

UNITED STATES PATENT OFFICE.

PATRICK J. LUCEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO LUCEY SLICING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SLICING MACHINE.

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To all whom it may concern:

Be it known that I, PATRICK J. LUCEY, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Slicing Machines, of which the following is a specification.

My invention relates to new and useful improvements in slicing machines of the type in which a reciprocating table moves to and fro along the side of a rotating knife.

In this type of slicing machine the operating means, which usually consists of a flywheel or a crankwheel, is rotated in a right hand or clockwise direction (as viewed from the right hand side in Figs. 1 and 2) thereby rotating the circular knife in a clockwise direction, indicated by arrow in Fig. 2, so that the cutting portion of the knife-edge will move in a downward direction as it engages and slices the material fed to it by the reciprocating table. And if the operator thoughtlessly happens to rotate the crankwheel and thereby the knife in the contrary or counter clockwise direction (which frequently occurs) then the cutting portion of the knife-edge, in its upward movement, carries upwards with it the slices of material just severed and drops them at random instead of permitting the slices to drop in position in the receptacle, as intended. And furthermore by such upward movement of the cutting portion of the knife-edge the material on the reciprocating table will be lifted and shifted sideways and the slices will consequently vary in thickness. And since most types of slicing machines have a gradual movement of the reciprocating table during the cutting or feeding stroke while the crankwheel is being rotated in the intended clockwise direction, and a rapid movement during the return stroke, then any reverse or counter-clockwise rotation of said crankwheel will on the contrary cause the material to be fed to the knife with a rapid stroke and will produce a slow return, just contrary to the movements desired.

It is my object to obviate these unpleasant incidents resulting from any accidental counter-clockwise or left-hand rotation of

the crankwheel or similar driving member, and to render such undesirable occurrences impossible by providing means in a slicing machine which will always cause the cutting portion of the knife edge to descend on the material advanced to said knife by the reciprocating table irrespective of the direction of rotation of the crankwheel or similar driving means, and which means will simultaneously cause the table to move gradually to and along the knife during its cutting stroke and rapidly during its return stroke.

This and other objects and advantages will become apparent from the following description taken in connection with the drawings, in which,

Fig. 1 is a plan view of my invention applied to a slicing machine, with parts broken away;

Fig. 2 is a side view thereof, partly in section, taken on line 2—2 of Fig. 1;

Fig. 3 is an enlarged sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is an enlarged sectional view taken on line 4—4 of Fig. 2; and

Fig. 5 is an enlarged sectional view taken on line 5—5 of Fig. 4, illustrating the clutch elements.

In the drawings I have shown my invention applied to a slicing machine of well known construction, comprising a frame 10 provided with a feed table 11, mounted to reciprocate on slide rails 12 and 13 which are supported on pillars 14 and 15, respectively, extending upwards from the frame. The machine comprises a circular knife 16 rotatably mounted on the upper part of the chain box or housing 17 by means of a knife shaft 18, which carries a sprocket 19 on one end.

The gear mechanism for driving the knife and table comprises a crown gear 21 fastened on a vertical shaft 22 which is journaled in the frame and is connected at its upper end to a crank arm 23, a link 24 being pivoted to said arm and to one corner of the feed table, as shown at 25 in the drawings. The gear mechanism further comprises a bevel pinion 27 which meshes with crown gear 21 and which is fastened on a lateral shaft 28, said shaft being rotatably mounted in frame 10 and a sprocket 29 being fastened on the

for rotating said knife in only one direction irrespective of the direction of movement of said driving means.

2. In a machine of the character described, in combination, a rotatable knife, a reversible driving member, and means connecting said driving member and said knife for rotating said knife in one direction irrespective of the direction of motion of said driving member.

3. In a machine of the character described, in combination, a rotatable knife, a reversible rotatable driving member, and means connecting said driving member and knife for rotating said knife in one direction irrespective of the direction of rotation of said driving member.

4. In a machine of the character described, in combination, a rotatable knife, driving means for said knife, said means being movable in opposite directions, and motion transmitting means between said driving means and said knife for effecting the rotation of said knife in the forward direction, irrespective of the direction of movement of said driving means.

