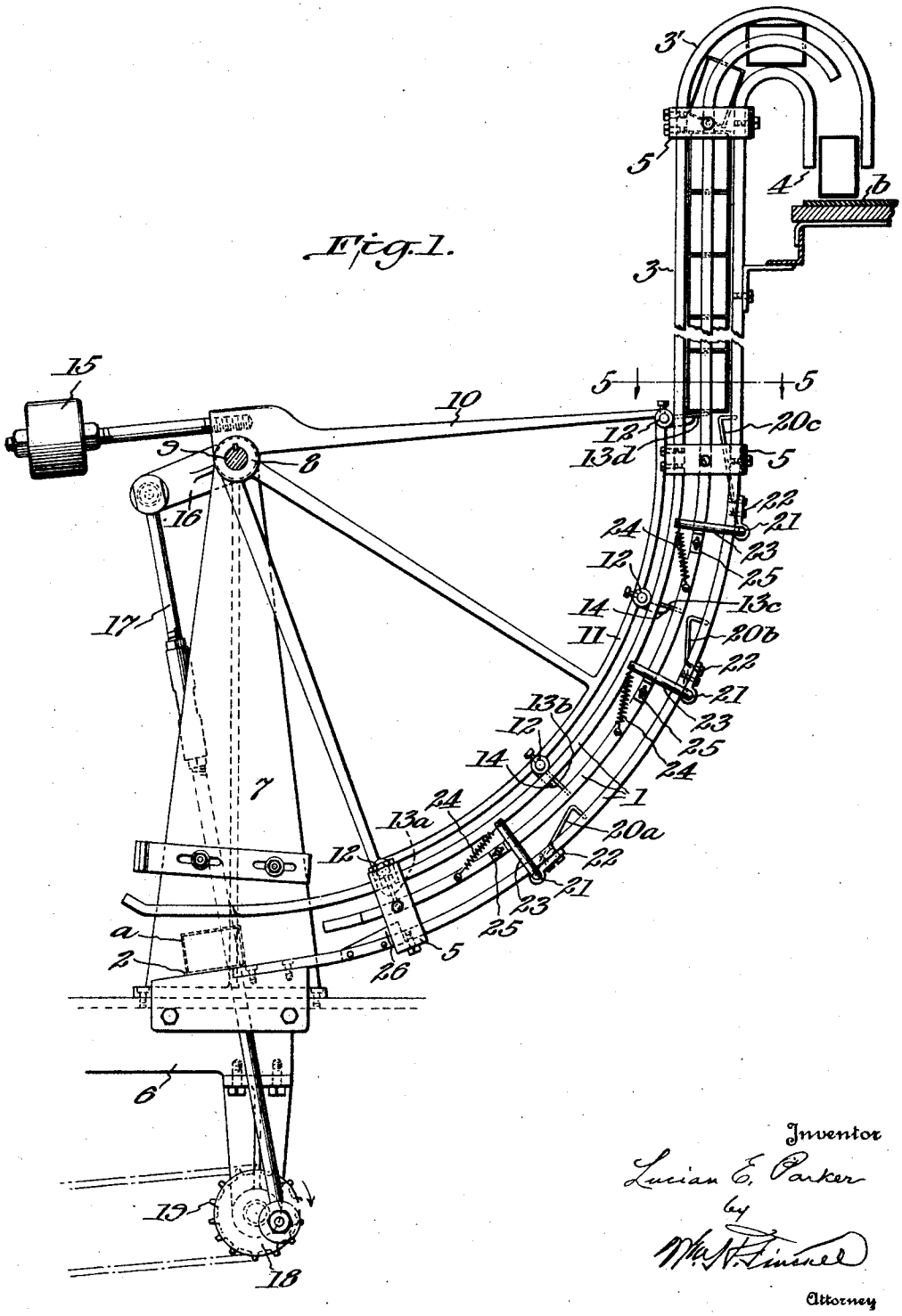
Oct. 30, 1928. 1,689,839

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ELEVATOR OR TRANSFER DEVICE

Filed Nov. 22, 1924 3 Sheets-Sheet 1

Fig. 1.



