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D. M. FINCKE

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MOUNTING FOR SLICER BLADES

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FIG. 1

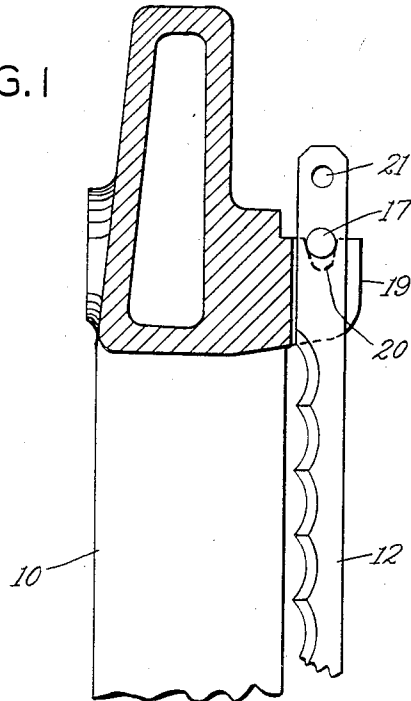


FIG. 2

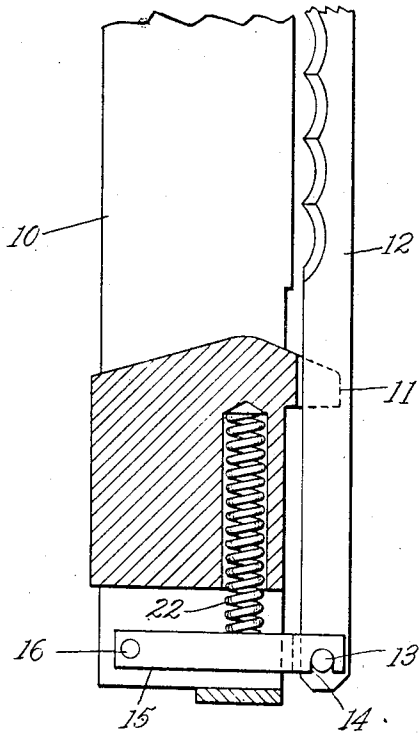
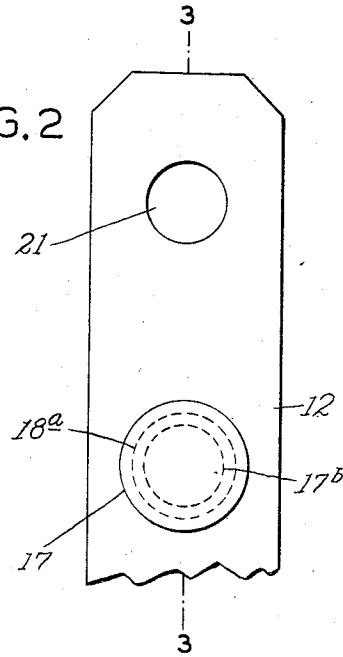
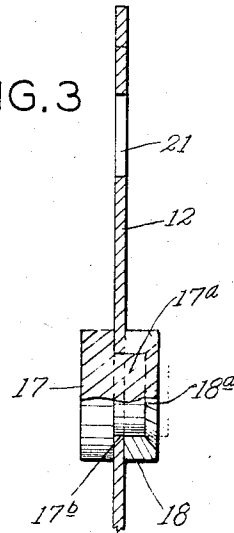


FIG. 3



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## UNITED STATES PATENT OFFICE

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## MOUNTING FOR SLICER BLADES

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4 Claims. (Cl. 146—153)

This invention relates to slicing mechanism, and more particularly to improvements in the means for mounting slicer blades in the frames used in bread slicing machines.

In machines generally used in the past, the slicer blades have been provided at their top and bottom ends with pins fixed in holes in the blades adapted to engage the holding means provided in the frames. Since the blades are quite thin and offer very little bearing surface for the pins it has been almost impossible heretofore to accurately position the pins in the blades, and they have often been secured in the blades askew, and away from the desired right angular position which they should occupy. Inasmuch as the blades must be held taut and are, therefore, under considerable tension at all times during their use, considerable wear has resulted around the pins causing them to become loose in the blades, or making it impossible for the blades to assume a correct position in the frames thereby causing the loaves to be poorly sliced.

It can be seen therefore that it is imperative that some means be provided that will allow blades to be properly positioned and held in the slicing mechanism, and not be subject to the disadvantages above mentioned.

In the present invention, the lower portion of the slicer frames are provided with spaced slotted projections preferably integral therewith, designed to guide the blades. The projections which are located comparatively near the bottom end of the blades, permit a pin to be used as heretofore, and eliminate any side thrust of the blades at this point, thereby preventing wear of the holes thus securely holding the pins. In the embodiment shown the upper end of each blade is equipped with a rivet, the head of which bears against the other side of the blade. With this construction the blade is rigidly held preventing looseness of the blade and holding means to occur, thus assuring a perfectly sliced loaf. In order to mount the blades each holder is provided with V-shaped notches which act as self aligning means for the blades, and no matter how much or little tension is applied the support rivets will fit snugly into the notches and align the blades in their proper position at right angles to the longitudinal axes of loaves to be sliced. This rivet and support arrangement after careful study and experimenting with different holding means has been found to be best suited to withstand and remain intact with the blades and overcoming vibration of the blades in the unguided cutting space between the lower guides

and upper holding means. In the usual blade and pin construction a distinct separation of parts always exists, but with the rivet construction the blade supporting device becomes for all practical purposes an integral part of the blade structure. It will be understood that the bottom ends of the blades may also be equipped in the same manner as their upper ends.

It is an object of this invention to furnish improved means for mounting slicer blades in operating position and greatly diminish any possibility of blades being incorrectly positioned with respect to loaves to be sliced.

