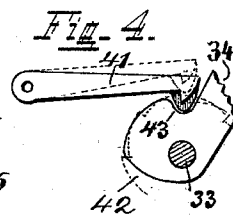
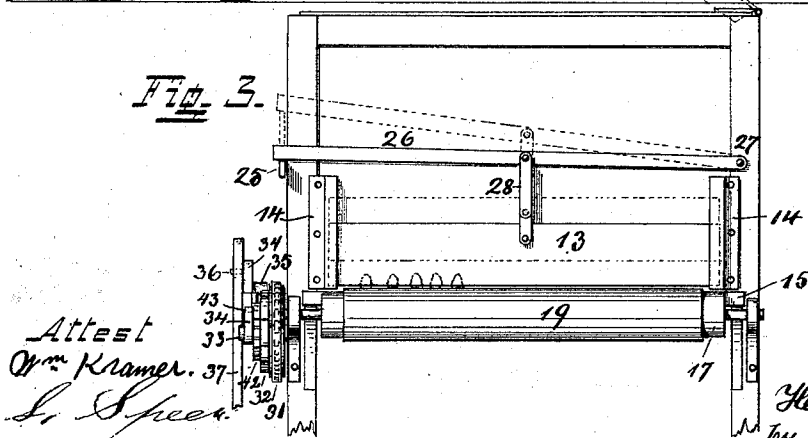
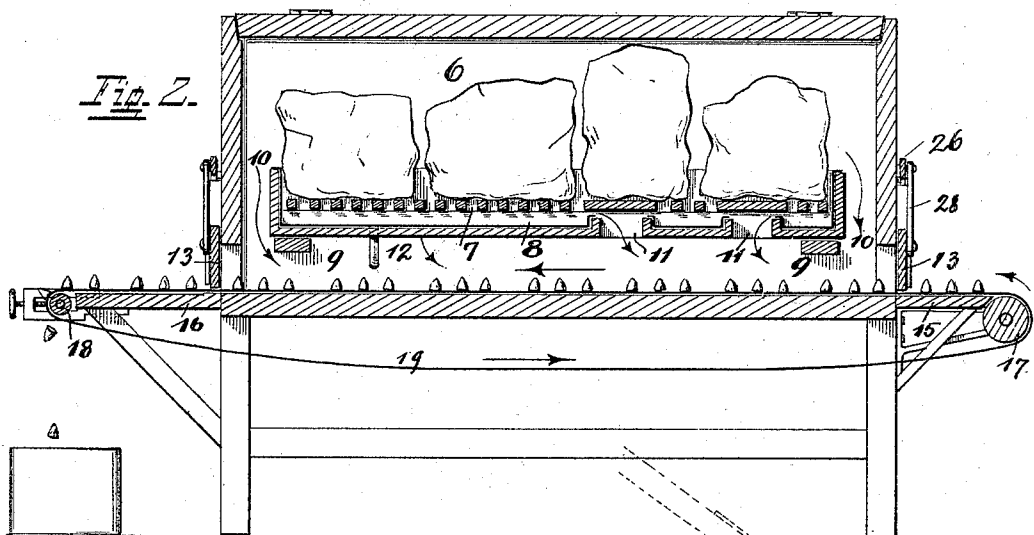
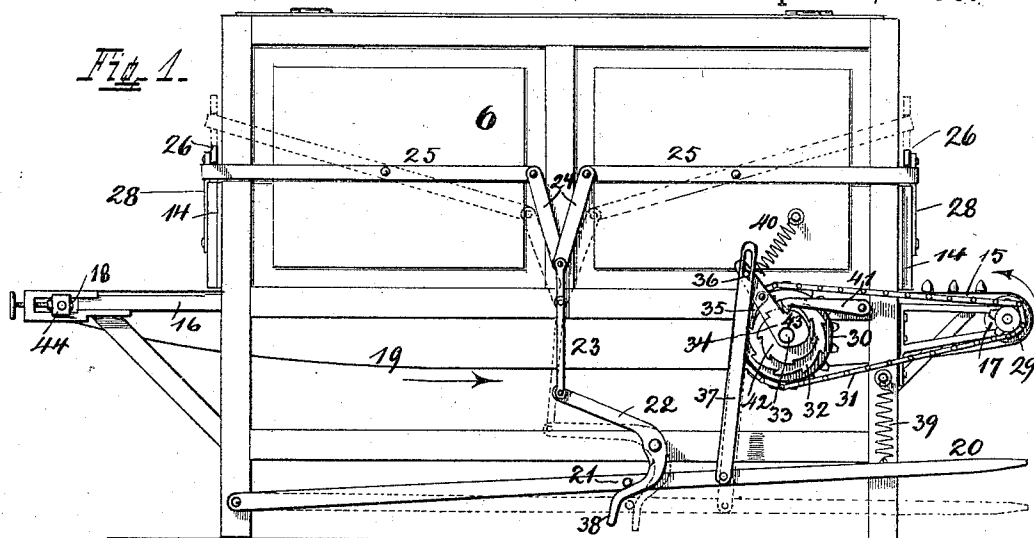


(No Model.)

