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CUTTING AND WRAPPING MACHINE

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6 Sheets-Sheet 6

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This invention relates to a machine for cutting a slab or block of material into sections or slices and wrapping the same in paper suitable for sale to the retail trade, and although this machine is primarily designed for cutting ice-cream slabs or blocks in this manner and wrapping them preparatory to turning the same over to customers, it obviously can be used for slicing and wrapping other materials preparatory to dispensing the same.

It is the object of this invention to provide a machine capable of performing these functions which is compact in construction, efficient and economical in operation and capable of handling a comparatively large amount of material conveniently, and expeditiously.

The present application is a division of my prior application Serial No. 190,359, filed May 10, 1927. The material cutting and feeding features are claimed more particularly herein.

In the accompanying drawings:

Figure 1 is a side elevation of a cutting and wrapping machine embodying my invention with parts of the enclosure broken away so as to show the internal mechanism.

Figure 2 is a top plan view of the same with parts broken away to show the internal mechanism.

Figure 3 is a front elevation of the same, on an enlarged scale, showing parts broken away and in section for exposing the internal mechanism.

Figure 4 is a fragmentary view similar to Fig. 3 but showing more particularly the mechanism for wrapping a sheet around the sections of material.

Figure 5 is a vertical transverse section, on an enlarged scale, taken on the line 5—5 of Fig. 1 and showing more particularly the mechanism whereby the block or slab of material is cut into sections or slices.

Figure 6 is a perspective view of a cake or slice of material which has been wrapped in the machine forming the subject of this invention.

Figure 7 is a fragmentary side elevation partly in section, on an enlarged scale, of the means whereby the mechanism which feeds the block of material to be cut and wrapped, may be adjusted to cut sections or slices of different thicknesses.

Figure 8 is a similar view of the follower and adjacent parts of the mechanism which feeds the block of material.

Figure 9 is a vertical cross section taken on line 9—9 Fig. 8.

Figures 10, 11, 12, 13 and 14 are diagrammatic views illustrating different positions of parts of the mechanism whereby a sheet of paper or similar material is wrapped around a section or slice of material.

Figure 15 is a fragmentary front elevation of the plunger and adjacent parts of the mechanism whereby a sheet of paper is wrapped around a section of the material.

Figure 16 is a fragmentary longitudinal section taken on line 16—16 Fig. 15.

Similar characters of reference indicate corresponding parts in the several figures of the drawings.

The numeral 30 represents the main frame of the machine which may be of any suitable construction to support the various working parts of the machine. On the upper part of this frame and at the rear end thereof the same is provided with a horizontal table 31 upon which is adapted to be supported a block or slab of material 32 such as a block of ice-cream, preparatory to cutting the same up into sections and wrapping the sections successfully in sheets of paper. The forward movement of this block of material is effected step by step through the medium of a feed mechanism and means are provided whereby the length of these steps may be varied in order to vary the thickness of the sections or slices 39 in accordance with the demands of the trade or other conditions. This block feeding and adjusting mechanism is constructed as follows:

The numeral 33 represents a follower which is arranged transversely above the feed table 31 and moved forwardly lengthwise thereof in engagement with the rear end of the block of material for advancing the latter toward the cutting mechanism and also capable of being retracted into the rearmost position.
for engaging with a new block when the cutting of the preceding block has been completed or nearly completed.

This follower 33 is provided with a rearwardly projecting arm 34 which is connected by means of a horizontal longitudinal pin 35 with a carrier 36 sliding horizontally and lengthwise upon a guide bar 37 which is mounted on the main frame adjacent to the rear side of the feed table 31, as best shown in Figs. 2, 8, and 9.

