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T. H. STRACHAN ET AL.

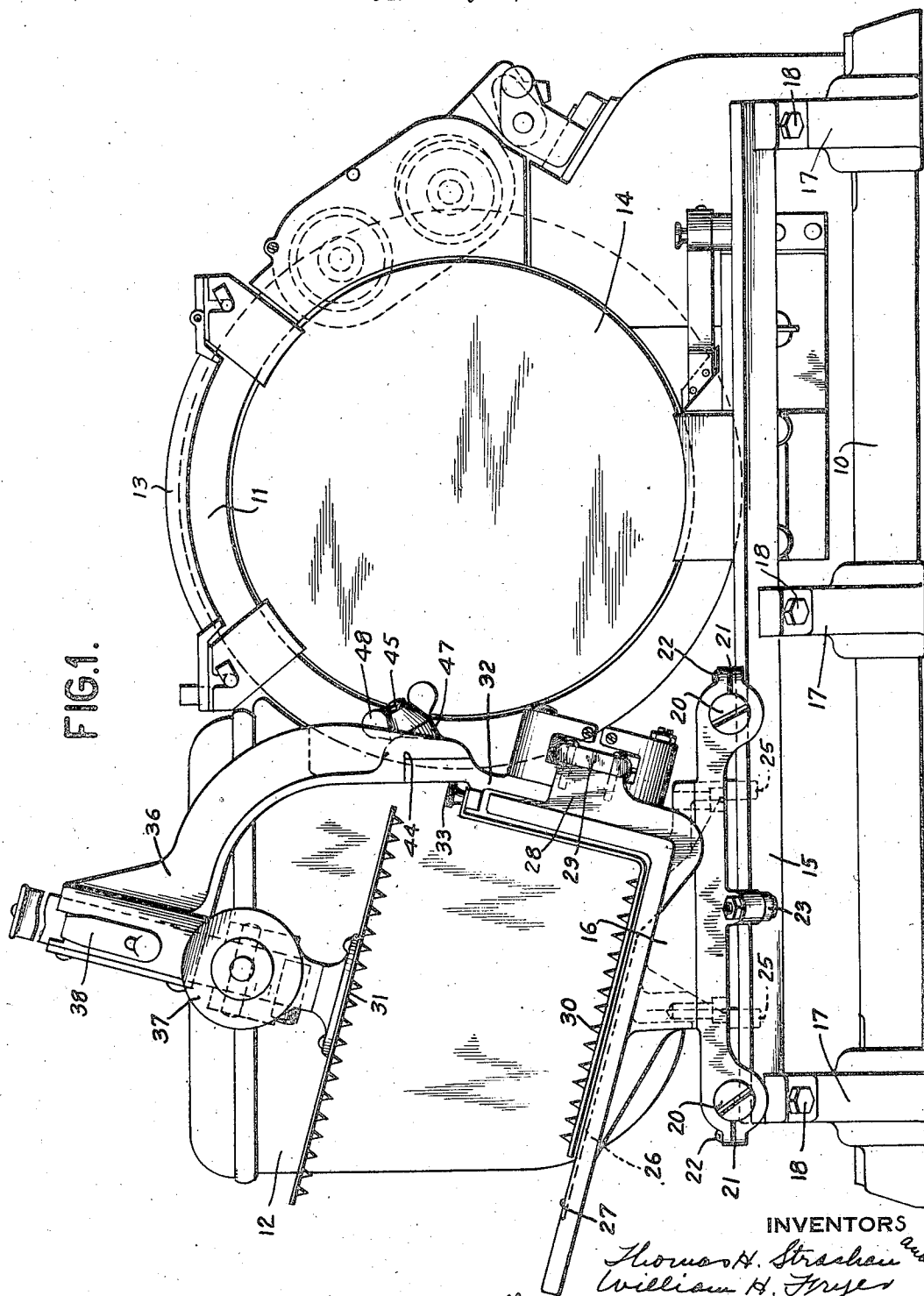
2,037,283

MEAT SLICER

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3 Sheets-Sheet 1

FIG. 1.



