No. 701,372. Patented June 3, 1902.

F. J. McDONNELL.

SWINGING MACHINE.

(Application filed July 30, 1901.)

(No Model.) 2 Sheets—Sheet 1.

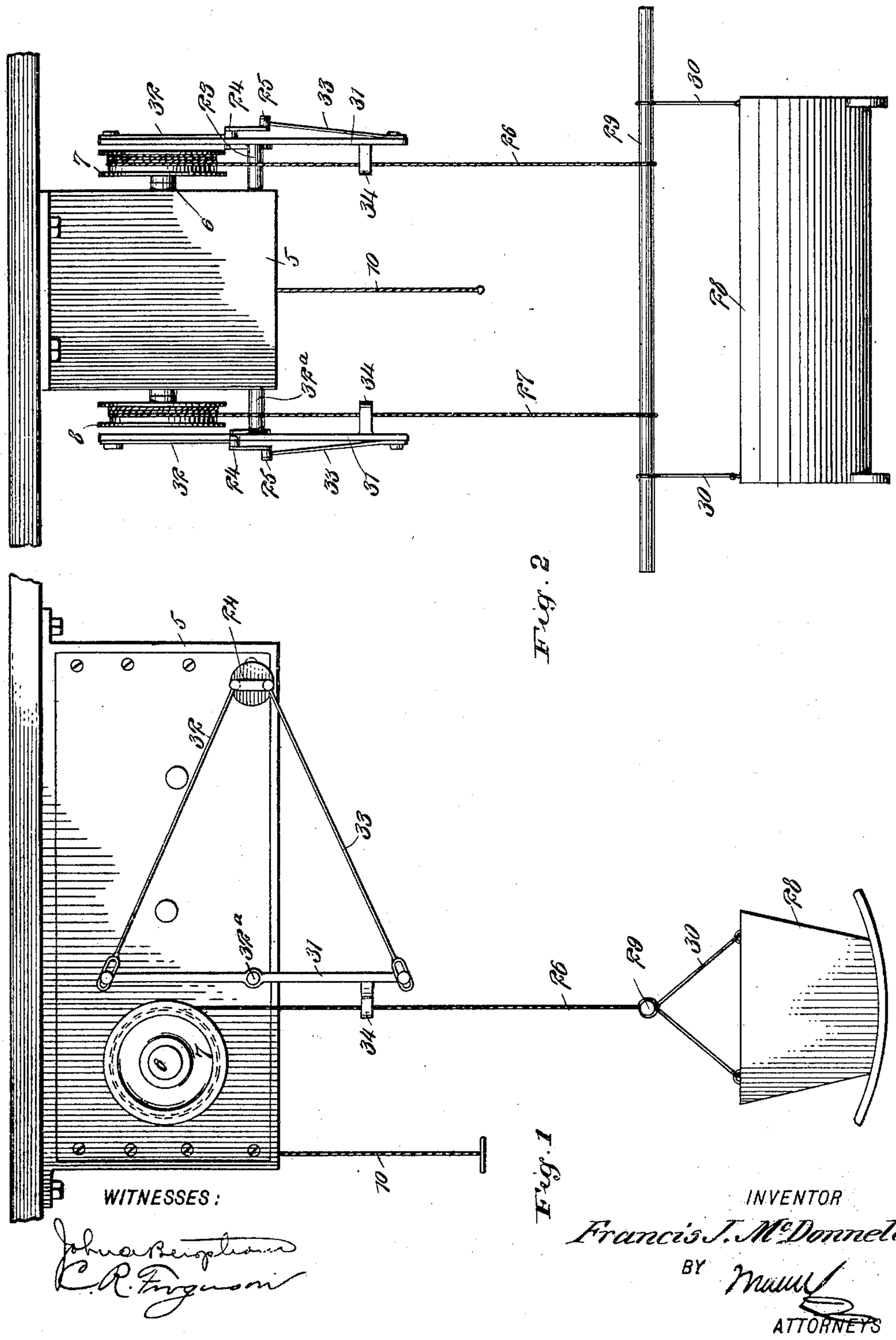

Fig. 2

Fig. 1

WITNESSES:

