A. LINKER.

WRAPPING MACHINE.

APPLICATION FILED MAY 11, 1915.

1,178,246.

Patented Apr. 4, 1916.

5 SHEETS—SHEET 1.

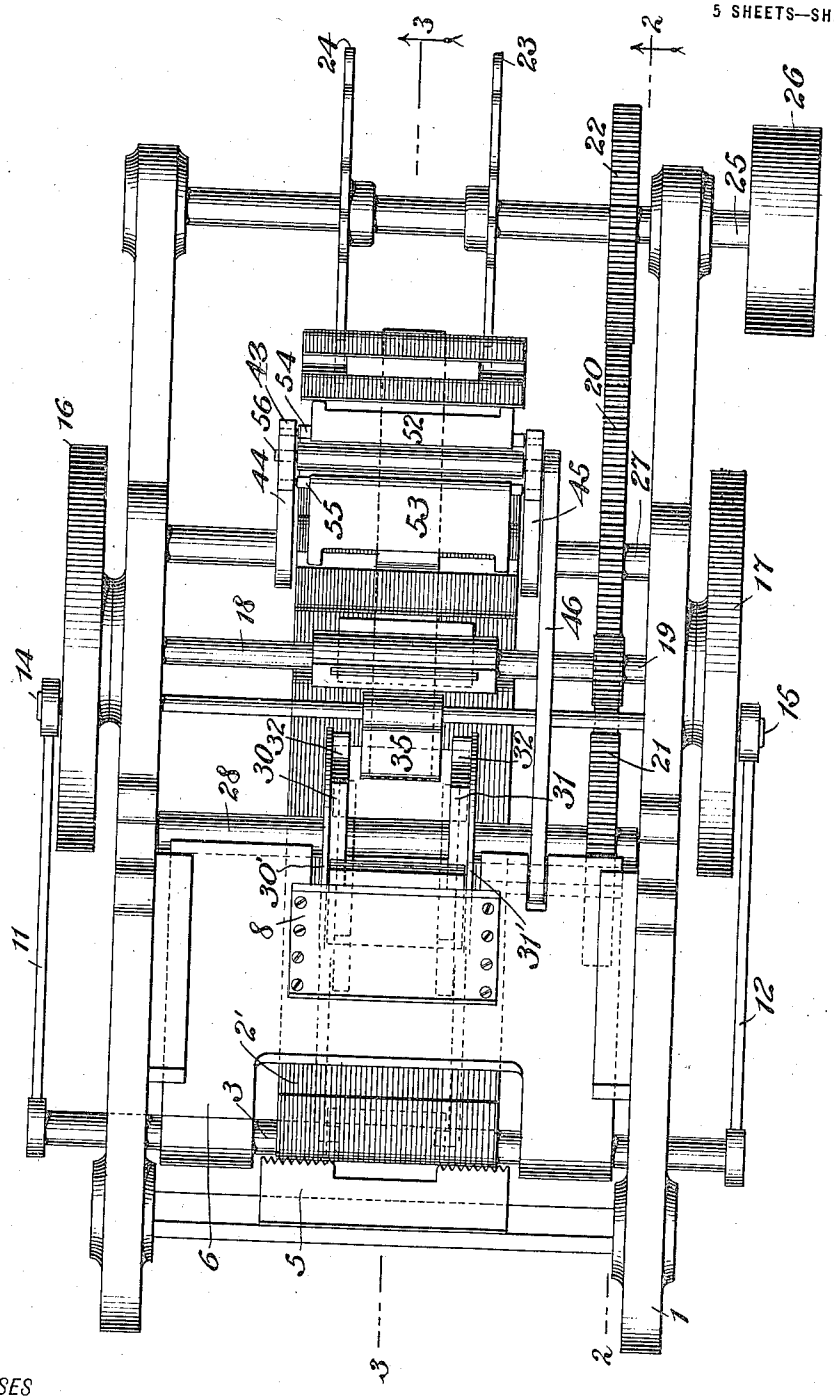


Fig. 1.