Below the guide bar 37 is arranged a longitudinally reciprocating feed bar 38 which is provided on different parts of its periphery with longitudinal rows of ratchet teeth 39, any row of which may be engaged by a feed pawl 40 which is pivotally mounted on the underside of the carriage 36 and adapted to be moved into and out of engagement with the respective row of teeth on the feed bar 38 by means of handle 41 connected with the pawl. By means of this handle 41 the pawl 40 may be lifted out of engagement from the respective teeth of the feed bar 38 after which the carriage 36 together with the follower 33 may be moved lengthwise of the feed table into any desired position, and after such adjustment the pawl 40 may be again lowered into engagement with the respective teeth of the feed bar 38 so that the movement of the latter will be transmitted to said follower.

This feed bar 38 has a longitudinally reciprocating movement, the strokes of which are of the same length, this movement being preferably derived from a main driving shaft 42 which is journaled horizontally and lengthwise in the lower part of the main frame and is rotated so that it makes one turn for every complete cycle of operations of the machine.

Although this driving shaft may be operated in any suitable manner and from any suitable source, it is preferable to drive the same from an electric motor 43 which is mounted on the lower rear part of the main frame.

Motion may be transmitted from this motor to the main driving shaft 42 by the driving belt 44 passing around pulleys 45 and 46 which are secured to the shaft 47 of the motor and a countershaft 48 arranged transversely below the main shaft 42, and a worm gearing consisting of a worm pinion 49 secured to the countershaft 48 and meshing with the worm wheel 50 on the main driving shaft, as best shown in Figs. 1 and 3. For the purpose of starting and stopping the machine without interrupting the motion of the motor, a clutch 51 is preferably employed which is interposed between the main driving shaft 42 and the driven worm wheel 50 and which is operated by means of a shifting lever 52, as shown in Fig. 1.

Motion is transmitted from the driving shaft 42 to the feed bar 38 for reciprocating the latter lengthwise by means of an upright rock lever 53 which is pivotally mounted on the main frame and actuated so that its upper arm moves forwardly by means of a cam 54 secured to the driving shaft 42 and engaging with the lower arm of this lever 53, while the return movement of this lever is effected by means of a spring 55 connecting the upper arm thereof with an adjacent stationary part of the main frame, a coupling sleeve 56 secured to the rear end of the feed bar 38 and provided with an annular groove 57, a coupling collar 58 engaging with the groove 57, and a link 59 connecting the collar 58 with the upper arm of the rock lever 53. By this means a longitudinal reciprocating movement having strokes of equal length is imparted to the feed bar 38 by motion derived from the driving shaft 42. The point at which the forward movement of the feed bar terminates is always the same but the point at which its rearward movement is arrested may be varied for the purpose of adjusting the effective stroke of the feed bar and the forward step of the follower 33, in accordance with the desired thickness of the section or slice which is to be cut off from the front or advancing end of the slab of material. For this purpose an adjustable stop device is provided which preferably is constructed as follows:

The numeral 60 represents an adjusting sleeve which is rotatably mounted on the main frame at the rear end of the feed table 31 but held against longitudinal movement by engaging a groove 61 formed by a reduced neck 62 on the sleeve with an opening 63 in the adjacent part of the frame, as shown in Fig. 7. This adjusting sleeve and the rear end of the feed bar 38 are connected with each other in such manner that the same are compelled to turn together, but the feed bar is capable of longitudinal movement in the adjusting sleeve.

In its preferred form the connection is effected by making the rear end of the feed bar 38 square, as shown at 64, and engaging the same with a correspondingly shaped bore 65 of this adjusting sleeve. On its front side this adjusting sleeve is provided with a plurality of stops 66 which are arranged in an annular row about the axis of this sleeve and are made of different heights so that the distance from the front ends of these stops to the further extremity of the stroke of the feed bar varies accordingly. On the coupling collar 58 is arranged a stop arm 67 which projects rearwardly therefrom and is adapted to engage with one or another of the series of stops 66 on the adjusting sleeve 60, depending upon which of these stops is arranged in line with this stop arm. Upon turning the adjusting sleeve 60 so that the shortest or lowest stop 66 is arranged in line with the stop arm 67, then the feed bar is permitted to effect its longest backward stroke and consequently its longest forward stroke so that a
slice or section of maximum thickness will be cut off from the front or advancing end of the material inasmuch as the shortest stop 68 in this position will permit the feed bar to move backwardly until the stop arm 67 engages with this shortest stop. If the adjusting sleeve is turned so that the longest stop 66 is brought in line with a stop arm 67, then the latter upon engaging with the longest stop 66 will arrest the backward movement of the feed bar 38 at a point which determines the shortest backward stroke and subsequently effects the shortest forward throw whereby the block of material will be fed downward a distance equal to the shortest stop, and a slice or section of minimum thickness will be cut off from the front end of the block.