5. In a slicing machine, in combination, a knife, a feed table moving to and fro along the side of said knife, driving means for said machine, and means associated with said driving means for always moving said table gradually during its feeding stroke and rapidly during its return stroke, irrespective of the direction of travel of said driving means.

6. In a slicing machine, in combination, a knife, a feed table movable to and fro along the side of said knife, means for actuating said knife, and motion transmitting means between said actuating means and said knife for causing the cutting portion of said knife to move downward on material carried to it by said table, irrespective of the direction of travel of said actuating means.

7. In a slicing machine, in combination, a knife, a feed table moving to and fro along the side of said knife, reversible and rotatable driving means for actuating said knife, and operative connections between said driving means and knife for moving the cutting portion of said knife downwards on material fed to it by said table, irrespective of direction of rotation of said driving means.

8. In a slicing machine, in combination, a knife, a table movable to and fro along the side of said knife, reversible driving means for said machine, and motion transmitting means between said driving means and said knife and table to move said table gradually to and rapidly away from said knife, and to rotate said knife with its cutting portion downward toward the table, whether said driving member rotates clockwise or counter-clockwise.

9. In a slicing machine, in combination, a

rotatable knife, a reciprocating table, a drive shaft for actuating said table and knife, reversible driving means for said machine, and power transmitting means actuated by said driving means for driving said drive shaft, knife and table always in the correct slicing direction, irrespective of direction of movement of said driving means.

10. In a slicing machine, in combination, a rotatable knife, a reciprocating table, a drive shaft for actuating said knife, a reversible driving member, and means for connecting said drive shaft with said knife and member for always driving said knife through said shaft in one direction, irrespective of the motion of said driving member.

11. In a slicing machine, in combination, a rotatable knife, a reciprocating table, a main drive shaft for driving said knife and table, an auxiliary drive shaft, and means interposed between said shafts for driving said main shaft in only one direction for properly actuating said knife and table, irrespective of the direction of movement of said auxiliary shaft.

12. In a slicing machine, in combination, a rotatable knife, a reciprocating table, a main drive shaft for driving said knife and table, an auxiliary drive shaft, and a rotary driving member therefor, and means interposed between said shafts for driving said main shaft in only one direction for properly actuating said knife and table, irrespective of the direction of rotation of said driving member and its auxiliary shaft.

13. In a slicing machine, in combination, a rotatable knife, a reciprocating table, a main drive shaft operatively connected with said knife and table, an auxiliary shaft and means for driving the same, and two sets of motion transmitting means between said two shafts, one set for rotating the main shaft when the auxiliary shaft and its driving means rotates in the right hand direction, and the other when said auxiliary shaft and driving means rotate in the left hand direction.

14. In a slicing machine, in combination, a rotatable knife, a reciprocating table, a main drive shaft operatively connected with said knife and table, an auxiliary shaft and means for driving the same, and two one-way clutch members interposed between said shafts, one for rotating the main shaft in the same direction as the auxiliary shaft, and the other for rotating the main shaft in a direction reverse to the auxiliary shaft.

15. In a slicing machine, in combination, a rotatable knife, a reciprocating table, a main drive shaft operatively connected with said knife and table, an auxiliary shaft and means for driving same, and two sets of gears operatively connecting said shafts, each set including a one-way clutch, one set for properly actuating the main shaft and

connected knife and table when the auxiliary shaft rotates in a right hand direction and the other set when the auxiliary shaft rotates in a left hand direction:

- 5 16. In a slicing machine, in combination, a rotatable knife, a reciprocating table, a main drive shaft operatively connected with said knife and table, an auxiliary shaft, a rotary crank means for driving the said
 10 auxiliary shaft, and two sets of gears interposed between said shafts, each set including a one-way clutch, one set for properly actuating the main shaft and connected knife

and table when the crank means is rotated in right hand direction, and the other set for 15 properly actuating the main shaft and connected knife and table when said crank is rotated in left hand direction.

In testimony whereof I have signed my name to this specification in the presence of 20 two subscribing witnesses.

PATRICK J. LUCEY.

Witnesses:

J. DANIEL STUME,
 ANNIE M. MELLEN.