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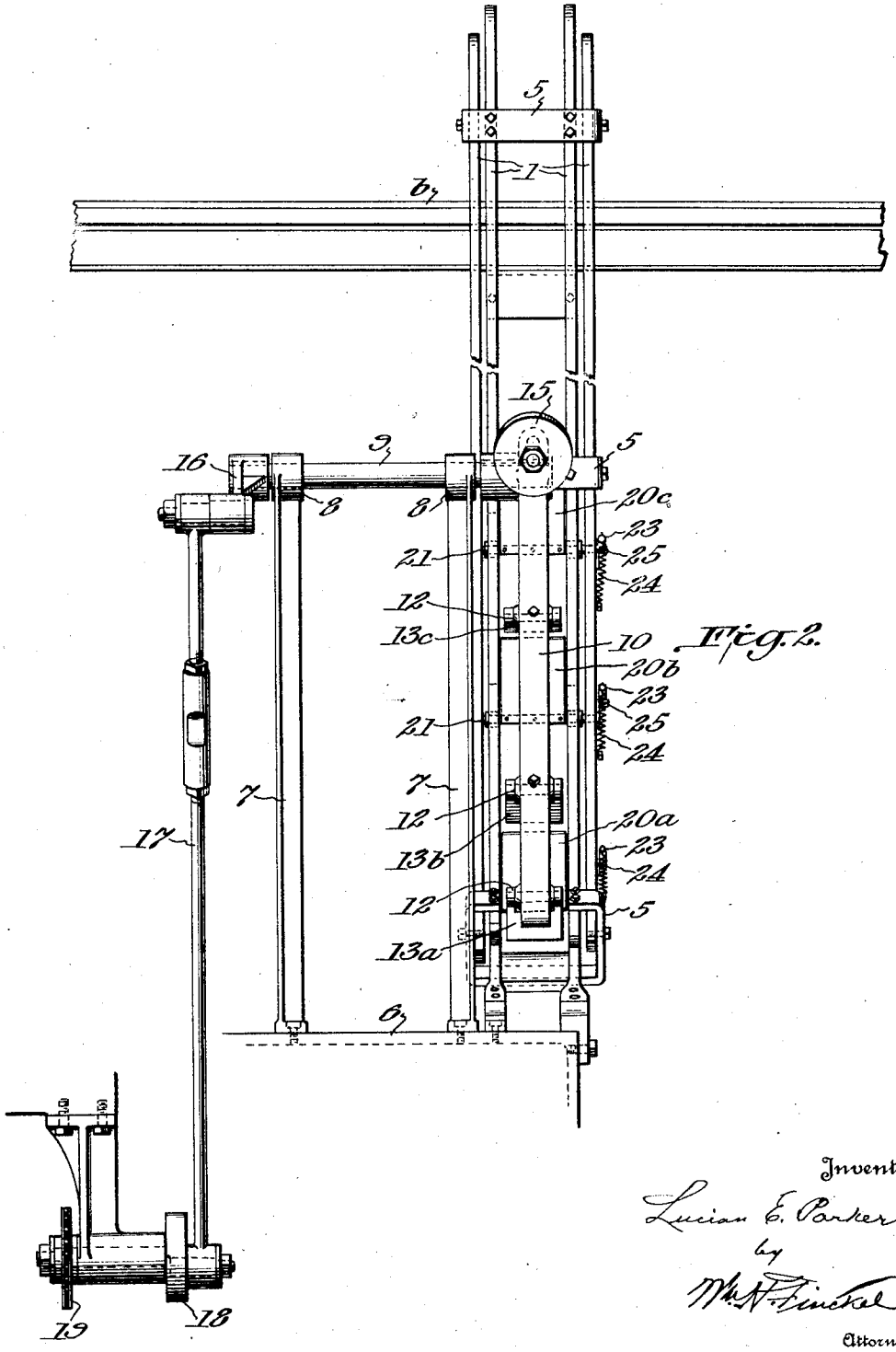


Fig. 2.

