(No Model.) 2 Sheets—Sheet 1.

W. S. LOWE.

EGG TRAY MACHINE.

No. 424,068. Patented Mar. 25, 1890.

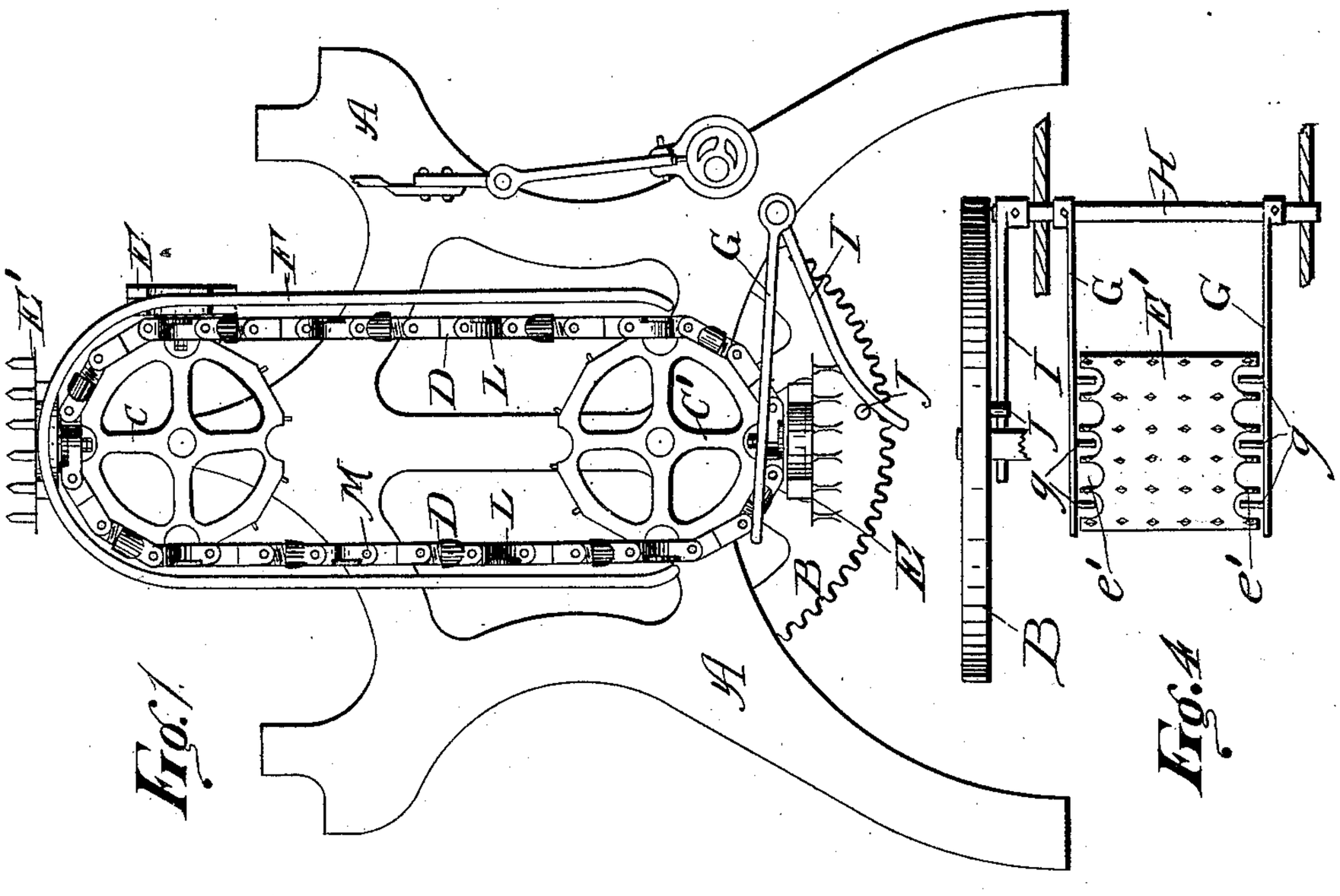

Fig. 1.