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INVENTOR

Francis J. McDonnell

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Fig. 3

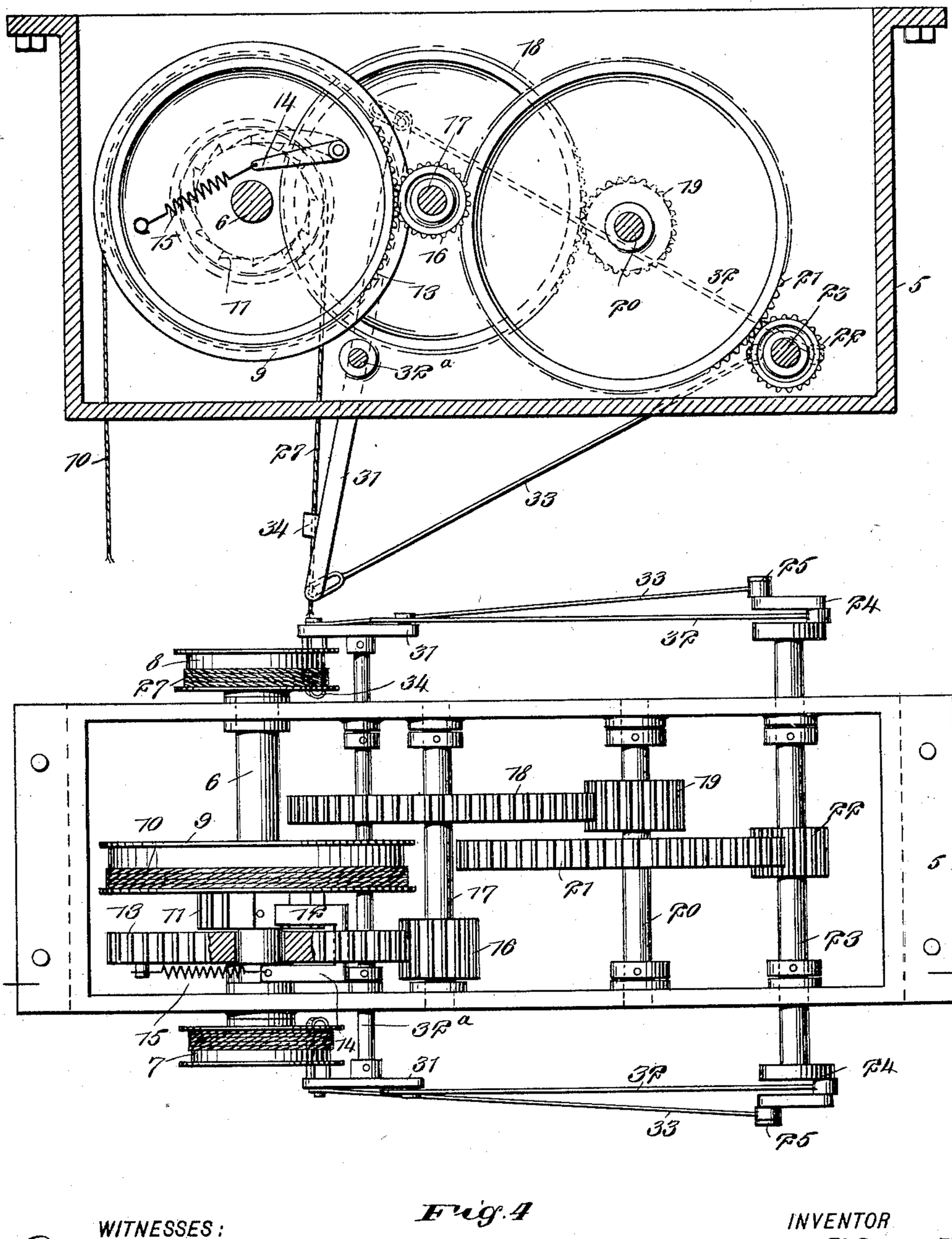

Fig. 4

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UNITED STATES PATENT OFFICE.

FRANCIS J. McDONNELL, OF NEW BEDFORD, MASSACHUSETTS.

SWINGING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 701,372, dated June 3, 1902.

Application filed July 30, 1901. Serial No. 70,241. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS J. McDONNELL, a citizen of the United States, and a resident of New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Swinging-Machines, of which the following is a full, clear, and exact description.

This invention relates to improvements in swinging-machines; and the object is to provide a machine of this character so constructed as to automatically cause the swinging motion of the carriage during a downward movement thereof, thus particularly adapting the device for use in the care of babies or children or for older persons when a hammock or the like is used as a carriage.

I will describe a swinging-machine embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a swinging-machine embodying my invention. Fig. 2 is an end view thereof. Fig. 3 is a section on the line 3 3 of Fig. 4, showing the operating-gear employed; and Fig. 4 is a plan view thereof.

Referring to the drawings, 5 designates a casing designed to be secured to a ceiling or other overhead support. This casing is closed at its ends, the sides, and bottom. One of the sides or ends, however, may be made removable. Arranged within the casing is a chain of gearing comprising a main shaft 6, having its ends extended through the side walls of the casing, and on the outer ends are winding-drums 7 and 8. Rigidly attached to the shaft within the casing is a large winding-drum 9, around which is wound a draw line or cable 10. This draw line or cable is attached at its inner end to said drum 9, and its other end extends through an opening in the bottom wall of the casing, so that it may be readily grasped for turning the drum in one direction. Also attached to the shaft 6 at one side of the drum 9 is a ratchet-wheel 11, engaged by a pawl 12, carried by a gear-wheel 13, loosely mounted on said shaft 6. The pawl 12 has a shaft portion extending loosely through an opening in the gear-wheel 13, and on the opposite end of said shaft is an arm 14, from which a spring 15 extends to and is connected with a lug on the gear-wheel. This spring serves to hold the pawl yieldingly in engagement with the ratchet-wheel.