In like manner the adjusting sleeve 60 may be turned for bringing either of the intermediate stops in line with the stop arm 67 and thereby vary the feeding action upon the block of material and the thickness of the slice or section which is cut therefrom accordingly. In order to hold the adjusting sleeve in any of the various positions in which it presents one or another of the stops 66 to the stop arm 67, a locking pin 68 is provided which moves vertically in the adjacent part of the frame and may be engaged or disengaged with one or another of a series of openings 69 formed at different points in the circumference of the neck of the adjusting sleeve corresponding to the positions of the several stops 66 relative to the stop arm 67.

As the feed bar 38 is turned for the purpose of varying the stroke of the same the rows of teeth arranged on the periphery thereof are also shifted circumferentially in order to engage one or another of these rows of teeth with the feed pawl 40. In the preferred construction the length of the teeth in these several rows varies in accordance with the length of the stroke of the feed bar, corresponding to the particular back stop 68 which is engaged by the stop arm 67, the teeth which are arranged in operative relation to the pawl 40 being longest when the shortest stop 66 is presented to the stop arm 67, as shown in Fig. 7 and at the top of Fig. 8, and proportionately shorter feed teeth being employed in the remaining rows on the feed bar as shown for example on the lower side of the feed bar in Fig. 8.

As the block of material reaches the end of each step during its forward movement the front end of this block projects beyond the front end of the table 31 and either engages with or is close to an upright front wall or stop 70 which latter is separated from the front edge of the table 31 by an intervening space which forms a vertical well 71. After the block of material has been thus advanced so that its front end projects beyond the front end of the feed table 31, this projecting part of the block is operated upon by a cutter mechanism for severing a section or slice of material from the block.

This cutter mechanism may be variously organized but in its preferred form the same comprises two cutter blades 72, 73 which are arranged vertically and are adapted to move transversely toward and from each other across the path of the block of material so that in the closed position of these cutters the opposing upright edges of the same practically meet at the center of the path of material, while in the open position of the blades the same are retracted laterally from opposite sides of this path so as to not obstruct the same and permit of feeding the block forwardly.

As best shown in Fig. 5 the cutter 72 is mounted on the upper arm 74 of an elbow lever which is pivoted on the main frame by a horizontal longitudinal pivot and the cutter 73 is secured to the upper arm 75 of a three-armed lever which is pivoted by a horizontal longitudinal pivot to the main frame. These levers are caused to move in unison so that their cutter blades approach the center of the path of the block and move away from the same at the same time by a link 76 connecting the inwardly projecting lower arm 77 of the lever supporting the left hand blade 72 with an inwardly projecting central arm 78 of the lever supporting the right hand blade 73, and a rotary cam 79 secured to the driving shaft 42 and engaging with the lower arm 80 of the lever supporting the right hand blade 73 as best shown in Figs. 1, 3 and 5.

After a section or slice has been cut off from the front end of the block, the same is shifted to the mechanism which operates to wrap a sheet of paper around the same. This mechanism in the preferred construction comprises an elevator 81 which is normally lowered in the well 71 with its upper end substantially flush with the top of the feed table 31 so that the block of ice-cream or other material when advanced, will project with its foremost portion over the upper side of the elevator 81, then the latter is raised so as to lift the foremost part of the block of material which has been severed in the form of a slice or cake from the remainder of the block until this section is arranged above the body of the material and horizontally in line with the device which operates to wrap a sheet of paper around this section. This elevator is raised and lowered in proper timing with the movements of the section cutter and block feeder and this is preferably accomplished by mounting this elevator on the upper end of a lifting rod 82 which is suitably guided on the main frame and engages its lower end with a lifting cam 83 which is mounted on the driving shaft 42 so as to be rotated thereby.