Fig. 4.

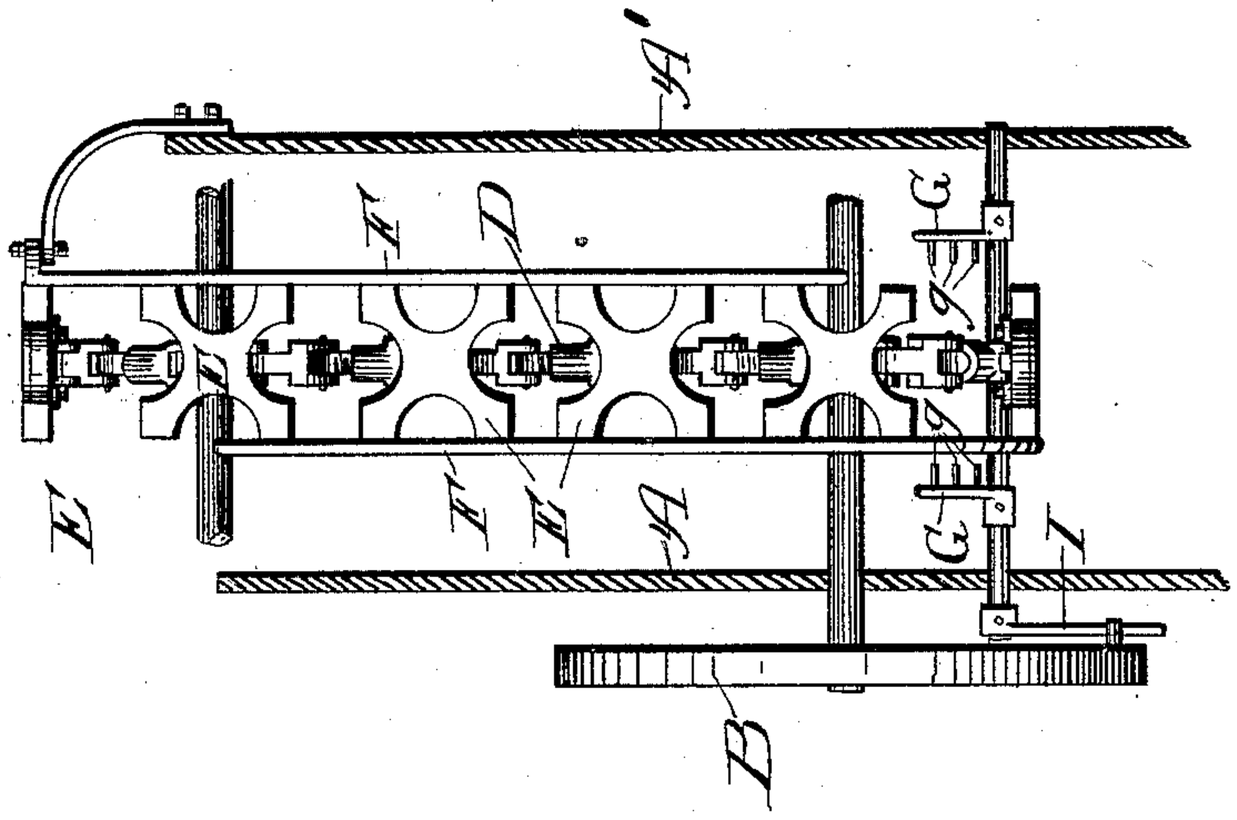

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

W. S. LOWE.

EGG TRAY MACHINE.

