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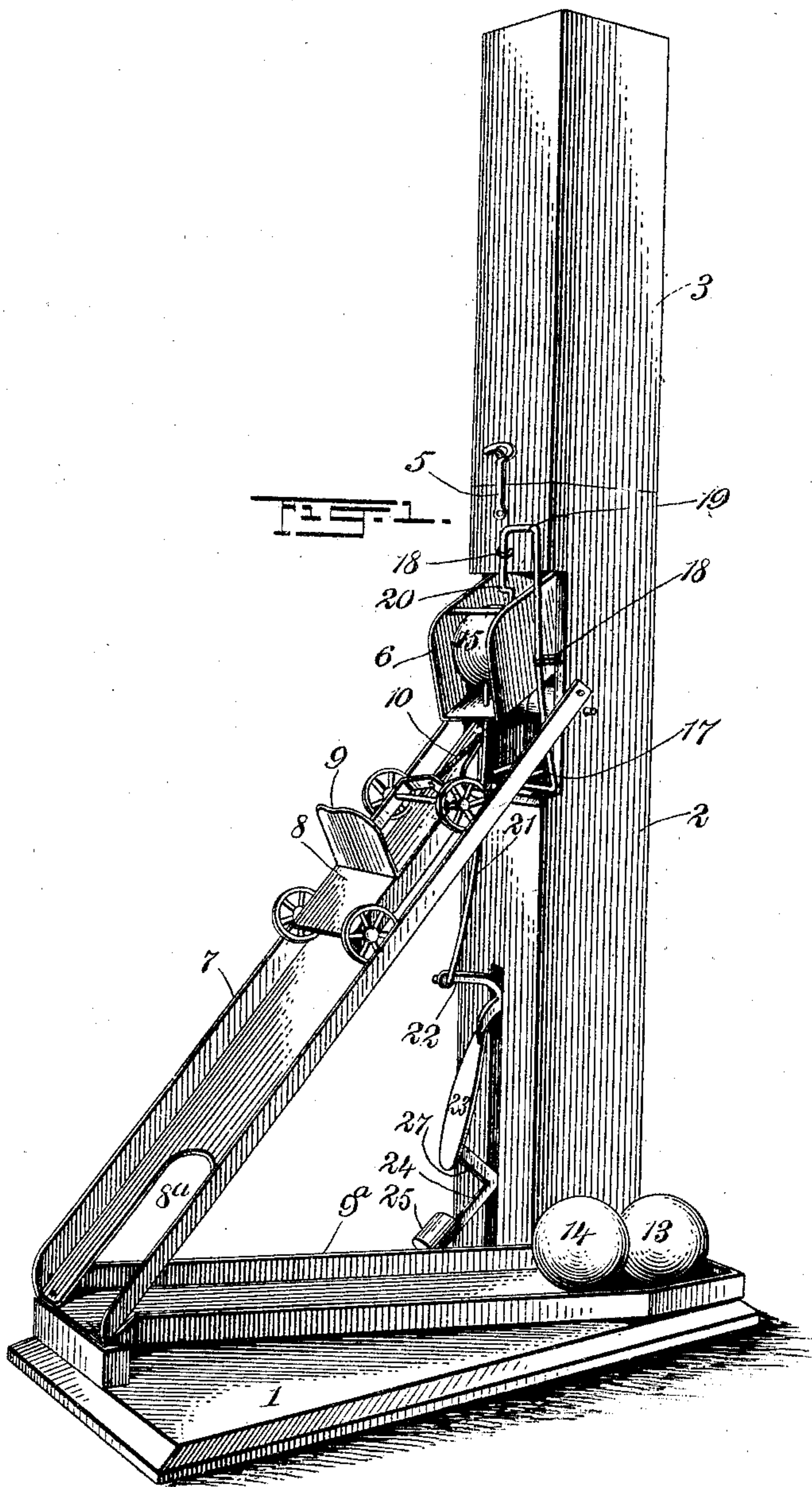
R. H. & R. D. ADAMS.

AUTOMATIC TOY.