In Fig. 10 this elevator is shown in its lowermost position which it occupies while the block of material is being fed over the
same, and in Fig. 11 this elevator is represented in its highest position which it assumes when the section of material severed from the body of the same has been elevated in proper position to be acted upon by the wrapping mechanism.

In the manufacture of ice-cream or similar material in the form of blocks or slabs, the cross section of the same is usually of oblong form and of twice the area in which ice-cream or similar material is usually sold in brick form. It is therefore proposed in the present machine to again divide the sections which are removed from the block of material into two smaller cakes or slices of equal size.

To accomplish this without involving the use of any additional movable parts, a dividing plate 84 is provided which is arranged in an upright and longitudinal position above the main frame so that when the section of material removed from the main block is lifted, this section will be engaged with this dividing plate 84 and cut thereby into two cakes or slices of equal dimensions by the time the section has been elevated into its highest position by the elevator.

In order to prevent the lower edge of this dividing blade from being injured or interfering with the operation of the elevator the central part of the latter is provided with a longitudinal notch or recess 85 as shown in Fig. 5, which receives the lower edge of the dividing blade 84 and enables the latter to effect a clean cut or division between the two smaller cakes or slices of material which have been elevated preparatory to wrapping them in paper.

After a section of material has been thus elevated and divided into two smaller cakes or slices, the same may be acted upon by automatic paper feeding and wrapping mechanism which will feed paper from a roll, cut it into sheets, and wrap the sheets individually around the cakes or slices of material so as to cover the upper and lower edges and the front and rear flat sides of each cake or slice, leaving the side edges exposed. However, it has been considered unnecessary to disclose this automatic paper feeding mechanism in this application. Such mechanism is fully disclosed in my aforesaid parent application, Serial No. 190,359, wherein the paper feeding and wrapping features are particularly larly claimed.

For the purposes of the present disclosure which has to do more directly with the cutting features of the machine I have relied upon manual feeding of sheets of paper to the slices of material to be wrapped but have included the folding and wrapping elements since they are ordinarily necessary to insure separation of the plunger from the slice and the slices from each other. The presentation of this divisional application in this way has been undertaken with a view to simplifying the disclosure as much as possible without giving up any substantial rights.

In the main, this wrapping mechanism is duplicated, the main parts of each mechanism serving to wrap one cake or slice of a pair and the following description, in the main, will therefore apply to the two sections of this wrapping mechanism whereby two slices or cakes of material are wrapped at the same time.

The numeral 86 represents a tubular receiver which is arranged horizontally and lengthwise immediately in rear of the place where the two cakes or slices of material come to rest when the elevator reaches the upper end of its stroke and which is adapted to receive these two slices by having the latter moved rearwardly into the same. This rearward movement of these two slices or cakes of material is effected by means of the longitudinally and horizontally movable plunger 87 which is mounted on the front end of a plunger rod 88 which is guided in suitable guideways on the upper part of the main frame and which is reciprocated in proper synchronism with the other parts of the machine by motion derived from the driving shaft 42. The particular mechanism whereby motion is transmitted from this driving shaft to the plunger rod 88 which is shown in the drawings, comprises an upright rock shaft 89 journaled in suitable bearings on the main frame and provided at its lower end with a rock arm 90 which engages with a cam 91 on the driving shaft 42, a spring 92 which holds the rock arm 90 yieldingly in engagement with the cam, an upper rock arm 93 arranged on the upper end of the rock shaft 89 and a link 94 connecting the upper rock arm 93 with the plunger rod 88, as best shown in Figs. 1, 2 and 3. While the section of material is being lifted by the elevator 81 and cut into two smaller cakes or slices the plunger 87 is retracted rearwardly out of the path of the slices to be wrapped, as shown in Fig. 10, and after these slices have reached their uppermost position, as shown in Fig. 11, the plunger is moved forwardly and pushes the slices of material from the top of the elevator into the receiver 86, as shown in Fig. 12.

