

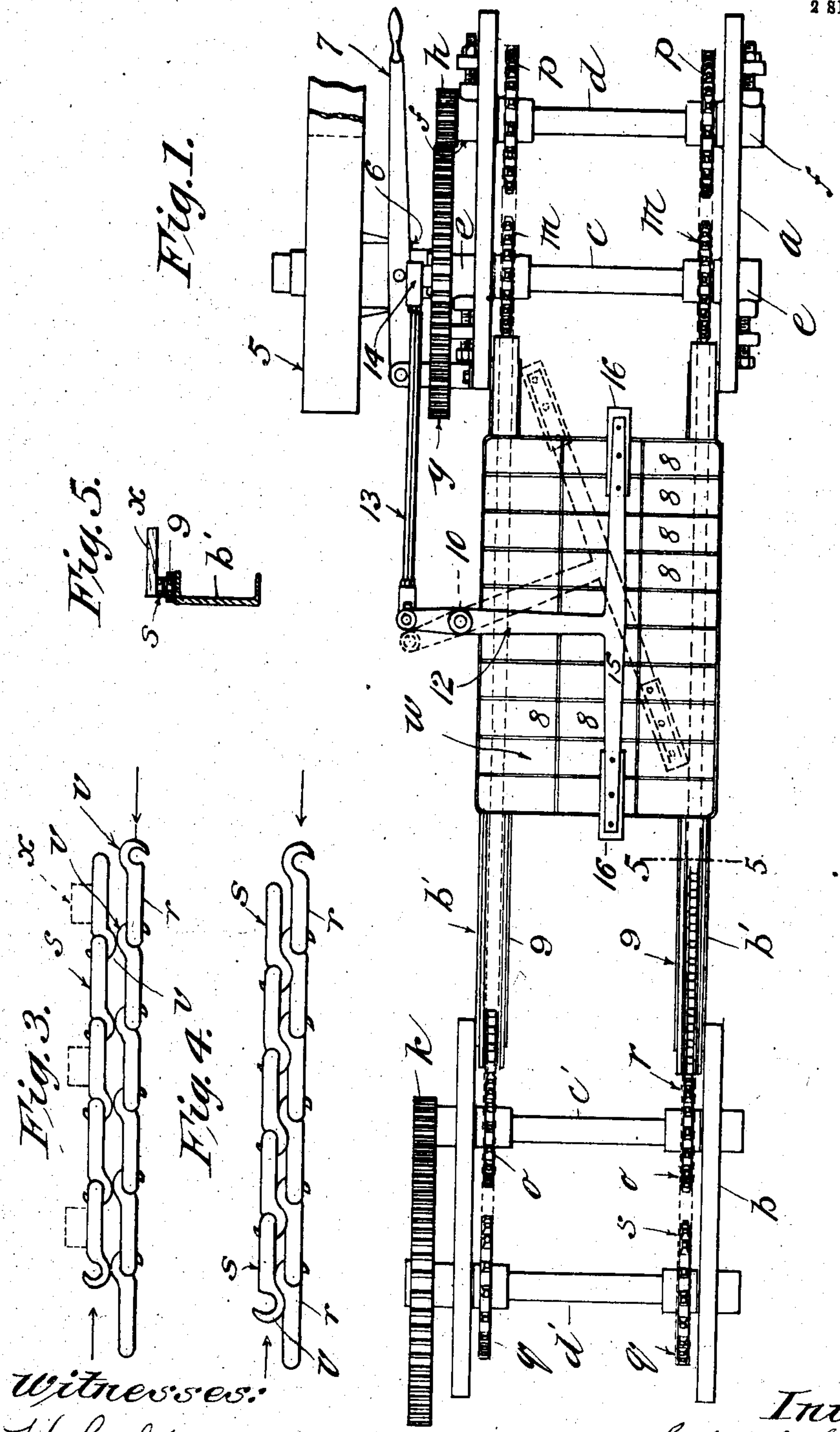
No. 834,186.

PATENTED OCT. 23, 1906.

G. CARLSON.
SHAKING TABLE.

APPLICATION FILED NOV. 6, 1906.