WITNESSES

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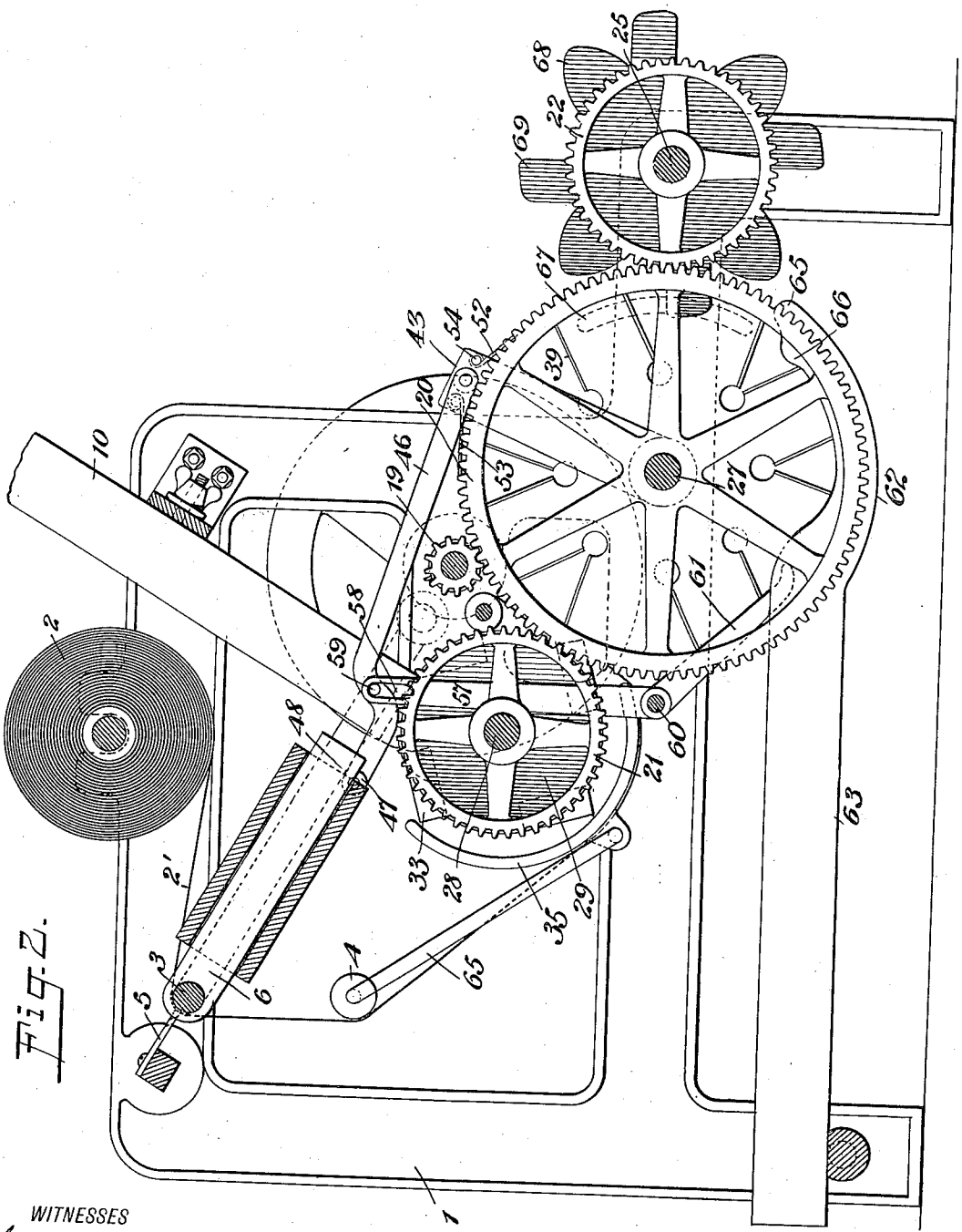


Fig. 2.

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5 SHEETS—SHEET 3.

Fig. 4.

