No. 630,894. Patented Aug. 15, 1899.

J. JOSEFKOWICZ.

SELF ROCKING CRADLE.

(Application filed Feb. 16, 1898.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.

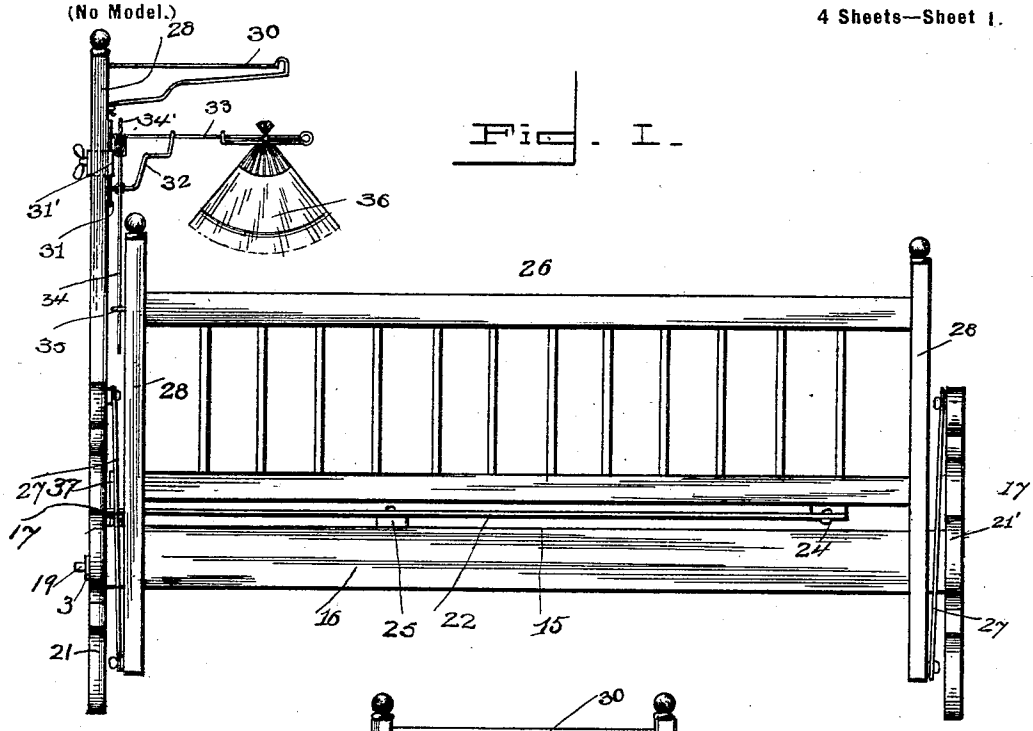
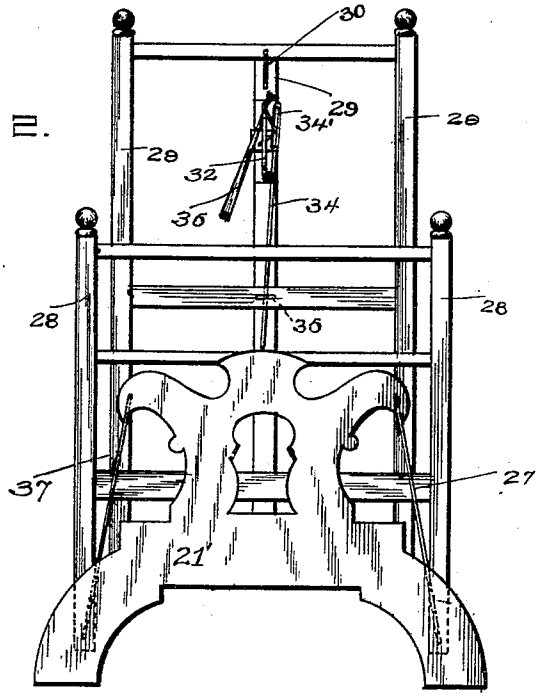


Fig. 2.



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Fig. 3.

