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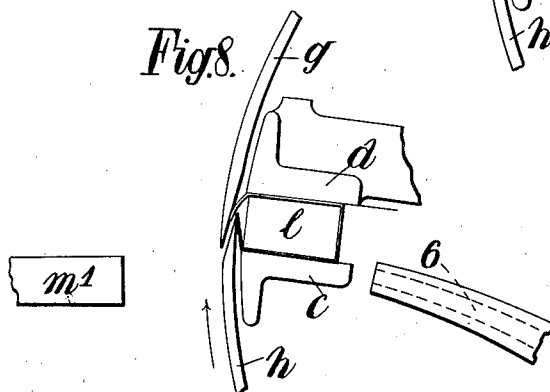
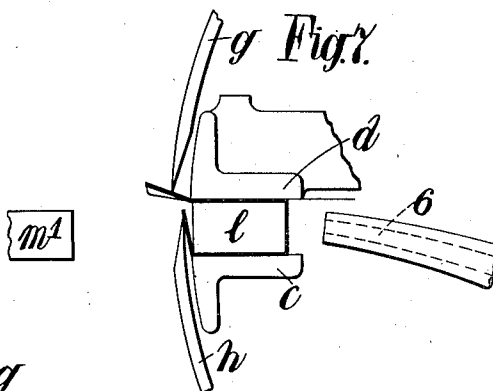
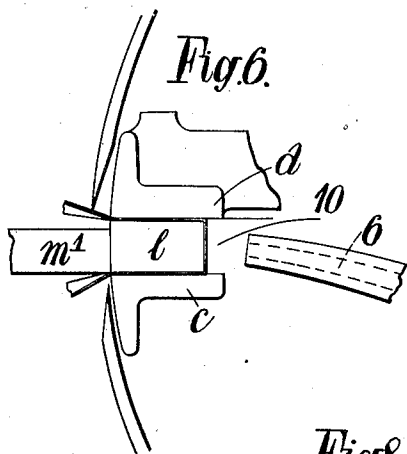
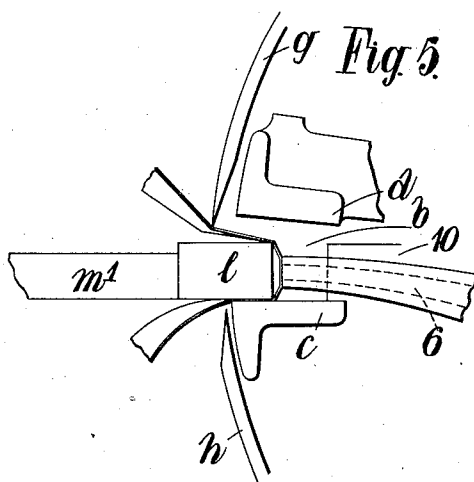
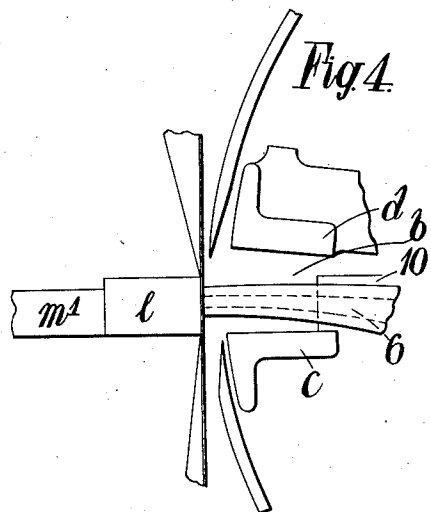
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WRAPPING MACHINE FOR SWEETMEATS AND THE LIKE

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## WRAPPING MACHINE FOR SWEETMEATS AND THE LIKE

Application filed January 11, 1930. Serial No. 420,052, and in Great Britain November 21, 1928.