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Fig. 3.

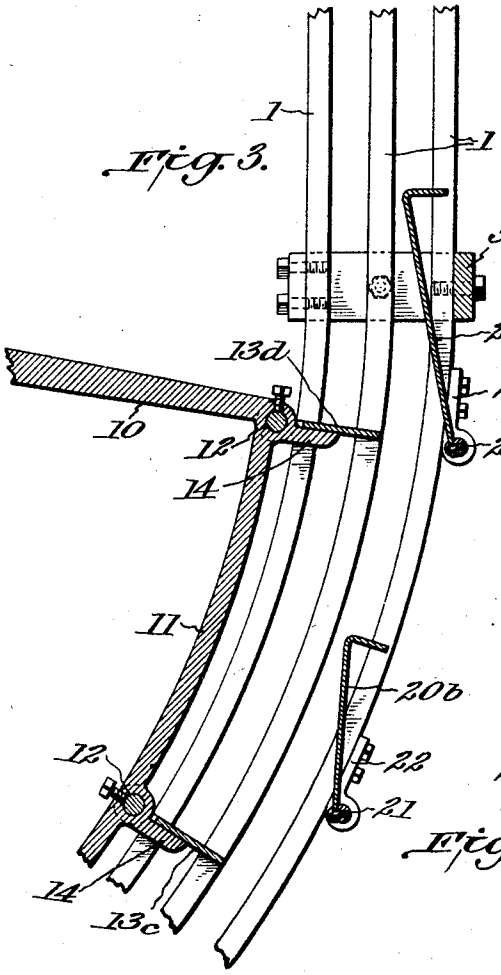


Fig. 4.

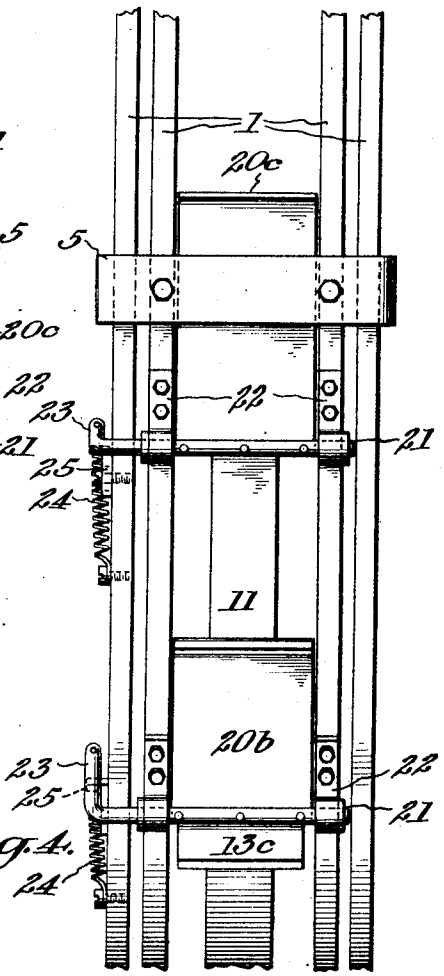
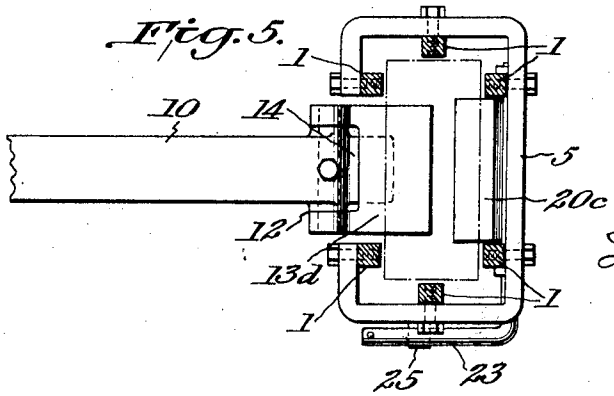


Fig. 5.



