No. 779,179. PATENTED JAN. 3, 1905.

L. PEROTTI.

AUTOMATIC CRADLE.

APPLICATION FILED MAY 23, 1904.

5 SHEETS—SHEET 1.

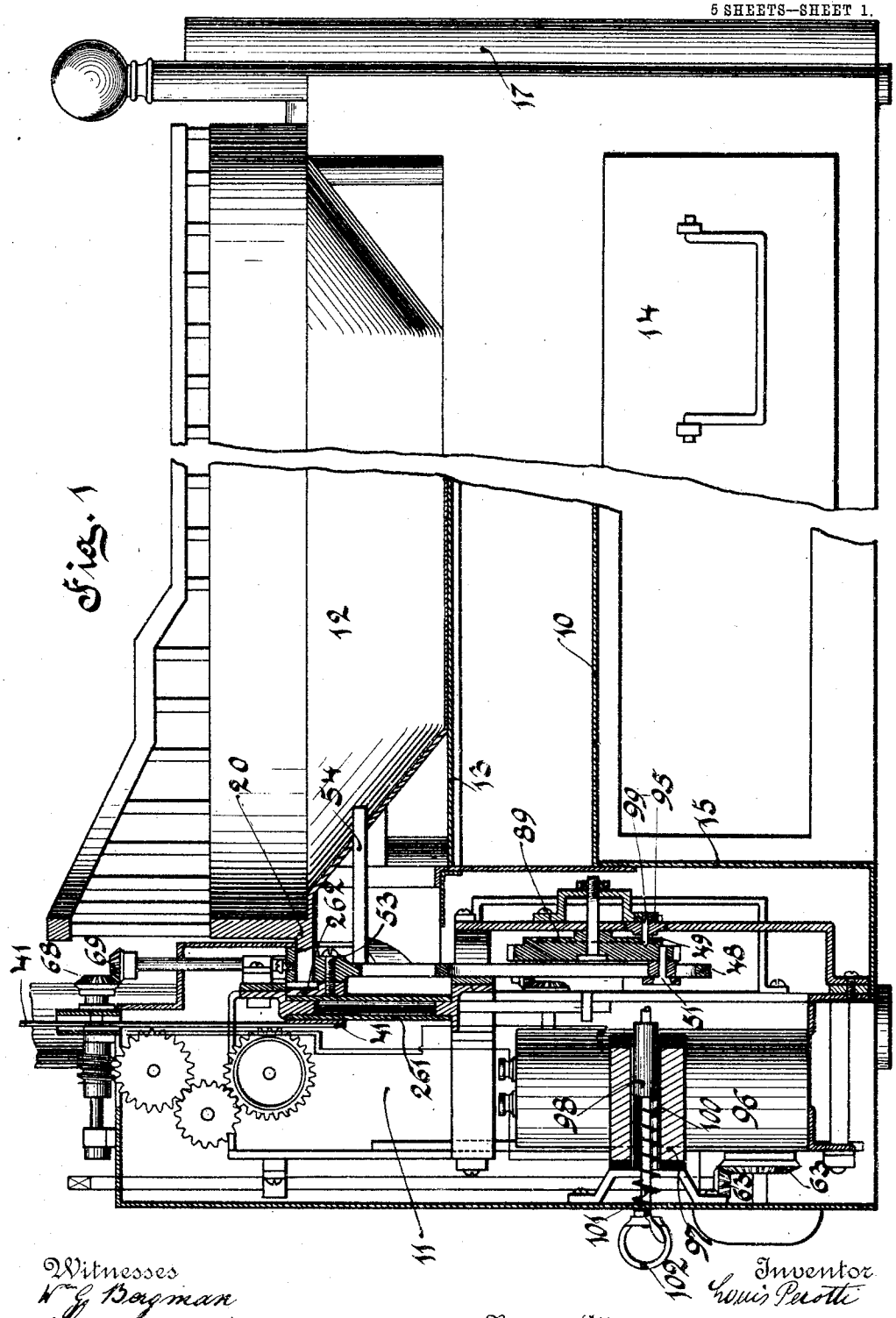


Fig. 1.

Witnesses
Wm. G. Bagman
F. W. Watson

Inventor
Louis Perotti

By Attorney Max D. Ordmann

No. 779,179. PATENTED JAN. 3, 1905.

L. PEROTTI.

AUTOMATIC CRADLE.

APPLICATION FILED MAY 23, 1904.

