

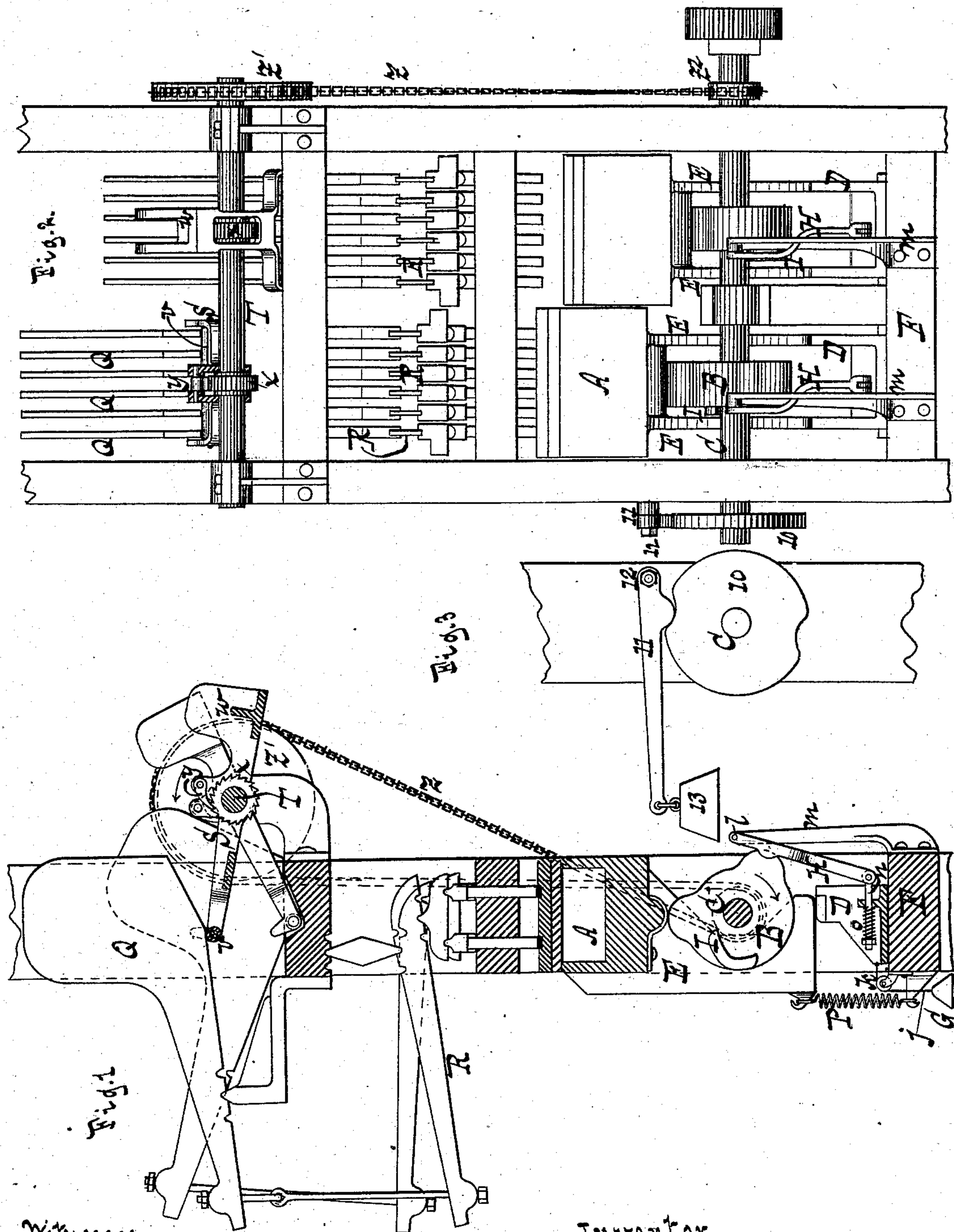
(No Model.)

W. F. NILES.

Machine for Molding Buttons and other Articles.

No. 237,308.

Patented Feb. 1, 1881.



Witnesses

Edw. Hupeland
William Miller

Inventor
William F. Niles.

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UNITED STATES PATENT OFFICE.

WILLIAM F. NILES, OF JERSEY CITY, N. J., ASSIGNOR TO WILFORD L. PALMER, OF NEW YORK, N. Y.

MACHINE FOR MOLDING BUTTONS AND OTHER ARTICLES.

SPECIFICATION forming part of Letters Patent No. 237,308, dated February 1, 1881.

Application filed December 9, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. NILES, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Machines for Molding Buttons and other Articles, of which the following is a specification.

This invention is an improvement on the machine described in an application for Letters Patent of the United States filed by me April 14, 1880, Serial No. 7,527, patented November 23, 1880, No. 234,800; and it has for its object to relieve the cam-shaft from the weight and pressure of the die-carriage and its concomitants during the pressing operation; also, to prevent the sudden falling of the weighted levers used for producing the action of the plunger-levers; and, further, to prevent jarring of the cam-shaft.