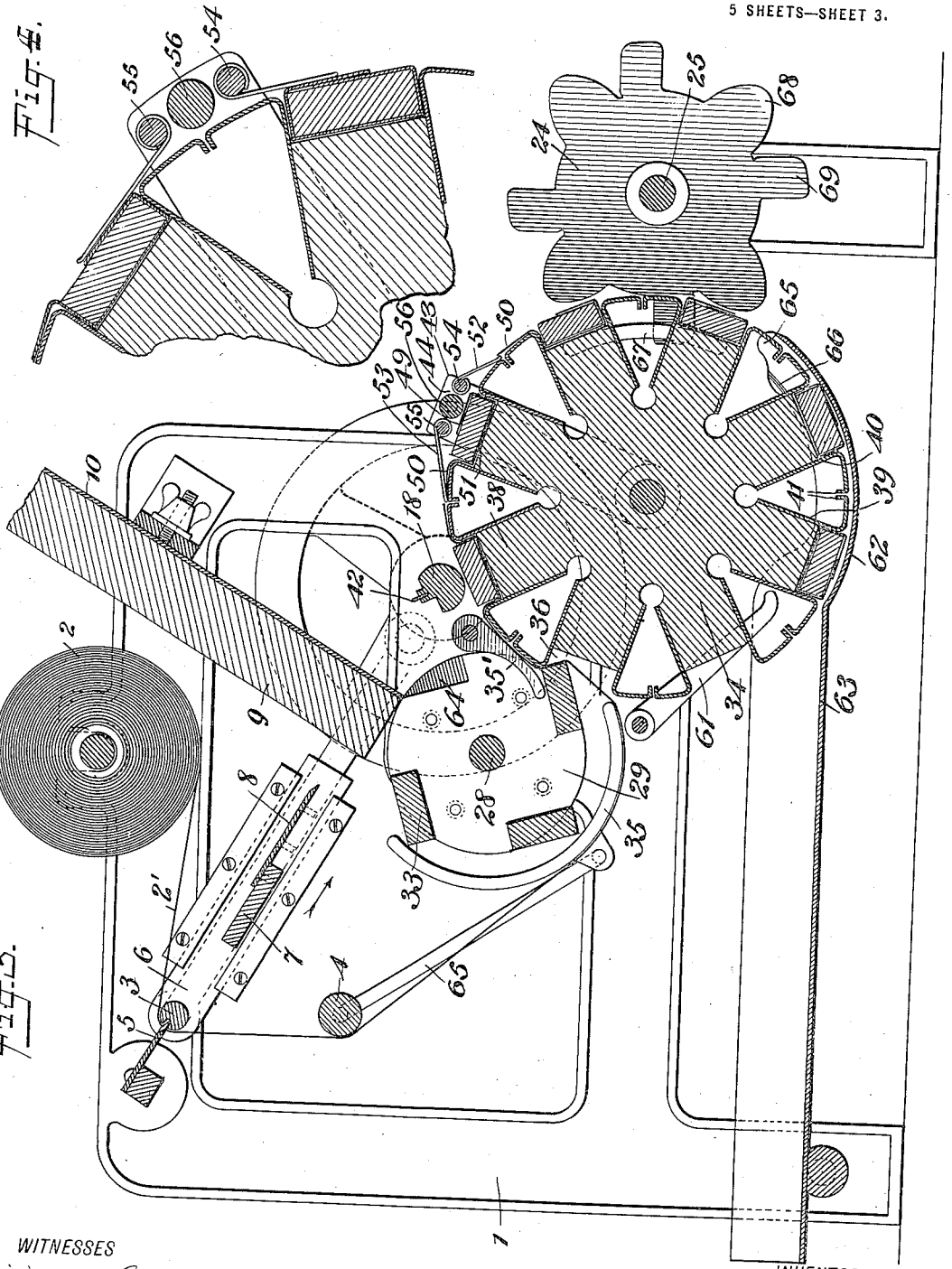


Fig. 3.

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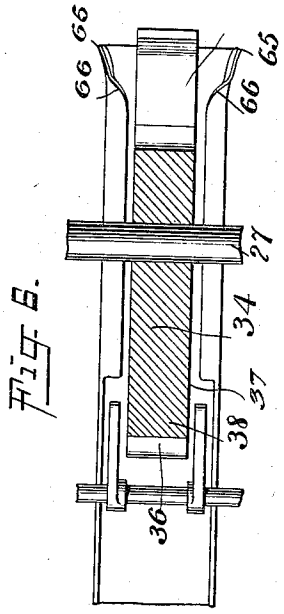


Fig. 6.

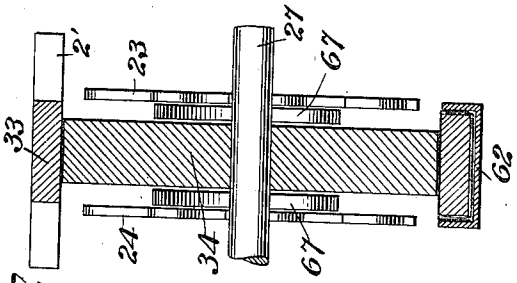


Fig. 7.

