

(No Model.)

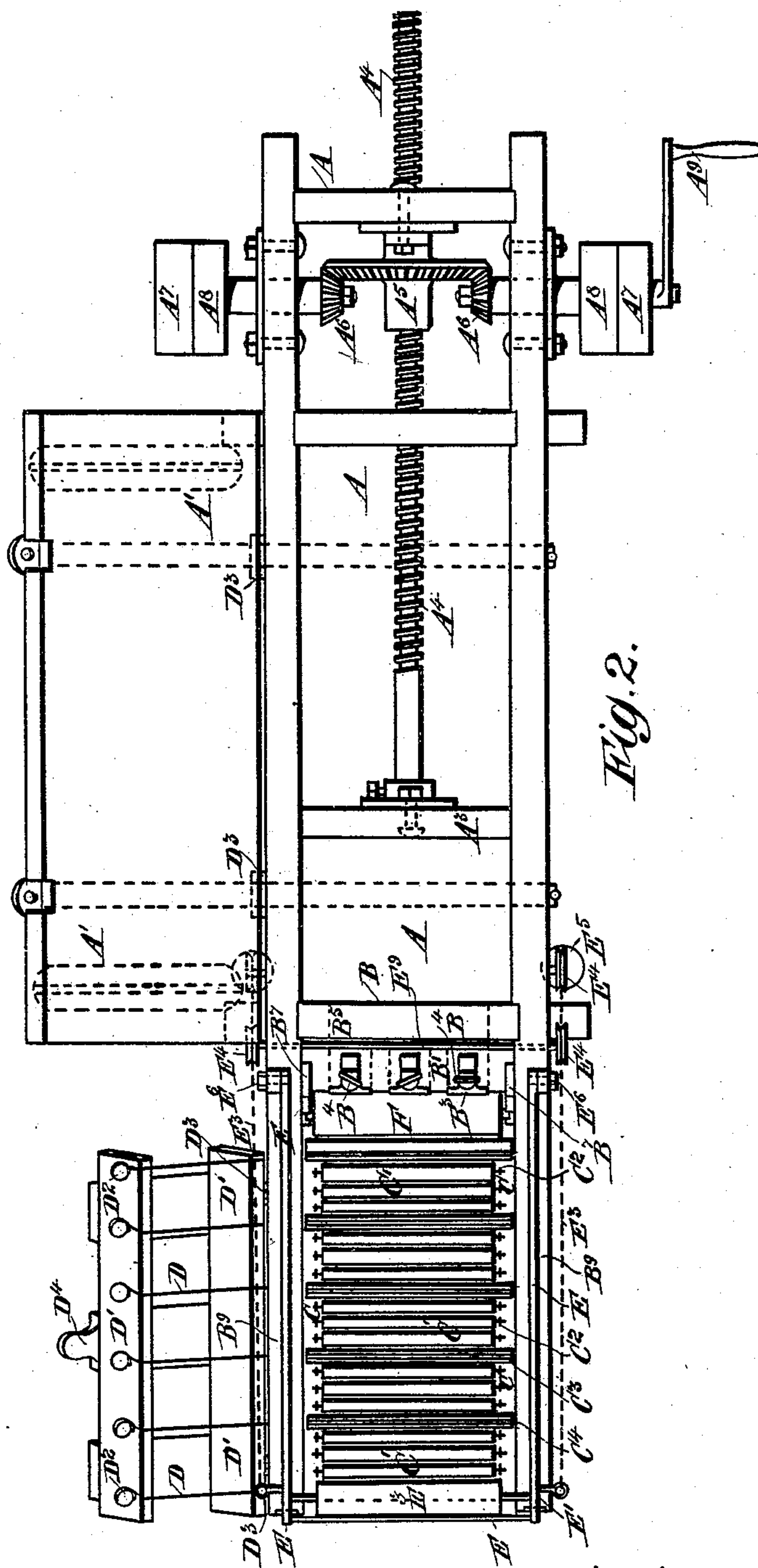
3 Sheets—Sheet 2.

W. FOSTER.

MACHINE FOR MOLDING OR SHAPING BUTTER.

No. 472,921.

Patented Apr. 12, 1892.



WITNESSES
C. S. Sturtevant
L. A. Conner Jr.