This invention relates to wrapping machines or machines for enfolding caramels or other sweetmeats or like unit articles in paper, foil or like wrappings, usually with twisted ends or wings.

The invention has particular reference to machines of known character employing a pocketed rotary wheel operating in conjunction with a synchronized pusher or plunger adapted to deliver a formed caramel into each of the pockets in turn concurrently with a square or piece of wrapping paper. Alternatively, the invention may be applied in connection with mechanism as described in British patent specification No. 215,902.

The object of the present invention is to provide an improved machine in which the partial enfolding of the caramel, or lining of the pocket with the paper, is facilitated and the troubles or difficulties which are liable to arise in connection with the usual mechanical grippers or fingers adapted to perform the function of placing the paper in position, is avoided and the laying or positioning of the paper is effected with uniform regularity.

According to the invention wrapping papers passed towards the caramel fed position are engaged by fingers or elements to which they are caused to adhere under the influence of a vacuum, the fingers being given a movement synchronized with the caramel feed and the rotation of the pocketed wheel or positioning of the pocket so that an engaged wrapping paper is disposed within a pocket as a caramel is fed into the same.

The feeding means for the caramels is of known kind and preferably comprises a pusher or plunger adapted to reciprocate in a direction which is radial of the pocketed wheel (or in line with a pocket) and adapted to feed caramels in succession after being cut off by a revolving or reciprocating knife from a continuous strip or ribbon of the caramel fed to the pusher at right-angles thereto. The arrangement according to the invention is preferably such that the severed caramel is fed into a pocket with its cut edges lying at each side of the feed path so that the wrapping paper, when twisted, is folded over the cut edges thus avoiding contact of the newly sev-

ered surface with paper which is pressed flat against it.

The invention as herein indicated may be applied to the known type of machine employing a pocketed wheel adapted to be revolved stepwise in one direction and hereafter the invention will be described in this sense.

The accompanying drawings illustrate one application of the invention to a rotary wheel machine of which the pertinent known features are shown diagrammatically. In the drawings:—

Figure 1 is a side diagrammatic elevation,

Figure 2 is a detail fragmentary plan illustrating the suction device in position,

Figure 3 is a fragmentary plan of the counting device,

Figures 4 to 8 are diagrams illustrating various successive stages of feeding a caramel and wrapping paper into the pocket of the wheel by aid of the suction device and the subsequent displacement of the pocket and known action of folding the margins of the paper about the caramel.

In the drawings, *a* indicates a pocketed wheel comprising a series of pockets *b* each formed by a fixed jaw *c* and a jaw *d* which is displaceable by aid of levers *e* acted upon by a cam *f* to permit the jaw *d* to close in known manner after a caramel has been fed into a pocket and to cause jaw *d* to open to discharge a caramel somewhere about 130 degrees from the vertical as seen in Figure 1. The wheel is provided with the usual guard plate and fixed folding element *g* adapted to co-operate with the movable folding element *h* in the known manner. The caramel strip is indicated at *i*, being fed by two pairs of forming and feeding rollers *j*, *k*. The strip is severed into pieces by a rotary knife *m* and a cut piece of caramel or sweetmeat is seen at *l*. The cut caramels are operated upon by a pusher *m'* actuated by a lever *n* oscillated by the engagement of a pin *o* (carried by a forked lever *p*) in a cam groove mounted upon a member rotated by the shaft *q*. *r* is a piece of wrapping paper which is severed from a strip by the knives *s*.

In carrying the invention into effect, ac-

cording to one convenient mode as applied to a wrapping machine of the character hereinbefore indicated and of a known general construction, the pocketed wheel *a* is provided with a suction device comprising a U-shaped element, 1 preferably having inturned fingers 1*a* at the extremity of the limbs of the U form. The element 1 is carried upon or forms part of a lever 2 (or pair of levers) pivoted at 3 and having a lateral pin 4 engaged by a cam 5 adapted to give the lever an oscillatory movement in one direction, the return movement being preferably effected by a spring. Alternatively, the oscillation of the lever 2 may be promoted positively from a cam groove or other equivalent device.

