

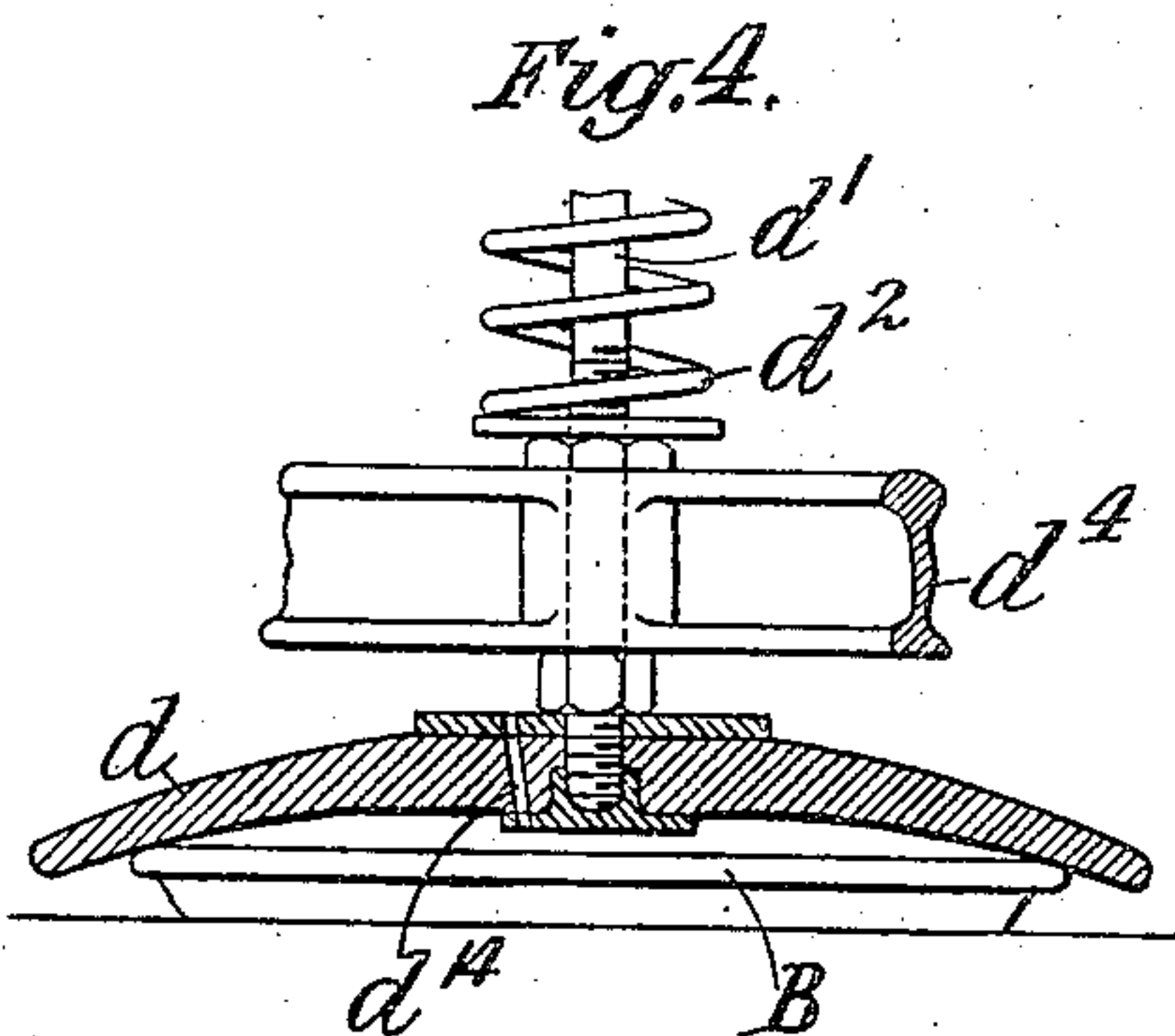