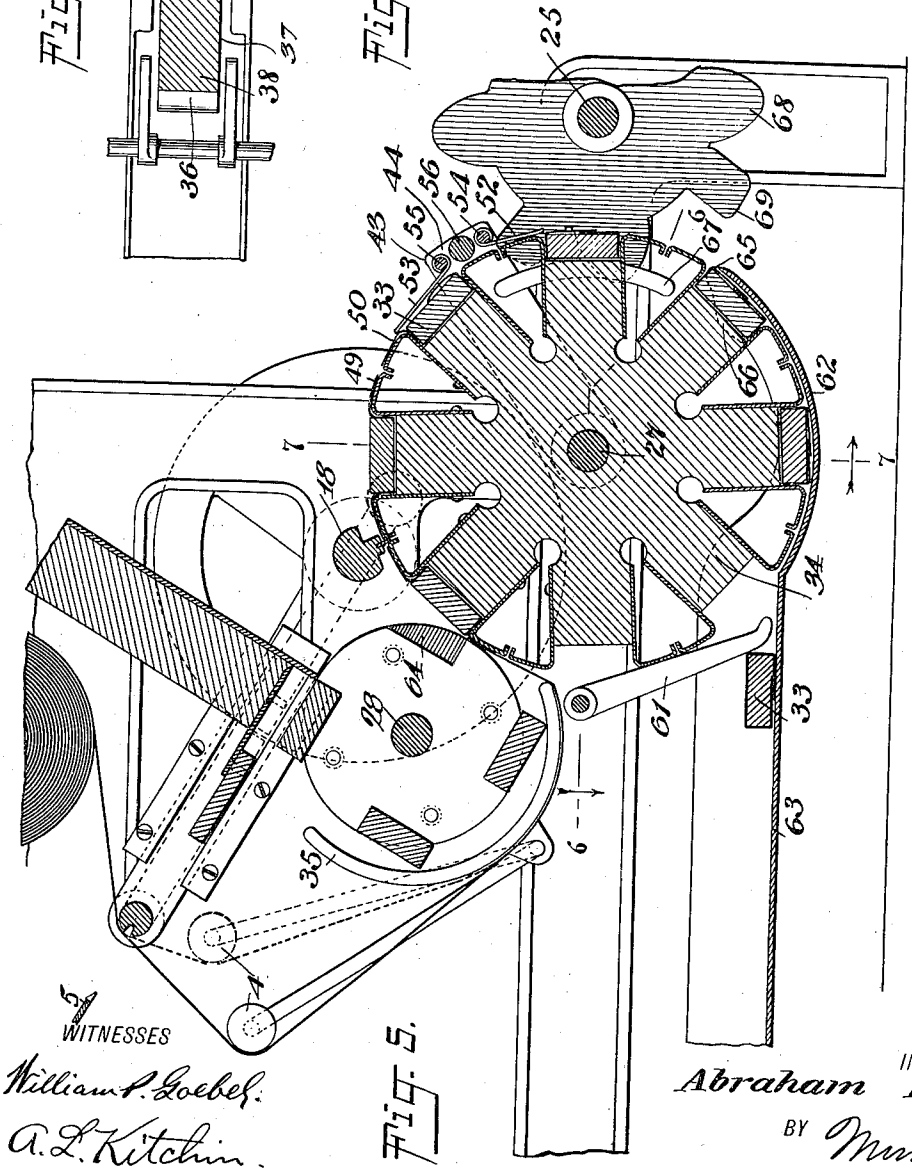


Fig. 5.

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5 SHEETS—SHEET 5.

Fig. 8.

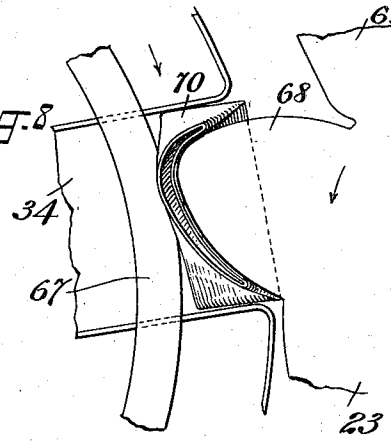


Fig. 10.

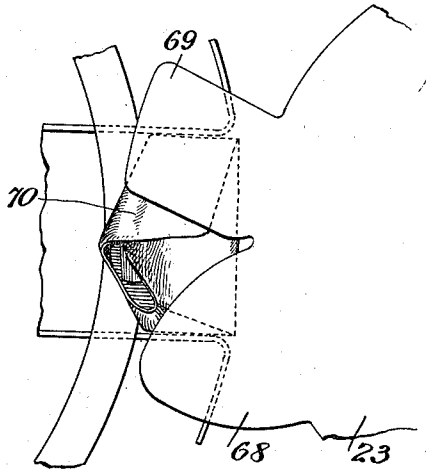


Fig. 9.

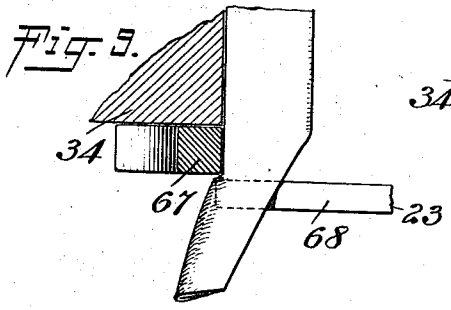


Fig. 11.