Preparatory to moving each cake or slice of material from the upper end of the elevator into the receiver 86 a sheet of paper is fed downwardly so that the central part 95 of this sheet is arranged opposite the inlet of this receiver and the upper and lower ends 96 and 97 of this sheet are arranged above and below the inlet of the receiver, as shown in Fig. 10. As each cake or slice of material is pushed from the elevator into the receiver the flat front side of the slice engages with the central part 95 of the sheet of paper and as this cake or slice and the sheet of paper are pushed.

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together forwardly into the receiver the upper and lower parts of the sheet immediately adjacent to the central part 95 thereof are bent horizontally rearwardly against the upper and lower edges of the cake of material by the rear edges 87, 88 of the top and bottom of the receiver 86, as shown at 98 and 99 in Figs. 6, 12, 13 and 14.

After the slice of material has been thus pushed into the receiver 86 and while the plunger 87 is still in engagement with the rear side of the slice, a lower folding blade 100 first rises into engagement with the lower part of the sheet immediately adjacent to the lower rear corner of the slice and produces a short crimp in the same, and an upper folding blade 101 descends and engages with the upper part of the sheet immediately adjacent to the upper rear corner of the slice and also produces a short crimp in this part of the sheet, as shown in Fig. 13, thereby serving as retainers whereby the partly wrapped slice of material is held in the receiver 86 and the plunger 87 is permitted to withdraw rearwardly out of engagement from the rear side of the slice of material without liability of pulling this slice backwardly with the plunger as would be liable to occur owing to the adhesion which was produced between the same while the plunger moved the slices of material forwardly into the receiver. After the plunger has been thus withdrawn rearwardly away from the rear side of the slice of material, the lower folding blade 100 completes its upward movement and bends the lower end 97 of the sheet in the form of a flap against the rear side of the slice of material, as shown in Fig. 14, and then the upper folding blade 101 also completes its downward movement and bends or folds the upper end 98 of the sheet downwardly against the rear side of the slice of material, as shown in Fig. 15. Thereafter the lower folding blade is moved downwardly and the upper folding blade 101 is raised out of the path of the slice and the plunger as the next slice is moved from the elevator into the receiver.

Various means may be employed for obtaining this particular action of the folding blades, these shown in the drawings being suitable and comprising a lower cross-head 102 which carries the lower blade, an upper cross-head 103 which carries the upper folding blade, two upright tubular shifting rods 104 connected with opposite ends of the lower cross-head 102 and guided in guide-ways 105 on the main frame, a lower cross-head 106 connected to the lower ends of the tubular rods 104, upright guide rods 107 sliding in the tubular rods 104 and connected at their upper ends with the upper cross-head 103, a lower cross-head 108 connected with the lower ends of the guide rods 107, and two cams 109, 110 formed on a disk 111 which is secured to the driving shaft 42 and engaging with the lower cross-heads 108 and 109 respectively, as shown in Fig. 4. As the cams 109 and 110 rotate with the driving shaft, the lower and upper folding blades are moved vertically toward and from each other across the rear or inlet end of the receiver 86 and produce the holding action on the sheet of paper for wrapping the same around a slice of cake of material in the manner which is described.

As each succeeding slice or piece of material is pushed forwardly from the elevator into the receiver and wrapped in a sheet of paper the same engages with the previously wrapped slice of material and pushes the latter forwardly upon a delivery table 112 on which the several wrapped slices of material accumulate in a row preparatory to being removed and dispensed to the trade or placed in a refrigerator or other container ready for distribution.

It will be understood that a sheet of paper is presented for each slice of material. These are positioned before the plunger as indicated in Fig. 10. As there shown the center 95 of each sheet lies in line with the center of the slice, or approximately so, and the upper and lower parts 96 and 97 overlie the blades 100 and 101.