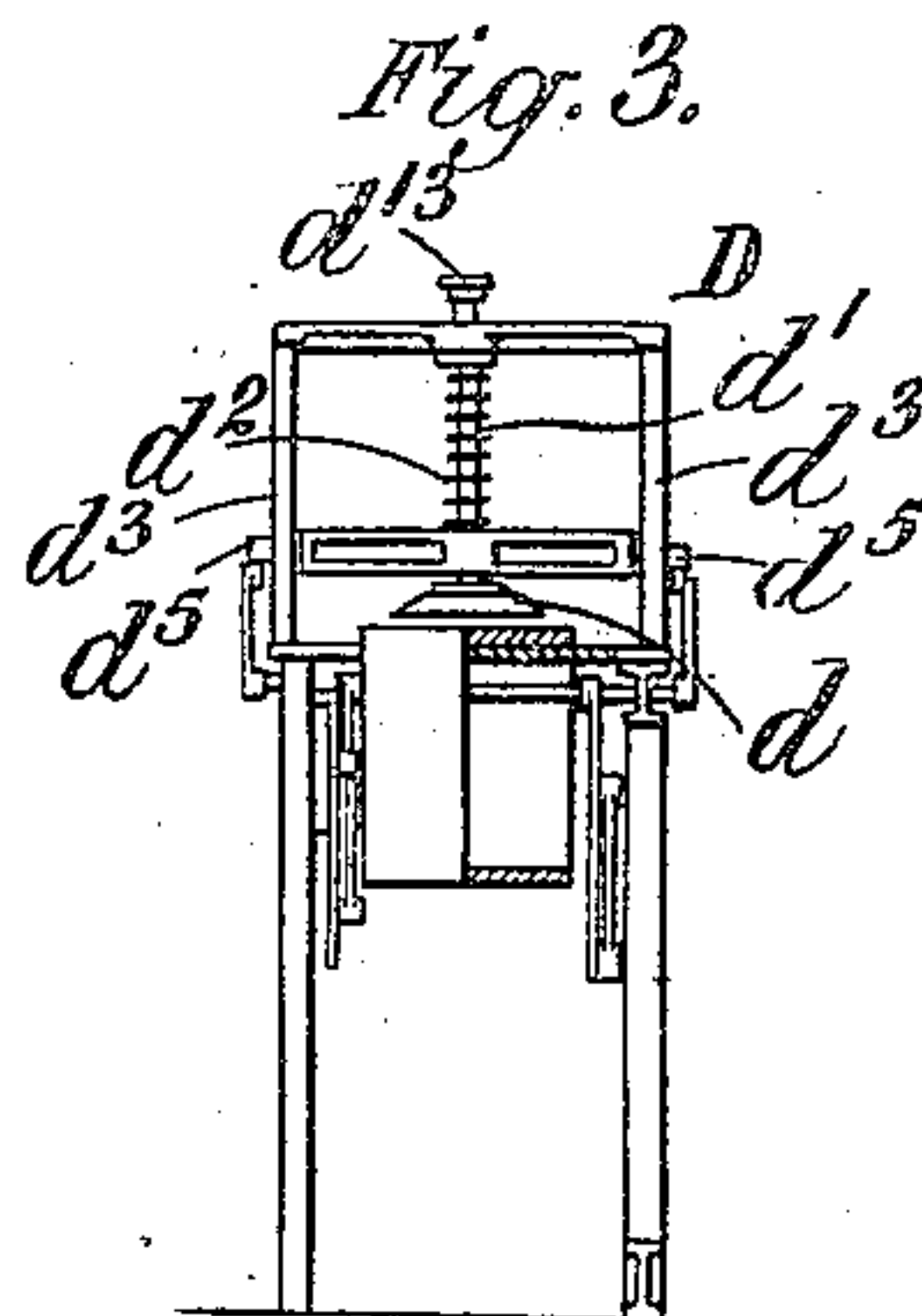
