June 11, 1929. W. J. CAMPBELL 1,716,416

SLICING MACHINE

Filed July 18, 1928 2 Sheets-Sheet 1

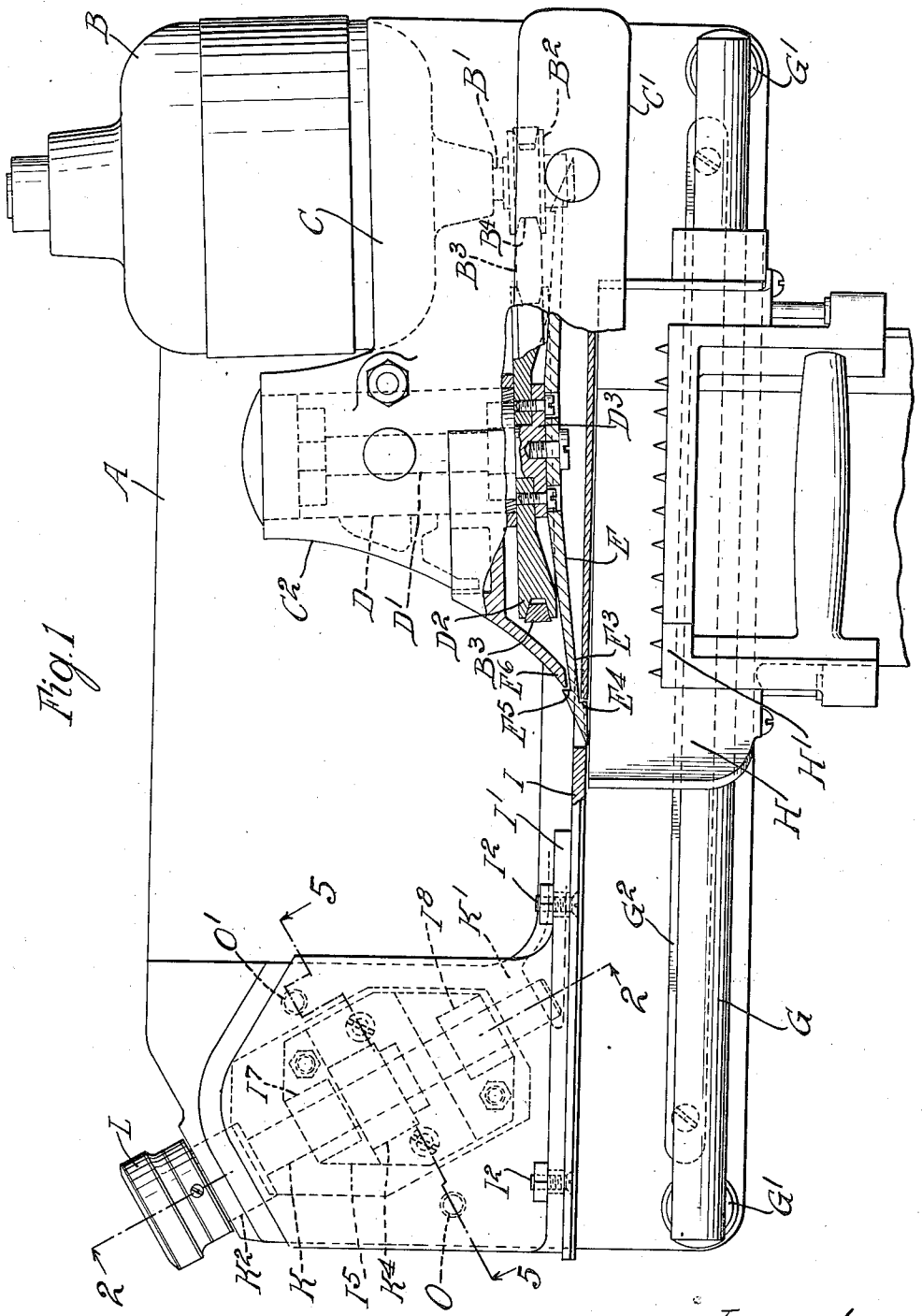


Fig. 1

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Fig.3