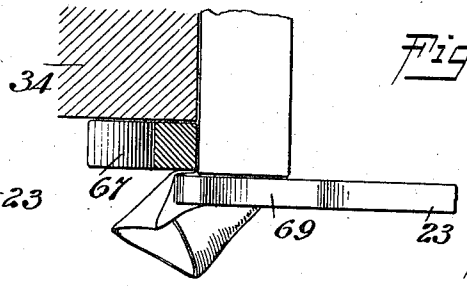


Fig. 14

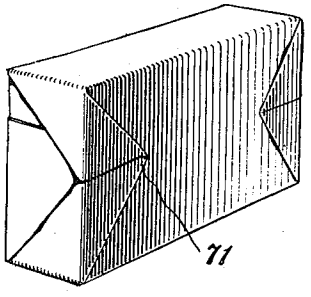


Fig. 12.

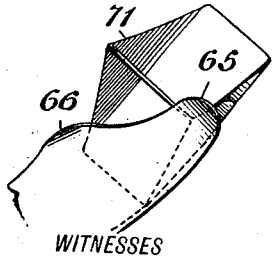
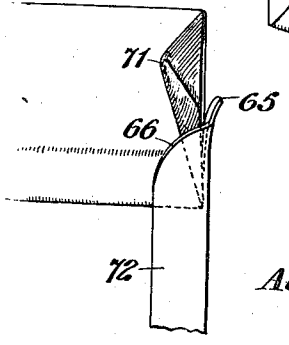


Fig. 13.



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UNITED STATES PATENT OFFICE.

ABRAHAM LINKER, OF NEW YORK, N. Y.

WRAPPING-MACHINE.

1,178,246. Specification of Letters Patent. Patented Apr. 4, 1916.

Application filed May 11, 1915. Serial No. 27,350.

To all whom it may concern:

Be it known that I, ABRAHAM LINKER, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Wrapping-Machine, of which the following is a full, clear, and exact description.

This invention relates to wrapping machines, and particularly to machines designed to sever a bar or other supply into sections and then wrap the sections.

A further object in view is to provide a wrapping machine which will fold a wrapper around an article and then fold the ends of the wrapper.

A still further object of the invention is to provide a pair of rotating members one of which acts as a feeding member and the other as a holding member, and a double set of wrapping mechanisms, one mechanism acting as means for folding a wrapper over the sides and top and bottom of the article, and the other wrapping means acting as mechanism for folding the ends together and then over the package.

In carrying out the objects of the invention a suitable frame of any desired kind is provided. A pair of rotating members are supported by the frame, one of the members being formed with sockets whereby the same acts as a holding member for various articles while the other rotating member acts as a feeding device. The feeding device is adapted to receive articles from a chute, the articles in the chute being fed one at a time. When ice cream or other similar articles are to be wrapped the same are arranged in the chute in a solid bar and are served immediately previous to their discharge from the chute so that the feeding member may feed small cakes into the holding member. As the holding member rotates, a strip of paper or other wrapping material is folded around the sides and top and bottom of the cake, and then the ends are folded together and bent back over the body of the cake, after which the wrapped cake is discharged. As the holding member and the feeding member are geared in a certain ratio and the remaining parts of the machine are connected up in a proper timed relationship with these parts the device may be operated at any desired speed so that when ice cream is being wrapped the same may receive its wrapper without any danger of melting previous to being wrapped. It is of course evident that soap and other articles could be wrapped in a similar manner without departing from the spirit of the invention.

In the accompanying drawings—Figure 1 is a top view of a machine embodying the invention; Fig. 2 is a section through Fig. 1 on line 2—2; Fig. 3 is a section through Fig. 1 on line 3—3; Fig. 4 is an enlarged detailed fragmentary sectional view of one of the folding members and associated parts; Fig. 5 is a sectional view similar to Fig. 3 but showing the various parts in different positions; Fig. 6 is a fragmentary sectional view through Fig. 5 on line 6—6; Fig. 7 is a sectional view through Fig. 5 on line 7—7; Fig. 8 is a detailed fragmentary view showing the first folding action of the end folding member; Fig. 9 is a top plan view of the structure shown in Fig. 8; Fig. 10 is a view similar to Fig. 8 but disclosing the next step of the folding operation of the end; Fig. 11 is a top plan view of the structure shown in Fig. 10; Fig. 12 is a fragmentary view showing one end of the discharge chute and cam for bending the folded end to a position on the back of the package; Fig. 13 is a top plan view of the structure shown in Fig. 12; Fig. 14 is a detailed perspective view of the package with a wrapper folded thereon.