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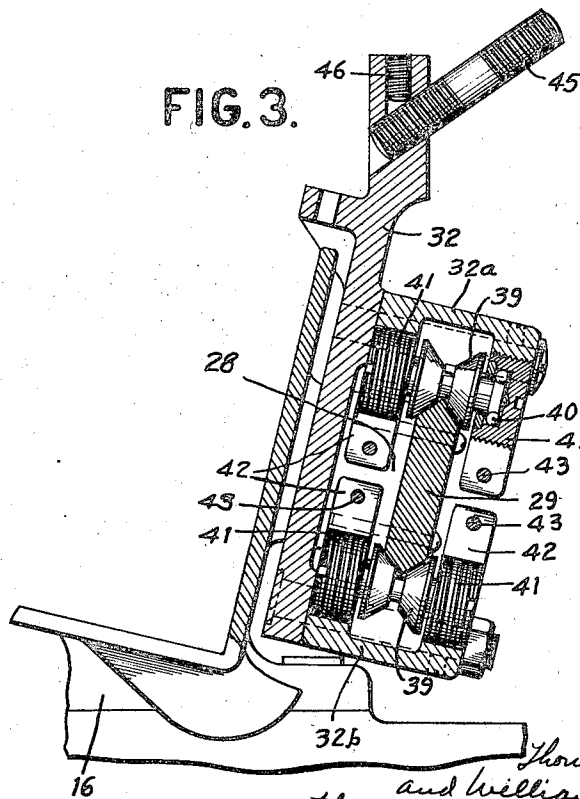
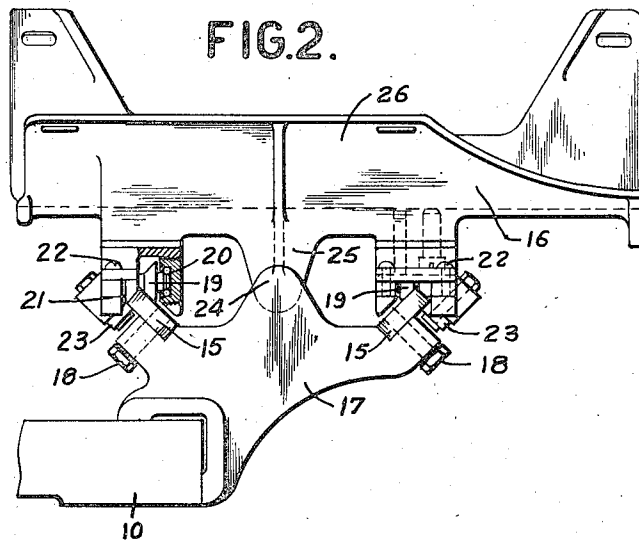
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FIG. 4.

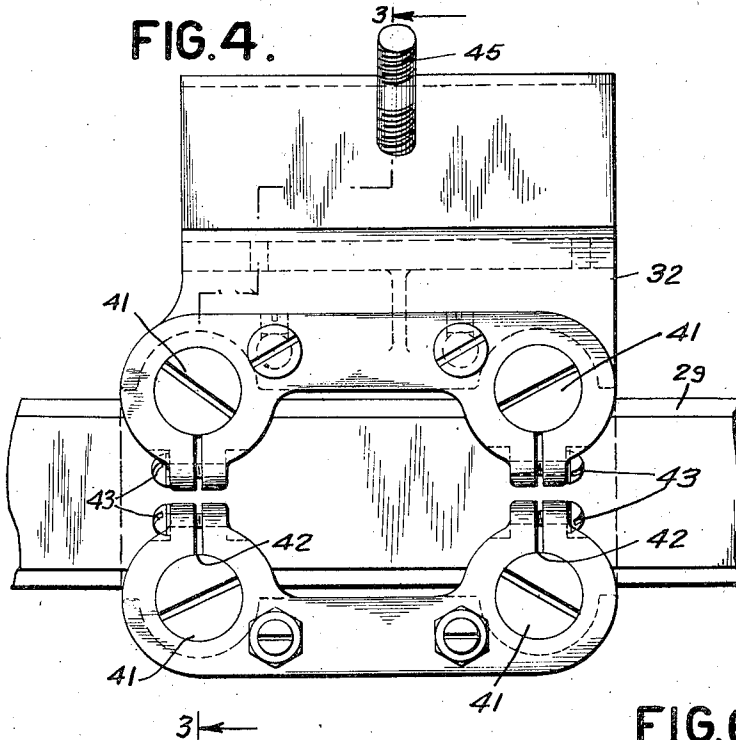


FIG. 6.