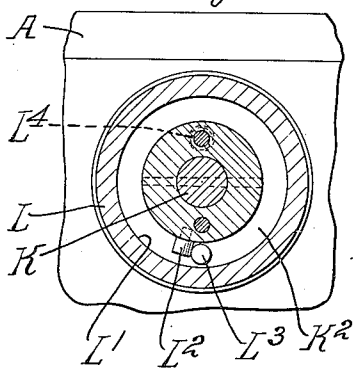


Fig.2

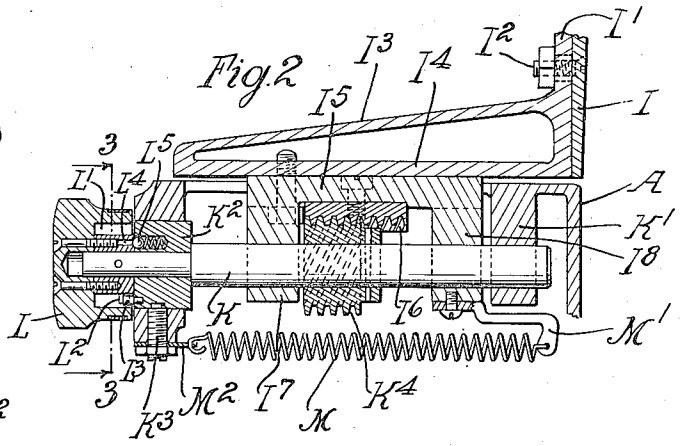


Fig.4

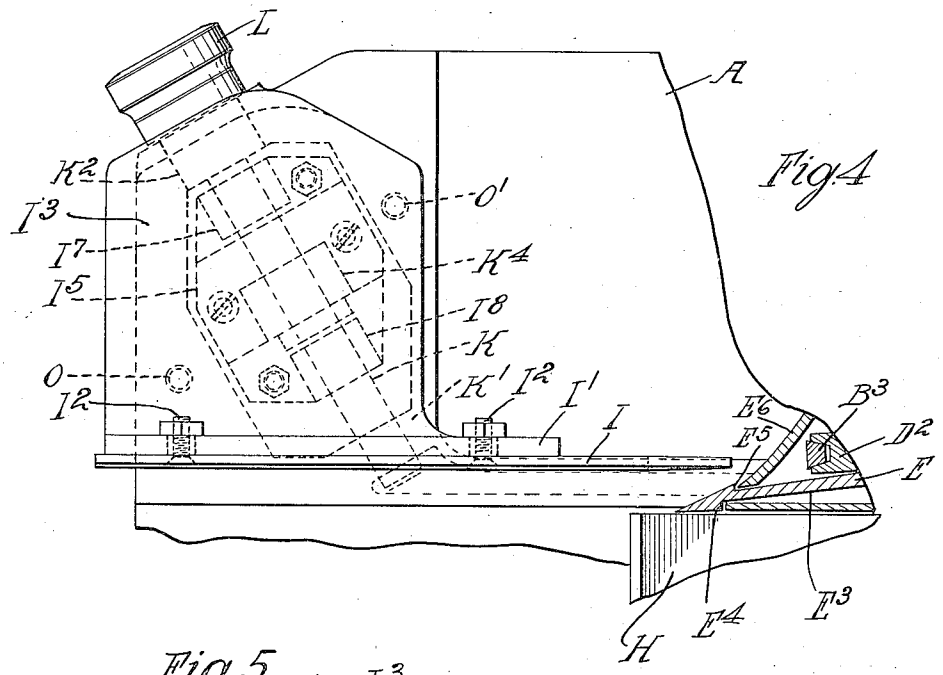
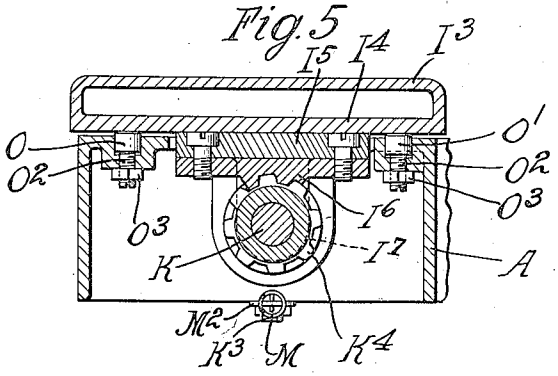