5 SHEETS—SHEET 2.

Fig. 3

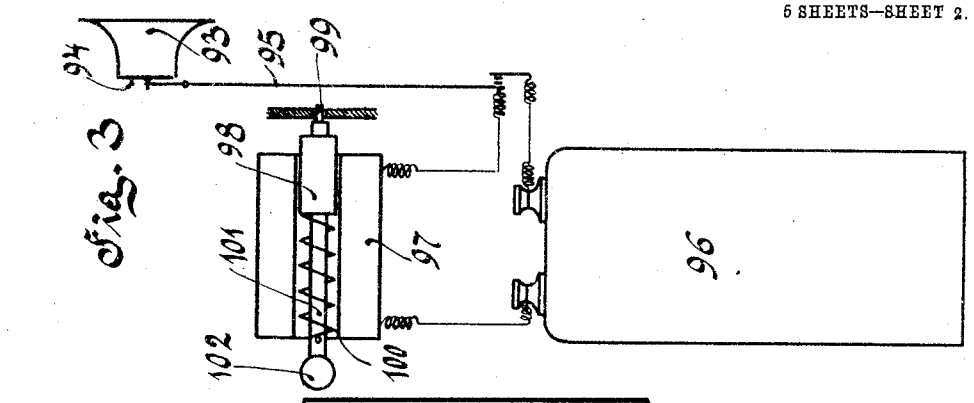
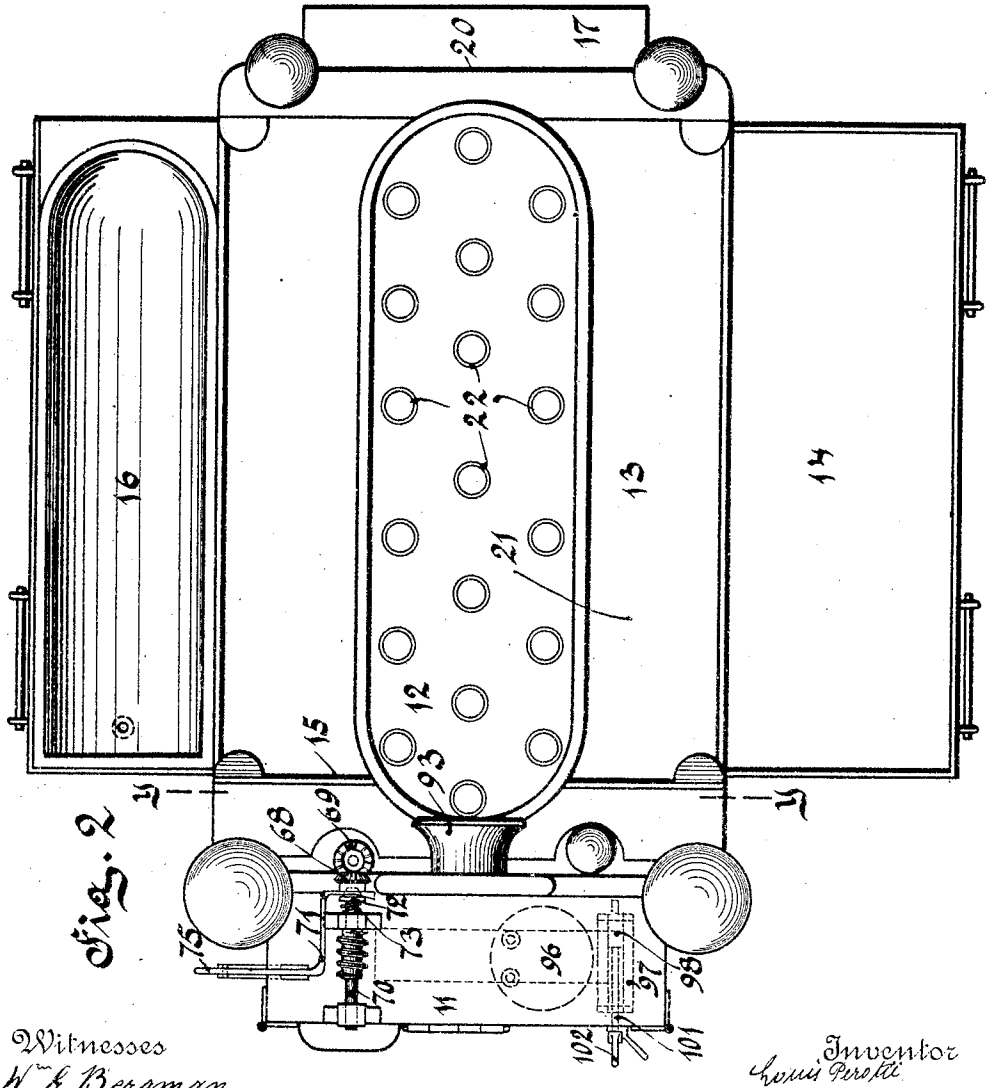


Fig. 2



Witnesses
Wm. J. Bergman
K. W. Olfson

Inventor
Louis Perotti

By Attorney Max E. Ordmann

No. 779,179. PATENTED JAN. 3, 1905.

L. PEROTTI.

AUTOMATIC CRADLE.

APPLICATION FILED MAY 23, 1904.