When thus positioned by hand, the sheet in each instance is preferably held from falling down and doubling up into a more or less irregular condition, which might interfere with the proper wrapping of the slice by means which retain the upper part of the sheet of paper in its proper position relative to the folding mechanism until it is engaged by the front side of the slice of material which is to be wrapped and under the control of the folding mechanism.

Preferred means for this purpose comprise a detent device consisting of a plurality of detent fingers 169 of spring metal, the lower ends of which are adapted to move forwardly and backwardly toward the rear side of the upper folding blade 101 for the purpose of clamping the upper part of the sheet of paper against the same, or releasing it, a horizontal rock shaft 170 carrying the upper ends of the detent fingers 169 and journaled in suitable bearings 171 on the main frame above the plunger 87, a retracting arm 172 projecting downwardly from the rock shaft 170 and adapted to engage the rear side of the plunger 87, and a spring 173 interposed between the upper rear side of the retracting arm 172 and the adjacent part of the main frame, and operating to move the arm 172, rock shaft 170 and fingers 169 forwardly toward the upper folding blade 101. When the plunger 87 is in its retracted position the same moves the retracting arm 172 backwardly together with the detent fingers 169 so that a clear path is formed between these detent fingers and the upper folding blade 101 through which the piece of paper can pass freely.
During the first part of its forward movement, the plunger 87 permits the retracting arm 172 to move forwardly from the position shown by full lines in Fig. 16 to a position shown by dotted lines in the same figure, whereby the gripping fingers 169 are permitted to move forwardly from the position shown by full lines in Fig. 16 to a position shown by dotted lines in the same figure in which last mentioned position the gripping fingers engage with the rear side of the upper part of the piece of paper and clasp the same against the rear side of the upper folding blade 101. When thus engaged by the gripping fingers 169, the person feeding the sheet may release his hold upon it for the sheet will be prevented from dropping and assuming a more or less crumpled position at this time, inasmuch as it is securely clamped adjacent to its upper end against the upper folding blade 101. The upper part of the sheet is however easily withdrawn from between the detent fingers 169 and the upper folding blade 101 as the central part of the sheet is engaged by the front side of the slice of material, which latter is pushed forwardly during the continued forward movement of the plunger 87 after the latter has permitted the detent fingers 169 to engage the upper folding blade.

During the downward movement of the upper folding blade 101 for effecting the preliminary crease in the upper flap of the sheet, as shown in Fig. 13, the upper blade simply slides in contact with the detent fingers 169 and also rises into its elevated position for the purpose of clearing the rear or inlet end of the receiver 86 without any objectionable effect.

During the backward or return movement of the plunger 87 the same again engages the lower end of the retracting arm 172 and moves the detent fingers 169 rearwardly out of the path of the paper.

It will be apparent from the foregoing description that by the use of this machine a large quantity of material which is usually manufactured in blocks or slabs such as ice cream can be cut up and wrapped economically and expeditiously with no waste of materials, thereby enabling goods of this character to be marketed at comparatively low cost and also in the most sanitary manner.

I claim as my invention:

1. A machine of the character described, comprising a feed table adapted to support a block of material, cutting means for severing said block into sections, and means for moving said block step by step on said table toward said cutting means comprising a follower adapted to engage the rear side of said block, longitudinally reciprocating feed bar provided on different parts of its periphery with longitudinal rows of differently spaced teeth, a pawl movably mounted on said follower and adapted to engage the teeth in any one of said rows, a longitudinal guide for said follower, a rock lever, a link connecting said lever and said bar, a cam engaging said lever and operating to move the feed bar forwardly to the same point, a spring connected with said lever and adapted to move the feed bar backwardly, a sleeve capable of turning with said bar but held against longitudinal movement therewith, a stop mounted on said sleeve and movable lengthwise therewith, and a plurality of differently spaced stops arranged in an annular row on said sleeve about the axis thereof and each adapted to be engaged by the stop on said bar for arresting the backward movement of the same at a different point.