Fig.5



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UNITED STATES PATENT OFFICE.

WILLIAM J. CAMPBELL, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO AMERICAN SLICING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW YORK.

SLICING MACHINE.

Application filed July 18, 1928. Serial No. 293,633.

My invention relates to a slicing machine which will be light, simple to manufacture, efficient, any easy to operate. One purpose of my invention is the provision of a slicing machine of the type described, wherein a particularly accurate adjustment of the gauge plate is possible. Another object is the provision of means for adjusting the gauge plate in relation to the opposed meat carrier. Another object is the provision of means for adjusting the gauge plate to mask the otherwise exposed edge of the rotary knife and to permit ready cleaning of the gauge plate. Another object is the provision of means for moving the gauge plate angularly toward and away from the knife and for preventing movement of the gauge plate when adjusted. Other objects will appear from time to time in the course of the specification and claims.

I illustrate my invention more or less diagrammatically in the accompanying drawings, wherein—

Figure 1 is a plan view with parts in horizontal section, and parts in skeleton outline;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a section on the line 3—3 of Figure 2;

Figure 4 is a view similar to Figure 1 of a portion of the device with the gauge plate withdrawn from the cutting plane of the knife; and

Figure 5 is a section on the line 5—5 of Figure 1.

Like parts are indicated by like symbols throughout the specification and drawings.

A generally indicates any suitable base frame or member. Mounted upon it is any suitable motor means, herein shown as the motor B, from which projects the motor shaft B^1 on which is the driving pulley B^2 adapted to engage and drive the belt B^3 which enters the channel B^4 of the pulley B^2.

C generally indicates the upwardly projecting housing or frame member which includes the shield portion C^1 and the knife supporting sleeve C^2.

Mounted within the sleeve C^2 is the knife shaft and assembly generally indicated as D which includes the knife shaft proper D^1 associated with which is the pulley D^2 about which passes the belt B^3.

E is a knife disc secured to the enlarged end portion D^3 of the shaft D^1. It is shown as convex and is peripherally cut away or recessed on its hollow face as at E^3 to leave a peripheral projection E^4. It is recessed in its rear face as at E^5 to receive the shield E^6.

G is a track, herein shown as of circular cross-section, mounted for example on the supports G^1 upwardly projecting from the opposite ends of the base A. Aligned beneath the track G is any suitable slide or rail G^2, herein shown as of rectangular cross-section.

Mounted for movement along the track G and the rail G^2 is any suitable carriage or supporting member H, herein shown as carrying the face plate member H^1 whereby the meat may be advanced along the carriage toward the cutting plane of the knife.

I generally indicates a face plate adjustably and removably mounted upon a supporting member I^1 as by the screws I^2. The face plate supporting member I^1 is mounted upon or integral with the laterally and rearwardly extending member which includes the vertically spaced walls I^3 I^4. Depending from and secured to the bottom wall I^4 is a depending portion I^5 on which is mounted the worm engaging rack or gear I^6. I^7 I^8 are bearing members associating with or depending from the member I^5.

Mounted on the base A beneath the member I^4 is a shaft K one end of which rotates in the bearing lug K^1, herein shown as integral with the frame and the other in a bushing K^2 mounted in the frame as by the screw K^3. The shaft K passes through the bearings I^7 I^8 and therefore serves as a track along which moves the face plate supporting structure above described. K^4 indicates a spiral or worm gear held against movement in relation to the shaft K and meshing with the rack I^6. It will be understood that rotation of the shaft K moves the gauge plate and gauge plate supporting assembly along a path parallel with the axis of said shaft.