Inventor
William Foster
By Geo. Whittier
att'y

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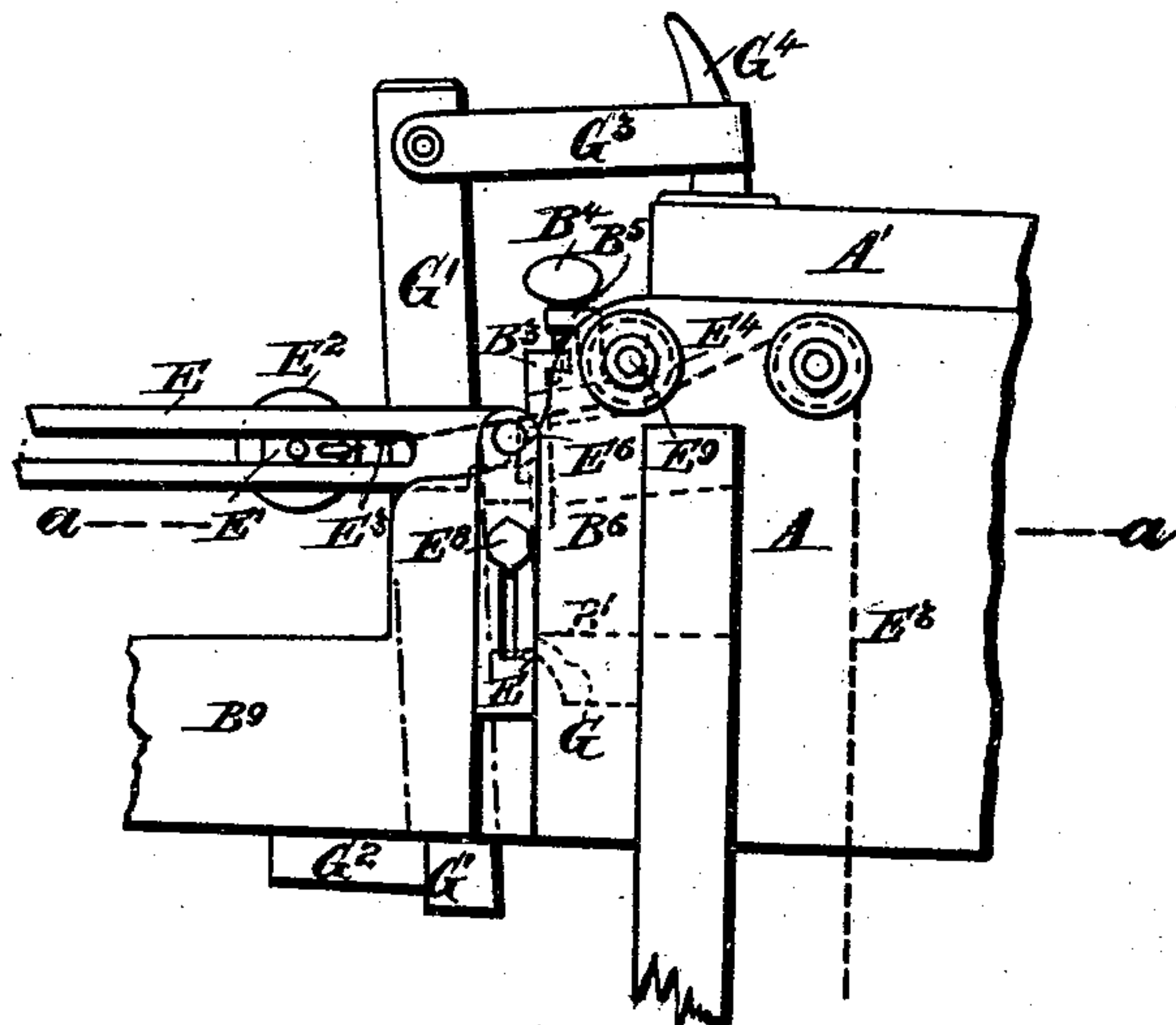


Fig. 4.