This invention is illustrated in the accompanying drawings, in which Figure 1 represents a vertical central section. Fig. 2 is a front view, partly in section. Fig. 3 is a side view of the brake.

Similar letters indicate corresponding parts.

The letter A designates the die-carriage, and B the cam for lifting the carriage, fixed to a shaft, C, to which a revolving motion is imparted by suitable means.

D is a movable rest, which is automatically brought beneath the die-carriage A when the latter has been lifted to force the die up against the plunger, and brought away from beneath the same at intervals, thus alternately sustaining the die-carriage in its upper position and allowing its descent. The portion of the die-carriage A which receives the movable rest D beneath it consists of legs E E, which are applied to the carriage on opposite sides of the cam B, and the movable rest is constructed to take its place beneath the legs, as shown in Fig. 2. The motion of the rest D is a sliding one, the same being guided on a cross-piece, F, of the machine-frame, and a weight, G, or a spring, is connected thereto in a suitable manner to force the same in the direction of the die-carriage A or its legs, while a swinging arm, H, arranged in the path of a pusher, I, is used to force the same away from the carriage.

A cord, j, running over a pulley, k, serves to connect the weight G to the movable rest D, and the swinging arm H is hung on a pivot, l, fixed to a bracket, m, while the free end thereof is connected to a flange on the movable rest by an eyebolt, n, a spring, o, being preferably interposed between the nut of this bolt and the flange. The pusher I is a fixture of the lifting-cam B, and it is so arranged as to displace the swinging arm H, thereby retracting the movable rest D from beneath the die-carriage A when the material supplied to the die has been sufficiently compressed. In order to insure the descent of the die-carriage, I connect thereto a retractile spring, P.

The letter Q designates the weighted levers which exert the required pressure on the plunger-levers R. These weighted levers Q rest, at their free ends, on a gravitating frame, S, hung loosely on a revolving shaft, T—that is to say, this frame catches beneath the weighted levers at one end, where it is preferably furnished with an anti-friction roller, v, while it is weighted at the opposite end, as at w. The revolving shaft T carries a fixed ratchet-wheel, x, and the gravitating frame S carries a pawl, y, engaging the ratchet-wheel. The shaft T, with its ratchet-wheel y, has a continuously-revolving motion in the direction of the arrow shown in Fig. 1, and when the gravitating frame S is at rest the pawl y simply rides over the teeth of the ratchet-wheel. When, however, the weighted levers Q are allowed to fall at their free ends, as by the descent of the die-carriage A, the gravitating frame S is thereby tilted against the action of its weight w, and the pawl y moves in the direction of the revolution of the shaft T; but inasmuch as the pawl is now caught by one of the teeth of the ratchet-wheel, it, together with the gravitating frame, is permitted to move only as fast as the shaft, and hence the weighted levers are caused to fall gradually instead of with a sudden impulse, as formerly. Motion is communicated to the revolving shaft T from the cam-shaft C by means of a chain, Z, running over chain-wheels Z' Z², fixed to the respective shafts, or by other suitable gearing; but it is obvious that the shaft T can also be driven from any other source.

The figure 10 designates a wheel fixed to the cam-shaft C, and 11 a lever resting on the periphery of this wheel, such lever being hung on a pivot, 12, at one end, and carrying a weight, 13, at its opposite end. The pressure of the lever 11 on the wheel 10 tends to brake the cam-shaft C, and thus to prevent jarring or jolting thereof, as at the moment when it is released from the weight and pressure of the die-carriage, &c.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the vertically-movable die-carriage A and lifting-cam B, of a movable rest which is automatically brought beneath the die-carriage when the latter has been lifted, and brought away from beneath the same at intervals, thus alternately sustaining the die-carriage in its upper position and allowing its descent, substantially as described.

2. The combination, with the vertically-movable die-carriage A and lifting-cam B, of the legs E E, applied to the die-carriage, the movable rest D, adapted to take its place beneath such legs, a weight, or the like, acting on the movable rest with a tendency to force the same toward the die-carriage, the swinging arm H, connected to the movable rest, and the pusher, arranged to act on the swinging arm and thereby force the movable rest away

from the die-carriage, the whole adapted to operate substantially as described.

3. The combination, with the weighted levers Q and plunger-levers R, of a revolving shaft carrying a fixed ratchet-wheel, and a gravitating frame mounted loosely on such shaft, to catch beneath the weighted levers at their free ends, and carrying a pawl which engages the ratchet-wheel, the whole adapted to operate substantially as described.

4. The combination of the chain-wheels Z' Z² and chain Z with the revolving shaft T, its ratchet-wheel, the cam-shaft C, the gravitating frame S, carrying a pawl to engage the ratchet-wheel, the weighted levers Q, and plunger-levers R, all adapted to operate substantially as described.

5. The combination, with the die-carriage A, the lifting-cam B and its shaft, of a brake-wheel fixed to the cam-shaft, and the weighted lever resting on the brake-wheel, substantially as shown and described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

WILLIAM F. NILES. [L. S.]

Witnesses:

J. HERMANN WAHLERS,
E. F. KASTENHUBER.