No. 854,022. PATENTED MAY 21, 1907.

J. H. BRADY.

WRAPPER CUTTING AND REGISTERING APPARATUS.

APPLICATION FILED NOV. 16, 1905.

3 SHEETS—SHEET 1

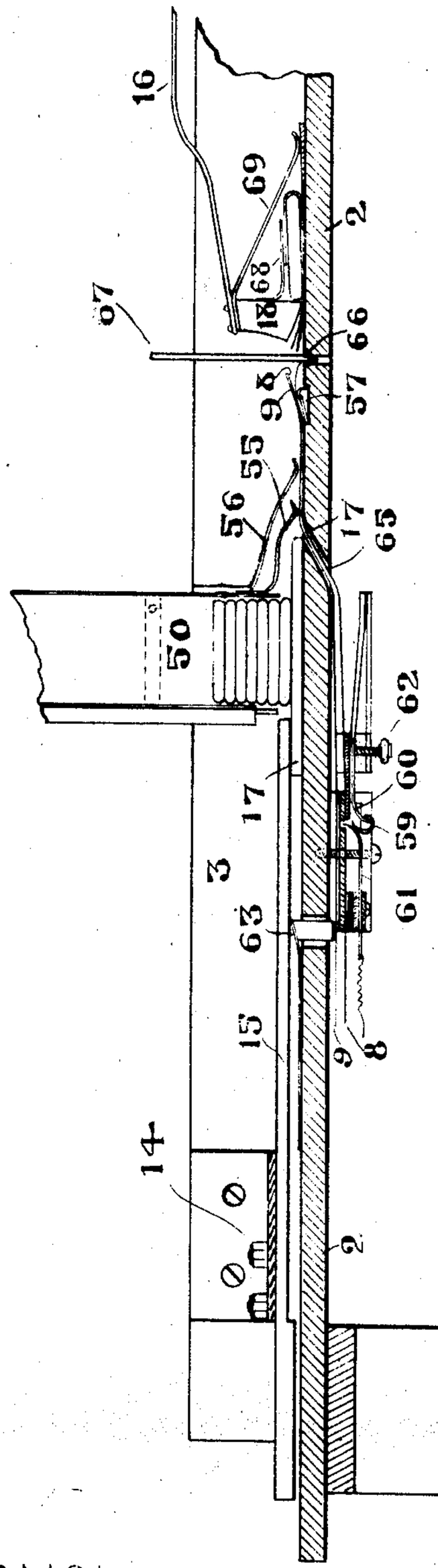

Fig. 1.

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3 SHEETS—SHEET 2

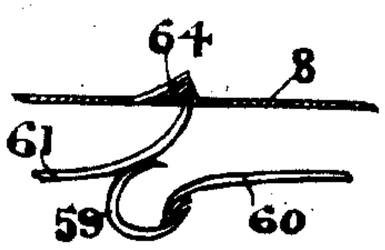

Fig. 6.