2. A machine of the character described, comprising a feed table adapted to support a block of material; means for moving said block forwardly intermittently; cutting means for severing sections successively from the front end of said block, said cutting means comprising two cutter blades movable toward and from each other at the front end of the path of said block, two rock levers carrying said blades, a link connecting said rock levers, and means for moving said sections to a position at one side of said block, said cutting means comprising an elevator adapted to engage the under side of each section and force it upward over the surface of said blades and out of contact therewith to said offset position, and a cam for actuating said elevator.

3. A machine of the character described, comprising a feed table adapted to support a block of material; means for moving said block forwardly intermittently; cutting means for severing sections from the front end of said block, said cutting means comprising two cutter blades movable toward and from each other at the front end of the path of said block, two rock levers carrying said blades, a link connecting said rock levers, and a cam operatively engaging one of said levers; shifting means for moving said sections to a position at one side of said block, said shifting means comprising an elevator adapted to engage the underside of each section and force it upward over the surfaces of said blades and out of contact therewith to said position, and a cam for actuating said elevator; and a divider just upward of the upper edge of a freshly severed section against which said section is moved by said elevator and whereby said section is divided.

4. A machine of the character described, comprising a feed table adapted to support a block of material; means for moving said block forwardly along said table intermittently; cutting means for severing sections from the front end of said block, said cutting means comprising two cutter blades movable from an outer open position toward each
other to an inner closed position to sever a section at the front end of the block; an elevator just forward of the plane of said blades adapted to engage the under side of each section to push the same over and out of contact with and to a position above said blades; a divider just above the upper edge of a freshly severed section against which said section is pressed by said elevator as the latter moves upward whereby said section is divided; and a receiving table about on a level with said divider to which the severed sections may be transferred.

5. A machine of the class described, comprising a horizontal feed table adapted to support a block of material, means for feeding said block forwardly along said table intermittently, cutting means for severing sections from the front end of said block, said cutting means comprising two outer blades movable toward and from each other in a vertical plane at the front end of the path of said block, vertically movable means movable over the faces of said blades in a single plane to move each severed section over and out of engagement with said blades to a position higher than said block, horizontally movable means above said block for engaging the rear of a section after it has been shifted to said elevated position but while it is still in engagement with said vertically movable means, to horizontally advance said section in the direction of feed clear of said vertically movable means, and a receiver for receiving and supporting sections thus advanced from said laterally movable means.

6. A machine of the class described, comprising a horizontal feed table adapted to support a block of material, means for feeding said block forwardly along said table intermittently, cutting means for severing sections from the front end of said block, said cutting means comprising two cutting blades movable toward and from each other in a transverse vertical plane at the front end of the path of said block, means for moving said sections vertically over and out of engagement with said blades to a position higher than said block, a horizontally movable plunger for engaging a section in said position while still in engagement with said vertically moving means to advance the section still further to a position forward of and out of engagement with said vertically moving means, and a delivery table forward of said plunger upon which said sections are advanced by said plunger.

7. A machine of the character described, comprising a table adapted to support a block of material; means for moving said block forwardly along said table intermittently; cutting means for severing sections successively from the front end of said block; said cutting means comprising two outer blades movable toward and from each other at the front end of the path of said block; an elevator just forward of the plane of said knives adapted to engage the under side of each section to raise the same to a position above said blades and out of contact therewith; a plunger movable in a path parallel to and above that of said block and operative to engage the side of an elevated section to advance it out of engagement with the raised elevator; and a receiving table upon which said sections are pushed by said plunger.

8. A machine of the character described, comprising a feed table adapted to support a block of material; means for moving said block forwardly along said table intermittently; cutting means for severing sections from the front end of said block, said cutting means comprising two outer cutter blades movable from an outer open position toward each other to an inner closed position to sever a section at the front end of the block; an elevator just forward of the plane of said blades adapted to engage the under side of each section to raise the same out of contact with and above said blades; a divider just upward of a freshly severed section against which said section is pressed by said elevator and thereby divided when delivered to its elevated position; a plunger movable in a path parallel to and above that of said block and operative to engage the rear sides of the divided parts of an elevated section to advance them out of engagement with the raised elevator; and a receiving table upon which said sections are delivered by said plunger.

