

S. F. WILSON & W. L. FIELD.
 CHRONOMETRIC BABY TENDER.
 APPLICATION FILED FEB. 24, 1908.

910,888.

Patented Jan. 26, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

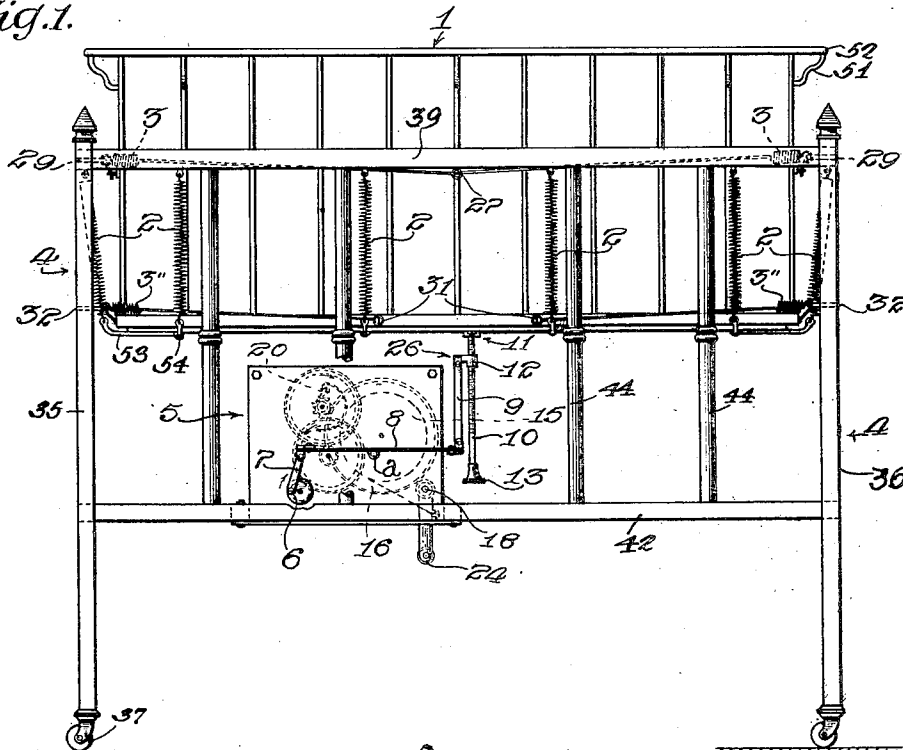


Fig. 2.

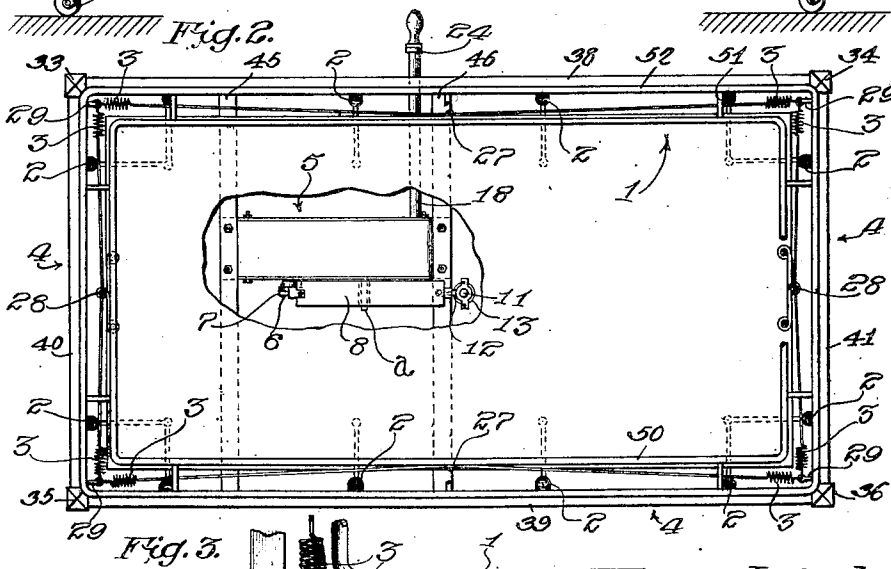
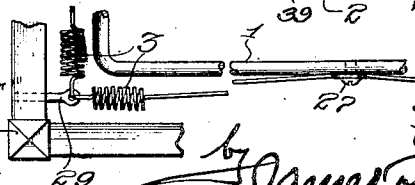


Fig. 3.