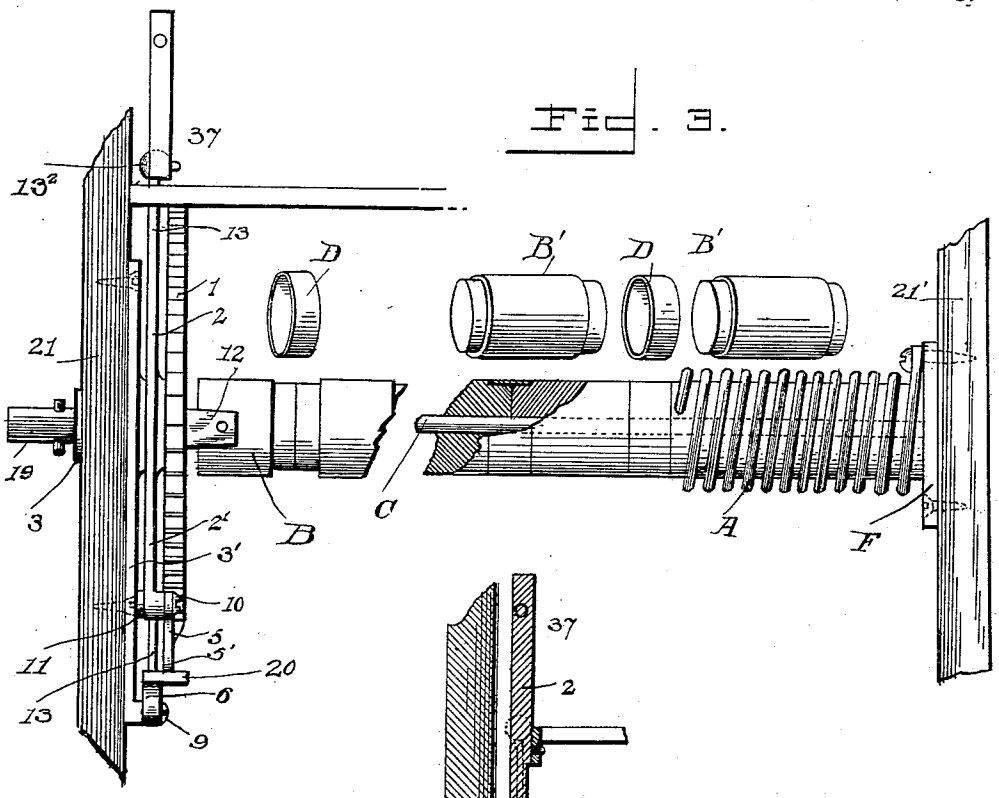
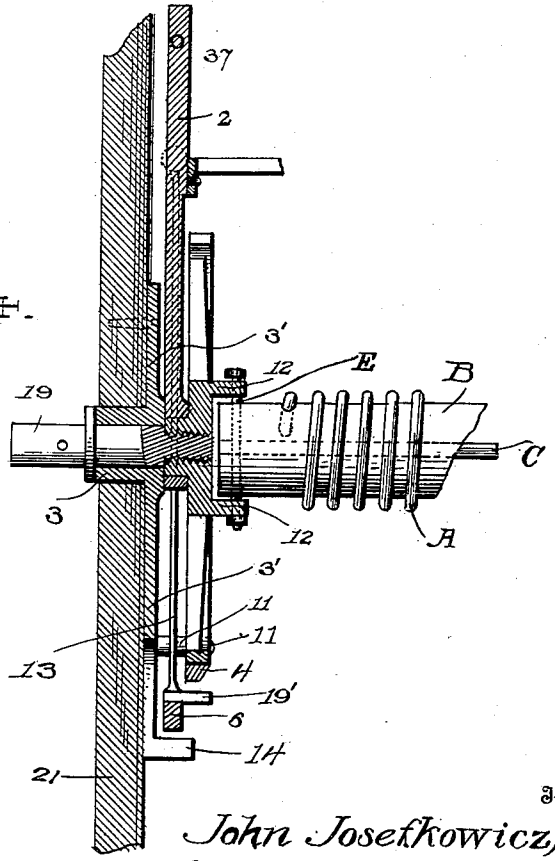


Fig. 4.



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Fig. 5.