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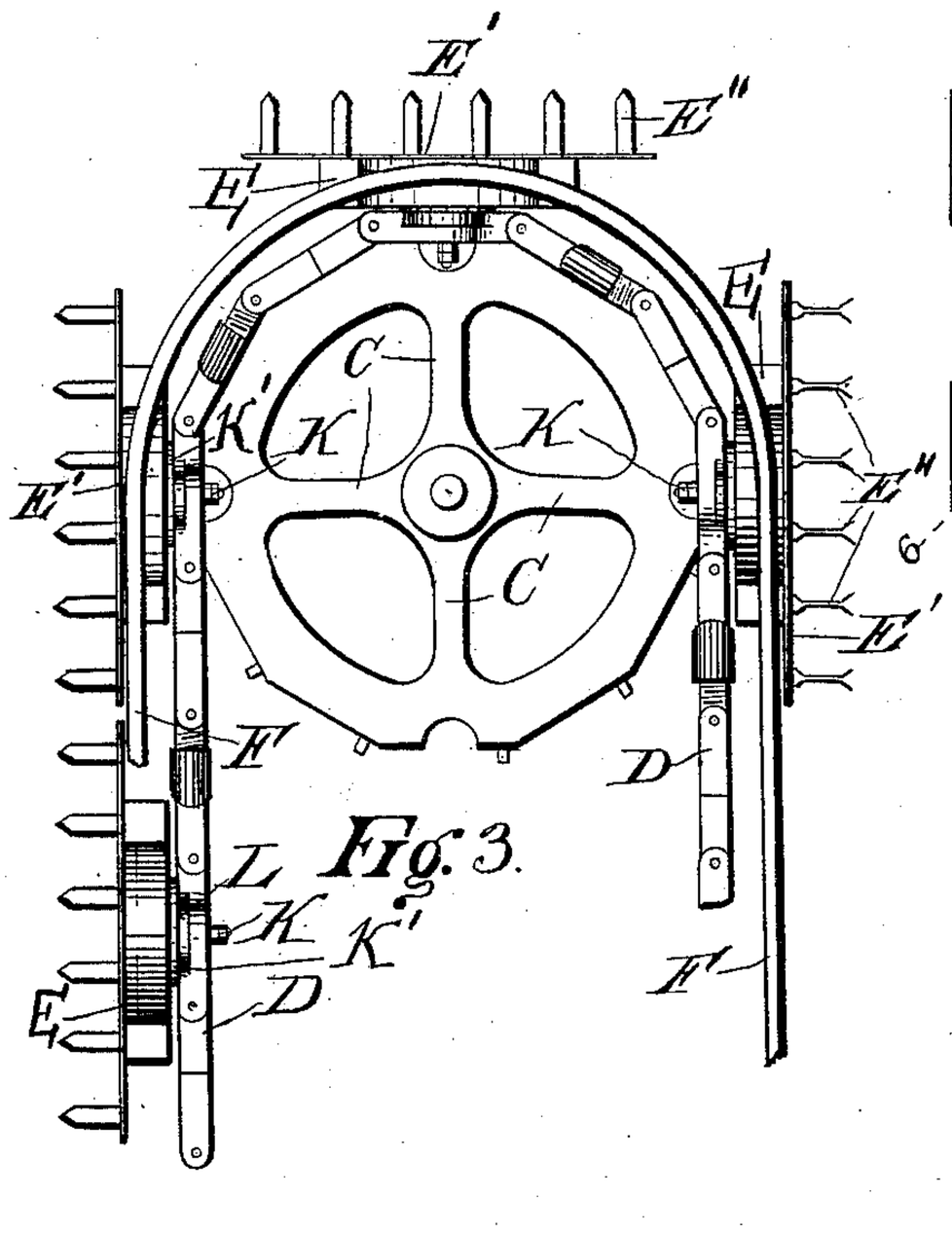


Fig. 3.