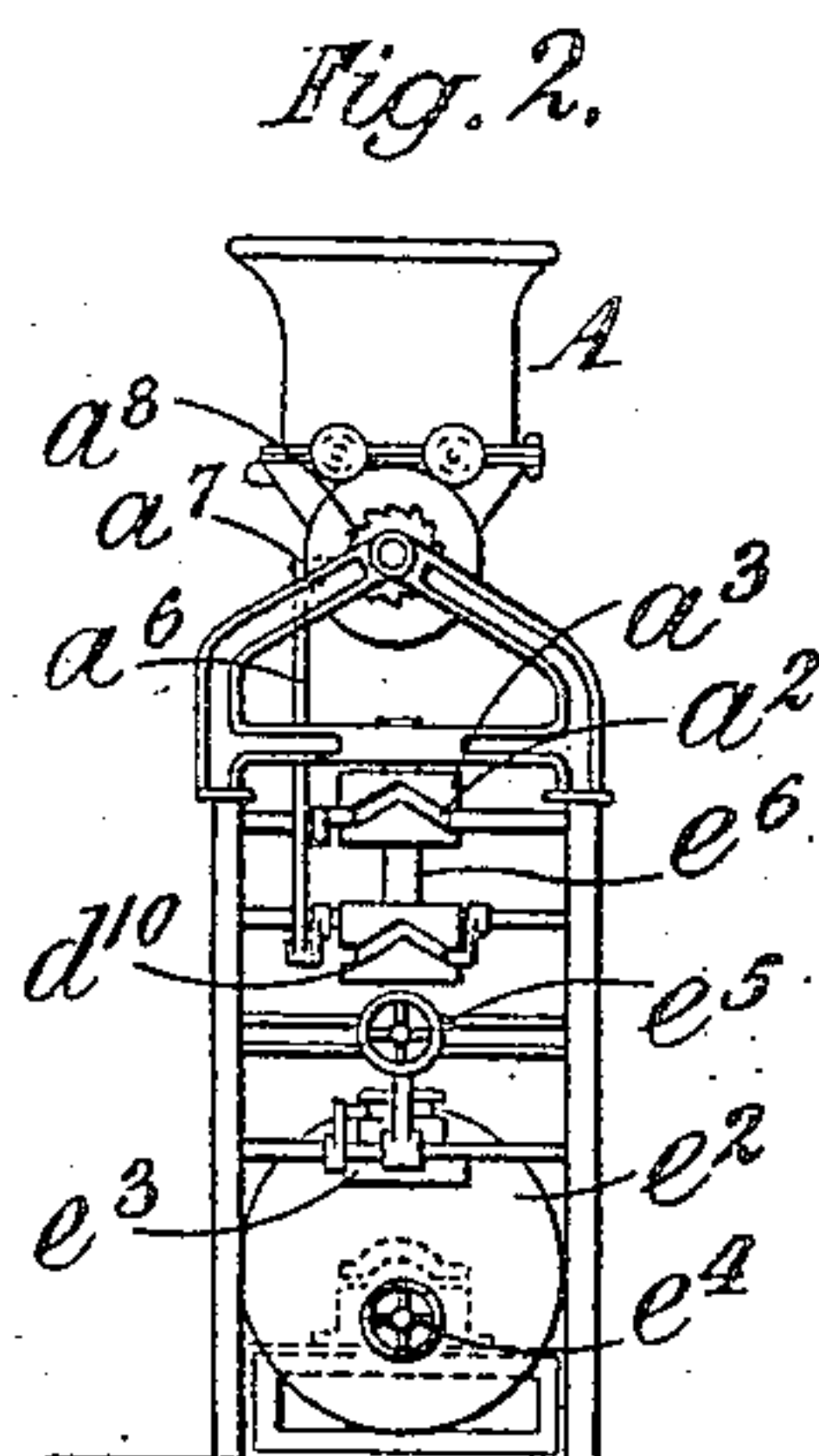