Referring to the accompanying drawings by numeral, 1 indicates a frame of any desired kind. Arranged at any convenient place, as for instance near the top of frame 1 is a roll 2 of paper or other wrapping material which is designed to be passed over a rod 3 and from thence over roller 4 into the moving parts of the machine. The strip 2′ of paper is perforated or slit by knife 5 whenever the slides 6 have been moved back to the position shown in Fig. 3. This weakens the strip 2′ at this point so that the same may be easily severed as hereinafter fully described. The slides 6 not only carry the rod 3 but a bar 7 to which is secured a knife 8. The knife 8 is designed to slice the bar 9 arranged in the chute 10. The bar 9 may be ice cream, soap or any other desired material which is designed to be sliced into cakes and wrapped, and the term ice cream will be understood as meaning any of these articles. It will also be understood that separate cakes could be placed in chute 10 and from

thence fed into the wrapping mechanism. The rod 3 extends beyond the slides 6 and has pivotally mounted thereon at the respective ends the links 11 and 12 so as to allow a proper movement of the links as these links are pivotally connected at 14 and 15 to the respective wheels 16 and 17. Wheels 16 and 17 act as drivers for links 11 and 12 and also act as fly wheels for causing an even movement of the entire machine. The wheels 16 and 17 are rigidly secured to shaft 18, which shaft is mounted in suitable bearings in the frame 1, and which has secured thereto a pinion 19 (Fig. 2). The pinion 19 meshes with a large gear wheel 20, which gear wheel in turn meshes with a smaller gear wheel 21, the gear wheels 20 and 21 being arranged so as to rotate in the proportion of two to one, that is, wheel 21 will make two rotations to a single rotation of gear wheel 20. The gear wheel 20 is arranged to continually mesh with gear wheel 22 in addition to meshing with pinion 19 and gear wheel 21, whereby the folding members 23 and 24 are caused to actuate in proper timed relationship to the mechanisms connected with wheels 20 and 21. Power may be provided for the moving parts of any desired kind and connected up with the device, for instance through shaft 25 on which the folding members 23 and 24 are mounted. Shaft 25 carries a pulley 26 which is driven by any desired means and consequently power may be transferred through the various gears heretofore mentioned for moving the various moving parts. It is evident that the power could be applied to some of the other parts, besides, without departing from the spirit of the invention, as for instance by having a power gear to mesh with gear wheel 20. The gear wheels 20 and 21 are rigidly secured to shafts 27 and 28 so as to drive the various parts connected therewith. Shaft 28 has rigidly secured thereto the cake feeding device 29, which device is formed from disk-shaped plates 30 and 31, which plates are formed with notches 32 for receiving the cakes 33 and feeding the same to the holder 34. The feeding device 29 is rigidly connected with shaft 28 so as to be rotated by the gear wheel 21. An arc-shaped guide 35 is arranged around part of the feeding device 29 so as to prevent the cakes 33 from falling out before they reach the holder 34. In order that the cakes 33 may be positively moved from the feeding device 29 a pivotally mounted feeding member 35′ is provided, which guide extends between the plates 30 and 31 and acts as a cam for forcing the cakes 33 into the respective sockets 36 as shown in Fig. 3. It will be noted from Fig. 3 that the paper strip 2′ extends across the upper part of the socket 36 and from thence to the next socket so that as the cake 33 is forced into socket 36 there will be provided a strip of paper beneath the same and extending on each side. In connection with the plates 30 and 31 it will be observed that secondary plates 30′ and 31′ are provided, which secondary plates act as end guards for preventing the cakes of ice cream from moving out endwise of the feeding device 29, these secondary plates being bolted or riveted to plates 30 and 31 as may be desired.