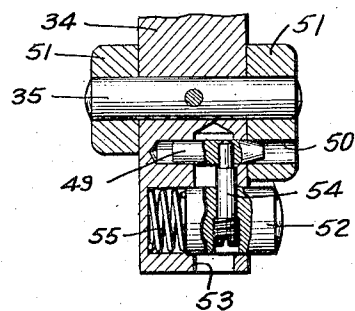
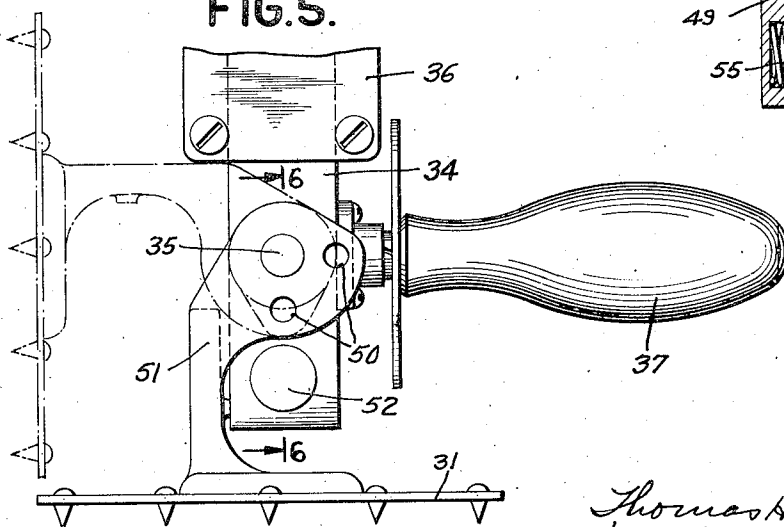


FIG. 5.



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MEAT SLICER

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Application May 14, 1931, Serial No. 537,316

3 Claims. (Cl. 146—102)

The present invention relates to machines such as may be used for slicing articles of food as, for example, bread, meats, and the like.

The primary object of this invention is to improve generally the construction of machines of the foregoing type.

A specific object is to improve the construction and arrangement of the carriage which supports the material to be sliced for feeding movement parallel with the knife whereby smoother and more reliable operation requiring less effort may be secured.

A further object is to provide an improved arrangement which facilitates setting of the upper portion of clamp in two positions and positively locks it in place when set in either of said positions.

Another object is to provide means whereby the upper portion of the clamp may be readily detached when it is not to be used.

A further object is to provide an improved clamp carrier for feeding the material to be sliced transversely of the knife.

Various other objects, advantages, or features of this invention will be pointed out in the following specification and claims or will be apparent after a study thereof and of the accompanying drawings.

In the drawings:

Fig. 1 is an elevation of the right side of the slicing machine and illustrates the arrangement of the carriage, the clamp, and the guiding rails for the carriage.

Fig. 2 is a view in elevation of the front end of the carriage and illustrates the construction and arrangement of the guiding rails and the anti-friction devices supporting the carriage for movement parallel with the knife.

Fig. 3 is a vertical section on the line 3—3 of Fig. 4.

Fig. 4 is a rear elevation of the carrier supporting the clamp for movement transversely relative to the knife.

Fig. 5 is a detail view in front elevation of the mechanism for holding the upper clamp in either a horizontal or a vertical position.

Fig. 6 is a vertical section on the line 6—6 in Fig. 5.

The base of the machine is designated by the numeral 10 (Fig. 1) and supports the driving mechanism for the knife 11, the adjustable gage plate 12, the upper knife guard 13, and the cover plate 14 for the knife 11. Since all of the foregoing mechanisms or parts are now well-known

in the art, they need not be described in detail herein.