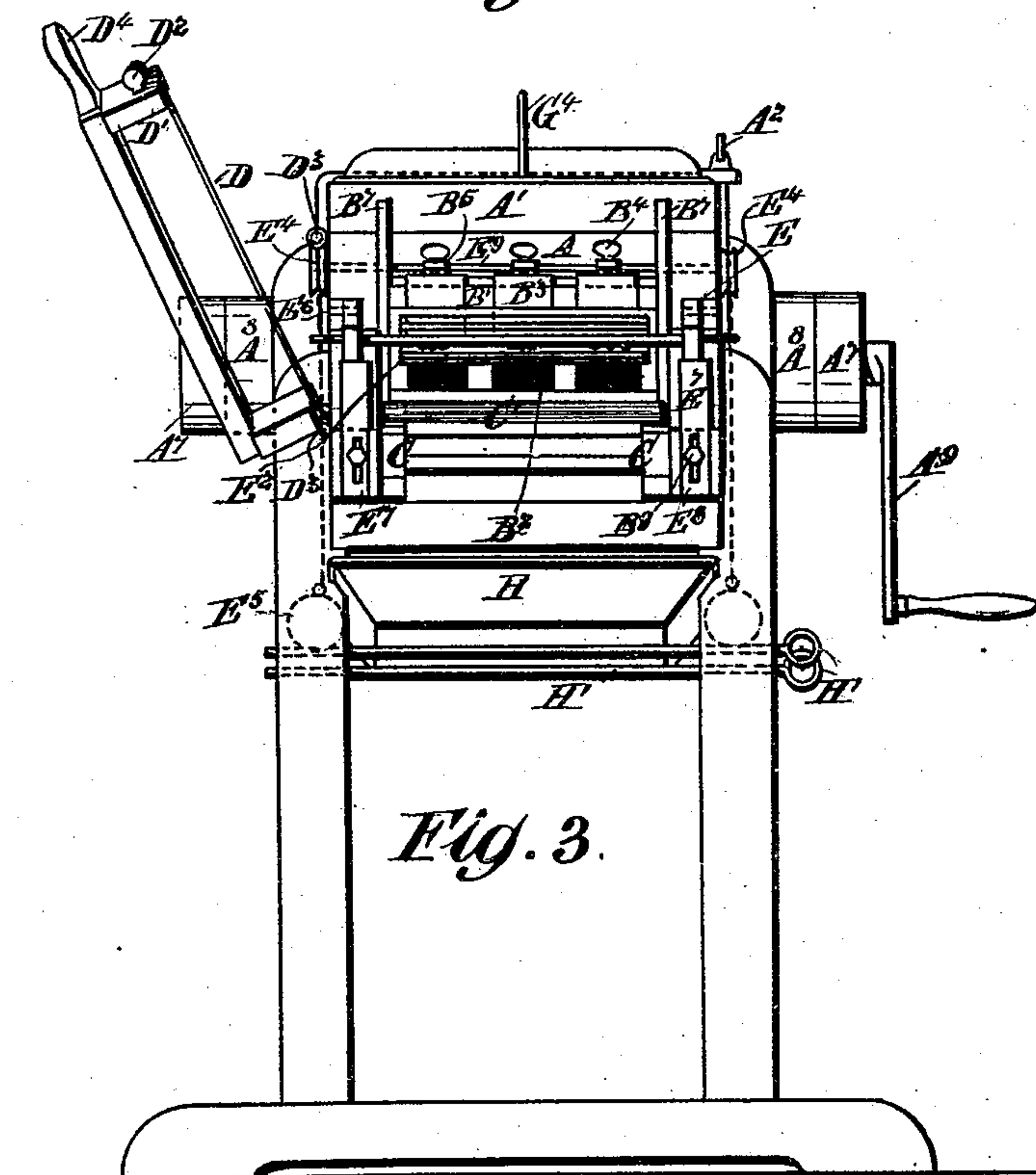


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM FOSTER, OF TUNGAMAH, VICTORIA.

MACHINE FOR MOLDING OR SHAPING BUTTER.

SPECIFICATION forming part of Letters Patent No. 472,921, dated April 12, 1892.

Application filed August 11, 1890. Serial No. 361,763. (No model.) Patented in Victoria January 25, 1889, No. 6,490; in New South Wales October 30, 1889, No. 1,800, and in England February 18, 1890, No. 2,574.

To all whom it may concern:

Be it known that I, WILLIAM FOSTER, a subject of Her Majesty the Queen of Great Britain, residing at Tungamah, in the British Colony of Victoria, have invented an Improved Machine for Molding or Shaping Butter, (for which Victorian Letters Patent No. 6,490, dated January 25, 1889, have been granted, and for which I have filed applications with provisional specifications in New South Wales, No. 1,800, dated October 30, 1889, and in Great Britain, No. 2,574, dated February 18, 1890,) of which the following is a specification.

This invention relates to apparatus for putting up butter in molds or "prints."