H. W. BECHT.
CONGEALER FOR CANDIES.

No. 537,522.

Patented Apr. 16, 1895.



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UNITED STATES PATENT OFFICE.

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CONGEALER FOR CANDIES.

SPECIFICATION forming part of Letters Patent No. 537,522, dated April 16, 1895.

Application filed June 20, 1894. Serial No. 515,117. (No model.)

To all whom it may concern:

Be it known that I, HERMAN W. BECHT, a citizen of the United States, and a resident of Cincinnati, Hamilton county, State of Ohio, have invented a certain new and useful Congealer for Candies; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, attention being called to the accompanying drawings, with the reference-numerals marked thereon, which form a part of this specification.

This invention relates to devices for finishing candies, chocolate-drops and similar confections where such finishing consists of hardening by congelation.

This class of candies is usually soft while and after being formed and is hardened by being chilled or otherwise subjected to the action of cold. Inasmuch as it cannot be handled or packed until thus hardened, it is desirable that the cooling process consume little or no time and it is further desirable that the candy be subjected to this process as quickly as possible after having been formed because otherwise and especially in hot weather it is liable to become so soft as to run and lose its shape before having become hard. The device should further be constructed to prevent all unnecessary loss of cold air during its operation so as to economize as much as possible in the cold-producing agent.

This invention consists therefore of an endless carrier, upon one end of which the candy is formed and whereby it is immediately carried into and through a cooling chamber with sliding doors, said carrier and sliding doors being operated together by a mechanism which is specifically constructed for the purpose and which is described and pointed out in the following specification and claim, together with its operation, parts and construction the latter being also illustrated in the accompanying drawings, in which—

Figure 1, is a side-elevation of the device complete. Fig. 2, is a longitudinal section thereof. Fig. 3, is an end view of the same and Fig. 4, is an enlarged rear-view of part and accessory parts.

6, is a cold-air chamber, the walls constructed in a suitable manner to prevent ra-

diation and exclude the influence of the outer warmer air upon its interior. The interior of this chamber may be cooled in any of the well-known ways. It may be by a coil of pipes placed therein and carrying a cooling medium produced by a refrigerating machine, or it may be by the direct action of ice placed inside as shown in the drawings. In this latter case the ice rests upon a rack 7, placed above a drip-pan 8, which latter is supported above the chamber floor on cross-pieces 9. This drip-pan is smaller as to length and width than the same interior dimensions of the cooling-chamber, whereby a space 10 is produced all around the drip-pan over which the cold-air may pass downwardly. Additional air-passages 11 are provided in the bottom of the drip-pan to further facilitate the admission of cold-air to the space below it.

The drip of the melting ice passes out through a pipe 12. The ice is most conveniently placed inside from above, for which purpose the top forms a door and is hinged to one of the sides. In the opposite ends of the chamber and directly above the floor thereof are openings closed by sliding doors 13, moving, when opening or closing, in guides 14. The ends of the chamber-floor are extended beyond these doors in the shape of shelves 15 and 16 at the outer ends of which guide-rollers 17 and 18 are supported and around and over all of which, that is chamber-floor and extensions thereof, an endless belt or carrier 19 passes. This latter should be of a material having a glazed or non-absorbent surface like oil-cloth for instance with the smooth or glazed side up or outwardly which is a very suitable material.

During the normal condition doors 13 remain closed, resting directly upon the endless carrier and the candy is formed, or if chocolate-drops, they are dipped upon one of the shelves, 15 in this case, and after formed or dipped they are placed in rows upon the endless carrier and upon that part of it which extends beyond and from under the door and as close to the latter as possible. If a suitable number, one or more rows have been placed upon the carrier, doors 13 are opened, the carrier moves and advances the candy thereon into chamber 6, after which the former stops and the doors close, the movement

being simply sufficient to bring that particular batch of candy inside. Another batch is formed outside and carried in, in the same manner, which operation is repeated until in
 5 due time finished candy appears at the other door and on shelf 16, after which the operation becomes continuous and the discharge corresponds to the feed.

As will be seen no extra handling intervenes after the forming of the candy and between its entrance to the cooling-chamber and this entrance follows as intermediate and direct after the forming, as it is possible with
 10 any means. This sudden exposure to the chilling action of the cold air also produces a superior and glossy finish.

Owing to the continuance of the operation, the discharge of finished candy, after the length of the carrier inside of chamber 6, is
 20 filled once, is equally continuous and the cooling-process practically consumes no time, because finished candy appears at the discharge-end in equal proportions to the candy which is formed or dipped at the inlet-end.

