crib securely locked in collapsed state.

In extended condition, as best shown in Figs. 1 and 2, the latch arms 46 similarly coact with latching slots 52 in the contiguous infolding end frame segment 18. A groove 53 of the thickness of the latching arm 46 is preferably provided in the upper edge of the end frame segment to accommodate the width of said arm so that the same in latched condition comes flush with the upper edge of the crib.

To better reveal the details of the construction I have shown a crib with relatively thick posts, rails, and struts. It will be understood that the invention is adapted and preferably employed in constructions embodying parts of metal, considerably thinner than those shown and thereby affording in collapsed state an even more compact structure than that shown. The term "side frame" and "end frame" is inclusive of panel constructions such as are employed in infants' cribs, which panels may readily be employed to advantage in my construction.

The fixed end frame sections 16 preferably determine a width no greater than the thickest mattress employed with a crib, so that in collapsed state of the crib, the mattress would be laterally contacted by the fixed side frame 10 at one face and by the tilting spring area 14′ at the other, its lower edge resting upon the narrow fixed spring section 14^2. Thus, the crib in collapsed state together with the mattress and the metal strip support therefor can be handled as a single unit, and to this end the mattress need not be of any special limber or thin construction and does not suffer any distortion or twisting in positioning the same in the collapsed crib.

The collapsed crib, it will be seen, is a

stable construction, standing on its four posts, taking up little room, and is very convenient to handle. The mattress is well protected in elevated position away from the floor or wall, so that it will not become injured or soiled.

I have also shown a special construction of drop side for the crib, which is of more general application to infants' cribs, whether of collapsing or non-collapsing type. I have particularly shown a drop side construction, which provides no detachable latches, rods, screws, or springs, but is a simple unitary construction.

In the embodiment illustratively shown, the ends of the drop sides are lateral metal strips 60 bent at their ends over the upper and lower rails of the drop side to which they are secured by screws 62. Each of the metal strips 60 has a pair of runner studs 64 respectively near the upper end and near the lower end thereof. The runner studs ride in corresponding runways which may be runner slots 65 preferably extending longitudinally of metal guide rails 66 secured to the drop side posts 22. Each of these guide rails, as shown, constitutes one of the webs of a metal angle bar the other web of which is secured as by screws 68 to the end posts. A tongue 69 at the end of web 67 may be turned over the top of the corner post for greater security and protection. The web 67 of each angle bar runner rail is secured to the corner post as best shown in Fig. 3 to afford a space 70 between the runner rail and the contiguous surface of the corner post wherein ride the runner studs 64 of the drop side. The heads of the runner studs being wider than the runner slot 65, it will be understood that preferably the lateral strip 60 of the drop side and the runner rail 66 are preassembled by means of the runner studs 64, the shank of which is preferably upset at 71 upon the lateral strip.

The upper end of each runner slot is reversely bent or hook-shaped at 72 from which it will be apparent that when the drop side is raised to its upper limit and then pushed inward, the upper runner studs 64 will lock or hang the drop side in upper or closed position, from said upper end. Preferably the lower ends of the runner slots 65 terminate slightly above the floor, so that the lower of the studs 64 will rest thereagainst for sustaining the drop side in lower position. In order to lower the drop side from closed position, it will be understood that the same is first raised to its limit and drawn outward, so as to cause the runner studs 64 to clear the reversely turned end 72 to the runner slot 65, whereupon the drop side can be eased downward.

Thus I have provided an infants' crib, which in collapsed state affords considerable space economy while stored in the warehouse, or in the store room of a hotel as well as in transportation, and which maintains the mattress in protected, clean and inviting condition without undue strain on the ticking or stuffing. The crib is so readily distended for use, that it is convenient to maintain it collapsed in the daytime and to distend it only at such times when it is actually to be used.

I claim:

A collapsible crib including side frames and an end frame, each of the end frames including a stationary section rigidly connected to one of the side frames and a plurality of inwardly hinging sections connecting said stationary section to the other side frame, a spring constituting the bottom of the crib and including a pair of hinged sections, the narrower of which is approximately equal in width to the thickness of the mattress and of slightly less width than the stationary end frame sections, the wider section of the spring being foldable upwardly into vertical position and when in such position cooperating with the other spring section, the stationary end sections and one side wall section to define an open topped elongated narrow box-like structure for supporting the mattress on edge, the spring side of such structure being out of the path of inward folding movement of the hinged end frame sections whereby the latter may be folded inwardly into substantial parallelism with the upwardly swung spring section, latches carried by the other side section of the crib, keeper means for the latches on certain of the hinged end frame sections, said latches being operative to hold the end frame sections against inward swinging movement when engaged in said keepers, and keepers for the latches on the stationary end frame sections whereby the crib may be sustained against unfolding when in its collapsed position with the latches engaging said last mentioned keepers.

Signed at New York, in the county of New York and State of New York, this 22nd day of November, A. D. 1926.

JOHN W. SHAW.