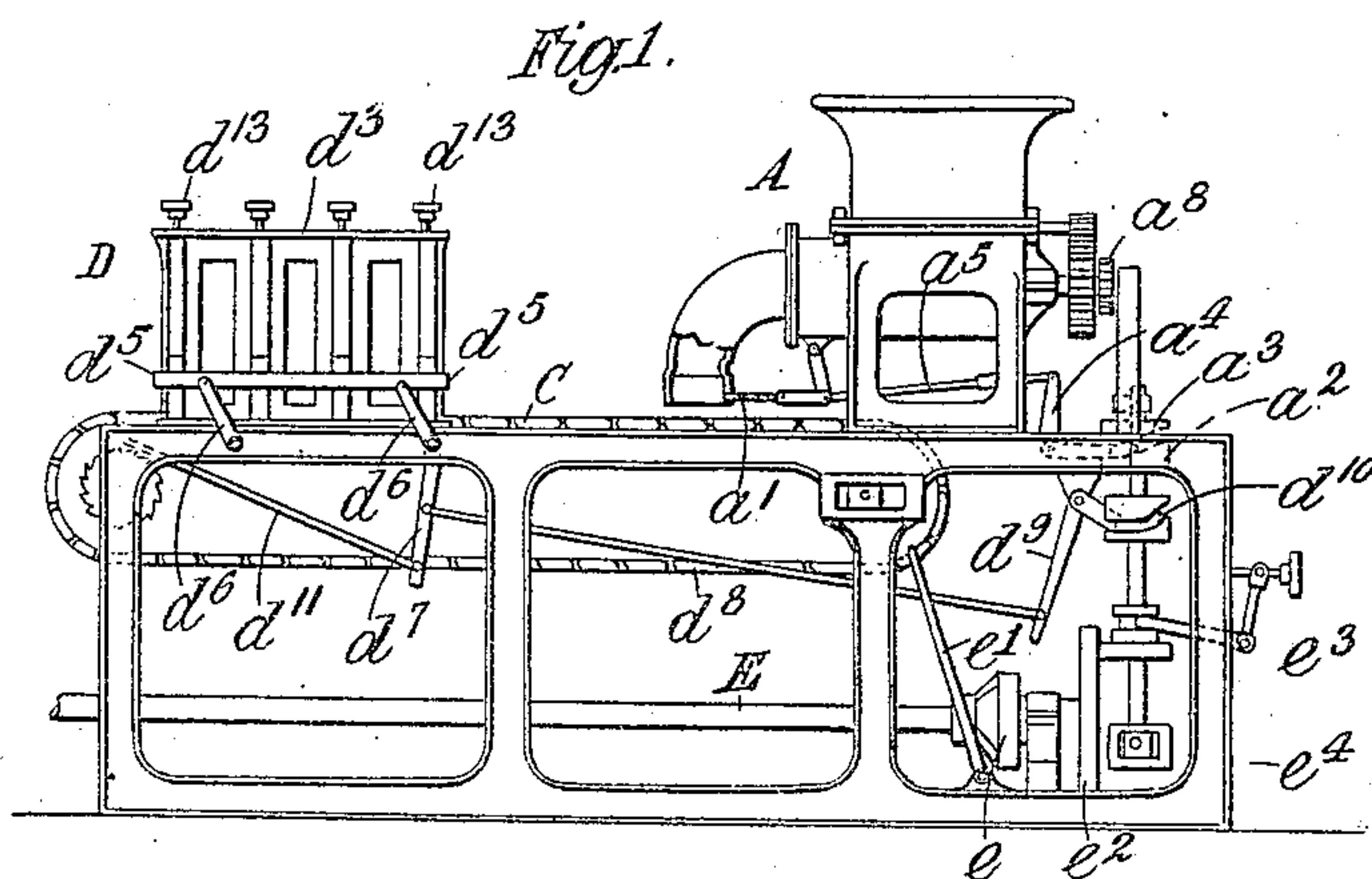
No. 838,985.