It is a further object of this invention to provide slicer blades having novel means for supporting them in slicing position.

It is a further object to provide slicing blades with supporting means comprising rivets inserted through apertures at one or both ends of a blade which rivets are secured in correct position by means of collars fixed to the ends of the rivets that project through the apertures in the blades.

It is an additional object to provide novel means integral with the blade frames for preventing lateral movement of blades secured therein.

The invention also consists of means formed on the blade supporting frame adjacent to the blade mountings for preventing lateral movement of blades near said mountings during the operation of the slicing machine.

The invention also comprises novel means for supporting blades in which supporting arms are provided with V-shaped notches which act as self aligning positioning means for the blades and insure each blade being positioned accurately with respect to loaves to be sliced.

With these and other objects not specifically mentioned in view, the invention consists in certain constructions and combinations which will be hereinafter fully described, and then specifically set forth in the claims hereunto appended.

In the accompanying drawing which forms a part of this specification and in which like characters of reference indicate the same or like parts:

Fig. 1 is a sectional side elevation showing the slicer blade mounted upon the improved slicer frame;

Fig. 2 is an enlarged view of the upper portion of a slicer blade equipped with the improved mounting means; and

Fig. 3 is a fragmentary detail view in vertical section, taken on the line 3—3 of Fig. 2.

Referring to the drawing, the slicer frame

which may be of the type shown in Patent No. 2,011,043 granted to L. Ferenci August 13, 1935, is provided near its face with spaced slotted lugs or arms 11 engaging and guiding the slice blades 12. Pins 13 supported in the lower end of the blades protruding from either side of the blades, are engaged and held in position by a slotted portion 14 of pivotally mounted arms 15. Arms 15 are mounted on a rod 16 carried by the frame 10 and so spaced as to engage the pin 13 of each of the series of blades 12. The distance from the lugs 11 to the pins 13 is comparatively small, and the rigidity of that part of the blade which extends there between overcomes any side thrust communicated from the operating stretch 12, therefore the pins are correctly positioned and rigid in the blades. The upper ends of the blades are each provided with a rivet 17. In the embodiment shown a shouldered rivet is used which on its shouldered part 17a supports a collar 18, Fig. 3. An opening 17b is provided in each blade to receive the shouldered portion 17a of the rivets, the holes being so made as to permit a press fit of the shoulder. A suitable collar 18 is then placed on the rivet and secured thereon, as shown in the drawing. When the collar 18 is mounted on the shoulder 17a, a portion of the rivet protrudes beyond the same, as indicated in dotted lines, and this portion is peened and pressed to fill the countersunk section 18a of the collar. It is obvious however that other methods of securing the rivets and collars in place may be used. In this manner the rivet and collar become a permanent part of the blade, and will remain rigid with respect to the blade.

A series of spaced slotted lugs or arms 19 at the upper end of frame 10 are provided with V-shaped notches 20 adapted to engage the rivet 17 and collar 18, thereby positively aligning the blades 12 as they are fitted into slicing knives. Adjacent to the upper rivet, each slicer blade 12 is provided with an opening 21 which permits an easy and convenient means for insertion or renewal of the blades in the frame 10.

Compression springs 22 at the base of frame 10 exert a constant pressure against the arms 15 whereby tension is applied and maintained upon the slicer blades.

The various means referred to may be varied in construction within the scope of the claims, for the particular device selected to illustrate the invention is but one of many possible concrete embodiments of the same. The invention is not, therefore, to be restricted to the precise details of the structure shown and described.

What is claimed is:

1. A knife blade for a bread slicing machine comprising a thin, flat, elongated body having a sharpened edge and a blade supporting member

comprising a rivet projecting through and beyond the faces of said blade, and said rivet having at each side of the blade a head of considerably larger diameter than that of the rivet shank, each head having a face engaged firmly with a contiguous annular area of the blade, and said heads being of like dimensions and contour, presenting at each side of the blade a smooth cylindrical bearing surface extending outwardly at right angles to said annular area.

2. A knife blade for bread slicing machines comprising a thin, flat, elongated body with a sharpened edge having apertures adjacent to each end thereof, and a blade supporting member comprising a rivet in each of said apertures, at least one of said rivets being formed with a shank tightly fixed in its said aperture, and with cylindrical bearing heads at each side of the blade, one head being of one-piece with said shank, and a symmetrical separately formed head at the other end constituted by a collar fitted upon the free end of said shank of the rivet and held against said blade by the peened end of said rivet.

3. A knife blade for a bread slicing machine, comprising a thin, flat, elongated blade body with a sharpened edge, and an aperture adjacent to an end thereof, a blade securing means including a cross supporting member comprising a rivet transfixing said aperture and extending substantially at right angles to the plane of the blade at either side thereof for securing the blade in operative position in a knife support having means for holding a blade therein and preventing pivoting of the blade while so held, said rivet projecting through and beyond the faces of said blade, and means for securing said rivet in said blade and furnishing cylindrical bearing surfaces cooperating with a suitable support having deeply notched V-shaped bearing surfaces, to hold the blade in operative slicing position.

4. In a knife blade for a machine of the class described: comprising a thin, flat, elongated body with a sharpened edge having an aperture near one end thereof: a blade-supporting member comprising a rivet having a shank fixed tightly in said aperture, and having a cylindrical head of equal dimensions at each side of said blade, the head at one side being formed in one piece with said shank, and the head at the other side of the blade including a separately formed annular collar having a large central orifice transfixed by the free end of said one-piece rivet shank, the latter being upset into a counter-sunk mouth of said collar; and said two-headed rivet thus providing two cylindrical, symmetrical bearing surfaces for engagement with complementary bearing surfaces of a supporting member in a blade frame.

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