In order to rotate said shaft I provide the

turn knob L. Its inner face is provided with an arcuate channel L^1 into which penetrates the stud or abutment L^2 which is adapted to engage an abutment L^3 mounted on the bushing K^2 and projecting into said channel. Formed in the center of the inner face of the knob, within the channel L^1, is an aperture L^4 which is adapted to receive the spring thrust ball L^5, also mounted in the bushing K^2. It will be understood that the engagement of the abutments L^2 L^3 limits the rotation of the shaft K and the worm K^4 in one direction, thus setting out the outward limit of movement of the face plate.

The aperture L^4 is so positioned as to serve as a lock, in association with the ball L^5, at the inner limit of the movement of the face plate, a lock which requires the application of extra force to the knob to release the knob for adjusting the face plate.

In order to maintain a tension on the worm I provide a spring M, herein shown as a tensional spring, one end being mounted to the abutment M^1 secured to the member I^8 and the other being mounted to the abutment M^2 which is held in position by the screw K^3.

In order to balance or adjust the member I^4 and thus the face plate itself I provide the adjusting members O O^1 which project upwardly against the bottom of the member I^4. They are controlled by the adjusting screws O^2 and the nuts O^3.

It will be realized that whereas I have described and shown a practical and operative device, nevertheless many changes might be made in the size, shape, number and disposition of parts without departing from the spirit of my invention. I therefore wish my description and drawings to be taken as in a broad sense illustrative and diagrammatic rather than as limiting me to my specific showing.

The use and operation of my invention are as follows:

I provide a method or form of gauge plate adjustment which is an improvement on that shown in my co-pending application No. 259,163, filed on March 5, 1928. In my present form the gauge plate is adjustably mounted upon a supporting member, as by the screws I^2 and it will be understood that the gauge plate may be removed from its support or may be adjusted vertically or horizontally to some slight extent or may be tilted in its vertical plane, this result being obtained by having some slight clearance between the supporting screws or bolts I^2 and the apertures in the member I^1 through which they pass, as indicated in Figure 2.

The gauge plate assembly includes the bottom wall I^4 which projects rearwardly horizontally from the member I^1. The shaft K serves as a track to support the face plate assembly and to guide it along the desired path, the bearing members I^7 I^8 riding on or about the track. It also serves as the means for propelling the gauge plate along its desired path of movement, since rotation of the shaft K actually moves the gauge plate assembly, the worm K^4 meshing with the gear I^6. In order to prevent rattling and to maintain a constant working engagement between the opposed worm and gear or rack I provide the spring member M. The opposed abutments L^2 L^3 serve to limit the outward movement of the gauge plate, and the engagement of the aperture L^4 and the ball L^5 serve as a locking means to hold the gauge plate at its innermost position when it is left in such position.

I claim:

1. In a slicing machine, a base, a material supporting carriage mounted on said base, a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path of movement of said carriage, and means for moving and guiding said gauge plate toward and away from the path of said carriage, said means including a shaft mounted on the base, the gauge plate being slidably movable along said shaft and a gear connection between said shaft and said gauge plate, and means for rotating said shaft.

2. In a slicing machine, a base, a material supporting carriage mounted on said base, a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path of movement of said carriage, and means for moving and guiding said gauge plate toward and away from the path of said carriage, said means including a shaft mounted on the base, the gauge plate being slidably movable along said shaft and a gear connection between said shaft and said gauge plate, and means for rotating said shaft, said shaft being inclined from the perpendicular in relation to the path of movement of said carriage.