After the cakes 33 have left the feeding device 29 they enter the sockets 36 of holder 34. The holder 34 comprises a body 37 (Fig. 6) which body is formed with a plurality of sockets 36. The body is arranged with radially projecting solid portions 38 which have arranged therebetween spring plates 39 and 40 (Fig. 3) which plates are secured to projection 38 by any suitable means, as for instance screws, and which are provided with turned-down ends 41, said ends usually having a slight space therebetween for accommodating knife 42 secured to the shaft 18. The holder 34 and shaft 18 are geared eight to one so that the knife 42 upon each rotation will enter one of the spaces between projections 41 so as to sever the strip of paper 2′, this severing action taking place along the line weakened or perforated by the perforating knife 5 shown in Figs. 1 and 3. The spring plates 39 and 40 project beyond the extensions 38 so as to provide with said extensions sockets 36, the end of said extensions acting as the bottoms of the sockets 36. As shown in Fig. 3 when the cake is forced into one of the sockets 36 the same will substantially fill the socket, and as holder 34 rotates knife 42 will sever the paper 2′ a short distance away from the cake. As the holder 34 rotates farther the knife 42 will sever the paper 2′ on the opposite side of the cake so that the cake will be resting upon a strip of paper having flaps of equal length on each side, these flaps extending from the aperture between one set of projections 41 to the aperture between the next set of projections 41. During the further operation of the machine these flaps are folded one at a time over the cake and then the ends are folded and bent over the back of the cake. Associated with the holder 34 is a folding device 43 which folds the respective flaps over the cakes arranged in sockets 36. The folding device 43 is provided with a pair of supports 44 and 45 which are pivotally mounted upon shaft 27, and which are actuated by an arm 46. The arm 46 is pivotally mounted at 47 to a shaft 48 which in turn is connected with the slides 6 carrying knife 8. As these slides are given a comparatively quick back and forth movement the supports 44 and 45 will be given a quick back and forth pivotal movement for engaging the flaps 49 and 50 of the strip 51 for folding the same over a cake, such folding action taking place while the

cake is passing from adjacent shaft 18 (Fig. 3) to adjacent the folding members 23 and 24. It will be observed that there are folding members 52 and 53 connected with the supports 44 and 45, these members being preferably plates as shown in Fig. 1. The plates 52 and 53 are mounted upon bars 54 and 55, which bars are pivotally mounted upon the arms 44 and 45. A central bracing bar 56 is provided which acts as a bracing member and as a roller for pressing one of the flaps against the cake. When the parts are in the position shown in Fig. 3 the movement of knife 8, toward the bar 9 will take place at the same time that arms 44 and 45 will be actuated for causing the plate 52 to move the flap 50 over the cake with which it is associated. This movement of flap 52 is a quick movement, whereby the flap 50 will be folded over the cake before the cake passes opposite the folding members 23 and 24. When the supports 44 and 45 move toward members 23 and 24 flap 50 is turned over, and when moved in the opposite direction the flap 49 is turned over, flap 49 being the first one turned over. In connection with the operating bar or link 46 which moves the supports 44 and 45 a pivotally mounted lever 57 is provided which is formed with a slot 58 at the upper end through which a pin 59 projects, pin 59 being connected with the link or bar 46. The lever 57 (Fig. 2) is rigidly connected with shaft 60 whereby the lever rocks shaft 60 and also rocks a discharge lever 61 rigidly secured to shaft 60. The discharge lever 61 is maintained in the position shown in Figs. 2 and 3 as the bars are being fed from the arc-shaped guideway 62 to the straight guideway 63. When a cake comes opposite the straight guideway 63 lever 61 pushes the same on to said guideway from which they may be removed at any time and by any desired means.

In operation as the strip 2′ is fed from roll 2 the same passes over rod 3 and is there perforated or cut on each side as shown more particularly in Fig. 1 whereby a central solid strip is left, which central strip is later cut by knife 42. From rod 3 the strip 2′ passes over a tension roller 4 supported by arm 65, which arm is pivotally mounted upon part of the guide 35, which guide surrounds the feeding member 29 for preventing the cakes from accidently falling therefrom. If desired a spring could be provided for lever 65, but ordinarily the weight thereof is sufficient. The paper 2′ extends from roll 4 over part of the guide 35, and from thence over part of the rotating member 34, whereby the cakes 3 may be placed on top of the strip of paper as the cakes are placed in sockets 36, the cakes forcing the strip into these sockets. A bar 9 of ice cream or other material is arranged in the guiding chute 10, which bar is severed into cakes by the knife 8. The knife 8 is adapted to move in a proper timed relationship with the feeding device 29 so as to sever a cake 33 immediately previous to the movement of a socket 64 opposite the chute 10. The cake is designed to drop by gravity into socket 64, and as the feeding device 29 rotates the cake will be fed around to the lowermost part of the shield 66 and from thence forced by member 35′ into one of the sockets 36. Member 34 will then move the cake together with the paper partially surrounding the same over and past knife 42, which will sever the paper a predetermined distance from the cake after the cake has passed. The plates 52 and 53 will then fold the side flaps of the strip of paper over the top of the cake, after which the cake moves to a position opposite the folding members 23 and 24 which will fold the ends. After the ends have been folded the cams 65 and 66 will complete the folding action and also turn the folded ends over as shown in Fig. 14. This completes the operation of wrapping the cake. The detailed operation of the folding members 23 and 24 is shown in Figs. 8 to 11, inclusive, and the detailed folding action of the cams 65 and 66 is shown in Figs. 12 and 13. When the cake first approaches the members 23 and 24 the same passes over suitable guiding supports 67 and the spur 68 on each end of the cake presses the ends of the folded flaps 49 and 50 together and downwardly as shown in Fig. 8. The spur 68 substantially holds the wrapping paper in this position until the substantially square spur 69 is in engagement with the edge 70 of the wrapping paper. As the members 53 and 54 continue to rotate and also the member 34 continues to rotate the parts will assume the position shown in Figs. 10 and 11. This completes the folding action as far as members 23 and 24 are concerned and the cake then passes on to cam 65 which engages the folded ends of flaps 49 and 50 as shown in Figs. 12 and 13 so as to press the same against the end of the cake of ice cream. The continued movement of member 34 which carries the cake will cause the folded projection 71 of the folded flaps 49 and 50 to be engaged by cam 66 and bent over to the position shown in Fig. 14, the side wall 72 merging into cam 66 continuing the action of cam 66 for pressing the folded projection against the cake of ice cream and holding the same in that position until the paper has been properly settled after which the ejector or discharge member 61 forces the cake out of the member 34 into the discharge chute or guideway 63.