5 SHEETS—SHEET 3.

Fig. 5

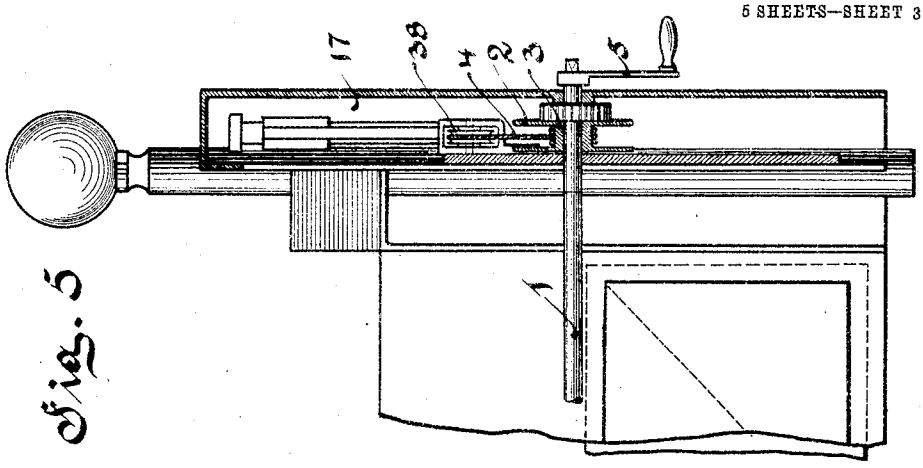
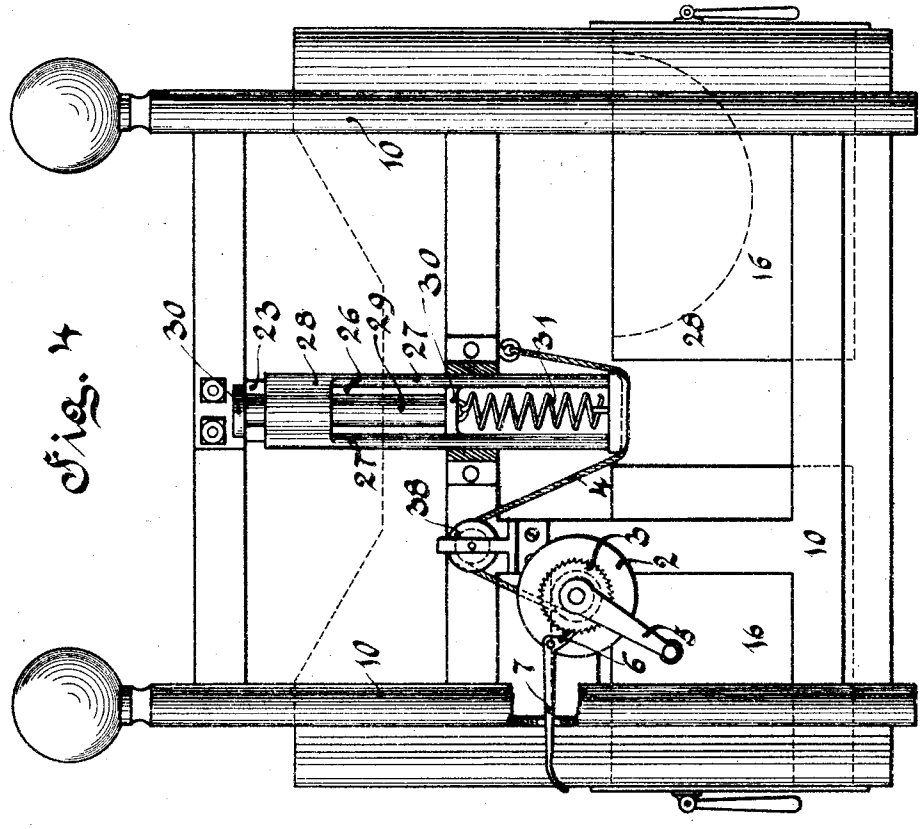


Fig. 4



Witnesses
H. J. Bergman
Geo. Wolfson

Inventor
Louis Perotti

By Attorney Max P. Ordemann

No. 779,179. PATENTED JAN. 3, 1905.