PATENTED DEC. 18, 1906.

V. HAIN.

MANUFACTURE OF SWEETMEAT, SUCH AS CHOCOLATE.

APPLICATION FILED AUG. 14, 1905.



Witnesses:

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UNITED STATES PATENT OFFICE.

VICTOR HAIN, OF CHISWICK, ENGLAND, ASSIGNOR OF ONE-HALF TO
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MANUFACTURE OF SWEETMEAT, SUCH AS CHOCOLATE.

No. 838,985.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed August 14, 1905. Serial No. 274,186.

To all whom it may concern:

Be it known that I, VICTOR HAIN, chocolate expert, a subject of the King of Great Britain, residing at 44 Brackley road, Chiswick, in the county of London, England, have invented certain new and useful Improvements Relating to the Manufacture of Sweetmeats, Such as Chocolate, of which the following is a specification.

This invention relates to the manufacture of sweetmeat—such, for example, as chocolate—the objects being to effect the operation of molding the plastic chocolate and, if desired, inclosing the sweetmeat in ordinary tin-foil covering or other suitable wrapping by mechanical means adapted to assimilate hand manipulation, but without actual contact with the hands of the operatives.

Plastic chocolate, with or without a covering or wrapping of tin-foil, requires gentle yielding pressure to enable it to fill out the recesses of the mold and to assume or to have imparted thereto the pattern or conformation of the mold in every particular without fracturing the wrapping or covering.

The device forming the subject of the present application is therefore intended to perform the molding or pressing in a manner assimilating that of hand molding or pressing by means of a yielding motion obtainable by the employment of a rubber pressing-face applied to the molding die or shoe under the influence of a tension-spring.

In order that the said invention may be clearly understood and readily carried into effect, I will proceed to describe the same with reference to the accompanying drawings, which illustrate, by way of example, mechanism adapted for accomplishing the objects in view.

Figure 1 represents a side view of a molding or pressure-imparting device according to the present invention. Fig. 2 is an end view looking toward the right-hand end of Fig. 1. Fig. 3 is a partial end view and transverse section. Fig. 4 is a detached view of the molding-die, drawn to an enlarged scale.

In the illustration the apparatus may comprise a shaping-machine, such as A, adapted to deliver, by means of interchangeable or adjustable mouthpieces *a* in conjunction with a severing device *a'*, successive sections of chocolate or other sweetmeat in the form of paste

of predetermined dimensions. Each section of plastic chocolate may be placed in a suitable mold, the molding and wrapping being accomplished in the following manner: The sweetmeat or chocolate having been expressed from the mouthpiece *a* of the shaping-machine A and severed by the separating device *a'*, the severed sections are deposited upon sheets or leaves of tin-foil or other wrapping material of appropriate size previously arranged in position in the molds B to receive the said sections as they are successively delivered from the mouthpiece *a*.

The chocolate, resting upon a sheet or leaf of wrapping in the mold and having another sheet or leaf placed thereon, is fed along by an endless traveling platform of table C to the molding or pressing gear D, which comprises a convenient number of dies or pressure-imparting devices *d*, of rubber, carried at the extremities of (a convenient number of) spindles *d'* and operated by springs *d²*, the spindles being mounted in a frame *d³* and attached to transverse bars *d⁴*, adapted to work in vertical slots in the said frame. Longitudinal bars *d⁵* are arranged in such a manner as to maintain the springs *d²* and the dies *d* normally inoperative, the bars *d⁵* being connected with the frame of the machine by arms *d⁶* *d⁶* and actuated by another arm *d⁷*. The device whereby the chocolate is expressed from the mouthpiece, the severing device, the intermittently-moving platform C, and the pressure-imparting device are operated from the shaft E, a clutch being provided at *e*, whereby the working may be suspended.

e' is the lever for operating the clutch.

e² is a friction driving disk or drum, and *e³* a wheel adapted to receive motion by frictional contact with the face of the disk *e²*, *e⁴* being a screw device for regulating the pressure of the disk *e³* in relation to the disk *e²*.

e⁵ is a device for varying the speed of the secondary shaft *e⁶*.

The severing device *a'* is actuated at suitable intervals by means of the groove or cam surface *a²* (formed in the drum *a³*) and lever *a⁴* and connecting-rod *a⁵*. From the said cam-groove *a²* a vertical rod *a⁶* and adjustable pawl *a⁷* are actuated so as to move the ratchet *a⁸* and operate the mechanism whereby the chocolate is expressed from the mouthpiece *a*. The bars *d⁵*, pertaining to the pres-

sure-imparting devices, are operated by the arm d^7 , which is actuated by the connecting-rod d^8 and lever d^9 from the cam-groove d^{10} . The said arm d^7 when moved also effects the intermittent movement of the platform C by means of the rod d^{11} and pawl-and-ratchet device d^{12} . The tension of the springs d^2 may be regulated by the nuts d^{13} .

d^{14} is an aperture or opening for permitting the escape of any air which may be imprisoned between the concavity or inner face of the die or pressure surface d and the section of chocolate under treatment.