9. A machine of the character described, comprising a feed table adapted to support a block of material, cutting means for severing said block into sections, said cutting means including cutting blades entering said block at the sides and moving together to sever the section, feeding means for intermittently moving said block toward said cutting means, shifting means for moving the severed sections successively to one side of said block, a plunger for engaging the rear of a severed section thus shifted to advance the same, a receiving table for carrying the sections advanced by said plunger, and means for actuating said plunger comprising a slide rod supporting said plunger, an upper rock arm connected to said slide rod, a rook shaft carrying said upper arm, a lower rock arm mounted on said shaft, a cam engaging said lower rock arm and adapted to move said plunger forwardly, and a spring for moving said plunger backwardly.

10. A machine of the character described, comprising means for longitudinally advancing a block of material, a pair of oscillating blades for cutting sections from the front end of the block, the cutting taking place when said blades move toward each
other, and a fixed dividing knife at the upper end of the meeting line of said blades; means for oscillating said blades, means for forcing a severed section upward along said blades after they have severed the section and while they are together, whereby the severed section is elevated and divided while being elevated, and a receiver in alignment with said divided severed sections.

11. A machine of the character described, comprising a feed table adapted to support a block of material, cutting means for severing said block into sections, and means for moving said block on said table toward said cutting means, comprising a follower adapted to engage the rear side of said block, a longitudinally reciprocating feed bar provided with a longitudinal row of teeth, a coupling pawl mounted on said follower and adapted to be engaged by said teeth, means for moving the feed bar forward to the same point at each stroke, a stop support at the rear end of said feed bar, stop pins of different lengths on said support, said support being freely movable in a plane transverse to the axis of said bar to bring said pins individually to a bar limiting position, and yielding means for bringing said bar up against the particular stop pin in said bar limiting position, whereby variable strokes are given said bar in exact accord with the setting of said support and pins.

12. A machine of the character described, comprising a feed table adapted to support a block of material, cutting means for severing said block into sections, and means for moving said block on said table toward said cutting means, comprising a follower adapted to engage the rear of said block, a longitudinally reciprocating feed bar provided with a plurality of longitudinal rows of teeth on different circumferential parts thereof, means for turning said bar for engaging any one of its rows of teeth with said coupling pawl, a plurality of differently spaced stops at the rear end of said feed bar adapted to arrest the backward movement of said feed bar at different points, power driven mechanism for advancing said feed bar to its extreme forward position, a spring cooperating with said mechanism to return said feed bar against the particular one of said stops set at the time in line therewith, and means for shifting said stops laterally so as to bring them individually and successively into bar arresting position.

13. A machine of the character described, comprising a feed table adapted to support a block of material; means for moving said block forwardly intermittently; cutting means for severing sections successively from the front end of said block, said cutting means comprising two cutter blades movable toward and from each other at the front end of the path of said block, two rock levers carrying said blades, mechanism for actuating said rock levers and cutter blades toward and from each other as stated, an elevator for raising said sections to a position above said block, said elevator engaging the under side of each section and forcing it upward over the surface of said blades and out of contact therewith to a raised position above said block, a plunger for engaging the side of an elevated section and forcing it laterally over the surface of said elevator and out of contact therewith, and means for receiving the section thus delivered.

14. A machine of the character described, comprising a feed table adapted to support a block of material; means for moving said block forwardly intermittently; cutting means for severing sections from the front end of said block, said cutting means comprising two cutter blades movable toward and from each other at the front end of the path of said block, two rock levers carrying said blades, mechanism for moving said blades toward and from each other as stated; shifting means for moving said sections to a position on one side of said block, said shifting means comprising an elevator adapted to engage the under side of each section and force it upward over the surface of said blades and out of contact therewith to said position; and mechanism for operating said elevator.

In witness whereof, I have affixed my signature this 18th day of February, 1928.

EDWARD C. HEGG.