H. STUKART.

POWER MECHANISM FOR SLICING MACHINES.

APPLICATION FILED NOV. 29, 1916.

1,268,176. Patented June 4, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

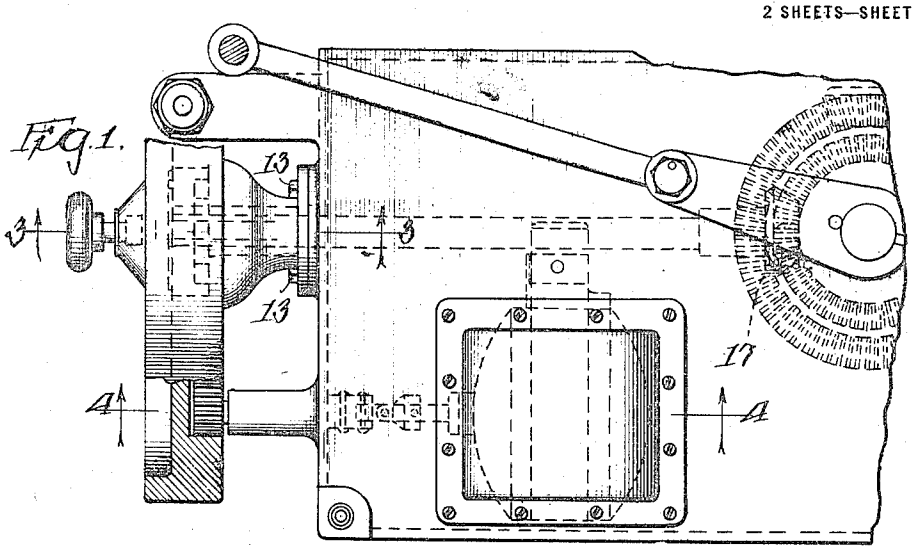
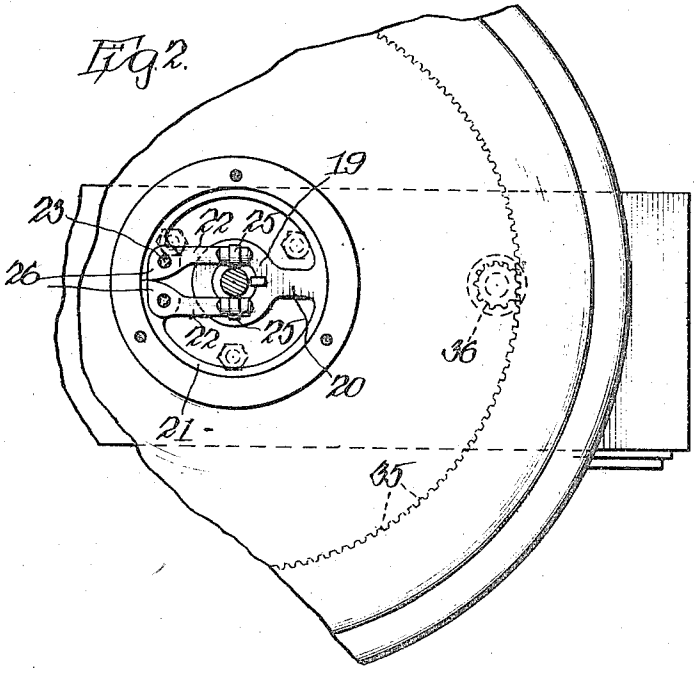