The action of the die, pressure-pad, or shoe is such that a yielding effect is obtained, whereby the die is capable of accommodating itself to the chocolate, and thereby causing the same to be gradually pressed into the interstices or pattern of the mold without risk of fracturing the wrapping or of impairing the appearance of the chocolate.

The yielding or elastic face of the die provides for a junction with the edges of the mold at the first impact, leaving a concavity in reserve which is gradually destroyed by the adjusted pressure incidental to the springs, but without the said junction with the edges being released.

The object of the assimilated hand motion is to insure the plastic chocolate entering the recesses in the mold whether the chocolate be inclosed in a wrapping of foil or other material or not. The function of the apparatus is therefore to imitate the action of the hand in pressing a plastic material possessing a certain degree of resistance into a mold or into the recesses of a mold, the characteristic feature of the die or shoe being an india-rubber face which is given a pressure from above by means of a tension-spring and an adjustable nut, so that while the spring from above exerts the pressure the nut adjusts the extent of such pressure. When the pressure from above is exerted so that the die is fully pressed upon the mold, the yielding of the india-rubber face enables a gentle yielding pressure to be exerted upon the chocolate. From the shaping, molding or pressing, and wrapping appliance the mold and the enveloped and molded or pressed paste are then conveyed by suitable means through a cooling-chamber, from which the sweetmeat issues in a hardened condition. The mold is removed, there being no cohesion between it and the surface of the wrapping. The edges of the molded cake are trimmed, so as to remove any superfluous wrapping or paste which may result from the molding or pressing, the sweetmeat being then finished for the market.

It is found that chocolate will lend itself to mechanical molding while in a plastic state if the surface of the chocolate be protected from the yielding pressure-surface by means

of tin-foil or similar wrapping. The latter may, however, be readily removed upon the molded or pressed cake becoming cool and hard. If no wrapping of the paste is desired, the latter is placed into the mold with a layer of tin-foil thereon, but without the application of a complete wrapping, and after cooling the molded or pressed cake is removed, trimmed, and finished, as previously described.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In apparatus for molding and wrapping chocolate or other sweetmeat in a plastic state, means for molding or pressing cut or severed sections of paste, said means comprising a mold, and a pressing device adapted to gradually press the aforesaid sections into the mold with a yielding pressure, substantially as hereinbefore described.

2. In apparatus for molding and wrapping chocolate or other sweetmeat in a plastic state, the combination with a mold, of a die having a yielding or elastic face and adapted to effect a junction with the mold and to induce the chocolate to completely fill the recesses in the mold.

3. In an apparatus for molding and wrapping chocolate or other sweetmeat in a plastic state, a die having an india-rubber face, a yielding support for said die, and means for operating the die.

4. In an apparatus for molding and wrapping chocolate or other sweetmeat in a plastic state, a die having a yielding working face, a yielding support for the die, and means for operating the die.

5. In a machine for molding and wrapping chocolate or other sweetmeat in a plastic state, the combination of an intermittently-traveling platform, means for operating the platform, dies having yielding working faces, and means for operating the dies relatively to each other.

6. In an apparatus for molding and wrapping chocolate or other sweetmeat in a plastic state, a mold, a die of greater diameter than the mold and having a yielding working face, a yielding supporting means for the die and operating means for the die.

7. In an apparatus for molding and wrapping chocolate or other sweetmeat in a plastic state, a mold and a yieldingly-supported die having an elastic working face adapted to gradually press the material to fill the mold by yielding pressure.

In testimony whereof I have hereunto set my hand, in presence of two subscribing witnesses, this 2d day of August, 1905.

VICTOR HAIN.

Witnesses:

T. SELBY WARDLE,
WALTER J. SKERTEN.