2 SHEETS—SHEET 1.



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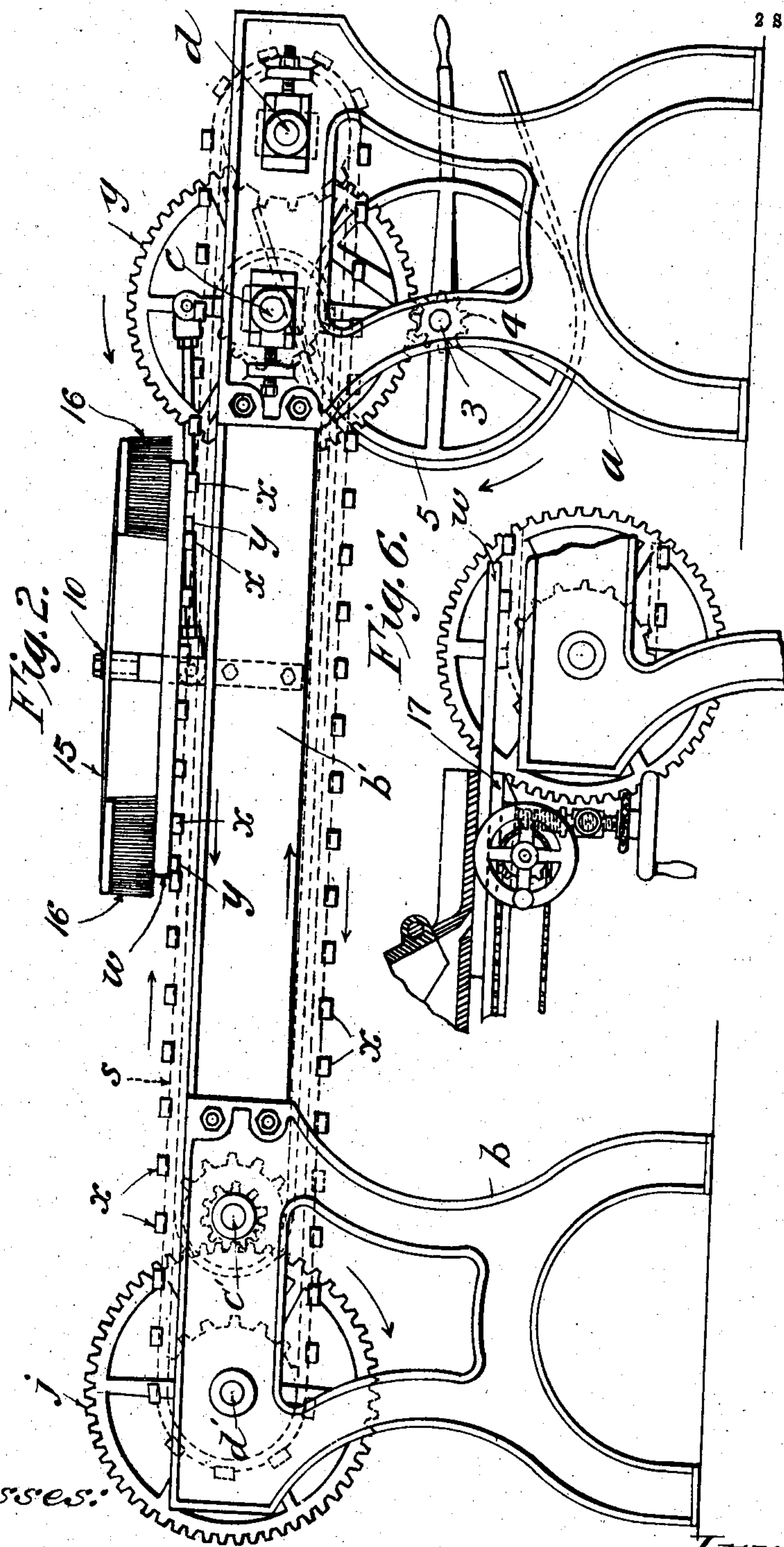
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

GABRIEL CARLSON, OF SPRINGFIELD, MASSACHUSETTS.

SHAKING-TABLE.

No. 834,186.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed November 6, 1905. Serial No. 286,017.

To all whom it may concern:

Be it known that I, GABRIEL CARLSON, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Shaking-Tables, of which the following is a specification.

This invention relates particularly to machines used in the manufacture of confectionery, and has special reference to the construction of a shaking-table whereby goods in more or less plastic condition, which have been deposited in molds, may when the latter are passed through the machine on the table be settled down in the molds in a manner to bring the lighter or more liquid parts to the surface, whereby a suitable finish for the exposed surface of the confectionery may be provided.