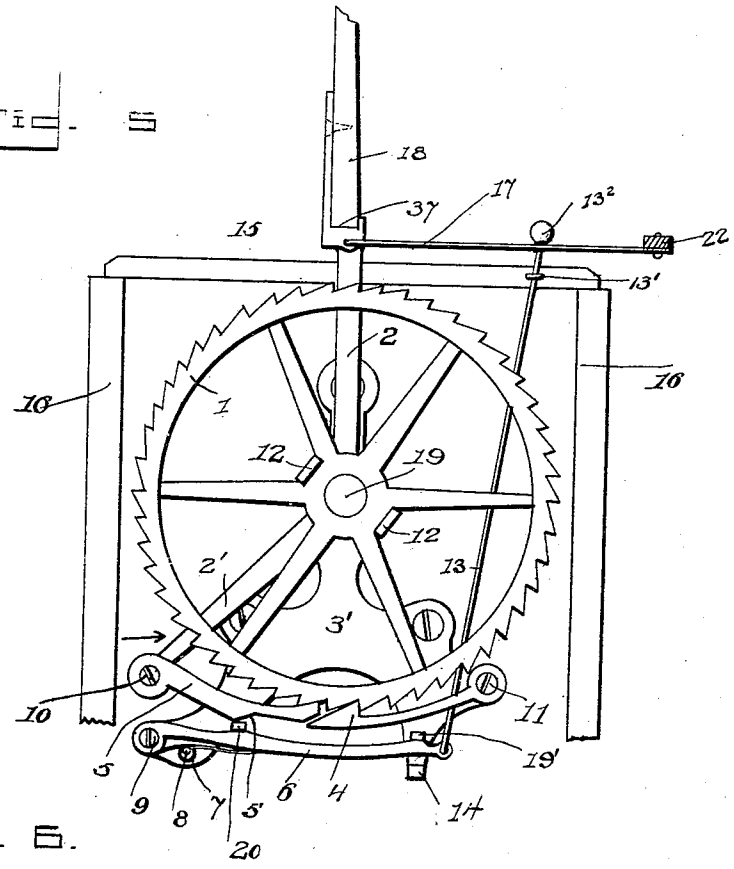


Fig. 6.

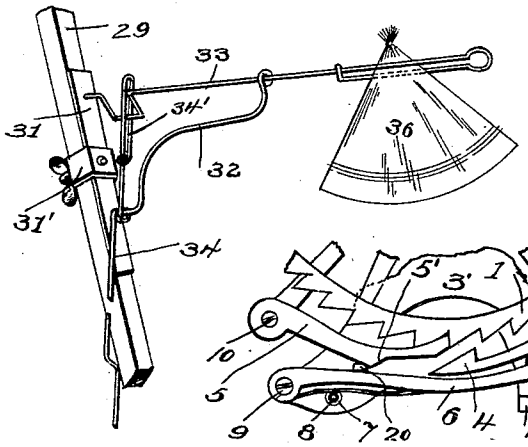


Fig. 7.

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(No Model.) 4 Sheets—Sheet 4.

Fig. 8.