What I claim is—

1. In a wrapping machine of the class de-

scribed, a rotating member adapted to receive cakes to be wrapped, means for supplying a continuous strip of wrapping material to said rotating holding member, a knife for cutting said strip into lengths, said knife cutting said strip on opposite sides of the cake in said holder, a rocking device associated with said holder for folding over the ends of said severed strips, a pair of rotating toothed members folding over the sides of said strips, said sides being folded over the ends of the cake, and means for pressing said folded sides against the end of said cake and also against the bottom or back of the cake.

2. In a wrapping machine of the class described, a rotating feeding member, a guide for guiding material into said feeding member, means for severing said material into cakes, a rotating holding member for receiving cakes from said feeding member, means for feeding a strip of wrapping material to said holding member, means for forcing the cakes from said feeding member individually into said holding member, and on top of part of said strip of wrapping material, a knife for severing said wrapping material into lengths, the movement of said knife being timed with the movement of said holding member so as to sever said strip of wrapping material an equal distance on each side of the cakes fed into said holder, means for folding the ends of said severed strips over the face of said cakes, means for folding said wrapping material over the ends of said cakes, and means for pressing the folded wrapping material from the end over the back of the cakes.

3. In a wrapping machine of the class described, a feeding guideway, a rotating member for receiving cakes of soap, said rotating member being formed with supporting means spaced apart, an arm extending between said parts whereby the cakes to be wrapped are forced from said rotating feeding member as the cakes engage said arm, a rotating holder provided with sockets for receiving the cakes as the same are forced from said feeding member, means for supplying a strip of wrapping material to the periphery of said holding member, said cakes being fed into said sockets on top of part of said strip of wrapping material, means for severing said wrapping material into lengths, an oscillating member for folding part of said lengths of wrapping material over the ends of said cakes, and means for pressing said wrapping material against the ends of said cakes and against the back of said cakes.

4. In a wrapping machine of the character described, a rotating holding member provided with sockets for receiving the sections of wrapping material and cakes to be wrapped thereby, an oscillating arm, a pair of plates designed to have their edges arranged adjacent said holding member, means for rocking said arm and said plates whereby one end of said section of wrapping paper is folded over the cakes as they approach the rocking arm and the opposite end is folded over the respective cakes as the cakes pass the rocking arm, means for folding the wrapping material over the ends of said cakes after the cakes have passed said rocking arm, a pair of cams for pressing the material adjacent the ends of said cakes over the back of the cakes, and means for ejecting the wrapped cakes from the holder.

5. In a wrapping machine of the class described, a rotating cake holding member, means for feeding cakes to said cake holding member, a rocking folding device, means for supplying a strip of wrapping material to said holding device, a knife for cutting said strip of wrapping material into lengths, said oscillating folding device partially wrapping said severed strips over the respective cakes as the same pass the rocking folding device, a pair of rotating folding walls having pairs of spurs, one of said spurs being designed to fold together the parts of the severed strips at the ends of the cakes and the other of the spurs being adapted to fold said wrapping material together at said ends, a pair of cams engaging the ends of said cakes for forcing the wrapping material while in a folded condition over and against the cakes and means for ejecting the wrapped cakes from said holding member.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ABRAHAM LINKER.

Witnesses:

A. L. KITCHIN,

PHILIP D. ROLLHAUS.