The object of the invention further lies in the provision of means for lightly brushing the surface of the confections during the shaking-down process, whereby a superior polished effect may be imparted to the surface thereof.

The invention is fully illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of the machine in which the invention is embodied. Fig. 2 is a side elevation of the same, the chains constituting the carriers for the molds passing through the machine and constituting also the shaking elements, being shown in dotted lines only. Figs. 3 and 4 are side elevations of the chains in two different positions and on an enlarged scale and clearly illustrate the manner in which the shaking effect is produced on articles carried on said chains. Fig. 5 is a fragmentary sectional view through one of the side rails of the machine, substantially on line 5-5, Fig. 1, showing the relation of the chains thereto. Fig. 6 is a side elevation showing a portion of one of the end frames of the shaking-table and one end of a paste-molding machine with which the shaking-table is used, the latter having trays or molds filled with confections delivered to it from the molding-machine.

Referring now to the drawings, *a b* indicate two end frames spaced at suitable distances apart by the rails *b'*, each frame carrying two shafts located in the same horizontal plane, the shafts in the frame *a* being indicated by *c* and *d* and those in the frame *b* by *c'* and *d'*. The shafts in the frame *b* are pref-

erably non-adjustable; but the shafts *c* and *d* in the frame *a* are mounted in bearings *e* and *f*, which are adjustable independently in the same plane toward and from the shafts *c'* and *d'*.

On the shaft *c* is a large gear *g*, and on the shaft *d* is a smaller gear *h*, in mesh therewith. The same construction is followed in the frame *b*, there being a large gear *j* on the shaft *d'* and a smaller gear *k* on the shaft *c'*, in mesh with the gear *j*. On the shaft *c* are two sprockets *m*, fixed thereon, and two similar sprockets *o* are fixed on the shaft *c'*. On the shaft *d* are two sprockets *p*, and on the shaft *d'* are two like sprockets *q*, these sprockets *p* and *q* being enough greater in diameter than the sprockets *m* and *o* so that the outer surface of the chain *r*, running over the sprockets *m* and *o*, will lie in the same plane as the inner surface of the chain *s*, which runs over the sprockets *p* and *q*.

It is to be noted that these chains, as shown in Figs. 3 and 4, are so constructed as to provide projections *v* thereon at regular intervals on the contiguous surfaces thereof, these preferably being formed by making a link having a rounding hook on the end to engage with the contiguous link of the chain, as clearly illustrated in the drawings referred to, the rounded ends of the hooks extending beyond the plane of the links, the latter preferably being rectangular in shape. The links being mounted on the sprockets, the bearings *e* and *f* of the shafts *c d* are so adjusted as to place the chains *r* and *s* under a proper tension. It will be noted that the shafts *c* and *d* and *c'* *d'* are connected together in a manner which if one of the gears *j* or *g* be rotated movement will be imparted to the chains *r* and *s* in opposite directions, whereby the projections *v* on the chain will ride over the projections on the other, the alternate positions of the links of the two chains being shown in Figs. 3 and 4, whereby anything placed on the chain will be given a vertical reciprocating jarring movement equal to the height of the two projections on the two chains, and the frequency of the vibrations may be regulated as desired by the relative speeds of the chains, these, as stated, running in opposite directions.

To provide for carrying the trays or molds *w*, which are shown in Figs. 1 and 2, on the chain *s*, which is the outer chain, transversely-located bars *x* are secured to the latter, as shown in Fig. 2, and on the under side

of the trays are bars or cleats *y*, adapted to fit in between two of the bars *x*, whereby the tray may be carried along with the chain positively. This is shown and described only as a desirable mode of engaging the trays or molds with the chain, and, if desired, a different means of engagement may be provided.

Any device for imparting movement to the shafts *c* and *d* and *c'* and *d'* in the manner described may be employed; but I prefer to use the gears connected in the manner described with said shaft and with each other, and to drive one of the gears *g* or *j* a driving-shaft 3 is mounted in the frame *a* and provided with a small gear 4 to mesh with the gear *g*, the shaft 3 having a driving-pulley 5 thereon, and, as shown in Fig. 1, a clutch 6 is located between the driving-pulley and the gear 4, whereby by means of a clutch-lever 7 the machine may be stopped or started at will.