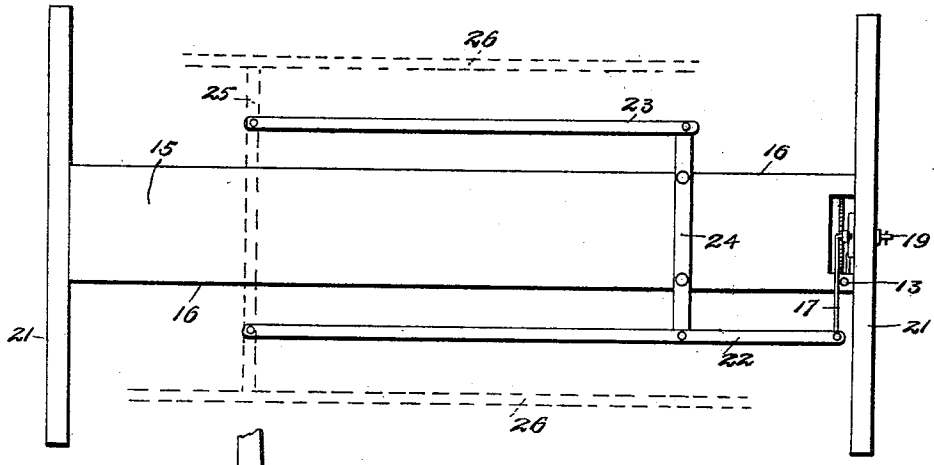


Fig 9

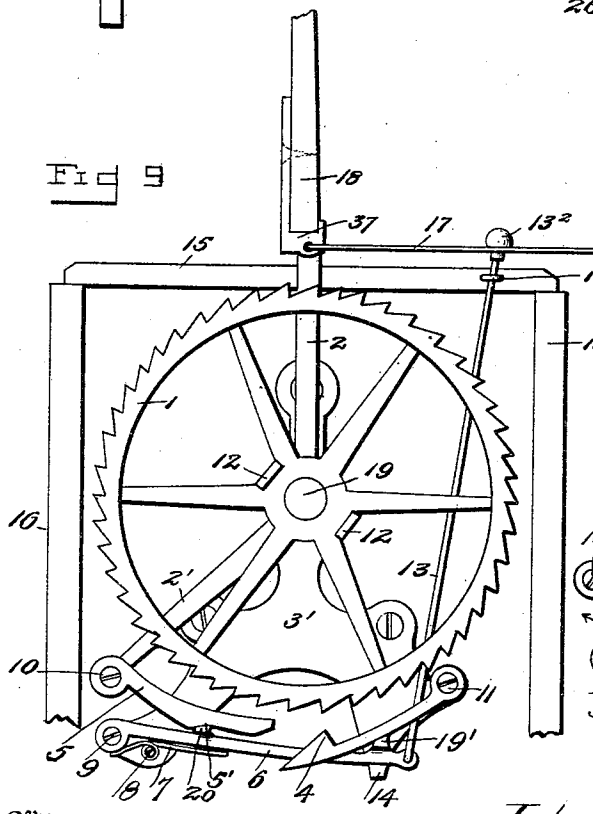
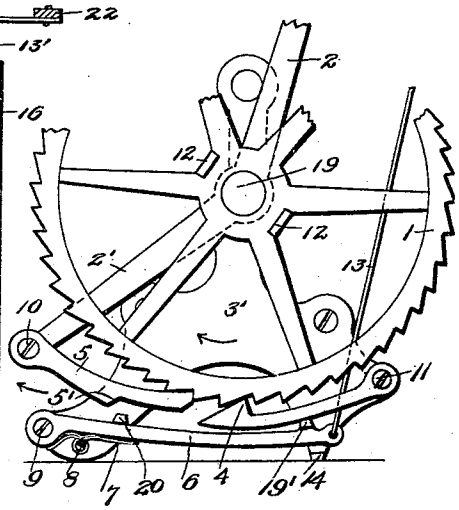


Fig. 10.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN JOSEFKOWICZ, OF BUCHANAN, MICHIGAN, ASSIGNOR TO PHILOMENA BUKOLT, OF SAME PLACE.

SELF-ROCKING CRADLE.

SPECIFICATION forming part of Letters Patent No. 630,894, dated August 15, 1899.

Application filed February 16, 1898. Serial No. 670,536. (No model.)

To all whom it may concern:

Be it known that I, JOHN JOSEFKOWICZ, a citizen of the United States, residing at Buchanan, in the county of Berrien and State of Michigan, have invented certain new and useful Improvements in Self-Rocking Cradles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain novel improvements in self-rocking cradles, of which Patent No. 579,256, granted March 23, 1897, may be taken as a type; and the objects of the invention are to simplify the construction, lessen the cost, and increase the efficiency and durability of the device.

To these ends the invention consists in the construction, combination, and arrangement of the device, as will be hereinafter more fully described, and particularly pointed out in the claims.

The accompanying drawings show my invention in the best form now known to me; but many changes in the details might be made within the skill of a good mechanic without departing from the spirit of my invention as set forth in the claims at the end of this specification.

The same reference characters indicate the same parts of the invention.

Figure 1 is a side elevation of my improved self-rocking cradle. Fig. 2 is an end elevation. Fig. 3 is an enlarged detail view of the escape-wheel and sectional shaft. Fig. 4 is section of the escape-wheel. Fig. 5 is a front elevation of the same. Fig. 6 is a perspective detail of the fan attachment. Fig. 7 is a detail view of the lower portion of the escape-wheel and its operating-pawls in their normal position when the cradle is at rest. Fig. 8 is a diagrammatic plan view of the cradle-operating levers. Fig. 9 shows the rod 13 pushed down to throw both of the pawls out of engagement with the ratchet-wheel. Fig. 10 is a detail view showing one position of the pawls during the operation of the cradle.

The frame consists of the foot-piece 21′, the head-piece 21, and the box 15 16 16, which connects them. The box consists of the parallel sides 16 16 and the top 15, fixed thereto, there being no bottom piece to the box. The head-piece and the foot-piece are fixed to the ends of the box.