The base 10 supports the guiding rails 15 for the carriage frame 16 by means of brackets 17 attached to the right edge of said base, suitable screws 18 serving to firmly clamp the rails 15 to the brackets 17. It will be observed by reference to Fig. 2 that the rails 15 are inclined transversely of their axes so that an edge of each is adapted to slidably support the carriage frame 16 by means of anti-friction rollers 19 having V-shaped grooves conforming to the upper edge of the rails 15.

The rollers 19 are mounted in anti-friction bearings supported by adjustable carriers 20 which are screwed into threaded holes in the frame 16 and are slotted to permit rotation by means of a screw driver or some such tool. The carriage frame 16 is slotted or split adjacent each of the carriers 20 as at 21 (Fig. 1) and provided with clamping screws 22. It will be obvious that the carriers 20 may be readily turned by loosening the clamping screws 22 and utilizing a screw driver to turn the carrier.

In this manner the carriers may be adjusted toward or away from each other to take up lost motion and adjust the rollers 19 relative to the rails 15. In order to prevent the carriage frame 16 from leaving the rails 15 there is provided anti-friction rollers 23 carried by the frame 16 and bearing against the lower inclined edge of rails 15. It will be seen that the construction just described permits the carriage to be moved parallel with the knife with little effort.

The brackets 17 which support the ends of the rails 15 are formed with upward extensions 24 which cooperate with downwardly extending projections 25 formed in the carriage frame 16 to limit the sliding movement of said carriage parallel to the knife 11. If desired, any suitable shock absorbing devices such as rubber cushions may be mounted upon the extensions 24 or 25 to minimize shocks due to a too rapid motion of the carriage parallel with the knife 11 which would cause severe jars when the projections 25 strike the extensions 24.

The carriage frame 16 has an inclined portion 26 (Fig. 1) upon which rests the tray 27 adapted to support the material to be sliced, and is provided with two extensions 28 which support a cross bar 29 for guiding the clamp carrier. The clamp comprises two members 30, 31 having sharp spikes set in the surfaces adapted to make contact with the material to be sliced and hold said material firmly while being sliced. The lower

clamp member 30 is formed of a flat strip of metal bent at right angles and attached to the clamp carrier 32 by means of thumb screws such as indicated by the reference numeral 33 (Fig. 1). The upper clamping member 31 is pivotally mounted upon the lower end of a sliding bar or rod 34 by means of a stub shaft 35 pinned to the bar 34.

The purpose of pivoting member 31 to bar 34 will later be more fully explained. Said bar 34 is slidably mounted in a bracket 36 detachably mounted upon the carrier frame 32 and fixed to said bar is a handle 37 provided for the purpose of raising and lowering the upper clamping member 31 which may be retained in its uppermost position by means of a spring urged catch 38 pivotally mounted upon the bracket 36 and having a tongue or nose engageable with a slot in the bar 34 to retain the latter in raised position.

The entire assembly comprising the clamping members 30, 31, the bracket 36, and the clamp carrier 32 is slidable transversely relative to the knife 11 along the bar 29. The carrier 32 is provided with grooved antifriction rollers 39 similar to the rollers 19 and mounted in similar manner in antifriction bearings 40 mounted in slotted carriers 41 similar to the carriers 20. There are four of the rollers 39, two resting upon the upper edge of bar 29 and two in contact with the lower edge of said bar, and the frame 32 is split adjacent each carrier 41 as at 42 and provided with clamping screws 43 similar to the clamping screws 22. In order to simplify assembly of the carrier 32 upon the bar 29 and reduce the cost of replacements of worn or broken parts the carrier 32 is made in three parts 32, 32a, and 32b, the part 32a being attached to the part 32 by means of machine screws while the part 32b is attached to the part 32 by means of suitable bolts. The upper pair of rollers 39 is mounted in the part 32a while the lower pair is mounted in the part 32b.

The bracket 36 is not permanently fastened to the carrier 32 but is adapted to be readily detached when it is not desired to use the upper clamping member and for this reason the bracket 36 is provided with an angular shoulder 44 which is adapted to fit against the top edge and rear face of the frame 32 (Fig. 1) and has an inclined hole cooperating with an inclined stud 45 screwed into the carrier 32 and locked in place by a set screw 46.