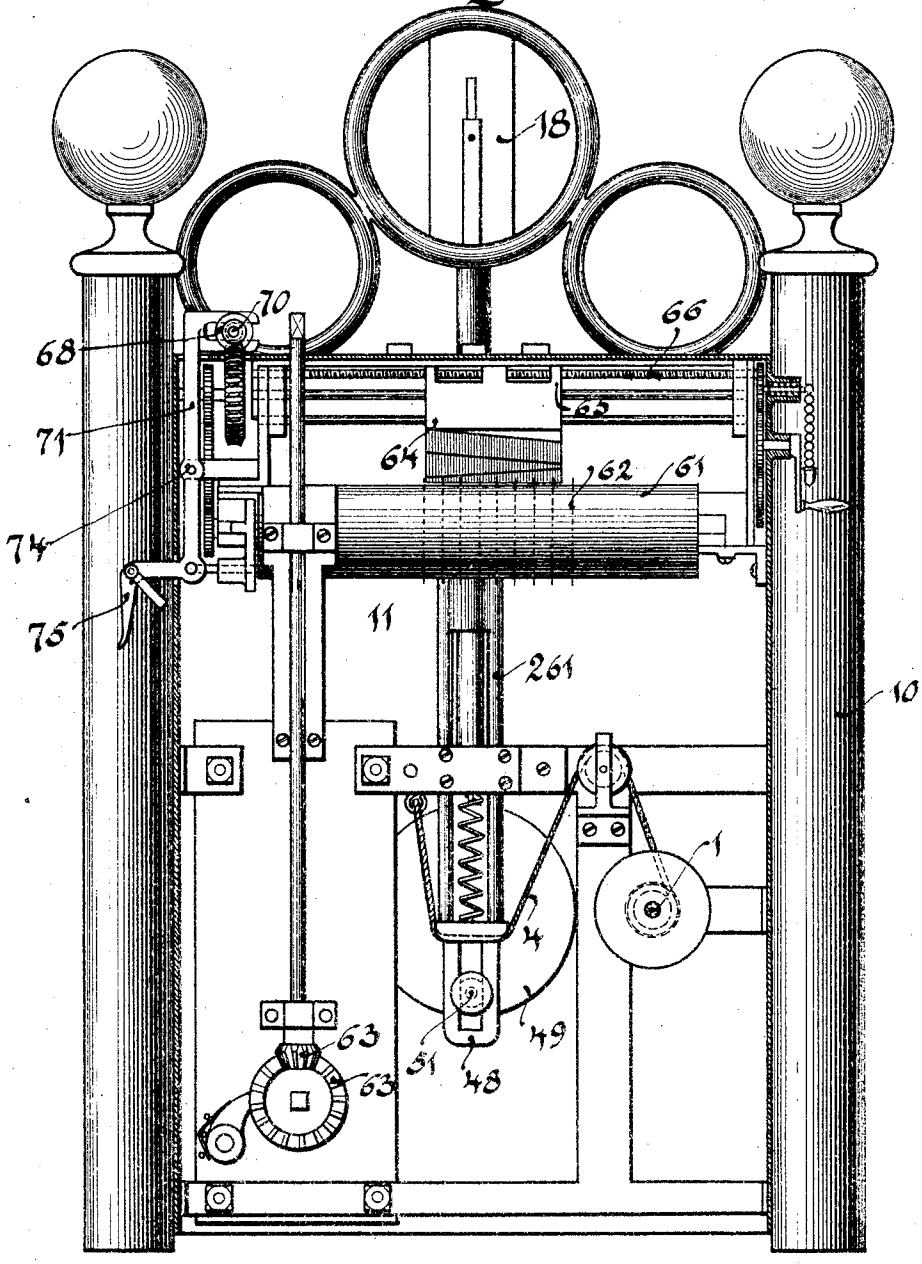
L. PEROTTI.

AUTOMATIC CRADLE.

APPLICATION FILED MAY 23, 1904.

5 SHEETS—SHEET 4.

Fig. 6



Witnesses
W. J. Bergman
Leo Wolfson

Inventor
Louis Perotti

By Attorney Max D. Ordmann

No. 779,179. PATENTED JAN. 3, 1905.

L. PEROTTI.

AUTOMATIC CRADLE.

APPLICATION FILED MAY 23, 1904.

5 SHEETS—SHEET 5.

Fig. 7

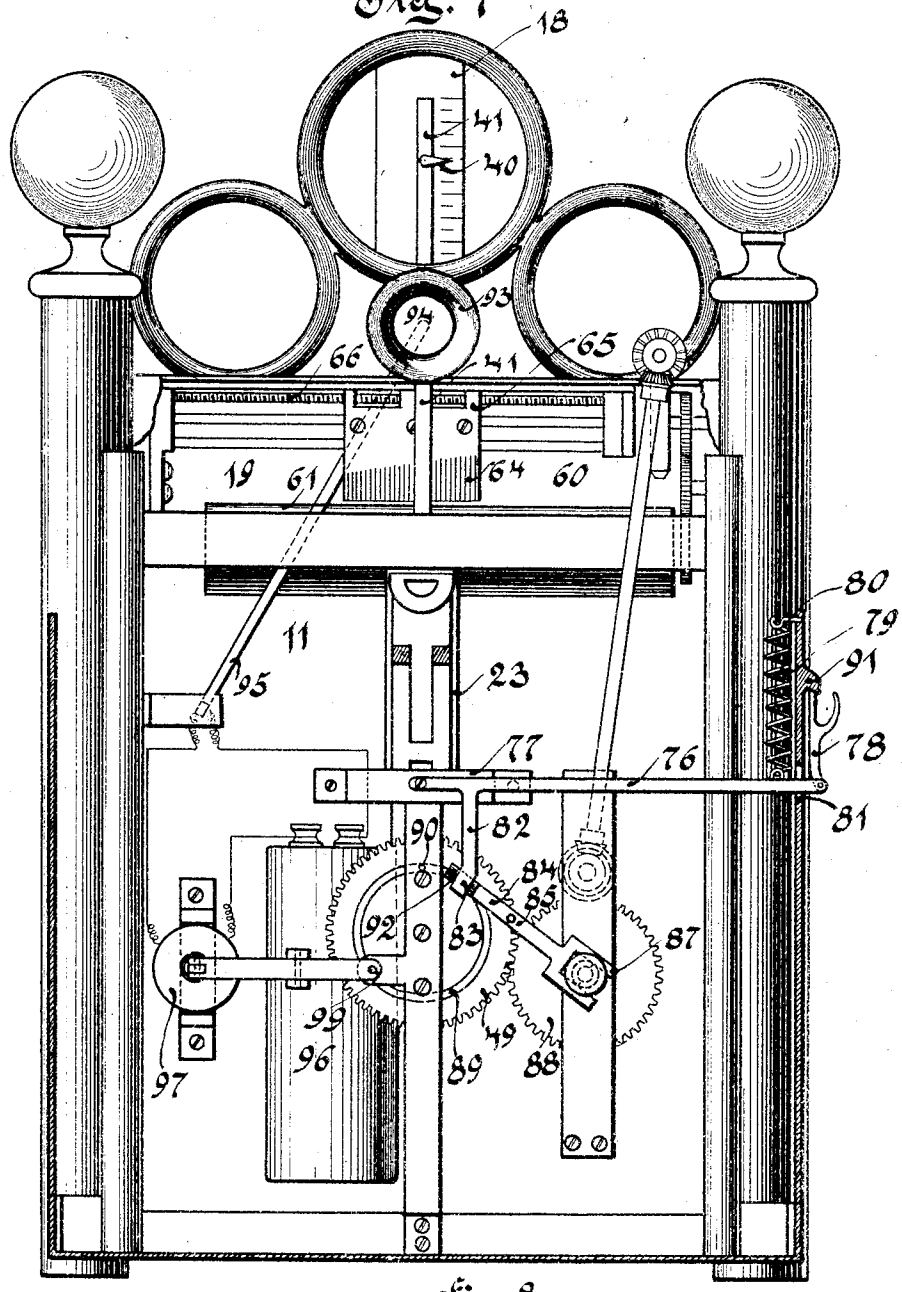
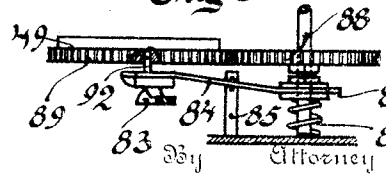