3. In a slicing machine, a base, a material supporting carriage mounted on said base, a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path of movement of said carriage, a support on which said gauge plate is mounted, and means for moving and guiding said gauge plate and support toward and away from the path of said carriage, said means including a shaft mounted on the base, the gauge plate support being slidable along said shaft, a gear connection between said shaft and said support and means for rotating said shaft.

4. In a slicing machine, a base, a material supporting carriage mounted on said base,

a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path of movement of said carriage, a support on which said gauge plate is mounted, and means for moving and guiding said gauge plate and support toward and away from the path of said carriage, said means including a shaft mounted on the base, the gauge plate support being slidable along said shaft, a gear connection between said shaft and said support and means for rotating said shaft, and means for adjusting the horizontal plane of said support.

5. In a slicing machine, a base, a material supporting carriage mounted on said base, a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path of movement of said carriage, a support on which said gauge plate is mounted, means for moving and guiding said gauge plate and support toward and away from the path of said carriage, said means including a shaft mounted on the base, the gauge plate support being slidable along said shaft, a gear connection between said shaft and said support and means for rotating said shaft, and means for adjusting the horizontal plane of said support, including a plurality of vertically adjustable members, positioned at either side of the axis of said shaft and adapted to be engaged with the lower surface of said support.

6. In a slicing machine, a base, a material supporting carriage mounted on said base, a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path of movement of said carriage, and means for moving and guiding said gauge plate toward and away from the path of said carriage, said means including a shaft mounted on the base, the gauge plate being slidably movable along said shaft and a gear connection between said shaft and said gauge plate, and means for rotating said shaft, and means for maintaining the opposed gear surfaces of said gear connection compressed against each other.

7. In a slicing machine, a base, a material supporting carriage mounted on said base, a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path of movement of said carriage, and means for moving and guiding said gauge plate toward and away from the path of said carriage, said means including a shaft mounted on the base, the gauge plate being slidably movable along said shaft and a gear connection between said shaft and said gauge plate, means for rotating said shaft, and means for maintaining the opposed gear surfaces of said gear connection compressed against each other, including a tension spring one end of which is secured to the base and the other is associated with the gauge plate.

8. In a slicing machine, a base, a material supporting carriage mounted on said base, a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path of movement of said carriage, and means for moving and guiding said gauge plate toward and away from the path of said carriage, said means including a shaft mounted on the base, the gauge plate being slidably movable along said shaft and a gear connection between said shaft and said gauge plate, means for rotating said shaft, and means for limiting the gauge plate withdrawing rotation of said shaft.

9. In a slicing machine, a base, a material supporting carriage mounted on said base, a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path of movement of said carriage, and means for moving and guiding said gauge plate toward and away from the path of said carriage, said means including a shaft mounted on the base, the gauge plate being slidably movable along said shaft and a gear connection between said shaft and said gauge plate, means for rotating said shaft, and means for limiting the gauge plate withdrawing rotation of said shaft, and means for locking said shaft against rotation when the gauge plate is at its closest approach to the cutting plane of the knife.

10. In a slicing machine, a base, a material supporting carriage mounted on said base, a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path of movement of said carriage, and means for moving and guiding said gauge plate toward and away from the path of said carriage, along a path inclined from the perpendicular in relation to the path of movement of said carriage, said means including a shaft mounted on the base, the gauge plate being slidably movable along said shaft and a gear connection between said shaft and said gauge plate, and means for rotating said shaft.

11. In a slicing machine, a base, a material supporting carriage mounted on said base, a rotary knife on said base and means for rotating it, means for guiding said carriage across the face of said knife, a gauge plate lying in a plane substantially parallel with the path

of movement of said carriage, and means for moving and guiding said gauge plate toward and away from the path of said carriage, along a path inclined from the perpendicular in relation to the path of movement of said carriage, said means including a shaft mounted on the base, the gauge plate being slidably movable along said shaft and a worm gear connection between said shaft and said gauge plate, and means for rotating said shaft.

Signed at Indianapolis, county of Marion and State of Indiana, this 8th day of July, 1928.

WILLIAM J. CAMPBELL.