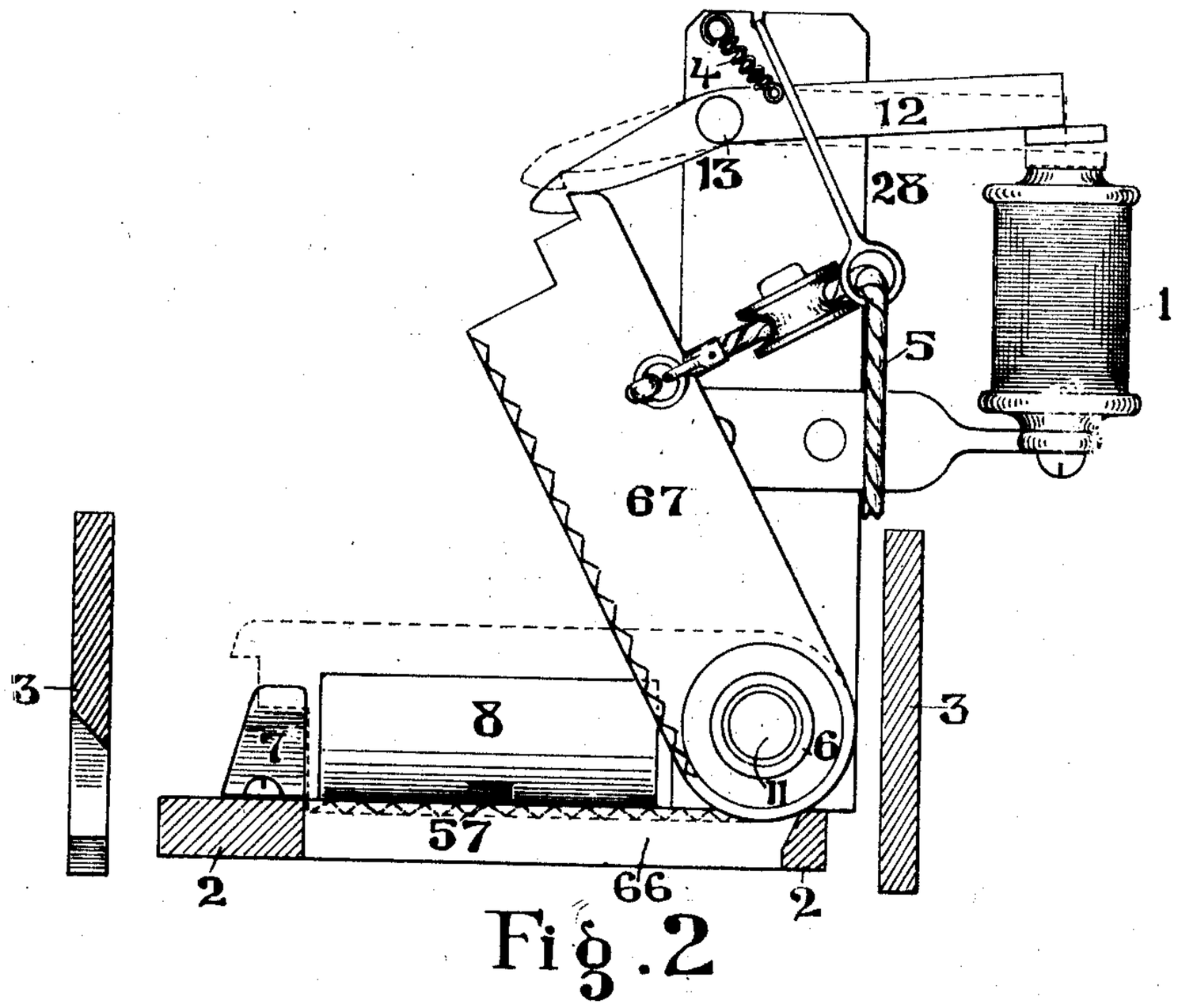

Fig. 2

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3 SHEETS—SHEET