Fig. 8



Witnesses
H. G. Bergman
Geo. Walfson

Inventor
Louis Perotti.
By Max D. Ordmann
Attorney

No. 779,179. Patented January 3, 1905.

UNITED STATES PATENT OFFICE.

LOUIS PEROTTI, OF NEWARK, NEW JERSEY.

AUTOMATIC CRADLE.

SPECIFICATION forming part of Letters Patent No. 779,179, dated January 3, 1905.

Application filed May 23, 1904. Serial No. 209,193.

To all whom it may concern:

Be it known that I, LOUIS PEROTTI, a subject of the King of Italy, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Automatic Cradles, of which the following is a specification.

The present invention relates to that class of automatic cradles for infant children which has been described in my prior application for Letters Patent filed August 3, 1903, Serial No. 168,010, and which will when operated produce musical compositions, and thus enable the child to listen to the music while being automatically rocked, whereby its attention will be attracted and thus lulled to sleep.

The objects of the present invention are to simplify the arrangements shown in my prior application and to provide for an apparatus by means of which the cradle will be automatically set in motion by the sound transmitted while the infant cries and will be stopped when the infant is soothed.

I prefer to use this apparatus in connection with the means shown and described in my prior application for releasing and stopping the motor or clockwork by hand in order to permit in the day-time to set the motor in motion or stop it by hand, and in the night-time have the same done automatically.

My invention also relates to some other improvements which will be hereinafter more fully specified.

In the accompanying drawings, in which corresponding reference-figures denote corresponding parts, Figure 1 is partly a side elevation and partly a vertical central section of my improved cradle and of other parts connected therewith. Fig. 2 is a plan view thereof, the storage-drawer and the bathing-tub being shown drawn out for service. Fig. 3 is a diagrammatic view of the mechanism by means of which the cradle-operating motor is automatically released or stopped. Fig. 4 is an elevation of the foot of the bed-frame of the cradle; Fig. 5, a transverse section through the central line of said foot of the bed-frame; Fig. 6, an elevation of the head of the cradle, the outer plate or cover being removed to show the construction of the working parts within more clearly; and Fig. 7 is a transverse section taken on line $y\ y$ to Fig. 2, and Fig. 8 shows some details of the arrangements.

With reference to the drawings, numeral 10 indicates the bed-frame of the device, which is preferably of metal or other material to suit various conditions and may be of any construction suited to the purposes desired.

Although the main parts of which the cradle is composed have been fully described in my prior application, I will describe the same here with sufficient fullness to enable a person skilled in the art to build said cradle and to apply to the same all the improvements which form the subject of my present invention.

The bed-frame 10 is provided at its head with a vertical head casing or receptacle 11, Figs. 1, 2, 6, 7, for a music-box and a motor or a clockwork for rocking the cradle 12 and operating the said music-box. The clockwork may preferably be composed of a spring or springs or other suitable motive means. The said framework or bed 10 provides beneath the cradle 12 a horizontal table 13, beneath which a chamber is formed which will serve as a receptacle for a drawer 14 for clothing, toilet implements, &c., for use when washing the infant. Beneath the said horizontal table 13 the said framework also provides a slideway 15 for a drawer-like bath-tub 16, made wholly or partly of metal and of a size sufficiently large to receive the infant and enable it to be washed with convenience and ease. The one slideway may serve to receive the drawer at one end and the bath-tub at the opposite end, the said bath-tub extending about half-way through the frame transversally. At the foot of the frame another receptacle, 17, is provided for bearings and devices upon which the cradle may be supported and operated and which will be hereinafter more fully described. Within the head-receptacle 11 is also provided weighing means of any suitable construction, by which the weight of the child is indicated at the dial or scale-plate 18, Figs. 6, 7, at or near the top of the slide-board or portion of the frame.