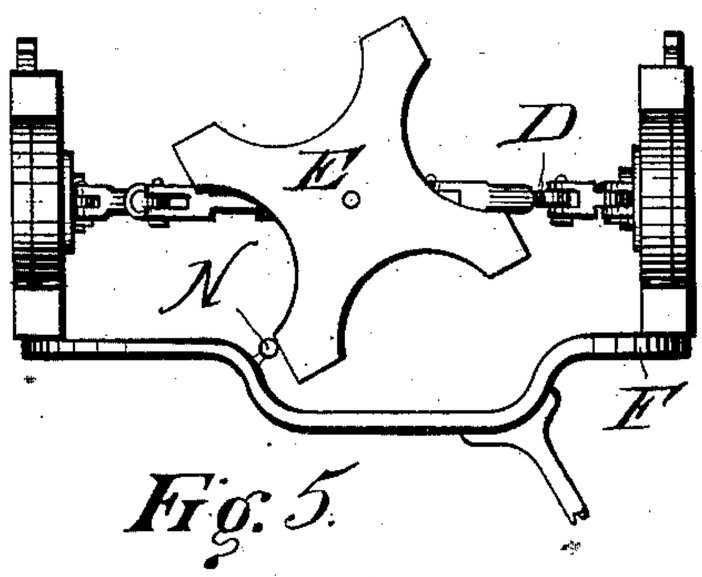
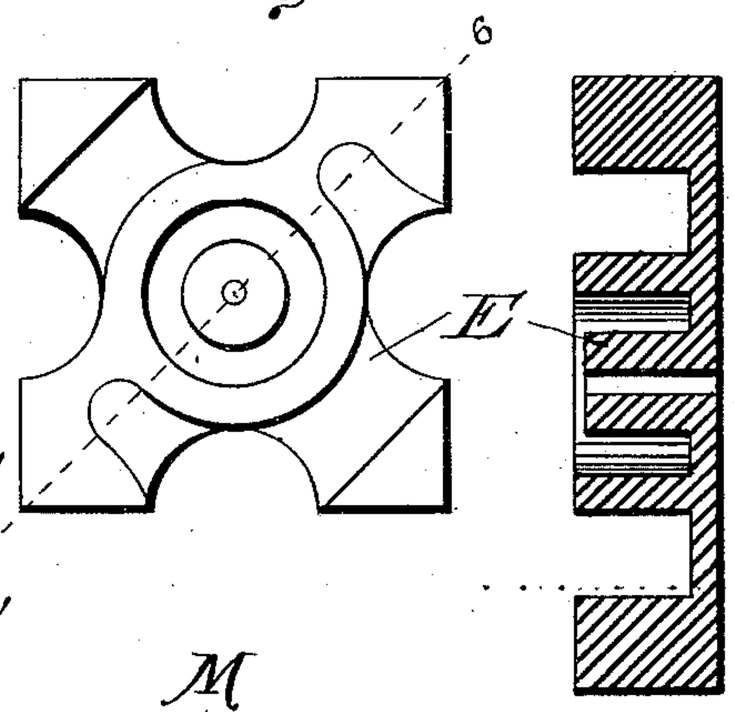


Fig. 5.