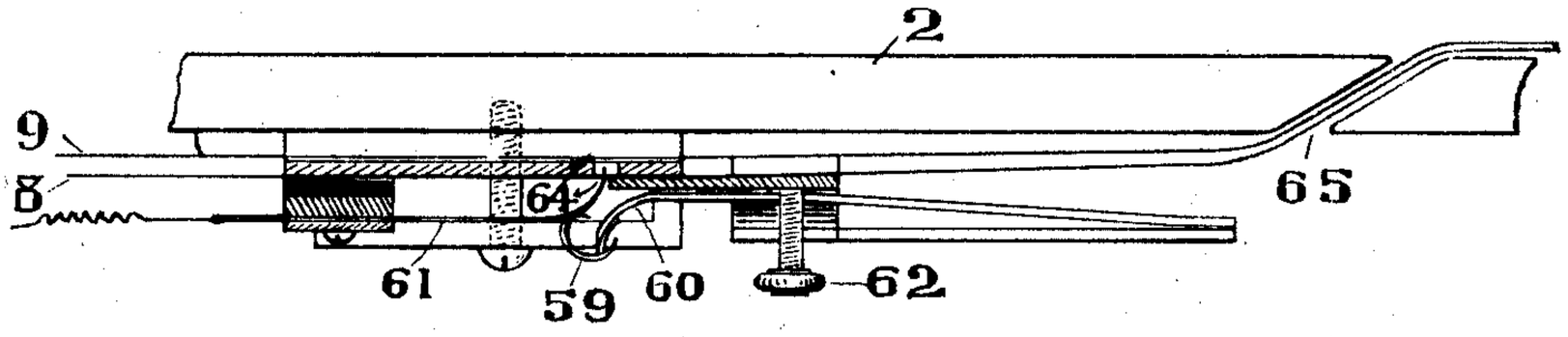

Fig. 4.

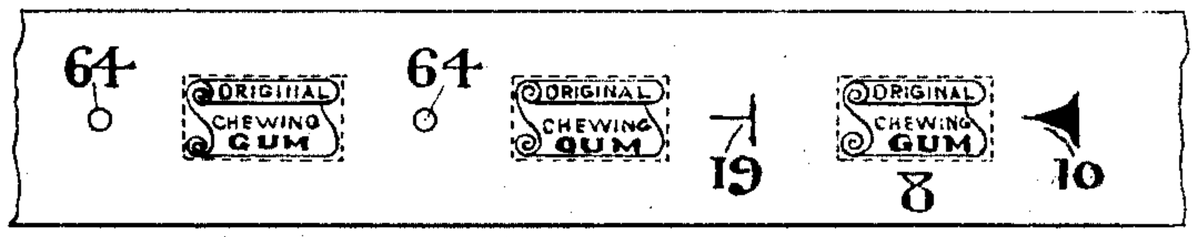

Fig. 5.