APPLICATION FILED MAR. 26, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

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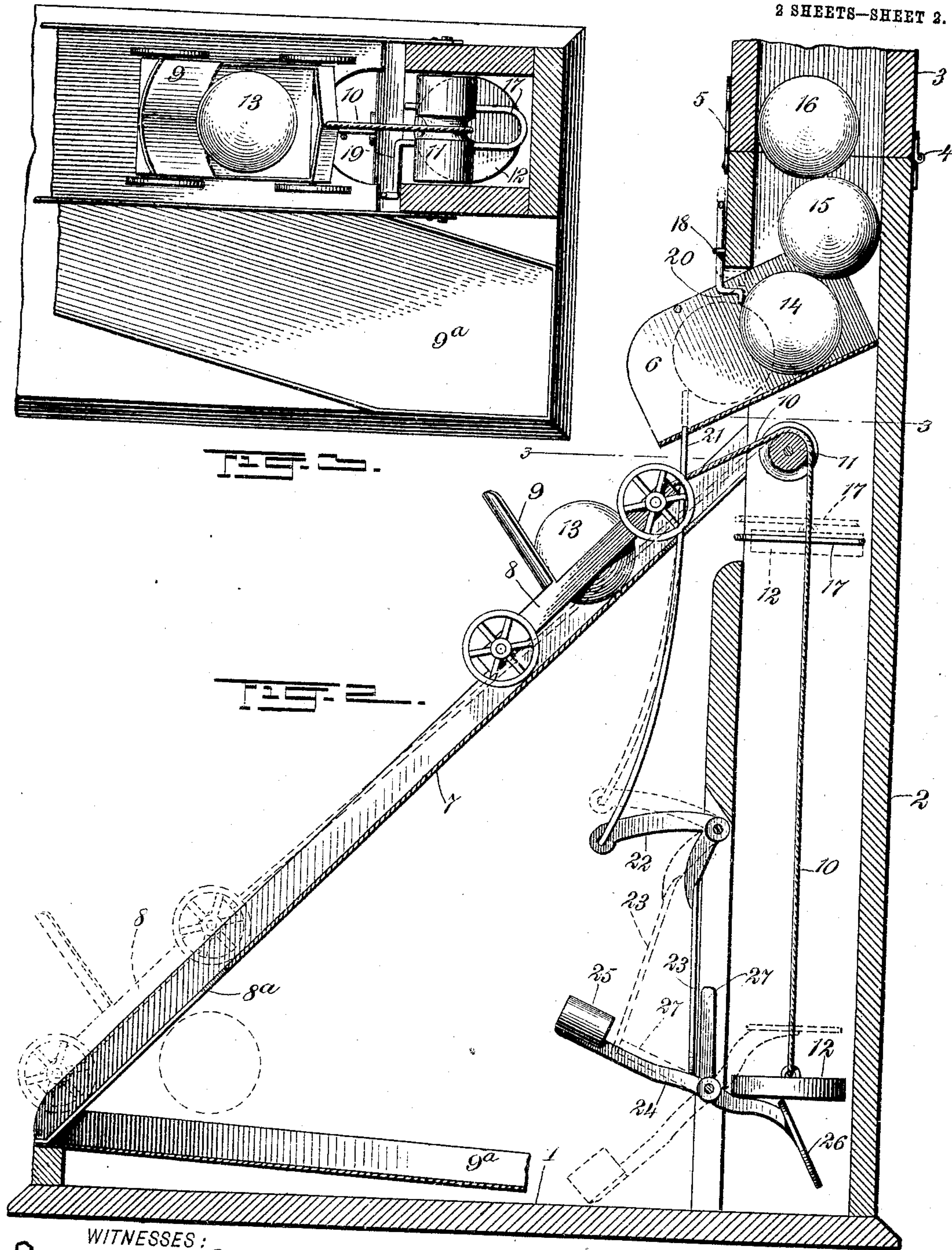
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UNITED STATES PATENT OFFICE.

REUBEN HARRISON ADAMS AND RENNIE DURRAND ADAMS, OF MINNEAPOLIS, MINNESOTA.

AUTOMATIC TOY.

SPECIFICATION forming part of Letters Patent No. 719,711, dated February 3, 1903.

Application filed March 26, 1902. Serial No. 100,023. (No model.)

To all whom it may concern:

Be it known that we, REUBEN HARRISON ADAMS and RENNIE DURRAND ADAMS, citizens of the United States, and residents of Minneapolis, in the county of Hennepin and State of Minnesota, have invented new and useful Improvements in Automatic Toys, of which the following is a full, clear, and exact description.

Our invention relates to an automatic toy representing a vehicle engaged in conveying articles from one point to another.

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 perspective view showing our device in operation. Fig. 2 is a fragmentary section taken centrally through the same and slightly enlarged; and Fig. 3 is a horizontal section on line 3 3 of Fig. 2, also slightly enlarged.

Upon the base-board 1 is mounted a vertical tubular member consisting of lower and upper parts 2 3, the same being hinged together at 4 and secured at 5 by a fastening. By this arrangement the upper part 3 may be bent over, so that the apparatus will occupy less space and certain internal parts thereby made more readily accessible. This tubular member constitutes a magazine for the articles to be stored and is provided with a hopper 6 for the purpose of discharging said articles. An inclined chute 7 leads downward from a point adjacent to the lower end of the magazine to a point adjacent to the base-board 1. A vehicle 8, provided with a guard 9, is connected with a flexible cord 10, passing over the roller 11 and engaging a weight 12, the arrangement being such that said vehicle runs obliquely up and down the chute as said weight 12 passes down and up through the vertical tubular member 2.

A number of balls or analogous articles 13, 14, 15, and 16 are provided for the purpose of operating the device. A wire member 17 is provided with a yoke to be engaged by the weight 12 during the ascent thereof, so as to be slightly lifted thereby, as indicated by dotted lines in Fig. 2. This wire member is mounted to slide vertically in guides 18 and

is bent over at 19, so that one of its ends 20 is free to obstruct the hopper.