The cradle 12 is provided at its opposite ends with longitudinal projecting pivots 20,

by means of which the same is supported in its bearings at the head and foot boards of the bed-frame. Within the cradle a plate 21 is arranged, having a series of collections of springs 22, upon which a mattress or other bedding may be suitably supported. The head and foot boards of the bed-frame may be vertically slotted, as at 23, and through the slots in said head and foot boards the pivots 20 of the cradle extend into contact with the sliding bearings 26 261, the said sliding bearings being in connection with the above-stated weighing apparatus, which will be hereinafter more fully described. The construction of the sliding bearings of the footboard is best shown in Figs. 4 and 5, where the said bearings of the footboard are shown to consist of a frame-like piece comprising two vertical bars 27, connected by cross-pieces 28. One of said cross-pieces is vertically apertured to receive the vertical shaft 29, fixed to the foot portion of the bed-frame 10, upon which shaft the sliding bearings 26 slide vertically in the weighing operation. The said vertical shaft 29, providing a slideway for the said vertical slide, is supported on the brackets 30 of the footboard, and the said slide 26 at its lower end is fastened to the lower end of a helical spring 31, fastened upon said bracket 30. An increase of weight in the cradle tends to force the same downward against the resistance of the spring, as in any ordinary weighing-scales employing springs.

The weighing connections at the head of the cradle are shown in Fig. 1, where the sliding bearing or support 261 is arranged in a bracket 262 of the frame and is constructed substantially the same as at the foot of the cradle. At its upper end said frame is provided with a rod 41, which extends upward from the said sliding bearing or support to the slotted plate having graduation-marks thereon adapted to indicate the different degrees of weight, the said rod 41 being provided with the index-finger or pointer 40 to facilitate the observations, as already described.

When the weighing apparatus is not to be employed, the sliding frames 26 261 at both ends of the bed-frame are supported in their upper position by the following arrangement: Lengthwise of the bed-frame underneath the horizontal table 13 extends the rod 1, having its bearings within the head and foot boards of the bed-frame. Said rod 1 is provided with reels 2 upon its extremities, and adjacent to the reel at the foot end of the bed-frame a ratchet-wheel is mounted rigidly connected therewith. Attached at suitable points of the head and foot boards are ropes or chains 4, which extend downward and are carried around the lower cross-pieces 28 of the sliding frames and other pulleys, 38, and being also attached to the corresponding reels 2 are adapted to wind up and off the latter when the reels are turned in one or other direction by means of a handle 5 applied to the one end of the rod 1, which extends outward from the bed-casing. A ratchet 6, pivoted to the footboard of the bed-frame and provided with a handle 7, extending outward from the casing, is adapted to engage the ratchet-wheel 3, and thus lock the reels in their position at will. It will be seen that by turning the rod 1 in the one or other direction the ropes or chains 4 will wind up or off the reels 2 and will be thus stretched or loosened. When the ropes or chains are loosened, the weighing apparatus will be released and the weight of the infant will be shown upon the scale heretofore described. When, however, the ropes or chains are stretched around the lower cross-pieces 28 of the sliding frames, they will support the latter and prevent their vertical movement. As there will be always more weight at the head of the cradle than at the foot when the infant is in the cradle and the rope or chain at that side will be stretched sooner than the one at the foot end of the bed-frame, it will be necessary to turn the rod 1 so long until the chain or rope at the foot becomes stretched, the cradle being hereby a little raised at the head and the center of gravity displaced, so that the weight shown upon the scale-plate 18 will be exactly the half of the real weight of the infant.

The means for transmitting the rocking movement to the cradle from the motor or clockwork consists of an oscillating slotted arm 48, which extends downward to a crank-wheel 49, connected with a motor arranged in the casing 11, said motor being not shown in the drawings. The power is transmitted from the said motor or clockwork to the crank-wheel 49 by means of suitable intermediate gearings of any desired construction. The crank-wheel 49 has a crank-pin 51 sliding in said slotted arm 48, so that as the crank-wheel 49 rotates the arm is caused to oscillate and the pivot 20 within the semicircular socket in the frame end of said oscillating arm is caused to oscillate, and thus impart some movement to the cradle. The slotted arm 48 during weighing operation is brought into vertical position and may thus move longitudinally downward and not interfere with the weighing operation.

