

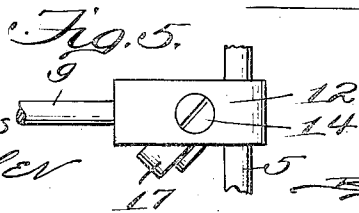
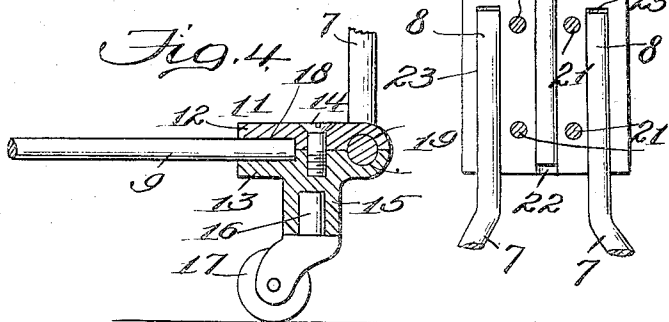
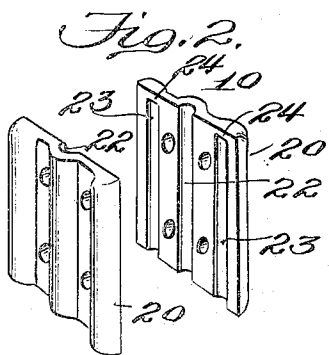
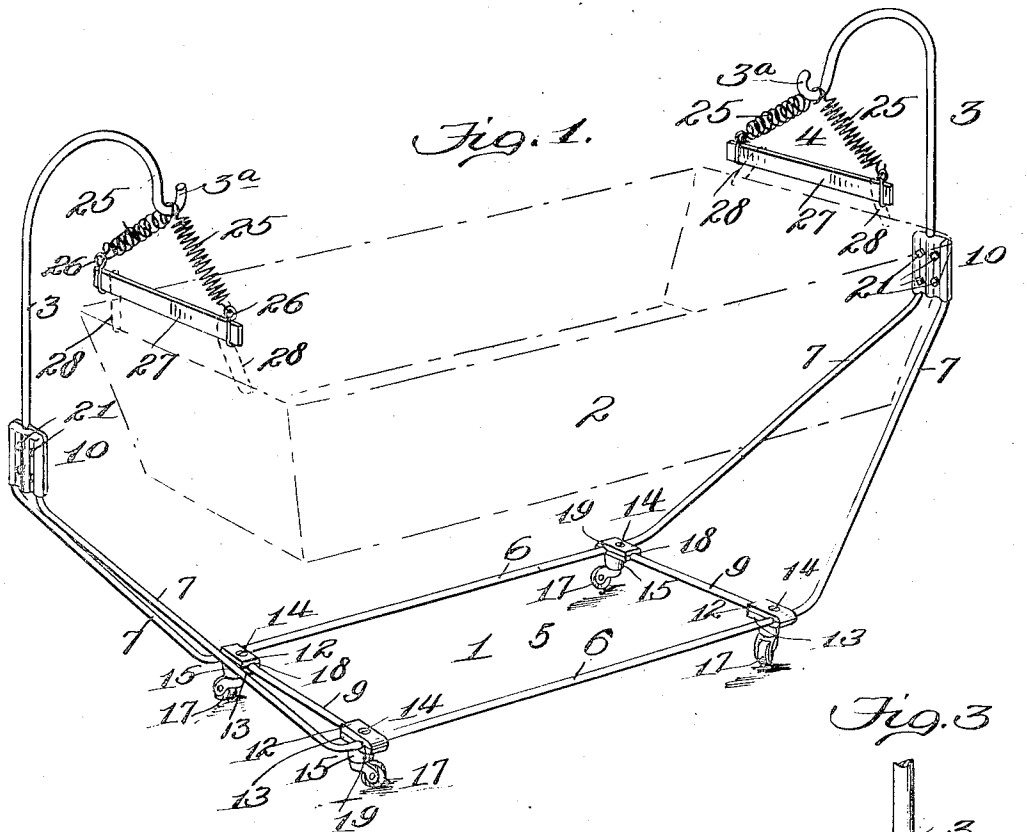
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CRADLE.

APPLICATION FILED JAN. 27, 1909.

941,927.

Patented Nov. 30, 1909.