The U-shaped member is provided with a conduit or double-armed passageway 6 which on one side is coupled by means of a flexible pipe 7 to a source of vacuum, preferably a vacuum pump 8 conveniently operated from the shaft *g* by means of an eccentric 9. The outer ends of the passageway communicate through ports 6*a* with the face of the fingers 1*a*, the fingers acting as a support for the wrapping paper *r* while the ports 6 admit of a suction or vacuum effect to cause the paper to be drawn up and held against the fingers.

A stop 10 is provided at the back of the pocket feeding position to determine the rearward movement of a caramel as it is pushed into a pocket and the extremities of the fingers 1*a* are spaced apart or have a clearance to accommodate the stop 10 in the rearward movement of the suction device.

The setting of the cam 5 is adapted to synchronize with the movement of the plunger *m'* and correspondingly the movement of the suction device is timed to fit in with the closing of the jaw *c, d* of the pocketed wheel and its stepwise rotational displacement.

The wrapping paper *r* is fed down in front of the pocket position so that on the forward stroke of the suction device the flat face of the fingers 1*a* lie against or immediately adjacent the paper (see Figure 2). The paper is severed by the knife *s*. As the fingers are about to engage a sheet of paper the vacuum is applied by the action of the pump 8 and the paper is sucked into contact with the fingers whereby when the lever 2 swings back the paper is moved with and adhering to the fingers. The severance of the paper is followed by a movement of the plunger *m'* to push the caramel *l* which has been severed by the knife *m* (see Figure 4) between the open jaws *c, d* of the pocket *e* (see Figure 5). As the plunger *m'* pushes the caramel *l* into the pocket the suction device 6 recedes, drawing the severed sheet around the caramel with it (see Figure 5). As the plunger *m'* finishes its stroke the caramel meets the stop 10 so that the fingers 1*a* of the suction device 6 become detached from the wrapping paper

and the movement of the fingers is continued rearwardly for a short period (see Figure 6). As the caramel and its wrapping paper are placed in position by the plunger *m'* and by aid of the suction device, the jaw *d* closes upon the caramel. As the pocketed wheel is revolved stepwise, the moving folding element *h*, in conjunction with the folding end of the cover plate *g*, folds the radially protruding margins of the wrapper around the caramel (see Figures 7 and 8). The above cycle of operations is repeated as each pocket is brought opposite the plunger *m'*.

In the region of the 3 o'clock position of the pocketed wheel (see Figure 1) the ends of the wrapper which protrude on each side of the pockets are twisted into wings by known twisting mechanism (not shown).

The wrapping paper may be fed freely in front of the feeding guideway and plunger *m'* in the usual way.

Instead of breaking the vacuum by the employment of a stop as described above, an automatic cut-out may be provided comprising a vent valve device for the vacuum which is adapted to come into operation when the lever and fingers have moved rearwardly to an adequate extent and positioned the paper.

A counting mechanism may be installed for counting the number of caramels which have been actually wrapped with paper and it is preferred to arrange this in a position in which the laterally protruding ends of the wrappers actuate the counting device before the twisting position. The counting device comprises a wheel 11 with wire or other detecting arms or spokes 11*a*, the wheel being mounted upon a spindle parallel with the shaft of the pocketed wheel and provided with a gear train for operating a cyclometer device 12 (see Figures 1 and 3). As the pockets of the wheel are advanced stepwise the protruding ends of the wrappers engage the spokes 11*a* in succession and impart a rotation equivalent to one unit. This arrangement ensures that only wrapped caramels are counted by the device and should for any reason a wrapping paper fail to be fed into a pocket with a caramel, then the counting device will not be operated on the passage of the pocket containing that caramel. The spokes 11*a* of the wheels 11 are set as close to the pocket wheel as possible, only allowing a working clearance, as the paper is better able to operate the wheels at a point close to the caramels without interfering with the folding or causing the bending of the wrapping paper than if located further away.