The supporting-pivot 20, extending horizontally from the foot of the cradle to its bearing in the sliding frame, is adapted to turn within the bearing or socket of the said sliding frame. At the head of the cradle the arm 20 is made semicircular to enter the socket of the oscillating arm 48, said socket being horizontally in line or nearly in line with the pivot 53, connecting said oscillating arm to the sliding bearing 261. The oscillating movement of the arm 48 imparts thus to the cradle a pivotal movement. To relieve the pivot 20, attached to the oscillating arm 48, of some of

the strain which would otherwise be applied thereto, I prefer to attach to said oscillating arm 48 arms 54, which engage the cradle to help in swaying the same.

The clockwork may be provided with any of the ordinary devices, winding the spring, &c.

The device by means of which the cradle can be set in motion, respectively stopped at will, is as follows: A lever 76 is pivoted at its inner end to a bracket 77, applied at the head of the bed-frame. Said lever 76 extends transversally through the bed-frame and outward through a recess in the side wall of the latter and is provided at its free end with a tilting-handle 78. At its outer end the lever 76 is suspended from a helical spring 79, which is attached to a hook 80, applied to the side board of the bed-frame. The recess 81 within the side board of the bed-frame allows a certain play to the lever, so that the latter can sufficiently move up and down. At its inner end the lever 76 has a downwardly-extending arm 82, the free end of which, 83, is formed to a cam, Fig. 8. This cam 83 is adapted to act upon a lever 84, pivoted at 85 to the head-board of the bed-frame and engaging with its other bifurcated end, 87, the shaft of the gear-wheel 88, intermeshing with the crank-wheel 49. This crank-wheel 49 is provided with a concentric groove 89, in which at a certain point a bore 90 is made. A pin 92 applied to the inner side of the inner end of the lever 84 is adapted to slide within the groove 89 and to engage the said bore 90 as soon as it comes in line therewith. In order to disengage the pin 92 from the hole 90, the lever 76 must be depressed, whereby the cam 83 will release the lever 84, which will by the action of a spring 88 (shown in Fig. 8) move away from the crank-wheel 49, so that the pin 92 will come out of engagement with the hole 90. When the lever 76 is in its upward position, the cam 83 will press the pin 92 into the groove 89 of the crank-wheel 49, and when the latter is rotated the pin will slide within the groove until it will meet the hole 90 and engage the latter, whereby the wheel 49 and the clockwork will be stopped. In order to lock the lever 76 in its lower position, in which the pin 92 is out of engagement with the hole 90, the handle 78 is turned toward the side board of the bed-frame until caught by the stop 91, projecting outward from said side board of the frame.

With the clockwork I have connected a mechanically-operatable music-box 60 of any suitable variety. When the cradle is being oscillated or rocked, the tunes may be produced by power derived from the cradle-rocking motor, whereby the child may be soothed by the music while being rocked to sleep. In the drawings, 61 is a cylinder having pins 62, Fig. 6, the said cylinder being in train by means of gear-wheels 63, intermeshing one with another with the said motor. 64 indicates a comb having a series of musical tones adapted to be tripped by the pins of the cylinder to secure the desired sound-producing vibrations, the said comb being carried on the sliding carrier 65, arranged at the top of the headboard upon a spindle 66 and adapted to cause the comb-teeth and points to trip at predetermined times to effect the desired tune of music. To disengage the cylinder 61 from operative connections with the motor, so that the music may be quickly stopped at will, I have arranged the gear-wheels 68 69 so that they may be thrown out of meshing relation, thus enabling the clockwork to continue its movement. The wheel 68 is mounted loosely upon the shaft 70, upon which also a disk 72 is mounted at the inner end thereof at the back of the wheel 68, which disk is capable of a longitudinal displacement and adapted to rotate with the shaft 70. The disk 72 is made yielding upon the shaft 70, a spring 73 being arranged at the back of said disk and adapted to bear against the latter. A bifurcated lever 74, one side of which is cam-shaped, is adapted to slide to and fro over the shaft 70 between the disk 72 and the back of the wheel 68 and be operated by a lever 71, having a handle 75, Figs. 2, 6. When the lever is pressed outward, the cam part of the bifurcated lever 74 will press against the yielding disk 72, and the friction between the said lever and the disk on one side and the wheel on the other side will couple the said wheel with the rotating shaft 70, whereby the cylinder 61 will be set in motion. When, however, the lever will be pressed forward, the wheel 68 will be uncoupled and the cylinder thus stopped.

The apparatus by means of which the clockwork can be set automatically in motion and respectively stopped when the apparatus used for operating the clockwork by hand has been thrown out of gear consists of the following parts: A receiver 93 of the type used for telephones is suitably arranged in the cradle, preferably at the top end of the head of the cradle, Figs. 2, 7. Said receiver is provided at its back with a diaphragm 94, to which a turning-lever 95 is suitably attached. The free end of said lever 95 is adapted to form a contact, so as to close an electric circuit deriving from a battery 96, arranged inthe casing at the head of the bed-frame. The electric current is in a well-known manner caused to pass an electromagnet 97, having an armature 98, provided with a forwardly-projecting pin 99, which pin is adapted to slide normally within the groove 89 of the crank-wheel 49 and to engage the bore 90 within said groove 89. The armature 98 is attached to a spring 100, which tends to keep the pin 99 out of engagement with the bore 90 in the groove 89 of the crank-wheel 49. The armature 98 may also be provided with a rod 101 and a handle 102, by means of which the disengagement of the pin 99 may be effected by