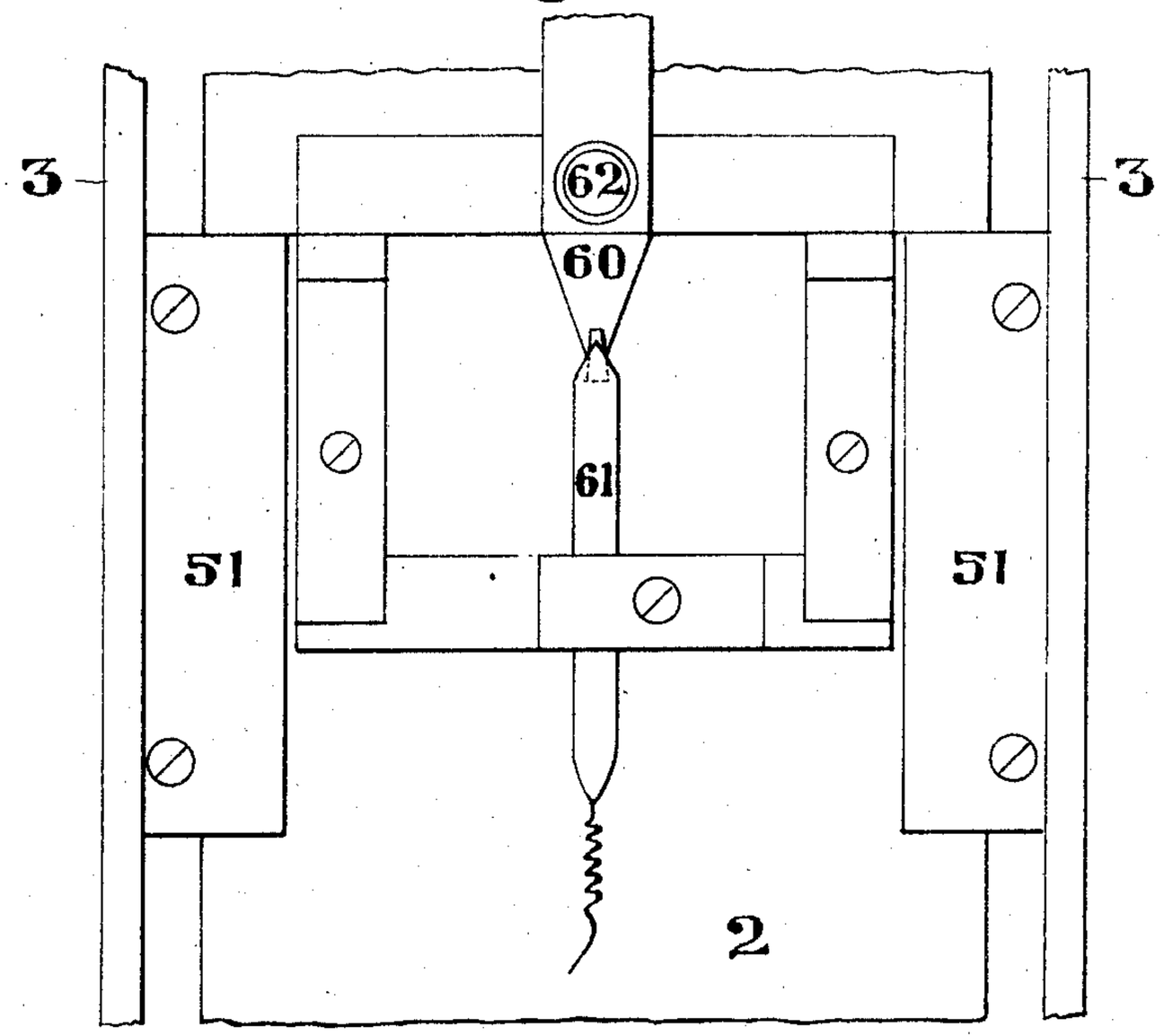

Fig. 3.

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UNITED STATES PATENT OFFICE.

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WRAPPER-CUTTING AND REGISTERING APPARATUS.

No. 854,022. Specification of Letters Patent. Patented May 21, 1907.

Original application filed April 3, 1905, Serial No. 253,517. Divided and this application filed November 16, 1905. Serial No. 287,744.

To all whom it may concern:

Be it known that I, JAMES HENRY BRADY, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Wrapper-Cutting and Registering Apparatus, of which the following is a specification.

This invention relates to means for cutting printed wrappers from a web used in wrapping machines and registering the printed label portion upon the article wrapped therein. The web is severed while in motion by cutting devices whose operation is controlled by the web.

This application is a division of my application for patent on wrapping machines, Serial No. 253,517, filed April 3, 1905.

That embodiment of this invention shown in the accompanying drawings is one which experience has demonstrated to be practical and efficient but changes in the details of structure and arrangement may, no doubt, be devised by those skilled in such matters without departing from the principles of the invention.

Figure 1 is a longitudinal sectional diagrammatic view; Fig. 2, a transverse detail section showing the web severing cutter and its trigger; Fig. 3, a bottom plan view showing electrical contacts that control an electric circuit that determines the moment of actuation of the cutter; Fig. 4, a longitudinal detail section, on a larger scale than Fig. 1, showing the electrical contact devices; Fig. 5, a plan view of the label web; and Fig. 6, an enlarged detail view of the electric contact devices.

2, indicates a horizontal base plate upon which is mounted a reciprocal carriage 3, by means of guide-shoes 51 grooved to receive the edges of the plate 2. The side bars of carriage 3 are rigidly connected at each end by cross-piece 14. The right-hand end of Fig. 1 is regarded as the front of the machine for the purpose of this description.

The figures in the drawings illustrate my invention as embodied in a machine for wrapping cakes of chewing gum, a full description of which will be found in the application above referred to.

To the rear cross-piece 14 is secured a cake-ejecting bar 15, adapted to push the bottom cake from a stationary hopper 50. When carriage 3 moves forward bar 15 pushes the bottom cake in hopper 50 forward under springs 55 and 56 until the rear edge of the cake drops in front of a shoulder formed by an abutment plate 17 attached to the base plate and constituting the bottom of the hopper.