Fig. 6



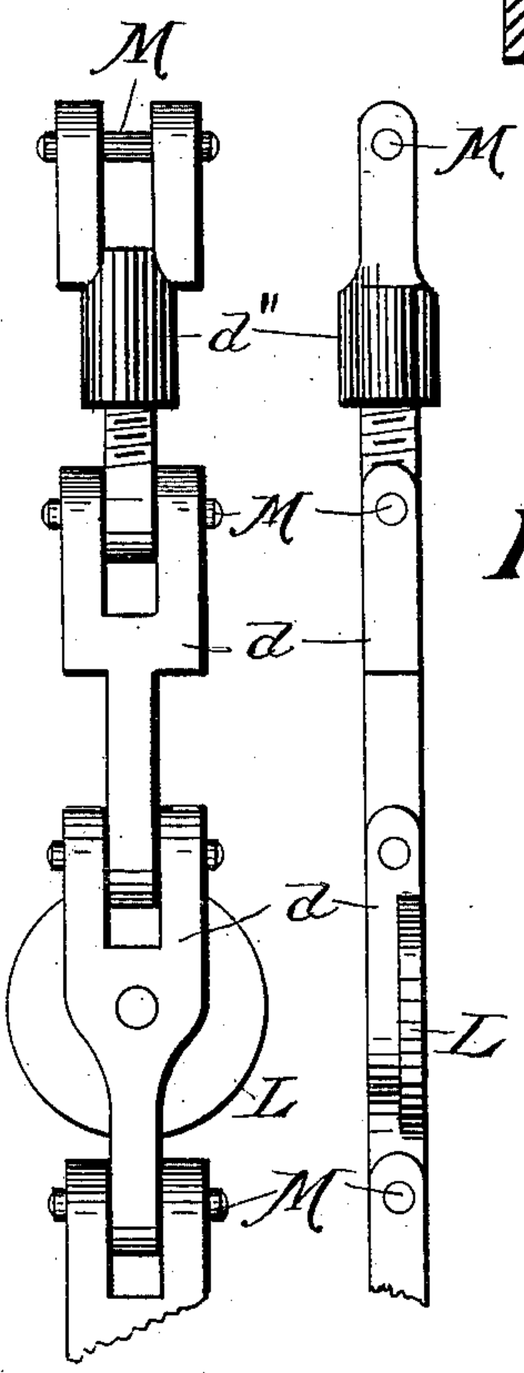


Fig. 7.

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UNITED STATES PATENT OFFICE.

WILLIAM S. LOWE, OF LIMA, OHIO, ASSIGNOR TO THE AMERICAN STRAW BOARD COMPANY, OF CHICAGO, ILLINOIS.

EGG-TRAY MACHINE.

SPECIFICATION forming part of Letters Patent No. 424,068, dated March 25, 1890.

Application filed December 4, 1889. Serial No. 332,611. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. LOWE, a citizen of the United States, residing at Lima, Allen county, Ohio, have invented a new and useful Improvement in Egg-Tray Machines, of which the following is a specification.

My object is to improve in certain particulars upon the construction shown and described in United States Patent No. 369,944, issued September 13, 1887, to which reference is made for a more thorough comprehension of this invention, and in order to save unnecessary repetition in the present specification those parts of the machine common to both inventions and not especially necessary to the operation of my improvements are not shown or described herein.

My improvements relate more especially to the sprocket-chain, the platforms upon which the trays are built, the plates to which these platforms are attached, and to the guides in which the platform-plates move; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a longitudinal section of an egg-tray machine, showing one side of the frame, the sprocket-chain, wheels, &c.; Fig. 2, an end view of a portion of the machine, showing the sprocket-chain, platform-plates, and discharging-bars; Fig. 3, an elevation of one of the sprocket-wheels, chain, platforms, guides, &c.; Fig. 4, a plan view of the platform, discharging-bars, &c.; Fig. 5, a top view of the sprocket-chain, platform-plates, guides, and means for rotating the plates; Fig. 6, a bottom view of one of the platform-plates and a diagonal section thereof on line 6 6; and Fig. 7, bottom and side views of the sprocket-chain. The third, fifth, sixth, and seventh figures are on an enlarged scale.

A A is the frame of the machine; B, a gear-wheel; C C′, sprocket-wheels; D, a sprocket-chain; *d d′ d″*, the links thereof; E E, platform-plates; E′ E′, platforms; F F, guides; G G, discharging-bars; *g*, fingers on such bars; H, a rock-shaft, on which the discharging-bars are mounted; I, an arm attached to such shaft, and J a pin on the gear-wheel B. The frame, sprocket and gear wheels are made substantially like those shown in Patent No. 369,944, above referred to. The cutters, punches, feeding mechanism, &c., therein shown are the same in a machine supplied with my improvements and require no further description.