2 SHEETS—SHEET 1.



Witnesses
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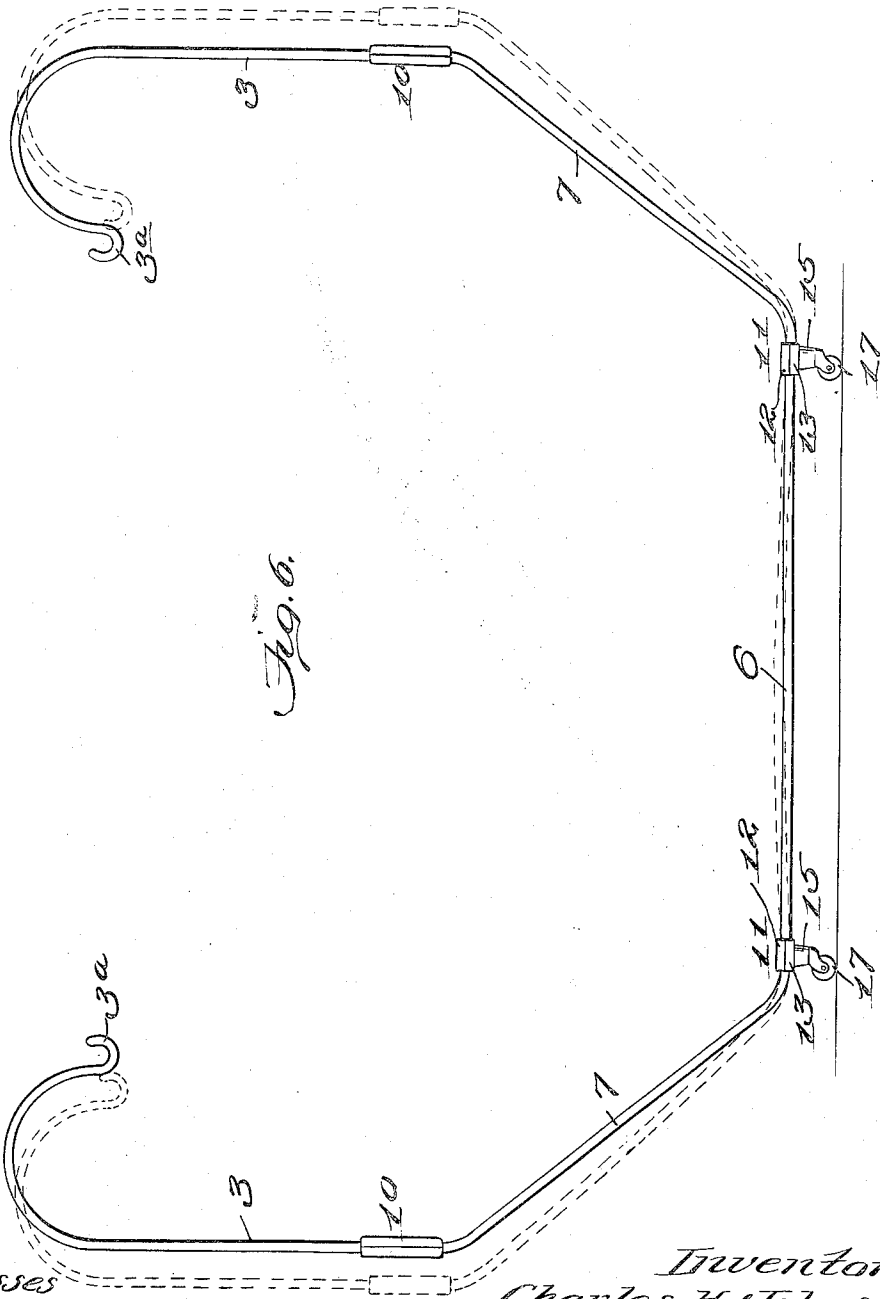


Fig. 6.

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UNITED STATES PATENT OFFICE.

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CRADLE.

941,927.

Specification of Letters Patent.

Patented Nov. 30, 1909.

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To all whom it may concern:

Be it known that I, CHARLES H. JOHNSON, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Cradles, of which the following is a specification.

This invention relates to new and useful improvements in cradles and more particularly to a cradle of that general type in which a basket is supported by spring connections from a suitable frame.

A number of structures are known to the art, in which spring supported baskets are employed. In such structures, however, the vibrations of the basket are more or less sudden, short, and short lived and the stress is placed altogether upon the supporting springs, which after a comparatively short period of use become slack and inefficient.

The present invention aims to overcome the objection stated and accordingly a structure is provided in which the frame takes up a material degree of the stress which has hitherto been absorbed by the suspension springs and in carrying out this principle the improved cradle structure comprises more particularly a spring frame provided with hangers which partake of vibrations and thereby assist the suspension springs in their action. In this manner sudden reactionary vibrations of the suspension springs are taken up by the frame and vice versa.

Incidental to the foregoing feature of novelty, the invention resides further in novel details of structure and combination, the ultimate purpose of which is to provide for simplicity and inexpensiveness of construction, durability and efficiency of service.

The structural details will be set forth at length in the following description which is to be read in connection with the accompanying drawings which disclose a preferred and advantageous embodiment of the invention.

The novel features by which the invention is to be distinguished from other spring cradles known to the art, will be described in language of the proper determinative scope in the claims appended at the end of the description.

In the said drawings: Figure 1 is a perspective view of a spring cradle constructed in accordance with the present invention. Fig. 2 is a detail perspective view of a pair

of cooperating clamp members which form an incidental novel feature of the invention. Fig. 3 is a detail sectional view showing in elevation the relation of the clamp members to the frame bars and hangers. Fig. 4 is a detail sectional view illustrating the structure of a combined clamp and caster structure included in the invention. Fig. 5 is a top plan view of such structure, and Fig. 6 is a side elevation showing by dotted lines, the vibratory action of the spring frame.

Similar characters of reference refer to corresponding parts throughout the several views.

