Aug. 7, 1928. 1,679,508

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KNIFE FOR SLICING MACHINES

Filed Jan. 16, 1924

Fig. 1.

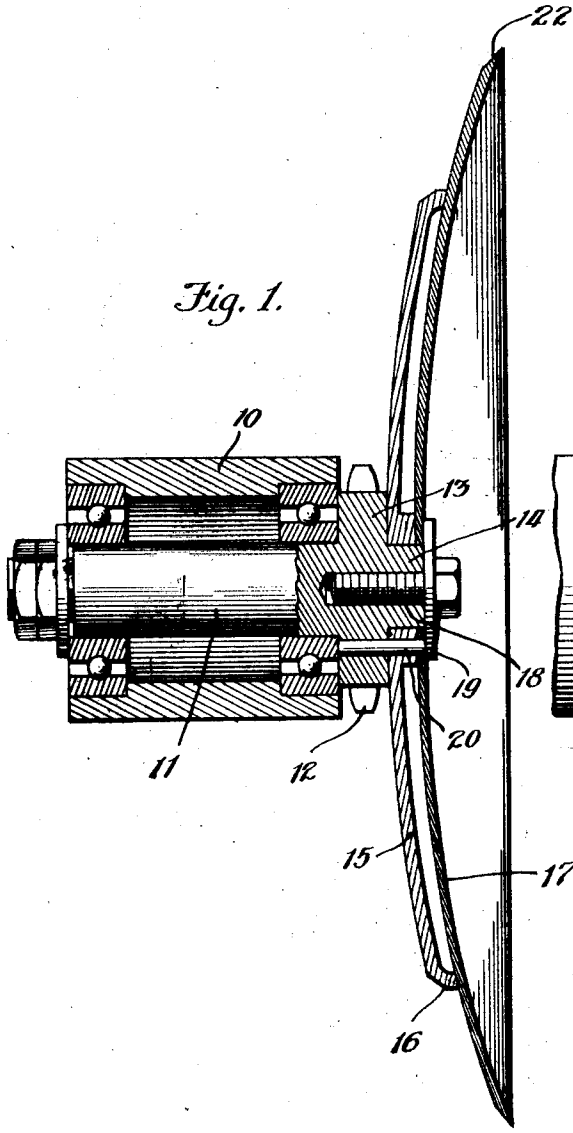
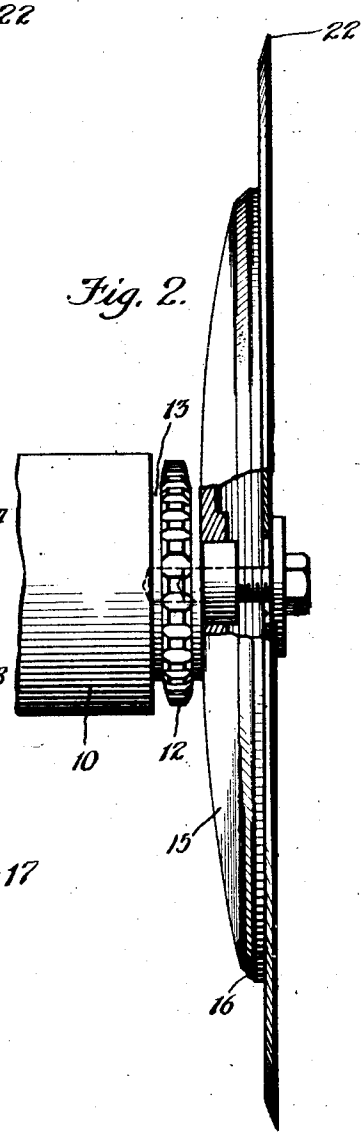


Fig. 2.



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KNIFE FOR SLICING MACHINES.

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This invention relates to rotary disc knives such as are used for slicing meat and other commodities, and has for its object the provision of a knife of the class described which shall be economical to manufacture and efficient in use.