The sprocket-chain D, preferably made of cast steel, is made up of three forms of link arranged in alternation, as shown in Fig. 7. These forms I call "tray" links, "straight" links, and "adjustable" links. The tray-links are provided with flattened disk-shaped portions L, affording a bearing-surface upon which the plates E revolve. These plates are attached to the links by means of pins, which pass through holes in the links and have nuts K on their inner ends. A washer K′ is preferably used between the disks L and plates E. (See Fig. 3.) The adjustable link, as shown in Fig. 7, is made in two parts, screw-threaded to allow of their being fastened together. When it is desired to tighten the chain, one or more of the pins M are removed and the two parts of the link screwed closer together, after which the pin M is replaced. The straight link is used to connect the other two forms, and its shape is obvious from the drawings.

The platform-plates E, attached to the tray-links, are made square, as shown, and preferably beveled at two of their corners. (See Fig. 5.) The object of making these plates square is to enable them to fit between the guides in which they move up and down. These guides F F, Figs. 1, 2, and 3, consist of two bars, of any suitable dimensions and material, extending from top to bottom of each end of the machine; or, if desired, they may extend continuously around the machine. Between these bars the plates E move, the bars being placed at a proper distance apart to receive them. In this way the proper alignment of the plates is assured, and they are presented to the feeding mechanism always in a proper position. These guides are made flat or not grooved, as shown, the advantage of this being that the platform-plates may be drawn out at any time between the guides without disturbing the latter or removing them, as would have to be done if the guides were grooved.

In the former patent above referred to, the

platforms were made smaller than the egg-trays, so that the ends of the latter projected beyond the edges of the platforms, and the discharging-bars, striking against these projecting ends, dislodged the trays.

My improved platform is constructed the full size of the tray to be made, and is provided, as shown, with recesses *e'* along two of its opposing sides. The discharging-bars G, instead of being simply straight arms, are provided with fingers *g*, which pass through the recesses *e'* as the rock-shaft H is turned by means of the pin J and arm I. These fingers will strike against the sides of the tray, which will extend across the recesses *e'*, and the tray is thereby dislodged from the platform.

The platforms are provided with elastic fingers, and are attached in any suitable manner to the plates E, so as to move and rotate with them.

Chain D moves by means of the revolution of the sprocket-wheels C C', over which it passes. As each plate and platform reaches the top of the machine the plate strikes against a pin N, Fig. 5, fastened to the frame or one of the guides, and is thereby turned through a quarter of a revolution. At the bottom of the machine it strikes against a similar pin and is rotated another quarter turn. The object of these turns is to present the platforms to the feeding mechanism in the proper position, and is fully described in the former patent.

I claim—

1. In an egg-tray machine, a sprocket-chain composed of links *d*, having plates L attached thereto, adjustable links *d''*, made in two parts screwing into each other, as shown, and straight links *d'*, connecting the adjustable links with the tray-links, substantially as described.

2. In an egg-tray machine, the combination of a sprocket-chain, platform-plates pivoted thereto, and guides between which such plates slide, substantially as described.

3. In an egg-tray machine, the combination of the sprocket-chain D, composed of tray, straight, and adjustable links, square plates E, attached to such chain, and guides F F, extending from top to bottom of the machine, between which the plates E move, substantially as described.

4. In an egg-tray machine, a platform constructed the full size of the tray to be made and provided with recesses along two of its opposing sides, and means, as fingers *g g*, for discharging the tray from the platform, substantially as described.

5. In an egg-tray machine, the combination of the rock-shaft H, arm I, discharging-bars G G, having fingers *g g*, platform E', having recesses *e'*, and means for rocking the shaft, whereby the fingers *g g* pass through the recesses to discharge the tray, substantially as described.

6. In an egg-tray machine, the combination of a sprocket-chain, square platform-plates E, pivotally attached thereto, and flat guide-bars F F, between which such plates move, substantially as described.

WILLIAM S. LOWE.

Witnesses:
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SAML. A. LOWE.