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2 SHEETS—SHEET 2.

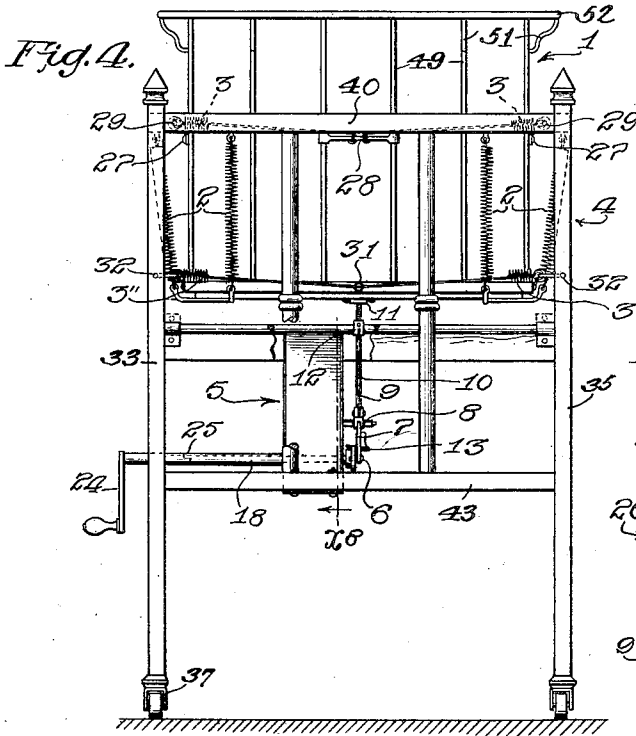
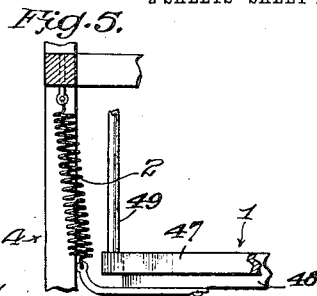


Fig. 6. *Fig. 7.*

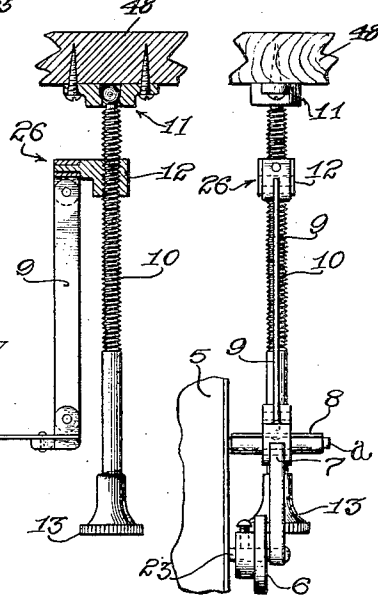
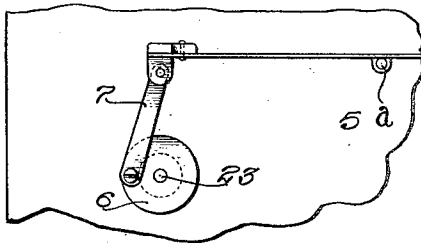
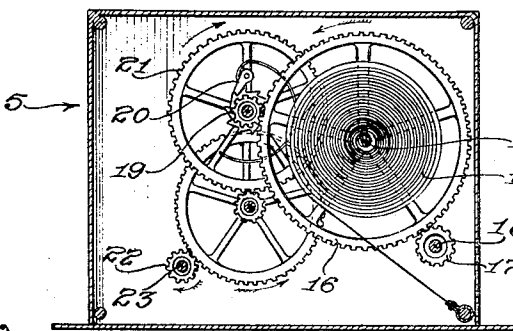
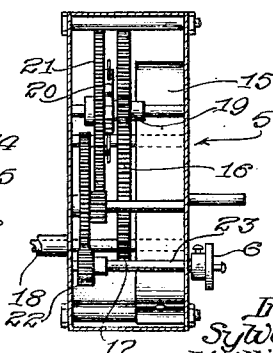


Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

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CHRONOMETRIC BABY-TENDER.