To support the chain between the two frames *a* and *b*, the side rails *b'* are made of channel-iron, their flanges extending inwardly, as shown at 9 9, Fig. 1, whereby they may serve as a shelf to support the chains and prevent their sagging, it being undesirable to tighten the chains sufficiently to carry the trays *w* through the machine in a substantially horizontal plane without permitting them to sag, for the reason that under such conditions the strain on the bearings of the shafts *c c'* and *d d'* would be too great.

To impart the highest finish to the surface of the confections in the compartments 8 of the tray *w*, it is desirable that the exposed surfaces thereof be brushed lightly as the trays move through the machine. To this end a suitable standard 10 is mounted on one side of the machine, preferably near the delivery end of the latter, and on this is carried an arm 12, pivotally mounted on the standard 10 to swing in a horizontal plane, one end of the arm which extends outside of the standard being by means of a rod 13 connected to a crank-pin 14, carried on the gear *g*, whereby reciprocating movements in a horizontal plane may be imparted to the arm 12. On the end of this arm, which extends about half-way across the tray *w*, is a cross-arm 15, extending both sides of the arm 12 substantially at right angles thereto and carrying on the under side of the opposite ends thereof brushes 16, so positioned that their ends will sweep lightly across the exposed surface of the confections in the compartments of the tray *w*, the swing of the arm 12 being illustrated in Fig. 1 by the dotted position thereof, whereby it is seen that each of the brushes 16 will swing from side to side of the trays as the latter pass under them.

In practice the machine forming the subject-matter of this application is used in connection with a machine for filling molds with

paste confectionery, more especially chocolate, of which that forming the subject-matter of my prior United States Letters Patent for "paste-molding machines," dated December 12, 1905, No. 807,107, is a good type, and in Fig. 6 of the drawings a portion of said machine is shown, 17 indicating the table thereof on which the trays or molds *w* are supported during the mold-filling operation, as described therein, and which by the movement of the mold-filling machine are delivered onto the chain belt *s* of the shaking-table.

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

1. A shaking-table consisting of a flexible carrier having downwardly-extending projections thereon, a support for the carrier provided with upwardly-extending projections, and means to move the carrier over its support to cause the projections thereon to ride over the projections on the support.

2. A shaking-table consisting of a flexible carrier having downwardly-extending projections thereon, a movable support for the carrier provided with upwardly-extending projections, and means to move the carrier and its support in opposite directions to cause the projections on the carrier to ride over those on the support.

3. A shaking-table consisting of a flexible carrier, and a flexible support, the latter and the carrier having oppositely-extending projections, and means to move the carrier and its support in opposite directions, the path of movement of the projections on one of said elements extending into the path of movement of the projections on the other.

4. A shaking-table consisting of two endless chains, the outer one constituting a carrier, said chains being movable in the same plane with the under side of one in contact with the upper side of the other each being provided with projections on their contiguous sides, and means to move the chains in opposite directions.

5. In a shaking-table, a suitable frame, two shafts supported in each frame substantially in the same plane, sprocket-wheels fixed on the ends of each shaft, those on the outer shafts at each end of the frame having a greater diameter than those on the inner shafts; chains running over said sprockets the inner surface of one being in contact with the outer surface of the other, there being projections on the contiguous surfaces of the chains, together with means to adjust said shafts toward and from each other, said chains being movable in opposite directions.

6. A shaking-table consisting of a flexible carrier and a support for the carrier, there being projections on the contiguous surfaces of the carrier and the support, means to move the carrier over its support to cause the projections thereon to ride over the pro-

jections on the support, together with a brush supported above the carrier to lightly brush the surface of a tray or mold moving through the machine on the carrier.

5 7. A shaking-table consisting of a flexible carrier and a support for the carrier, there being projections on the contiguous surfaces of the carrier and the support, means to move the carrier over its support to cause the
10 projections thereon to ride over the projections on the support, together with a brush supported above the carrier to swing over the surface of a tray or mold moving through the machine on the carrier, and a suitable
15 mechanism to actuate the brush by the movement of the machine.

8. In combination a shaking-table consisting of a flexible carrier having downwardly-extending projections thereon, a sup-

port for the carrier provided with upwardly- 20
extending projections, and means to move the carrier over its support to cause the projections thereon to ride over the projections on the support, said carrier receiving trays or
25 molds filled with paste confections, together with a brush operatively located above the carrier to brush the surface of said confections.

9. In combination a shaking-table operatively located to receive trays or molds filled 30
with confections in a paste form, and a brush supported above said shaking-table to sweep the surface of the mold during the movement of the latter over said table.

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