9 represents a web of waxed paper, and 8 a printed label web, which are together drawn forward, one superimposed upon the other, under the base-plate, through the contact devices, and upward through a diagonal slot 65, in the base-plate upon the upper face of which they lie. In the base-plate in front of springs 55 and 56, is a spring 57, acting to elevate the free ends of webs 8 and 9. When the lowest article or cake in the hopper is pushed forward, springs 55 and 56 press it upon the web, the end of wnich, extending beyond it, is slightly elevated by spring 57 (Fig. 1).

The label-web 8 is formed with openings, or breaks in its uniform continuity, shown, in this instance, as perforations 64 (or slits 19 and 10) (Fig. 5), arranged mid-way between the printed labels. If a slit like that illustrated at 10 is used, the transverse cut thereof is preferably disposed centrally between the labels. The exact location of the openings in the web depends upon the adjustment of the devices.

Electric contact devices (Figs. 1, 3, 4, 6) are secured to the under face of the base-plate. The waxed web 9 (Fig. 4) passes above, and the perforated label web 8 below, a separating plate. An insulated contact spring 61, provided with an upturned point is so arranged beneath the web that the point presses against the paper in the path of the perforations, and the separating plate above the label web is perforated opposite the point of spring 61 in order that the point may spring into the perforation without coming in contact with the plate. A downwardly extending hooked contact piece 59 carried by spring 61, projects in proximity to a grounded contact piece 60, adjustable with relation to contact 59 by a set-screw 62. As the label-web 8 moves forward it depresses the point of spring 61, and holds apart con-

tacts 59 and 60, until spring 61, enters a perforation or slit, and so lifts contact piece 59 against contact 60 closing an electric circuit.

A wrapper-folding shoe 18, having a presser spring 68, in front and an auxiliary presser spring 69, is carried at the rear end of a shoe-arm 16, secured to and reciprocating with the front cross-piece 14 (not illustrated) of carriage 3. In the base-plate a short distance in front of spring 57, there is a slot 66 adapted to receive the cutting edges of a cutter 67, pivoted on a shaft 11, on one side of base-plate 2, and urged downward by a strong spring 6′. Just above the cutter is a trigger 12, (having a spring 4 applied to it) pivoted on a stud 13, and having one end notched to hold the free end of the cutter, and its opposite end provided with an armature for an electro magnet 1. A cord passing over a guide pulley and through the eye of a link carried by a standard 5′ on the base plate has one end attached to cutter 67 near its upper edge, and its other end to the carriage 3. The cord is of such length and so arranged that it raises cutter 67, at the end of the forward stroke of carriage 3, a sufficient height to be engaged by the spring latch or trigger 12, in which position it is held by the trigger during the rearward stroke of carriage 3 and a portion of the forward stroke. When the point of spring 61 passes into a perforation in the label-web the circuit of magnet 1 is closed at contact pieces 59 and 60 and the armature carried by the trigger being attracted the cutter is released. The cutter 67 being held in elevated position during the rearward stroke of shoe 18, allows the shoe to pass freely over slot 66 toward hopper 50. A cake of gum or other article to be wrapped having been fed by plunger 15, upon the web and under springs 55 and 56, shoe 18, as it moves to the rear, strikes the free ends of webs 8 and 9 which are held up by spring 57, folds them around the forward edge and down on top of the cake where they are held by spring 68. The shoe travels over the cake until its heel or lower edge (by reason of a slot or groove in abutment plate 17) is permitted to drop in behind the cake. As shoe 18 moves forward it drags with it the cake together with the webs that have been turned over it and that are clamped by spring 68. During this forward travel of the webs, a perforation in the label web is brought opposite the point of spring 61, the contact pieces come together, magnet 1 is energized and cutter 67 is instantly thrown down by its spring, the webs being severed at the proper point, *i. e.*, midway between the labels. To facilitate assembling the contact apparatus is made adjustable longitudinally of the base plate. The machine can not get out of time, so as to cut the wrapper across the label or fail to register the printed label portion properly on the cake, because cutter 67 will only descend when the point of spring 61 meets a perforation, and when a perforation is over slot 66. The cutter may be of any appropriate character. As shown its edge is serrated, as also are the edges of the slot 66. The term "perforations" (referring to the web) as used in the claims is intended to include equivalent apertures, slits, notches or other breaks in the continuity of the surface of the web. The web severing means controlled by such perforations are shown as electrical and are preferred for the reason that not only instantaneous action of the cutter is effected, but the part controlled by the perforations may be very light, have but slight pressure upon the web and small extent of movement.