The finished candy may be taken off of shelf 16 for packing as fast as it appears, or when immediate packing is no object, the same may pass on until reaching the end of the upper part of the carrier, where the same
 30 returns around roller 18, at which point the candy readily drops off. Roller 18 is preferably of small diameter, to cause the carrier to turn on a short curve around which the candy is unable to follow and whereby it becomes readily loose and disengaged, in case it should
 35 slightly adhere thereto. The glazed surface of the carrier however prevents in most cases any adherence and the under-surface of the candy remains smooth and even.

The width of the machine, respectively of carrier 19, may be such that one or more candy-makers may work side by side on shelf
 40 15. The mechanical means to be presently described, for opening the doors and advancing the carrier, operate simultaneously, in this manner however, that the opening of the doors slightly precedes the start of the carrier, the advance of which latter correspond-
 45 ingly ceases again slightly before the closing of the doors. The doors are opened by means of a treadle 20, operated by one of the candy-makers working at shelf 15, and which treadle on depressing and by means of a pin 21, acts
 50 upon a bended lever 22, connected by links 23 and 24, to levers 25 the outer ends of which lift up the swinging ends of levers 26 pivoted at 27 and thereby raise the doors by reason of their connection to levers 26 by links 28.

The carrier is moved by roller 17 which constitutes a driving-pulley, being rotated by means of sprocket-wheels 29 and 30, connected by chain 31. Sprocket-wheel 30 has rigidly connected to it a ratchet-wheel 32, the two sitting loosely on a stud-shaft 33, the
 60 outer end of which carries also loosely, an arm 34 with a pawl 35 and a pin 36 which occupies a slot in link 37. When the treadle is

depressed this link is carried down until pin 36 reaches the upper end of the slot therein, whereupon arm 34 is also depressed and by
 70 means of pawl 35 rotates ratchet-wheel 32 and sprocket wheel 30. The latter by means of chain 31 acts upon sprocket-wheel 29 and roller 17 and advances the carrier. It will be noticed that the depression of the treadle
 75 affects at once lever 22, whereas arm 34 is not affected until the degree of depression equals the length of the slot in link 37. By reason of this delay of action of the last mentioned parts, the doors will be open before the carrier starts
 80 and any obstacle in the path of the advancing candy is avoided. The opening of the doors is completed when pin 21 reaches the straight lower end 38 of lever 22 and it merely slides
 85 past thereon during the continued depression of the treadle without acting further upon lever 22. When the operation of the treadle and the advance of the carrier stops, the doors are held still open and remain so until the returning treadle has carried pin 21 above
 90 the straight part 38 of lever 22 whereupon the latter becomes free and is permitted with the other parts, to assume normal positions. This return in case of the doors is accomplished by gravitation while with reference to
 95 the other parts, springs 39 and 40 are used. 41 is another pawl with a fixed center and when engaged with ratchet-wheel 42, also rigidly secured to sprocket-wheel 30, forms therewith a stop to the rotation of the rollers, primarily of roller 17, and prevents belt 19 from
 100 being carried beyond the intended distance by the impetus received from the forward motion. Part of pawl 41, in front of ratchet-wheel 42 is extended and rests in a notch 43
 105 in the laterally extended hub of arm 34 whereby said hub, when arm 34 starts to turn, acts upon the extension of pawl 41 and lifts the same out of ratchet-wheel 42 so as to permit sprocket wheel 30 to rotate. It is held
 110 in such disengagement, resting on said hub, until arm 34 returns to its normal position, whereupon it drops again into notch 43 and thereby lowers pawl 41, into ratchet-wheel 42 to enable it to arrest the further rotation of
 115 the sprocket-wheels, rollers and progress of the carrier. The bearings for roller 18 are formed by adjustable boxes 44 whereby the tension of carrier 19 may be regulated and excessive slack taken out of it.

Having described my invention, I claim as new—

In a congealer for candy, the combination of a cooling chamber, sliding doors in its opposite ends, an endless carrier passing through
 125 it and through the sliding doors thereof, guide-rollers for the carrier, a treadle 20, a bent lever 22, one end of it capable of operative connection with the treadle, levers 26 to which the sliding doors connect, levers 25,
 130 for lifting levers 26, links 24 from each of the latter and link 23 connecting them to lever 22, a sprocket-wheel 29, for driving one of the guide-rollers of the carrier, another sprocket-

wheel 30 connected to the former by a chain-
belt, a ratchet-wheel 32, on sprocket-wheel 30,
an arm 34, with a pawl 35, in engagement
with ratchet-wheel 32, and a link 37, connect-
5 ing arm 34 to the treadle whereby one opera-
tion of the latter acts by means of lever 22,
and link 37, in conjunction with the inter-
mediate mechanism, upon the sliding doors

and the carrier, to actuate them each in their
particular function.

In testimony whereof I affix my signature
in presence of two witnesses.

HERMAN W. BECHT.

Witnesses:

WM. KRAMER,

C. SPENGEL.