No. 910,888.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed February 24, 1908. Serial No. 417,601.

To all whom it may concern:

Be it known that we, SYLVESTER F. WILSON and WILLIAM L. FIELD, citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Chronometric Baby-Tender, of which the following is a specification.

The object of this invention is to provide improved means for soothing children and putting them to sleep by constantly-recurring movements in measured time.

The object is to mount a baby-crib and apply power to the baby-crib so that it will have a softly-swaying motion in every direction in measured time; and my invention includes an open rectangular frame, a baby-crib, a series of springs for suspending the crib loosely within the frame, a series of springs for centralizing the crib within the frame, a motor, and a universally-yielding, adjustable connection between the motor and the crib.

This invention relates to a tender having a resiliently-supported carriage that may move down and up and laterally with an easy freedom of movement, and consists in novel means and combinations whereby the movement of the occupant of the baby-tender may be effected in a superior manner without jolts or jars, and which is adjustable for tending babies of different weights and for changes from heavy to light bedding, and vice versa, as the changes of the seasons occur.

The invention includes the novel appliance and various parts and combinations of parts hereinafter particularly described and claimed.

The invention may be embodied in various forms, and we do not propose to limit the same to any specific construction.

The accompanying drawings illustrate the invention in the form at present deemed most desirable.

Figure 1 is a side elevation of an appliance constructed in accordance with this invention. Fig. 2 is a plan projected from Fig. 1. Fig. 3 is a fragmental detail of one corner and side of Fig. 2. Fig. 4 is a broken end elevation. Fig. 5 is a fragmental detail of a spring that is partly shown in Fig. 4. Fig. 6 is a detail side elevation of the timing device and regulator partly in section, viewed from the right of Fig. 4. Fig. 7 is a detail eleva-

tion from the left of Figs. 1 and 6. Fig. 8 is a section on line x^x , Fig. 4, showing motor-mechanism from same side as in Fig. 1. Fig. 9 is an end elevation of the motor-mechanism from line x^x , Fig. 8.

1 is a suspended crib carriage or basket resiliently held by supporting springs 2 and stay-springs 3 which are carried by a frame 4 that surrounds the carriage 1, and within which frame the carriage 1 may move up and down and may also swing sidewise and endwise.

5 designates a motor which may be of any suitable construction and may be operated by electric or other power determined upon by the constructor. In the drawings a spring motor is shown, the same constituting a part of this invention, for the purpose of applying the broad idea of means in the simplest and most economical and convenient form for general use.

The frame 4 comprises posts 33, 34, 35 and 36 having casters 37 at their lower ends to travel on the floor; the upper side rails 38 and 39 connecting the posts 33, 34, and 35, 36, respectively; the upper end rails 40 and 41 connecting the posts 33, 35, and 34, 36, respectively, and forming a rectangular open frame to receive the crib. The lower side rails 42 and the lower end rails 43 connect the posts intermediate of their ends and serve as braces, and rounds 44 are inserted vertically between the upper rails and the lower rails. The frame thus constructed is adapted to run upon the floor so as to be easily moved from place to place. Sills 45 and 46 are inserted crosswise of the lower side rails 42 to support the motor 5.

The crib 1 comprises the rectangular metal base 47 corresponding in shape to the rectangular frame 4 but considerably smaller in size; the rectangular wooden bottom 48 placed within the base 47 and secured thereto; the metallic rounds 49 extending upwardly from the base 47; the rectangular inner edge wire 50 secured to the upper ends of the rounds 49; the braces 51 extending outwardly and upwardly from near the upper ends of some of the rounds 49; and the outer edge wire 52 secured to the braces 51. The outer edge wire 52 is large enough in plan so as to form a stop to engage the rectangular frame 4 and support the crib when the crib is placed downwardly in the frame. The series of rounds 49 extend all

the way around the base 47 so as to form a complete inclosure consisting of a bottom and a vertical wall or fence and open at the top to receive the baby.