In an apparatus constructed according to these improvements the butter is placed in a strong box, within which works a presser-plate or piston, to the back of which a screwed rod is secured. This rod passes out through the back of the box, where there is mounted upon it a bevel-wheel having a female screw formed through its eye to engage with the screw-thread on the piston-rod. The bevel-wheel is arranged so as to be incapable of moving longitudinally on the rod. Hence when it is rotated the rod, and consequently also the presser-plate, will move longitudinally, the direction of motion being governed by the direction of rotation of the bevel-wheel. The bevel-wheel may be rotated by other bevel-gears operated by hand or by power, as is well understood. In the front of box there are formed one or more square or D-shaped openings, so that when the butter is placed between the presser-plate and the front of the box and the hinge-cover secured down then by rotating the screwed rod the presser-plate is driven forward and the butter will be forced through the opening or openings and form bars that are delivered upon a movable roller-tray. Above the openings or otherwise conveniently situated with reference to them there are slides, which may be adjusted so as to regulate the thickness of the issuing bars to suit the required weights. The D-shaped openings are preferably arranged in the form of a detachable nozzle or die, so that they can be easily removed. Immediately in front of the openings is a lower roller to lead the issuing bars onto the roller-tray, while mounted in a

hinged frame is an upper roller, the surface of which is engraved or formed to produce any desired pattern, design, or description upon the surface of the bars that lie upon the roller-tray. The movable roller-tray is supported upon stationary rails, and to the back one of the rails there is hinged a wooden frame carrying cross-wires, which when the frame is dropped cut the bars of butter into any desired lengths, each of which forms a print. A number of these trays are provided for each machine, in order that as soon as one tray is filled it may be removed and replaced by an empty one. A movable slide is arranged in front of the openings to close them while the box is being filled.

In some cases two of the apparatus may be arranged in line, so that the one screw may pass into two boxes, and thus permit one box to be filled while the other is in use.

In order that the invention may be well understood it will now be described with reference to the accompanying sheet of drawings, in which—

Figure 1 is a part side elevation and a part longitudinal section of the machine, and Fig. 2, a plan thereof with the lid of presser-box open, while Fig. 3 is an elevation looking from the front end. Fig. 4 is an enlarged view of the mechanism for printing the butter and showing the movable stop-plate as arranged at front of box. Fig. 5 is a section at *a a*, Fig. 4, showing the stop-plate in position over the front openings.

In the figures, A is a wooden box furnished with a hinged cover A'.

A² are thumb-screws to retain the cover closed.

A³ is a movable presser-plate or piston having a square threaded screw or piston-rod A⁴ secured to it in such a manner that it will not revolve. Said screw A⁴ has upon it a bevel-wheel A⁵, the eye of which is threaded to suit screw A⁴. Bevel-wheel A⁵ gears with bevel-pinions A⁶ A⁶, secured on short spindles, each of which latter carries a loose pulley A⁷ and a fast pulley A⁸ to receive belting for operating the machine, while a hand-handle A⁹ is also provided.

In the front end of the box is an oblong opening B, covered by a movable nozzle or die

B', which has three holes or openings B² formed in it, each hole having its top surface slightly tapered and its lower surface horizontal, as shown in Fig. 1. These openings or holes B² are furnished with upper adjustable metal slides B³, that may be raised or lowered by revolving the thumb-screws B⁴ in their brackets B⁵, the slides B³ being held in place by a metal strap B⁶, as shown. The nozzle-piece is held in position by two tapered wedges B⁷ that press against ledge-pieces B⁸, secured to side rails. The lower part of the sides of the box extend forward in the form of two inclined rails B⁹, that support the movable tray C, which is made up of a number of small rollers C', furnished with pintles to pass into loops C² upon the side bars of the tray. By having the tray inclined downward it assists the travel of the butter bars by gravitation.

Across and attached to the sides of the movable tray C are slats of wood C³, having grooves C⁴ in them to clear the cutting-wires D, that are stretched across a suitable frame D', the sides of which are deep enough to allow its top battens to be clear of the butter-bars when the cutting-wires have passed through them. The tension of the wires is adjusted by keys D², while the frame is hinged to the back inclined rails at D³.

D⁴ is a handle for the cutting-frame.

E is a light slotted iron frame furnished with sliding blocks E' to carry the pintles of printing-roller E², that is caused to travel the whole length of the roller-tray by cords E³, attached to said blocks E' and passing under and over small sheaves E⁴, the front pair of sheaves being centered on same spindle E⁹. The cords E³ are acted upon by suitable weights E⁵, so as to cause the engraved roller to travel upward over bars of the butter to print its upper surface. The slotted frame carrying the print-rollers is centered at E⁶ to allow of its being thrown back, as shown in dotted lines, Fig. 1, when the butter is to be cut into lengths by the cross-wires. The height of the fore end of the roller-frame E may be adjusted by means of plates E⁷, secured by set-screws E⁸.