The wire trigger 21 is mounted upon the bell-crank 22, which is provided with an arm 23, said arm being free to move into the position indicated by dotted lines in Fig. 2. When in position, the wire trigger is raised to its uppermost limit, also as indicated by dotted lines in said figures.

A lever 24 is provided with a weight 25 and with a plate 26, said plate normally obstructing the descent of the weight 12, so as to be actuated thereby. The boss 27, which is integrally mounted upon the lever 24, is free to move the arm 23 outward, or into the position indicated by dotted lines in Fig. 2, whenever the weight 12 is raised.

The chute is provided at its lower end with an aperture 8^a, through which the balls are free to roll. After rolling through this aperture the balls pass down to the lowermost end of the receptacle 9^a.

The operation of our device is as follows: The balls being loaded into the magazine, as indicated in Fig. 2, the vehicle 8 is drawn down to the lower end of the chute by hand. This movement downward causes the ascent of the weight 12. The ascent of this weight drives the yoke 17 upward, thus causing the end 20 of the wire member to be momentarily raised into the position indicated by dotted lines in Fig. 2. This allows one of the balls, say 14, to move fully into the hopper, so as to occupy the position indicated by dotted lines in Fig. 2. The ball lodges upon the end of the trigger 21, where it is tentatively held in a position favorable to its subsequent release—that is to say, the ball is held in such position that a downward movement of the trigger 21 will cause it to roll into the vehicle, as the ball 13 (shown in Fig. 2) has just done. Supposing the vehicle, in the position indicated by dotted lines in Fig. 2, to be released, the weight 12 being heavier than the empty vehicle causes the latter to ascend the chute until it assumes the position indicated by full lines in Fig. 2. The descent of the weight trips the plate 26 of the lever 24, thereby allowing the comparatively light weight 25 to move the boss 27 from the position indicated in dotted lines to that indicated

in full lines, allowing the arm 23 to move to the right, the bell-crank 22 to move downward, and the trigger 21 to release the ball. The ball thus being free from the hopper rolls into the vehicle. Then because of its comparatively great weight it carries the vehicle down the chute, thus raising the weight 12. Arriving at the bottom the ball rolls through the aperture 8^a, thus lightening the vehicle, which immediately proceeds again to the top of the chute, only to be loaded by another ball and to make another trip downward. This process continues as long as the supply of balls lasts. Quite a number of balls may be placed in the magazine at a time, and, if desired, the discharge-balls at the bottom can be carried up and dropped into the magazine without disturbing the operation of the device.

Our invention operates continuously and simulates the loading and shipping of goods. The vehicle 8 is so constructed that a ball will pass freely through its bottom, except when checked by the bottom of the chute 7, so that the ball will be discharged when the vehicle arrives at the aperture 8^a in the bottom of the chute.

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

1. An automatic toy, comprising a magazine, a chute leading therefrom to a point below the same, a member movably mounted upon said chute and free to approach and recede from said magazine, means for actuating said movable member, a number of articles to be placed loosely in said magazine, means for discharging said articles one at a time from said magazine into said vehicle, and mechanism for automatically discharging said articles from said vehicle at the end of each trip, the arrangement being such that the apparatus may work continuously until all of said articles are discharged from said magazine.

2. An automatic toy, comprising a magazine, a chute leading thereto, a vehicle member movably mounted upon said chute and free to approach and to recede from said magazine, a weight connected by a cord to said vehicle for the purpose of actuating the same in one direction, a number of heavy articles to

be placed in said magazine for actuating said vehicle in the opposite direction, and means controllable automatically by movements of said vehicle, for discharging said balls from said vehicle.

3. An automatic toy comprising a magazine, a chute leading thereto, a vehicle movably mounted upon said chute and free to approach and to recede from said magazine, a weight connected by a flexible cord to said vehicle for the purpose of actuating the same in one direction, a number of heavy articles to be placed in said magazine for actuating said vehicle in the opposite direction, and means controllable automatically by movements of said vehicle, for alternately discharging said balls individually from said chute into said vehicle, and in turn from said vehicle into a receptacle; whereby the device may operate continuously.

4. An automatic toy comprising a magazine provided with a discharge-hopper, a number of heavy articles to be placed loosely in said magazine, a movable stop for checking said articles at a certain point within said hopper, an inclined chute mounted adjacent to said hopper, a vehicle member mounted upon said chute, means for automatically raising said vehicle to the top of said chute, a trigger for discharging said balls from said hopper into said vehicle, and means controllable automatically by movements of said vehicle, for periodically actuating said movable stop and said trigger.

5. An automatic toy comprising a chute, a vehicle movably mounted thereon, a revoluble roller, a weight heavier than said vehicle and connected thereto by a cord passing over said roller, a magazine provided with a movable stop, a number of bodies to be placed loosely within said magazine at will, and a trigger controllable by movements of said vehicle, for discharging said movable bodies one at a time into said vehicle.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

REUBEN HARRISON ADAMS.
RENNIE DURRAND ADAMS.

Witnesses:

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NORA L. NELSON.