In order to prevent the webs from being carried forward out of position when a cake of gum is pushed out upon them, a stop 63 working through an aperture on the base plate is mounted on a spring and adapted to be depressed by plunger 15 and hold the waxed web 9 firmly while the cake is being pushed thereon.

It is unnecessary to describe or show the remaining operations for folding the wrapper over the article and discharging the wrapped package from the machine.

The electric circuit may be arranged in any appropriate way. As indicated spring 61, carrying contact piece 59, is insulated, and contact 60 is in electrical connection with the frame. Consequently one terminal of the magnet-coil should be connected to spring 61 and the other should be connected to an insulated piece with which some moving part of the frame contacts at such times as energization of the magnet is required.

I have shown in Fig. 1 part of the folding devices described and claimed in my application Serial Number 253,517, filed April 3rd, 1905. Such folding devices form no part of the invention herein claimed and have been shown in the drawing merely to illustrate one way in which the paper web, or webs, may be drawn forward.

I claim as my invention:

1. A wrapper cutting and registering apparatus, comprising the combination of a cutter, a trigger normally holding the cutter in potential position, a trigger controlling device adapted to bear upon a web of paper in its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, and means whereby when said device enters such slit or perforation the cutter is automatically released to effect severance of the web while the latter is in motion.

2. A wrapper cutting and registering apparatus, comprising the combination of a cutter, a trigger normally holding the cutter in potential position, an electric contact device adapted to bear upon a web of paper during its traverse through the apparatus

and to enter a perforation or slit therein, means for intermittently drawing the web forward, electric contacts operated when the contact device enters such slit or perforation in the web, and an electro magnet, whose circuit is controlled by said contacts, acting to cause release of the cutter to effect severance of the web while the latter is in motion.

3. A wrapper cutting and registering apparatus, comprising the combination of a cutter normally held in potential position, an electric contact device adapted to bear upon a web of paper during its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, electric contacts controlled by said device and an electro magnet whose circuit is controlled by said contacts and which effects operation of the cutter to sever the web while the latter is in motion when the contact device enters a slit or perforation in the latter.

4. A wrapper cutting and registering apparatus, comprising the combination of a cutter, a trigger normally holding the cutter in potential position, a trigger controlling device adapted to bear upon a web of paper in its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, means whereby when said device enters such slit or perforation the cutter is automatically released to effect severance of the web while the latter is in motion, and means for automatically restoring the cutter to normal potential position.

5. A wrapper cutting and registering apparatus, comprising the combination of a cutter, a trigger normally holding the cutter in potential position, an electric contact device adapted to bear upon a web of paper during its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, electric contacts operated when the contact device enters such slit or perforation in the web, an electro magnet, whose circuit is controlled by said contacts, acting to cause release of the cutter to effect severance of the web while the latter is in motion, and means for automatically restoring the cutter to normal potential position.

6. A wrapper cutting and registering apparatus, comprising the combination of a cutter normally held in potential position, an electric contact device adapted to bear upon a web of paper during its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, electric contacts controlled by said device, an electro magnet whose circuit is controlled by said contacts and which effects operation of the cutter to sever the web while the latter is in motion when the contact device enters a slit or perforation in the latter, and means for automatically restoring the cutter to normal potential position.

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