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Patented Oct. 30, 1928. 1,689,839

UNITED STATES PATENT OFFICE.

LUCIAN E. PARKER, OF WADSWORTH, OHIO, ASSIGNOR TO THE OHIO MATCH COMPANY, OF WADSWORTH, OHIO, A CORPORATION OF OHIO.

ELEVATOR OR TRANSFER DEVICE.

Application filed November 22, 1924. Serial No. 751,607.

In the copending application of Harry I. Lahr and Orlo E. Swartz, for conveyor mechanism for match machines, filed November 8, 1924, Serial No. 748,758, (patented August 21, 1928, No. 1,681,863), there is shown an elevator for taking filled boxes of matches from a box-filling and sliding machine and transferring them therefrom to a travelling conveyor belt from which they are finally discharged to a packaging or wrapping machine or the like; and my invention hereinafter described and claimed relates to an improvement on or a modified form of elevator mechanism which may be substituted for that shown and described in the application above mentioned.

The object of the invention is to provide a simple and efficient mechanism for elevating or transferring filled boxes of matches from a box-filling and sliding machine to a conveyor mechanism, or the like, located upon a level above that at which the filling and sliding machine discharges, and capable of functioning continuously, so long as boxes of matches are supplied to it, to elevate said boxes with a step-by-step movement which results in their discharge upon a conveyor or the like one at a time.

The invention consists in an elevator or transfer device including a guideway forming a chute or shaft to contain boxes of matches, or the like packages or articles, and through which they may be moved, and means cooperating with this guideway and movable longitudinally thereof, with an oscillatory stroke, for advancing the boxes of matches or the like progressively therein, and in various details of construction for producing the efficient functioning of these parts, as I will proceed now to explain and finally claim.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation of the device of my invention, same being shown in combination with a portion of a conveyor belt and with one bearing bracket removed. Fig. 2 is an end view looking to the right, Fig. 1. Fig. 3 is an enlarged fragmentary longitudinal central section of a portion of the guideway and segmental feed member. Fig. 4 is an enlarged view of a portion of the guideway and associated parts looking toward the left, Fig. 1. Fig. 5 is an enlarged section taken on the line 5—5 of Fig. 1.

The device comprises a guideway or shaft composed of a plurality of longitudinally arranged bars 1, forming its sides and top and bottom, and this guideway extends in a curve or arc from a point 2 at which filled boxes of matches are fed to it from a box-filling and sliding machine, not shown, to a point 3 where it is continued in a straight extension which rises to the height desired and is then given a reverse bend at 3′ to form a discharge outlet 4, out of which the boxes of matches may fall. The bars 1 are braced and spaced at intervals by collars 5 to which they are bolted or otherwise suitably secured. Mounted upon a suitable stand 6 or upon the table of the filling and sliding machine, are bearing brackets 7 having bearings 8 in which is mounted a shaft 9 having keyed to it and carrying a segmental or fan-shaped feed member 10 provided with an arcuate rim 11, having mounted in suitable bearings 12 thereon pivoted pusher plates 13^a, 13^b, 13^c and 13^d which rest against and are limited in movement in one direction by stops 14 preferably formed integral with the rim 11.

The feed member 10 is provided with an adjustable counterweight 15, whereby in its oscillatory or swinging movement it may be free of jar.

Oscillatory movement is imparted to the member 10 by means of an arm 16 keyed to the shaft 9 and connected by means of an adjustable link 17 with a crank disk 18 driven by means of a sprocket and chain gear 19 from any suitable source of power, such as the drive of the filling and sliding machine.

At suitable intervals in the guideway, I mount latch members 20^a, 20^b and 20^c, pivoted at 21 in suitable bearing members 22 and provided with arms 23 to which are attached springs 24 connected to any suitable stationary part of the guideway, as shown. The movement of the latch members toward the interior of the guideway is limited by means of adjustable stops 25 arranged to limit the movement of the arms 23 under the influence of their springs 24.