The gear-wheel 13 meshes with a pinion 16, mounted on a shaft 17, which bears a gear-wheel 18, meshing with a pinion 19 on a shaft 20, and on this shaft 20 is secured a gear-wheel 21, engaging with a pinion 22 on a shaft 23, which has its end extended outward through the side walls of the casing, and each end is provided with double cranks 24 25.

Suspending cords or cables 26 27 engage around the pulleys 7 and 8. The lower ends of these suspending cords or cables are designed to support a carriage, which may be, as here shown, in the form of a cradle 28, or it may be a hammock or a chair or similar article.

As here shown, the cords or cables 26 are engaged with a rod 29, from which the carriage is swung by means of hangers 30. The rocking motion of the carriage is imparted from the shaft 23, which of course is operated from the chain of gearing before described.

On each side of the casing 5 is a rock-lever 31, the two rock-levers being mounted on a shaft 32^a, having bearings on the side walls of the casing. From the crank 24 a link-rod 32 extends to a pivotal connection with the upwardly-extended portion of the rock-lever, and from the crank 25 a link-rod 33 extends to a connection with the lower portion of said rock-lever. As the cranks 24 and 25 are extended in opposite directions, it is obvious that during the rotation of the shaft 23 a pulling strain will be imparted to one of the link-rods, while a pushing strain is operated against the other. It will be here stated, however, that the same rocking result would be obtained were one of the links—say the upper one—omitted.

The lower portions of the rock-levers 31 carry guides 34, through which the suspending cords or cables pass. In operation by drawing downward on the end of the cord or cable 10 the shaft 6 will be rotated to raise the carriage to its uppermost position. During this movement the pawl 12 will slide over

the ratchet-wheel, the chain of gearing remaining stationary. Upon releasing the draw cord or cable the carriage with its weight will descend, and as the shaft 6 will now through the agency of the pawl 12 be in locked engagement with the gear-wheel 13 motion will be imparted to the chain of gear-wheels, causing the crank-shaft 23 to rock the rock-levers 31, and this obviously will cause the swinging movement of the carriage.

It is obvious that by the chain of gearing employed the swinging motion of the carriage will be much faster than the downward movement. It is further obvious that by adding to or decreasing the chain of gearing any desired speed will be secured.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a swinging-machine, a suspended chain of gearing, a carriage, cable connections between the carriage and the gearing, a crank-shaft operated by the gearing, and connections between said shaft and the cables, substantially as specified.

2. In a swinging-machine, a suspended chain of gearing, a carriage, cable connections between the carriage and gearing, a crank-shaft, rock-levers on opposite sides of the casing, connections between said rock-levers and cranks on the crank-shaft, and guides carried by the rock-levers and through which the cables pass, substantially as specified.

3. In a swinging-machine, a casing designed to be secured to an overhead support, a main shaft in the casing, drums mounted on the outer ends of said shaft, cords or cables engaging the said drums, a carriage supported by the cords or cables, a winding-drum on the shaft, means for rotating the winding-drum and shaft, a gear-wheel loosely mounted on the shaft, means for locking said gear-wheel in connection with the shaft, a crank-shaft, a train of gearing between said crank-shaft and said gear-wheel, rock-levers on opposite sides of the casing, connections between said rock-levers and cranks on the crank-shafts, and guides carried by the rock-levers and through which the cords or cables pass, substantially as specified.

4. In a swinging-machine, a casing adapted to be secured to an overhead support, a main shaft arranged in the casing, a winding-drum on said shaft within the casing, a cord or cable extended from said drum through an opening in the bottom of the casing, a ratchet-wheel mounted on said shaft, a gear-wheel loosely mounted on the shaft, a spring-pressed pawl carried by the gear-wheel for engaging with the ratchet-wheel, drums on the outer ends of said shaft, a carriage having cord or cable connections with said drums, a crank-shaft having double cranks at its opposite ends, a chain of gearing between said crank-shaft and said gear-wheel, rock-levers on opposite sides of the casing, the said rock-levers being fulcrumed at their centers, link-rods extended from the crank members respectively to the upper and lower portions of the levers, and guides on the levers through which the carriage-suspending cords or cables pass, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANCIS J. McDONNELL.

Witnesses:
MAYHEW R. HITCH,
LIZZIE A. CHURCH.