5 Said motor is arranged to turn a crank 6 which is connected by a rod 7 with a resilient walking-beam 8 pivoted on a fulcrum-pin *a* carried by the frame of the motor 5 and adjustably connected with the bottom of the carriage or basket 1. The connecting means between said walking-beam and the basket is preferably adjustable in order to facilitate the regulation of the device for operation with different loads in the carriage or basket. 10 For this purpose said connecting means comprises a resilient link 9 connected to the resilient walking-beam on the other side of the fulcrum *a* from the connecting rod, and a temper-screw 10 connected with the bottom 20 of the carriage or basket by a universal joint 11 and connected with the link 9 by a pivotal nut 12. Said temper-screw 10 is provided with a handle 13 by which the screw may be turned, thus raising and lowering the nut 12 25 and thereby increasing or decreasing the tension of the spring that forms the walking-beam 8. Preferably, said walking-beam is formed of a flat sheet-spring capable of being deflected from its normal resistance to stop 30 the motor in case the opposite end of the walking-beam is held stationary by the carriage or basket. Other forms of spring may be used, but the flat form is at present deemed preferable. The resiliency of the 35 walking-beam is sufficient to move the carriage or basket up and down when the walking-beam is worked by the crank 6. When power is applied whereby the crank may be rotated and the carriage or basket is free to 40 respond to the impulse of the walking-beam, the appliance may be started into operation by pushing up or down on the carriage and then releasing the same so that it will be freely carried by the spring. The force of 45 the motor will then be sufficient to maintain the up-and-down motion of the carriage so long as the carriage is free to respond to the forces at work. The period of the up-and-down movement of the carriage will very 50 much depend upon the load in the carriage. The heavier the load the slower will be the movement; and it is important that the impulse of the walking-beam be given at the intermediate position of such beam in order 55 that the momentum of the load will operate to carry the crank past the dead center. By adjusting the temper-screw 10 to bring the walking-beam to such intermediate position: that is to say, a level position when the carriage is at rest, the appliance will be made to 60 operate freely whenever the carriage is started to move up and down.

In order that the appliance may be operated with the utmost convenience and smallest expense, a spring motor is provided in

which the spring shaft 14 that is driven by the spring 15, carries the driving wheel 16 which is constantly in mesh with the winding pinion 17 that is fixed to the winding shaft 18, and with the ratchet driving pinion 19 that 70 drives the ratchet 20 which is carried by a wheel of a train 21 that drives the crank-pinion 22 mounted on a shaft 23 on which the crank 6 is fixed. 24 is a detachable crank for the winding-shaft 18. The motor 75 may be wound by the crank 24 in the socket 25 on the winding shaft 18. As the spring 15 is wound, the driving wheel 16 rotates in a direction reverse to that indicated by the arrow in Fig. 8. When the winding has been 80 accomplished the crank 24 may be withdrawn, thus leaving the spring free to drive the driving-wheel 16 in the direction of the arrow shown in Fig. 8, thus setting the train 85 in motion to drive the crank-shaft 23 whenever vertical oscillation of the carriage is set up. Such oscillation may be initiated by the movement of a child in the carriage, or it may be initiated by the attendant. In either 90 case, the motor operates to keep up the oscillation until stopped by external force, or until the motor runs down or becomes inoperative. The crank and the resilient walking-beam operate as an escapement, and the weight of the carriage in the nature of a pendulum to cause a chronometric movement of 95 the carriage so long as the motor is operative or until the carriage is stopped by some external force.

The swivel nut 12 is connected with the 100 link 9 by universal joint 26 so that the operation of the device will not be interfered with by deflections of the carriage from vertical position. The centralizing stay or guy springs 3 are pivotally connected with the 105 carriage at screws 27 to the intermediate rounds 49 of the sides and at the eyes 28 secured to the rounds 49 of the ends of the carriage, and with eyes 29 at the corners of the frame so that a limited endwise and side- 110 wise movement of the carriage will be allowed.

The suspending springs 2 are fastened to the upper side rails 38, 39, and to the upper end rails 40, 41, of the frame and are secured to the bottom of the crib or carriage, 115 by the rods 53 having eyes at their outer ends to receive the hooks at the ends of the springs; said rods being placed under the bottom board 48 and secured to the board 120 by screws, rivets or nails 54; said rods 53 extending outwardly from the bottom all the way around so as to centralize the crib 1 relative to the frame 4. Two sets of centralizing stay or guy springs are arranged at different levels, one set, 3, being provided at 125 the top of the frame, and fastened to the carriage about midway between its top and bottom, and the other set 3" being connected at 31 with the bottom of the carriage and at 32 130

with the frame at the normal level of the carriage bottom; the purpose being to hold the carriage upright, but to allow a limited movement of the same in any direction.