The operation of the device would seem to be apparent, but in the interest of clearness, it may be said that as boxes are fed to the point 2 where they enter the guideway, as indicated in broken lines, at *a*, Fig. 1, the fan-shaped feed member 10 in its oscillation will cause the plate 13^a acting upon its pivot 12 to ride over the first box in line, drop be-

hind such box, and then being arrested by its stop 14 advance the box to a position where it will be moved over a stop member 26 and be thereby prevented from sliding back toward its original position. The feed member upon its return oscillation will cause the plate 13^b to ride over the box held by the stop 26 and will cause the plate 13^a to pick up another box from the point 2, and then upon the next forward oscillation of the feed member, the first box will be moved to a position where it is engaged and held by the latch member 20^a and the second box is advanced to a position to be held by the stop 26. The next return oscillation of the feed member will cause the plate 13^b to ride over the box held by the stop member 26 and pick up this box, will cause the pusher plate 13^c to ride over the box held by the latch member 20^a and will cause the pusher plate 13^a to pick up an additional box at the point 2, and then upon the next forward movement of the feed member the first box will be moved to a position past the latch member 20^b in which position it is held thereby, the second box will be moved past the latch member 20^a and held thereby, and the third box will be moved past the stop member 26. This progressive picking up and advancing of boxes in the guideway continues so long as boxes are fed to the point 2 and oscillation is imparted to the fan-shaped feed member, and when the boxes have accumulated in the guideway to a point where they are held by the latch member 20^c, additional boxes fed past this latch member 20^c will cause those ahead of it to be advanced a distance equal to the width of a box, and continued advancement step-by-step of boxes of matches in this manner will cause these boxes of matches to be discharged one by one from the discharge end 4 of the guideway and upon the conveyor belt *b*.

It will thus be seen that I provide an elevator or transferring device of exceedingly simple construction and few parts, which is not apt to become broken or inoperative, and which, moreover, will function properly so long as power is applied to it and boxes are fed to the point 2 at which they enter the guideway.

Various changes in details of construction and arrangement of parts are contemplated as within the spirit of the invention and the scope of the following claims.

What I claim is:—

1. In an elevator or transfer device, an arcuate guideway adapted to receive articles to be transferred and provided with an extension ending in a discharge opening for said articles, a segmental feed member pivotally mounted with respect to said guideway and carrying pusher members arranged for cooperation with the articles in said guideway to impart a step-by-step transfer movement thereto, means for imparting an oscillatory movement to said segmental member about its pivot, and means carried by said guideway for holding said articles in advanced position during their step-by-step movement upon oscillation of said segmental member, said articles as they are advanced in said guideway piling one behind the other and finally dropping one by one from said discharge end.

2. In an elevator or transfer device, an arcuate guideway adapted to receive articles to be transferred and provided with an extension ending in a discharge opening for said articles, a segmental feed member pivotally mounted with respect to said guideway and carrying pivoted pusher members arranged for cooperation with the articles in said guideway to impart a step-by-step transfer movement thereto, means for imparting an oscillatory movement to said segmental member about its pivot, and latch members carried by said guideway for holding said articles in advanced position during their step-by-step movement upon oscillation of said segmental member, said articles as they are advanced in said guideway piling one behind the other and finally dropping one by one from said discharge end.

3. In an elevator or transfer device, an arcuate guideway adapted to receive articles to be transferred and provided with an extension ending in a discharge opening for said articles, a segmental feed member pivotally mounted with respect to said guideway and carrying pivoted pusher members arranged for cooperation with the articles in said guideway to impart a step-by-step transfer movement thereto, means for imparting an oscillatory movement to said segmental member about its pivot, and spring latch members carried by said guideway for holding said articles in advanced position during their step-by-step movement upon oscillation of said segmental member, said articles as they are advanced in said guideway piling one behind the other and finally dropping one by one from said discharge end.

In testimony whereof I have hereunto set my hand this 19th day of Nov. A. D. 1924.

LUCIAN E. PARKER.