The essential elements of the device comprise the frame designated generally by the numeral 1, the basket or cradle body indicated at 2, the hangers, as 3, and the spring suspension means, as 4.

The frame 1 comprises two spring rods, as 5, preferably of round cross section and each comprising a horizontal central portion, as 6, terminating at its ends in upwardly and divergently inclined portions, as 7, the latter in turn being formed at their ends with perpendicular offsets, as 8.

The rods 5 are so related to one another that their horizontal portions 6 are parallel and the opposite end portions 7 converge upwardly. The rods 5 are of course especially formed to secure this relation, which is maintained in the assembled device by the use of stay bars 9 between the horizontal portions 6 and of clamp means 10 between the opposed converging portions 7, the clamps 10 directly cooperating with the offsets 8 in a manner to be explained.

The bars 9 are preferably assembled by means of novel clamp devices, as 11, shown more particularly in Figs. 4 and 5. Each clamp device 11 comprises an upper plate 12 and a lower plate 13, said plates being connected by a screw, as 14. The plate 13 is formed with a depending sleeve, as 15, which serves as the bearing for a pintle 16, the latter forming an element of a caster which includes also a roller 17. The plates 12 and 13 are otherwise similarly constructed and have their adjacent faces formed with registering grooves, as 18 and 19, the grooves 18 extending a short distance inwardly and axially of said plates and affording sockets to receive the ends of the bars 9 and the grooves 19 extending transversely of the plates and allowing of the

clamping engagement of the plates upon the portions 6. The screw 14 is employed to tighten the plates against one another when they have been so assembled and to thereby
 5 cause a frictional binding action which prevents loose play or displacement of the parts.

In Figs. 2 and 3, the construction of the clamp means 10 has been illustrated in detail. Such means comprises a pair of similarly constructed plates, as 20, which are
 10 connected by screws or bolts, as 21. Each plate 20 has its inner face formed with a central vertical groove, as 22, which preferably extends the entire length of the plate
 15 and with a pair of vertical grooves, as 23, located one on each side of the groove 22 and extending from the lower edge of the plate upwardly, terminating short of the upper edge thereof, by reason of the provision
 20 of stop webs, as 24. In the assembled relation of the plates 20 the several corresponding grooves 22 and 23 register, the offsets 8 projecting into and being frictionally held in the grooves 23 and the lower end portions
 25 of the hangers 3 being similarly held in the grooves 22. By reason of the fact that the grooves 22 extend the entire length of the plates 20, the hangers 3 may be adjusted vertically, if desirable, by simply loosening
 30 the screws 21, moving the hangers vertically to the desired position and then tightening said screws.

The hangers 3 have somewhat elongated shanks and are preferably of gooseneck
 35 shape, the goosenecks terminating in hooks, as 3^a.

Each suspension means 4 preferably comprises a pair of retractile coil springs, as 25, having their upper ends formed as hooks for
 40 coöperation with a hook 3^a as a common supporting means. The springs 25 are disposed in downwardly divergent relation and their lower ends are formed as hooks for engagement in suitable eyes, as 26, carried by a
 45 bar, as 27.

The basket 2 is preferably hung directly from the bars 27 and is disposed between the hangers 3, the end walls of said basket being connected with the bars 27 as by staples 28
 50 or other suitable connecting devices.

The novel action of the device in use, will be best apparent by reference to Fig. 6 from which it will be seen that vertical reciprocations of the basket 2 will cause horizontal

reciprocations of the hangers 3, on account 55 of the resiliency of the frame rods 1 which are susceptible to the varying stress caused by the reciprocation of the basket and which take up a portion of such stress throughout their whole length in a vibratory action as
 60 indicated by the dotted lines. The particular form of the rods 5 assists materially in the efficient vibration thereof, the unbalancing of the central portions 6 causing corresponding movements of the portions 7, the
 65 reactions of which produce further and lesser unbalancings of the portions 6 and so on until the motive force is exhausted.

The particular construction of suspension means as above explained, is advantageous 70 in that it assists the vibratory action by providing for the perfect balancing of the parts and by reducing friction.

Having fully described my invention, I
 75 claim:

1. In cradle structures of the type set forth, in combination, a frame including a pair of rods, a basket, means for suspending said basket from said frame, transverse stay bars for said rods and clamp means connect-
 80 ing said stay bars and said rods and each comprising upper and lower plates having angularly disposed grooves, the grooves of one plate registering with the corresponding grooves of the other plate, and a screw connect-
 85 ing said plates, one pair of registering grooves serving to receive an end of said stay bar and the grooves of the other pair surrounding one of the rods.

2. In a cradle structure of the type set forth, the combination with a frame including a pair of bars having vertically disposed end portions, goose-neck hangers and means connecting the hangers and the end portions of the bars and comprising a clamp device
 95 having a central opening to receive the shanks of the hangers and having side openings closed at their upper ends and receiving the end portions of the bars, a basket and means for suspending the basket from
 100 the hanger.

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

CHARLES H. JOHNSON.

Witnesses:

WILLIAM LAWSON LINDSLEY,
 VIRO LEWIS RICHARDSON.