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

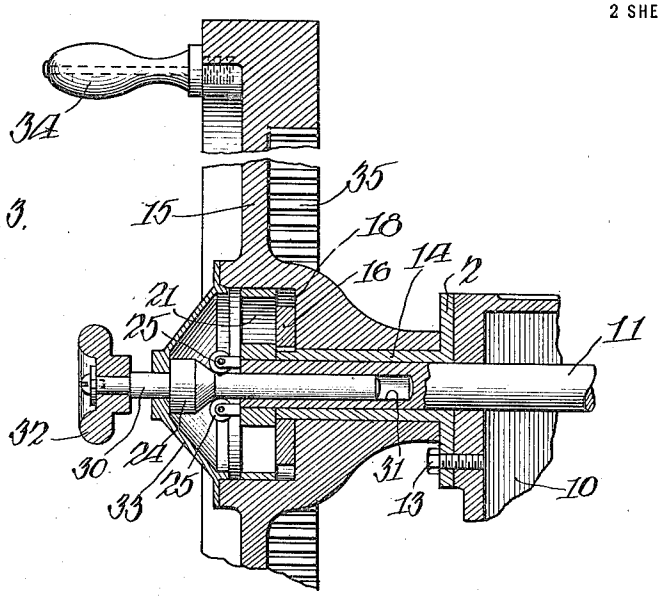


Fig. 4.

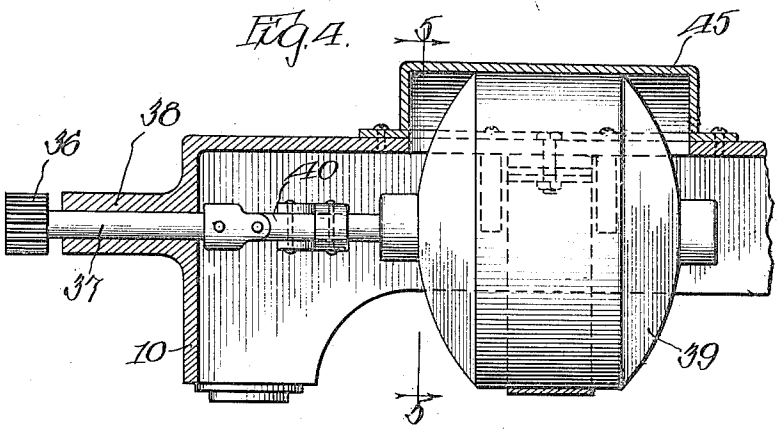
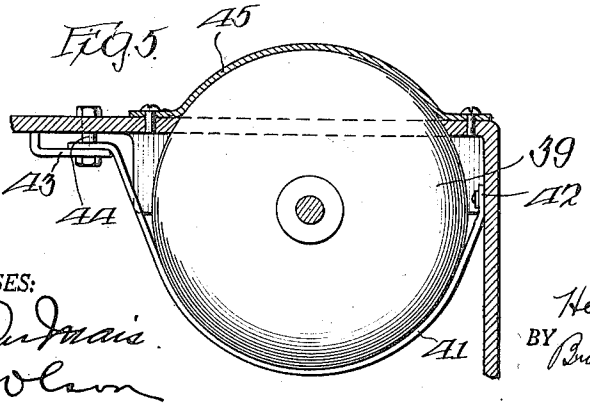


Fig. 5.



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HENDRIK STUKART, OF LAPORTE, INDIANA, ASSIGNOR TO U. S. SLICING MACHINE COMPANY, OF LAPORTE, INDIANA, A CORPORATION OF ILLINOIS.

POWER MECHANISM FOR SLICING-MACHINES.

1,268,176. Specification of Letters Patent. Patented June 4, 1918.

Application filed November 29, 1916. Serial No. 134,036.

To all whom it may concern:

Be it known that I, HENDRIK STUKART, a subject of the Queen of the Netherlands, residing at Laporte, in the county of Laporte and State of Indiana, have invented certain new and useful Improvements in Power Mechanism for Slicing-Machines, of which the following is a specification.

This invention relates to mechanism for driving the operating parts of slicing machines, and has for its object the provision of a machine of the class named which shall be of improved construction and operation.

The invention is exemplified in the combination and arrangement of parts shown in the accompanying drawings and described in the following specification, and it is more particularly pointed out in the appended claims.

In the drawings—

Figure 1 is a fragmentary top plan view of a portion of the table of a slicing machine showing the present invention applied thereto.