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

In the drawing—

Fig. 1 is a horizontal section through a journal bearing support of a slicing machine showing the knife spindle with the disc knife thereon; and

Fig. 2 is a plan view of the mechanism shown in Fig. 1, with parts broken away, showing the knife in process of assembly.

Heretofore it has been customary to provide slicing machines with a solid disc knife which is concave on the side adjacent the material from which slices are severed. Such a knife must be made of high grade steel and carefully tempered. The blade is thinner near the edge than it is toward the center so that as the periphery is ground away the material adjacent the edge becomes thicker, thus limiting the amount of material adjacent the periphery that is available for use. The manufacture of such a blade involves expensive operations, as well as material.

In the present invention a thin disc of high grade steel is provided for forming the cutting portion of the knife and a backing or support of less expensive material is used to impart the necessary shape and stiffness to the disc.

In the drawing, the numeral 10 designates the journal bearing support having a shaft 11 journaled therein. The shaft 11 is provided with sprocket teeth 12 by which it is rotated, the teeth being mounted on a shoulder 13 provided with a boss 14 for receiving a backing plate or support 15. The plate 15 has a forwardly projecting peripheral flange 16 which has its front edge faced to lie in a plane perpendicular to the axis of the shaft 11.

The knife 17 is formed from a flat disc having the center perforated to fit upon the boss 14. When the knife is placed against the backing disc 15 the central portion will be spaced outwardly from the boss 14, as shown in Fig. 2. This portion may be drawn into position to fit upon the boss 14 by means of a cap screw 18 threaded into the spindle 11 and having an integral flange 19 which engages the outer face of the disc 17 adjacent the central opening. The shoulder portion 13, the backing disc 15 and the knife 17 are all provided with registering openings for receiving a dowel pin 20 which holds the parts against relative rotation. It will be noted that the backing disc 15 has a central shoulder portion 21 so that the knife touches the disc only adjacent the center and on the front face of the flange 16, leaving the greater portion of the disc free to assume a concavo-convex form when placed under tension by the screw 18.

The central portion of the knife is preferably slightly thinner than the periphery and it has been found in practice that a thickness of one-sixteenth of an inch at the center and three-thirty-seconds adjacent the periphery produces good results. The edge of the knife is beveled as shown at 22 and the entire peripheral portion beyond the disc 15 is available for the cutting edge as the knife is worn away by sharpening.

The manufacture of the knife is a simple stamping process and the entire blade can be easily tempered. When the parts are assembled there are no exposed openings or joints to retain grease or particles of meat and the blade can be easily removed and replaced when it becomes necessary.

I claim:

1. In a slicing machine, a knife spindle having a supporting member mounted thereon provided with a circular laterally facing bearing ring, a relatively thin flat disc knife having its lateral face engaging said bearing ring and having a central opening therein, a central boss connected with said spindle for engaging said opening, and a threaded member for forcing the central portion of said knife laterally to press the face of said knife against said bearing ring and to dish said knife to provide a concave cutting face.

2. In a slicing machine, a bearing spindle having a shouldered boss formed on one end thereof, a substantially rigid disc mounted on said boss and having the periphery thereof arranged to provide a bearing ring, a relatively thin disc knife of resilient material having a central opening arranged to re-

ceive said boss, and a threaded member for engaging the central portion of said knife and said spindle to exert a lateral force at the center of said knife and to cooperate with the bearing ring on said rigid disc to impart a dished formation to said disc knife and provide a concave slicing face.

3. A slicing machine knife comprising a backing member having a concave face, a journal bearing for said backing member at the side thereof opposite said concave face, a normally flat circular plate knife of thin spring material having an opening therethrough, and a screw extending through said opening and having threaded engagement with said backing member to hold said knife in dished formation against said backing member, said screw having a head thereon disposed between said knife and the cutting plane thereof when said screw is tightened to hold said knife in dished formation.

In testimony whereof I have signed my name to this specification on this 12th day of January, A. D. 1924.

HENDRIK STUKART.