The cradle-body 26 is formed with four corner legs 28, from the lower ends of which the four supporting-rods 27 extend upwardly to the head and foot pieces, so as to permit a transverse and approximately horizontal oscillating movement of the cradle in the frame.

1 denotes the escape-wheel, which is formed with an internally-threaded hub to receive the stud-shaft 19, journaled in the hollow hub 3 of the casting 3′, fixed to the head-piece. A suitable crank is fitted to the projecting end of the stud-shaft for conveniently winding up the machine. This casting 3′ is simply a plate secured by suitable screws to the head-piece 21 and is approximately triangular in form, and it forms a support for the escape-wheel, the lever 6, and the pawl 4.

12 12 represent parallel ears on the face of the escape-wheel to receive the contiguous end of the sectional shaft 13, which is secured thereto by the transverse pin E. This shaft is composed of a series of sections B′ B′, mounted on a rod C, the contiguous ends of the sections being rabbeted to receive the ferrule D, so that the periphery of the sectional shaft will present a smooth unbroken surface.

F denotes a cast plate fixed to the inner face of the foot-piece 21′ to receive the end of the rod C, and A denotes the mainspring, encompassing the sectional shaft and having one end fixed to the plate F, while its opposite end is fixed to the end of the sectional shaft B which is connected to the escape-wheel.

2 represents a lever fulcrumed on the hub of the escape-wheel, its lower arm 2′ carrying a stud-screw 10, on which is pivoted a gravity-pawl 5, having its free end projecting into the path of the teeth on the escape-wheel. The vertical arm of this lever 2 is formed with a socket 37 to receive a rod 18 for a purpose to be hereinafter explained.

4 denotes a gravity-pawl fulcrumed on the screw-stud 11, fixed in the lower end of the plate 3′, and its free end projects into the path of the teeth on the escape-wheel.

6 represents a lever fulcrumed at one end on

the stud-screw 9, and 7 denotes a coiled spring fixed at one end to the screw 8, with its free end resting under the lever 6 to press it upward against the pawls 4 and 5.

13 denotes a wire rod fixed at its lower end to the outer end of the lever 6 and extending upwardly through a guide-orifice 13′ in the box-top 15, its upper end terminating in a button 13^2, as shown, and 14 denotes a lug on the face of the plate 3′ to limit the downward movement of said lever 6 when depressed by the rod 13.

19′ represents an integral lug on the lever 6, which extends across the path of the pawl 4, and 20 denotes a similar lug on said lever, which forms a bearing for the inclined face 5′ of the pawl 5.

26 denotes the cradle-body, which is suspended by the rods 27 27 from the head and foot pieces, two of these rods being employed at each end, as shown, so that an approximately horizontal motion may be imparted to the cradle-body while oscillating.

A connecting-rod 17 is pivoted at one end to the lever 2 and at its other end to a longitudinal lever 22, these connections being shown in Fig. 5, and by now referring to Fig. 8 it will be seen that the lever 22 is fulcrumed on a transverse bar 24, which is rigidly fixed to the cover 15 of the spring box-casing, and the opposite end of said lever 22 is pivoted to one end of a transverse bar 25, which is fixed to the bottom of the cradle-body, and from this construction it will be seen that the pendulating movement of the vertical lever 2 is imparted to the shorter arm of the horizontal lever 22 by the connecting-rod 17, and as the free end of the longer arm of said lever 22 is pivoted to the transverse bar 25, fixed to the cradle-body, the latter swings in unison with the lever 2. A rod 23 connects the end of the fixed bar 24 with the same end of the moving bar 25 on the cradle-body to prevent end or longitudinal movement of the latter while oscillating.

28 28 29 represent parallel standards arising from the head-piece and connected at their upper ends by the cross-brace, as shown, to which is fixed a bracket 30 to support the mosquito-netting or any suitable drapery to give an ornamental finish to the cradle.

31 denotes a plate fixed to a clamp 31′, which is adjustably secured to the standard 29, and 32 represents a bracket fixed to said plate, its upper end forming a bearing for the crank-shaft 33, the inner end of which is journaled in the plate 31, and the outer end of said shaft is formed with an integral spring-clip, as shown, to secure the fan 36.

34 denotes a lever fulcrumed on the bracket 32, its upper end being formed with a loop 34′ to engage the crank-pin of the shaft 33, while its lower end plays freely in a screw-eye 35, fixed to the head of the cradle-body.