F is a roller centered upon the rails B⁹ to lead the issuing butter bars to the roller-tray.

G is a movable stop-plate to close the front openings B², and held in position when said roller F is removed by a key G', bearing against a cross-rail G², and by a loop G³, passing over a horn G⁴. H is a drip-pan supported by movable rods H', passing through holes in the legs of the machine.

The mode of operation of the machine is as follows: The presser-plate or piston is brought to its hindmost position and the stop-plate placed over the openings B². The butter is then packed tightly into the box and its lid closed and secured. The machine is then put in motion to force the butter into the openings B² against the stop-plate G, and when this is done the machine is again stopped to

allow of the stop-plate G being removed and the roller F placed in position, while the slide-plates are also adjusted to give the butter bars their proper depth; also, both the cutting-frame and the print-frame must be thrown backward on their hinges. Now by again giving a forward motion to the presser-plate the butter will issue in bars onto the roller-tray until a sufficient length is thereon, when the machine is reversed—say half a revolution—to remove the pressure from the bars of butter and then stopped, when the print-frame, having the print-roller at its farther end, is lowered into position, and by releasing the roller from a slight catch it will travel upward over the butter bars, so as to print their upper surfaces.

Motion is given to the print-roller by the weights E⁵ pulling the blocks E' along its grooves. This roller is so engraved that it prints on the center of each pat. When the printing is completed, the frame is thrown back, as shown by dotted lines, Fig. 1, and the cutting-frame is brought down over the bars of butter to cut them into pieces, pats, or prints of the requisite weight. Then the cutting-frame is again raised and the movable roller-tray bearing the butter prints removed and replaced by another roller-tray, when the foregoing operation may be repeated.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a machine for molding butter, the combination, with a press-box provided at one end with two or more outlets for the butter; of a plunger traveling in said box, a slide adapted to move in front of each outlet to regulate the size of the bar issuing from said outlet, and a series of vertically-movable cutting-wires, substantially as described.

2. In a machine for molding butter, the combination, with a press-box provided at one end with two or more outlets for the butter, of a plunger traveling in said box, a slide arranged in front of each outlet, and a series of vertically-movable cutting-wires, and a roller-tray adapted to receive the bars issuing from said outlets, substantially as described.

3. In a machine for molding butter, the combination, with a press-box provided with outlets for the butter, of a plunger traveling in said box, a slide arranged in front of each outlet, a roller in front of said outlets, and a roller-tray beyond said roller, substantially as described.

4. In a machine for molding butter, the combination, with a press-box provided at one end with outlets for the butter, of a plunger traveling in said box, a slide arranged in front of each outlet, a roller adjacent to said outlets, a roller-tray beyond said roller, and a series of vertically-movable cutting-wires above the roller-tray, substantially as described.

5. In a machine for molding butter, the combination, with a press-box provided at one end

with outlets for the butter, of a plunger traveling in said box, a slide arranged in front of each outlet, a roller adjacent to said outlets, a roller-tray beyond said roller, a series of 5 vertically-movable cutting-wires above the roller-tray, and a printing-roller arranged to travel over the bars of butter on the tray, substantially as described.

6. In a machine for molding butter, the combination, with the press-box provided with an opening at one end, of a plunger traveling in said box, a removable nozzle having two or more outlets, each provided with a slide to regulate the size of the butter bars, a roller in 15 front of the outlets to feed along said bars, and a roller-tray beyond said roller, substantially as described.

7. In a machine for molding butter, the com-

bination, with the press-box provided with an opening at one end, of a plunger traveling in 20 said box, a removable nozzle, as B', having two or more outlets, each provided with a slide to regulate the size of the butter bars, a roller in front of the outlets to feed along said bars, a roller-tray beyond said roller, and a hinged 25 frame above the roller-tray and having cutting-wires adapted to cut the bars into proper size when the frame is let down, substantially as described.

In witness whereof I have hereunto set my 30 hand in the presence of two witnesses.

WILLIAM FOSTER.

Witnesses:

FRED CHAMBERLAIN,

BEDLINGTON BODYCOMB,

Patent Agent, Melbourne.