The invention has been described above with respect to its application to a wrapping machine employing a pocketed wheel; it is to be understood, however, that the invention is not confined in this respect and may be applied to any wrapping machine where wrap-

ping papers have to be positioned or fed for enfolding caramels and the like sweetmeats. In applying the invention to such other machine modifications may be necessary and it will be appreciated that the vacuum means may be carried by any suitable lever reciprocating means, whether pivotal or sliding, or by rotary elements in order that the vacuum means may be moved to perform the function of engaging or picking up the wrapping paper and appropriately positioning it with respect to other parts for enfolding the caramels.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A machine for wrapping caramels and like articles comprising a pocketed rotary wheel, a plunger for feeding a caramel and piece of wrapping paper into each of the pockets of the wheel in turn, and a displaceable element for positioning the pieces of wrapping paper, against which pieces of wrapping paper are retained by air pressure.

2. A machine for wrapping caramels and the like articles comprising a rotary wheel provided with pockets, a pusher for feeding both a caramel and a square of wrapping paper into each pocket in turn, and a displaceable suction device for engaging the wrapping paper and aiding in positioning the same around a caramel.

3. A machine for wrapping caramels and like articles comprising a pocketed rotary wheel operating in conjunction with a synchronized plunger adapted to deliver a caramel with a piece of wrapping paper into each of the pockets in turn, and a displaceable suction device comprising a U-shaped member having inwardly projecting fingers for aiding in positioning a wrapper around a caramel.

4. A machine for wrapping caramels and like articles comprising a pocketed rotary wheel, a plunger for feeding a formed caramel and a piece of wrapping paper into each of the pockets in turn, and a suction device having a movement in synchrony with the movement of the plunger for aiding in positioning the wrapping paper around a caramel.

5. A machine for wrapping caramels and like articles comprising a pocketed rotary wheel, a plunger or pusher for feeding a caramel and piece of wrapping paper into each of the pockets of the rotary wheel in turn, a movable suction device adapted to engage the wrapping paper and aid in positioning the same around a caramel, and a pump for providing the vacuum for the suction device.

6. A machine for wrapping caramels and like articles comprising a rotary wheel provided with pockets, a pusher having a movement synchronized with the movement of the

rotary wheel and adapted to deliver a caramel and piece of wrapping paper into each of the pockets of the wheel in turn, a stop to determine the rearward movement of the caramel as it is pushed into a pocket, and a displaceable suction device adapted to engage the wrapping paper and aid in positioning the same around a caramel.

7. A machine for wrapping caramels and like articles, comprising a pocketed rotary wheel, each pocket comprising a fixed and a movable jaw, a plunger adapted to feed a caramel and a piece of wrapping paper between said jaws, a movable U-shaped element having conduits connected to a source of vacuum and adapted to engage the wrapping paper, and a pump adapted to operate in synchronism with the feeding plunger.

8. A machine for wrapping caramels and like articles comprising a rotary wheel provided with pockets and a fixed folding element, a cam operated plunger adapted to feed a formed caramel and a severed portion of wrapping material into each of the pockets in succession, a suction device having a movement synchronized with the movement of the plunger and rotary wheel and adapted to engage and aid in positioning the wrapping paper around a caramel, and a stop for determining the position of the caramel in a pocket and for disengaging the wrapping material from the suction device.

9. A machine for wrapping caramels or like articles, comprising a pocketed rotary wheel, a plunger for delivering a caramel and piece of wrapping paper into each of the pockets in turn, a displaceable suction device for positioning pieces of wrapping paper, and a pump for supplying vacuum for the suction device, all of the mechanisms having synchronous movement.

In testimony whereof I have signed my name to this specification.

RICHARD ANSON HARRIS.