Fig. 10 shows the position the parts assume just before the escape-wheel is stopped by the pawl 4 to allow the pawl 5 to drop out of engagement and rest on the lug 20, at which time it immediately begins its backward movement and the cam 5′ rides up the lug 20, as seen in Fig. 5, which movement is continued by the impulse of the cradle until the pawl engages the next tooth with sufficient momentum to force the escape-wheel backward to release the pawl 4, which then falls on the lug 19, as shown in Fig. 7.

The operation is as follows: By means of a suitable crank-handle applied to the stud-shaft 19, which is turned in the reverse direction of the arrow shown in Fig. 5, the mainspring A is wound up, one or the other of the pawls 4 and 5 being normally in engagement with and serving to retain the escape-wheel at any point; but if it is desired to perform this winding operation noiselessly it is only necessary to press down on the button on the upper end of the rod 13, as shown in Fig. 9, which through the medium of the lever 6 allows the pawl to drop out of engagement with the ratchet-wheel, (see Fig. 9,) thereby throwing the whole strain of the spring on the crank-handle, and when the mainspring is wound up to its full limit the rod 13 is released and the spring 7 restores the lever 6 and pawls to their normal position, and which for the sake of illustration is that shown in Fig. 7. The spring being first wound up, as above described, the cradle is started by moving its body to the left, the tension of the spring A being exerted to rotate the escape-wheel in the direction of the arrow, with the pawl 5 in engagement with the lowermost tooth of the escape-wheel. The pressure being now communicated to said pawl forces it to the left, carrying with it the arm 2′ of the lever 2, and thereby swinging the cradle to the right. As the pawl 5 moves to the left its inclined face 5′ slides over the lug 20 on the lever 6, allowing the latter to rise under the influence of the spring 7, (see Fig. 10,) and its lug 19 comes in contact with the pawl 4 to raise it and engage the second tooth to the right of the one in contact with the pawl 5, thereby momentarily checking the escape-wheel, while the momentum of the cradle-body carries the pawl 5 beyond its tooth, thus releasing and allowing it to fall on the lug 20 and entirely clear of the teeth on the escape-wheel, so that on the return movement of the cradle this pawl 5 will pass under the tooth which it has just released, and after it passes said tooth the inclined face 5′ of said pawl rides up on the lug 20 of the lever 6, the momentum of the cradle-body carrying the end of the pawl with sufficient force against the face of the next succeeding tooth to force the lower edge of the escape-wheel backward a sufficient distance to release the pawl 4, which drops on the lug 19. This occurs at about the same moment the cradle starts on its return movement, which is accelerated by the action of the escape-wheel on the pawl 5, and the operation first described is repeated as long as the spring exerts its tension on the escape-wheel.

In some instances the cradle-body may be suspended pendulum fashion, similar to that shown in the Letters Patent hereinbefore referred to, in which case the rod 18 on the upper end of the lever 2 is pivoted to the pendulating body, which is kept oscillating in the same manner as that described in the previous instance.

I do not now claim the fan attachment which is herein shown and described, but reserve to myself the right to file a subsequent application covering said subject-matter.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. In a self-rocking cradle, the combination with the head and foot pieces, the longitudinal boxing connecting them and the cradle-body suspended from said head and foot pieces, of the escape-wheel 1 pivoted in said head-piece, the lever 2 fulcrumed on said wheel, the pawl 5 pivoted on the lower end of said lever and having its free end projecting into the path of the teeth on said escape-wheel, the rod 17, connecting said lever and cradle-body, the sectional shaft B incased within said longitudinal boxing having one end connected to said escape-wheel and the spiral spring A encompassing said shaft and having one end fixed thereto and its opposite end fixed to said foot-piece, and the pawl 11, lever 6, and the spring 7, substantially as shown and described.

2. In a self-rocking cradle, the combination with the connected head and foot pieces of the cradle-body suspended therefrom, the plate 3′ formed with the hub 3 and lug 14, fixed to said head-piece, the pawl 4 and the lever 6, formed with the lugs 19 and 20 and fulcrumed on said plate, the spring-actuated escape-wheel journaled in said plate, the lever 2 fulcrumed on said escape-wheel and operatively connected to said cradle-body, the pawl 5 pivoted on said lever 2 and the spring 7 fixed at one end to said plate and having its free end in contact with the lever 6, substantially as shown and described.

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

JOHN JOSEFKOWICZ.

Witnesses:
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JOHN J. BUKOLT.