hand. It will be easily seen that a sufficiently strong sound caused while the infant cries and transmitted to the diaphragm 94 will cause a vibration of the latter, which vibration will in turn be transmitted to the lever 95, whereby the free end of the said lever will, by means of its contact-piece, close the electric circuit, so that the armature 98 will be attracted by the electromagnet 97, and the pin 99 will disengage the hole 90 in the groove 88 of the crank-wheel 49, whereupon the clockwork of the cradle will be set in motion, provided that the pin 92 of the lever 84 has been before put out of engagement with the bore 90 in the groove 89. As soon as the sound will cease the electric circuit will be opened and the armature will be repulsed by the spring 100, so that the pin 99 will engage the groove 89 and slide therein until it will meet the bore 90, when it will engage the same and stop the clockwork. The mode of operation of the above-described apparatus is clearly shown in the diagrammatic view in Fig. 3.

As various changes can be made with the different parts of the arrangements shown without departing from the spirit of my invention, I do not confine myself to these particular arrangements.

What I desire to secure by Letters Patent is—

1. The combination with an improved cradle operated by a motor or clockwork and having a music-box attachment, of vertical sliding bearings suspended from springs, a crank-wheel operated by the motor or clockwork, a slotted arm pivoted on one of the said sliding bearings and connected to the cradle, and means for relieving and stopping the clockwork by hand, and means for relieving and stopping the motor or clockwork automatically, when the hand-operated means have been thrown out of gear, substantially and for the purpose as specified.

2. The combination with an improved cradle operated by a motor or clockwork and having a music-box attachment, of vertical sliding bearings suspended from springs, a crank-wheel operated by the motor or clockwork, a slotted arm pivoted on one end of the said sliding bearings and connected to the cradle, and a central groove on the outer surface of the crank-wheel, a cam-lever to be operated by hand, a second lever acted upon by the cam-lever having a pin or pivot projecting toward the crank-wheel and adapted to engage the central groove of the latter and slide therein, a bore at a certain point of said groove, which bore is adapted to engage said pin or pivot when the latter comes in line therewith, a spring which tends to keep the pin in engagement with the bore, the disengagement of the pin being attained by the depression of the cam-lever, and means for relieving and stopping the motor or clockwork when the hand-operated means are thrown out of gear, substantially and for the purpose as specified.

3. The combination with an improved cradle operated by a motor or clockwork and having a music-box attachment, and vertical sliding bearings suspended from springs, a crank-wheel operated by the motor or clockwork, a slotted arm pivoted on one of the said sliding bearings and connected to the cradle, and a central groove on the outer surface of the crank-wheel, a device to be operated by hand and to be brought in and out of engagement with the crank-wheel, a sound-receiver at the head of the cradle, a diaphragm at the back of the receiver, a turning-rod connected with said diaphragm and having at its free end a contact-piece adapted to come into contact with a second contact-piece arranged oppositely thereto, an electric battery, an electromagnet having an armature provided with a forwardly-projecting pin, which pin is adapted to engage the above-named circular groove in the crank-wheel, when the electric circuit is being closed by the contact-piece of the turning-rod as a sound is transmitted through the receiver to the said diaphragm and to slide therein, until it meets the bore in said groove and engages the same, whereby the crank-wheel and the motor or clockwork are arrested, substantially and for the purpose as specified.

4. The combination with an improved cradle operated by a motor or clockwork and having a music-box attachment, of a weighing means comprising vertically-sliding bearings suspended from springs, a graduated plate and index-finger connected with said sliding bearings and a device for locking the sliding bearings of the weighing apparatus in their position and for relieving the same, said device consisting of a rod extending longitudinally throughout the full length of the bed-frame and through the head and foot boards thereof, reels mounted upon the outer extremities of the rod and rigidly attached thereto, a ratchet-wheel, upon one extremity of said rod, a ratchet having a lever attached thereto to be handled from the outside, said ratchet being adapted to mesh with the said ratchet-wheel, ropes or chains attached to the head and foot boards of the bed-frame and guided around the lower ends of the sliding frames and adapted to wind up and off said reels, the rod being provided with a crank at the outside of the bed-frame so as to be turned in one or the other direction, in order to stretch or loosen the ropes or chains, substantially and for the purpose as specified.

5. The combination with an improved cradle operated by a motor or clockwork and having a music-box, means for transmitting the movement from the motor thereto, and permitting independent operation of said motor, said means consisting of gears intermeshing

with each other, one of said gears being loosely mounted upon its shaft, a spring-acted disk upon said shaft, which is adapted to be longitudinally displaced upon the latter and to revolve with same, a bifurcated lever engaging the shaft between the disk and the back of said loose gear, the bifurcated lever having a pivoted arm projecting outward, one side of the bifurcated end of said lever being formed to a cam adapted to couple the disk with said loose gear and means for locking the bifurcated lever in the coupling position, substantially and for the purpose as specified.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 21st day of May, 1904.

LOUIS PEROTTI.

Witnesses:
LEO WALFSON,
MABEL HAMBURGER.