Fig. 2 is a fragmentary elevational view partly in section looking toward the right in Fig. 1.

Fig. 3 is a vertical sectional view on line 3—3 of Fig. 1.

Fig. 4 is a vertical sectional view with parts removed on line 4—4 of Fig. 1; and

Fig. 5 is a vertical sectional view approximately on line 5—5 of Fig. 4.

In the drawings, the numeral 10 designates the supporting table of a slicing machine of well known construction having a main drive shaft 11. The shaft 11 is journaled in a bearing 12 secured to the frame 10 by lag screws 13. The bearing 12 is provided with an elongated sleeve 14 upon which is journaled for rotation a fly wheel 15. The fly wheel is held in place on the sleeve 14 by a collar 16 rigidly secured to the end of the sleeve. The shaft 11, as shown in Fig. 1, has a driving connection with the mechanism of the slicing machine through gearing shown at 17 in that figure.

The fly wheel 15 is centrally recessed on its outer side to form an opening 18 into which the ends of the shaft 11 and sleeve 14 project, and against the inner flat surface of which the collar 16 secured to the end of the sleeve 14 bears. Attached to the end of the shaft 11, within the recess 18, is an expansion clutch having a main body portion 19 provided with a laterally projecting arm 20, to the end of which arm is secured a resilient split ring 21. The ring 21 normally rotates freely within the recess 18, but may be expanded by means of levers 22 pivoted at 23 on the arms of the ring 21 adjacent the split portion thereof. When the ring 21 is thus expanded, its outer surface bears frictionally against the inner surface of the recess 18 and thus locks the fly wheel 15 to the shaft 11 to cause the shaft to rotate with the fly wheel.

The mechanism for expanding the ring 21 comprises a cone-shaped wedge or cam 24 arranged to bear against the rollers 25 carried on the inner ends of the levers 22. When the cone 24 is moved inwardly, or to the right, as shown in Fig. 3, the lever arms 22 are forced outwardly by the cone, and since the outer ends of these levers are provided with fulcrum points 26 which bear against one another, this outward movement of the levers will increase the distance between the pivots 23, and hence spread the arms of the spring ring 21, forcing the ring into contact with the inner surface of the recess 18 in the fly wheel. The cone 24 is manipulated by means of a rod 30 to which the cone is secured and which is free to slide longitudinally in an opening 31 in the shaft 11. The outer end of the rod 30 is provided with a knob or hand-piece 32 by which the rod is moved inwardly and outwardly to operate the clutch. A cover-piece 33 extends over the outer portion of the recess 18 and incloses the clutch mechanism. This cover-piece is provided with an opening through which the rod 30 passes, thus forming a guide or support for the outer end of the rod and supplying a stop for limiting the movement of the rod in both directions. The fly wheel 15 is provided with a handle 34 by means of which the fly wheel may be rotated by hand to drive the shaft 11 and the operating mechanism of the slicing machine whenever the shaft is clutched to the fly wheel.

The rear side of the fly wheel 15 is provided with internal gear teeth 35 which mesh with a pinion 36 carried on a shaft 37, journaled in a bearing 38, supported by the table 10. The shaft 37 is connected with a motor 39 by means of a flexible transmission device 40, the flexible transmission device being for the purpose of compensating for any slight variation in the alinement of the motor shaft proper with the shaft 37. The motor 39 is supported beneath the table top by a flexible strap 41 secured to the table at one end, as indicated at 42, and provided at the outer end with a tightening device comprising a clip 43 and a bolt 44 which passes through the end of the clip and the strap and the top of the table 10. By this construction, the motor may be firmly clamped in place beneath the table by tightening the nut on the bolt 44. The motor may be permitted to project slightly above the general plane of the upper surface of the table top, and the opening through which it thus projects is closed by a cover-plate 45.