The bracket 36 is also provided with a boss 47 the surface of which is at right angles to the axis of the stud 45 and against which a wing nut 48 may be screwed to hold the bracket firmly in place on the upper edge of the carrier 32. It will be clear that the bracket may be easily removed by simply unscrewing the wing nut 48 and sliding the bracket along the axis of the stud 45 until it is completely disengaged therefrom. The lower clamping member 30 may be readily removed if desired by unscrewing the thumb screws 33.

It is often desirable to be able to slice very thin slabs of material or remnants of food such as the butt end of a piece of meat which is too thin to be held between the clamping members 30, 31, therefore, the upper clamping member 31 is adapted to be turned 90° so that the spikes thereon are directed toward the plane of the knife thereby permitting impaling of the material to be sliced upon the spikes. It has already been stated that the upper clamping member 31 is pivotally mounted upon the stud 35 permitting said member to be swung from the position shown in solid lines in Fig. 5 to that indicated by broken lines in the same figure. In order to retain the member in

either of said positions releasable means is provided comprising a plunger 49 slidably mounted in a hole in the bar 34 and adapted to register with either of two holes 50 formed in one of the hubs of the forked member 51 supporting the clamping member 31. A second plunger 52 is mounted in a hole in bar 34 below the plunger 49 and with its axis parallel to the axis of plunger 49.

A hole 53 is provided extending crosswise of the holes guiding the plungers 49, 52 and provides a chamber permitting a limited movement of a screw stud 54, joining both plungers 49, 52, in the direction of the axes of the plungers so that both plungers move as a unit to the left (Fig. 6) whenever the plunger 52 is pressed to the left by the operator's finger, this movement being resisted by a spring 55 pressing against the left end of the plunger 52. It will be clear that the clamping member 31 may be set in either of the positions shown in Fig. 5 by merely pressing in the plunger 52 until the plunger 49 becomes disengaged from the associated hole 50 and then turning the clamp to the desired position where the plunger 52 is released and plunger 49 is permitted to enter the other hole 50 thereby locking the clamping member in set position.

The present invention has been shown as embodied in a specific form solely for the purpose of illustration, therefore, it is not desired to be limited either to the specific construction illustrated or the specific machine shown in the drawings as it is contemplated that the invention may be varied as to details and arrangement in order to adapt it to conditions found in practice.

We claim:

1. A slicing machine having a lower clamp member, a single support to which said member is secured, an upper clamp member, a single support for the upper clamp member, and means for removably mounting the second named support on the first named support, comprising a notch or shoulder formed in the second named support whose walls intimately contact with two coacting surfaces in a projecting part of the first named support, and clamping means operable to exert a force in a direction inclined to both of said coacting surfaces and clamp each wall of said notch or shoulder into contact with its corresponding coacting surface.

2. In a slicing machine, a movable clamp member and a support therefor, a fixed clamp member and a support therefor, said last named support having two supporting surfaces at an angle to each other to form a wedge adapted to carry the entire weight of the movable clamp member and the first named support, the latter having a shoulder or notch formed therein adapted to receive the wedge, the walls of said shoulder being adapted to closely contact with the aforementioned surfaces on the second support forming the wedge, and a single clamping means mounted on one of said supports adjacent the intersection of the two surfaces on the second named support and inclined to both said surfaces, and adapted to securely clamp both supports together by a wedging action between the walls of the shoulder on the one support and the two supporting surfaces on the other support.

3. A slicing machine having a base, a cutter mounted on the base, an article carriage slidably mounted on the base for reciprocatory movement parallel with the cutter; a guide rail secured to the carriage and extending in a direction transverse of the knife, said guide rail consisting of a flat bar having opposite edges triangular in sec-

tion; a clamp supporting structure; and means for slidably mounting the clamp structure on the guide rail comprising a pair of housings secured to the clamp structure, carriers removably retained in holes in said housings, means carried 5 by the housings adjacent said holes for securely clamping the carriers in the housing after the carriers have been inserted into their holes, anti-friction bearings mounted in said carriers, and

grooved rollers riding on the opposite edges of the guide rail and supported by the antifriction bearings, the grooves in said rollers being triangular in shape and adapted to coact with the triangular edges of the guide rail to prevent displacement of the clamp structure relative to the 5 rail other than longitudinally thereof.

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