5 The attendant may increase the period of oscillation by adding to the load in the carriage, and may reduce such period by reducing the load in the carriage.

The crib or carriage 1 is suspended in the frame 4 by a series of springs extending all the way around so as to cushion the crib and allow it to move yieldingly in every direction. The universal joint 11 should be applied to the bottom 48 as near as practicable to its center so that when the power is applied the tendency will be to move the crib almost straight up and down, or so that power will be applied equally to all parts of the crib. The connecting-rod 9 and the resilient walking-beam 8 provide a cheap and simple yielding connection between the power device and the crib that is peculiarly adapted to transmit the motion to the crib gently and that affords ready and convenient means for interposing between the walking-beam and the crib, an adjusting device for increasing and decreasing the tension of the spring through which the power is transmitted.

I claim:—

30 1. A frame, a carriage yieldingly mounted in the frame, a motor carried by the frame and provided with a crank, a resilient walking beam carried by the frame, a temper screw loosely jointed to the carriage, a nut on the screw, a link connecting an arm of the walking beam with said nut and means connecting the crank with the other arm of the walking beam.

2. In a chronometric baby tender provided with a resiliently-supported carriage, the mechanism set forth for transmitting motion from the timing mechanism to the resiliently supported carriage, which transmitting mechanism comprises a walking-beam formed of a spring pivoted between its ends, and a connecting-rod and a crank whereby said spring is connected at one end with the timing mechanism; and a link, a pivotal nut, a screw and a universal joint whereby said pivoted spring is connected with the carriage.

3. In a chronometric baby tender the combination with a motor and a resiliently suspended carriage, of a spring pivoted between its ends, means for transmitting motion from the timing mechanism to one end of the pivoted spring and means connecting the other end of the pivoted spring with the carriage.

4. In a chronometric baby tender the combination with a motor and a resiliently suspended carriage, of a spring pivoted between its ends, means for transmitting motion from

the timing mechanism to one end of the pivoted spring and adjustable means connecting the other end of the pivoted spring with the carriage.

5. A frame comprising the posts 33, 34, 35 and 36, mounted on casters to travel on the floor; the upper side rails 38 and 39 connecting the posts 33, 34, and 35, 36, respectively; the upper end rails 40 and 41 connecting the posts 33, 35, and 34, 36, respectively, and forming a rectangular open frame; the crib 1 mounted loosely in the frame with the bottom of the crib below the top of the frame; vertical springs 2 connecting the bottom of the crib to the top of the frame all the way around so as to centralize the crib; a motor, and a connection between the motor and the crib.

6. An open rectangular frame, the crib 1 mounted loosely in the frame, said crib comprising the rectangular metal base 47, the wooden bottom 48 mounted within the base, the metallic rounds 49 extending upwardly from the base, the rectangular inner edge wire 50 secured to the upper ends of the rounds, the braces 51 extending outwardly and upwardly from near the upper ends of some of the rounds 49, the outer edge wire 52 secured to the braces 51, and the vertical supporting springs connecting the bottom of the crib to the top of the frame.

7. A crib comprising a rectangular metal base, a wooden bottom secured to the base, metallic rounds extending upwardly from the base, an inner edge wire secured to the upper ends of the rounds, braces extending outwardly and upwardly from near the upper ends of some of the rounds, and an outer edge wire secured to the upper ends of the braces.

8. A frame open and rectangular in plan, a crib loosely mounted within the frame, the bottom of the crib being below the top of the frame, springs connecting the crib to the frame all the way around so as to hold the crib in a central position in the opening in the frame, a motor, the adjusting-screw connected to the center of the bottom of the crib by a universal joint, the adjustable pivot-nut 12 upon the adjusting-screw, the resilient connecting-rod 9 connected to the nut, and the resilient walking-beam 8 pivotally mounted and connected to the connecting-rod 9 and to the motor.

In testimony whereof, we have hereunto set our hands at Los Angeles, California, this 13th day of February, 1908.

SYLVESTER F. WILSON.
WILLIAM L. FIELD.

In presence of—

JAMES R. TOWNSEND,
L. BELLE RICE.