By the construction described, mechanism is provided by which the operating parts of the slicing machine may be successfully driven either by hand, or by motor power, and the operation of these parts may be discontinued, or brought into action, without interrupting the rotation of the fly wheel. This is accomplished merely by manipulating the clutch for connecting the shaft 11 with the fly wheel. If the fly wheel is rotating, and it is desirable to operate the slicing machine parts, these parts may be gradually started without shock by movement of the clutch rod 30 inwardly. Frictional contact between the ring 21 and the walls of the recess 18 permits gradual starting of the slicing machine parts before the rod 30 has moved inwardly a sufficient amount to bring the rollers 25 against the cylindrical portion of the cone 24 to lock the shaft 11 and fly wheel 15 in clutched relation with one another. On the other hand, if it is desired to discontinue the operation of the slicing machine parts, all that is necessary is to throw out the clutch, permitting the fly wheel to continue its rotation. In this way the machine may be stopped instantaneously without the effort and consequent loss of energy of stopping the fly wheel. These advantages are present whether the machine is being driven by hand or by motor power, but are especially advantageous when motor power is being used.

The motor 39 is maintained in operative connection with the fly wheel at all times whether the wheel is driven by the motor, or by means of the handle 34. When the wheel is rotated by means of the handle, the motor of course, is driven by the gearing 35 and 36, but this rotation of the motor does not add perceptibly to the effort necessary to drive the machine, since the rotation of the motor parts merely serves to increase the fly wheel effect.

I claim:—

1. In combination with the operating parts of a slicing machine, driving mechanism therefor comprising a rotary member arranged to be rotated manually, a power device for rotating said member, and a friction clutch for operatively connecting and disconnecting said rotary member with said slicing machine parts while said member continues to rotate.

2. In combination with the operating parts of a slicing machine, a rotary member for driving said parts, means for rotating said member manually, power mechanism for rotating said member, and means for operatively connecting and disconnecting said rotary member with said slicing machine parts while said member continues to rotate.

3. In combination with the operating parts of a slicing machine, a shaft for driving said parts, a fly wheel for operating said shaft, means for rotating said fly wheel manually, power mechanism for rotating said fly wheel, and a clutch for connecting and disconnecting said fly wheel with said shaft to permit starting and stopping of said slicing machine parts independently of change in the rotation of said fly wheel.

4. In combination with the operating parts of a slicing machine, driving mechanism therefor comprising a motor, means for operatively connecting said motor with said slicing machine parts whereby said parts may be driven by said motor, and means for manually operating said parts without disturbing the driving connection between said parts and said motor.

5. In combination with the operating parts of a slicing machine, a shaft for driving said parts, a fly wheel for driving said shaft, a power motor for driving said fly wheel, and a clutch for connecting and disconnecting said shaft with said fly wheel without interfering with the movement of said fly wheel and said motor.

6. In combination with the operating parts of a slicing machine, a shaft for driving said parts, means for driving said shaft, a motor for actuating said driving means operatively connected therewith, a handle for operating said driving means manually, and a clutch for connecting and disconnecting said driving means with said shaft.

7. In combination with the operating parts of a slicing machine, a shaft for driving said parts, a fly wheel, a friction clutch for connecting said shaft to said fly wheel, a motor, driving connection between said motor and said fly wheel, and a handle for rotating said fly wheel without interfering with the driving connection between said fly wheel and said motor.

8. Driving mechanism for slicing machines, said mechanism embodying a drive shaft, a fly wheel, means for connecting and disconnecting the fly wheel and the shaft, a handle for rotating the wheel by hand, a motor, and permanent operative connection between said motor and said fly wheel.

9. Driving mechanism for slicing machines, said mechanism embodying a drive shaft, a supporting base, a motor, means for supporting the motor within the base of the machine, means for connecting the motor and said shaft, and provision for actuating the shaft by hand power while the motor and shaft remain in operative connection with one another.

In testimony whereof I have signed my name to this specification, on this 25th day of November, A. D. 1916.

HENDRIK STUKART.