W. C. KNAPP.

SLICING MACHINE.

APPLICATION FILED JUNE 5, 1920.

1,417,844. Patented May 30, 1922.

Fig. 1

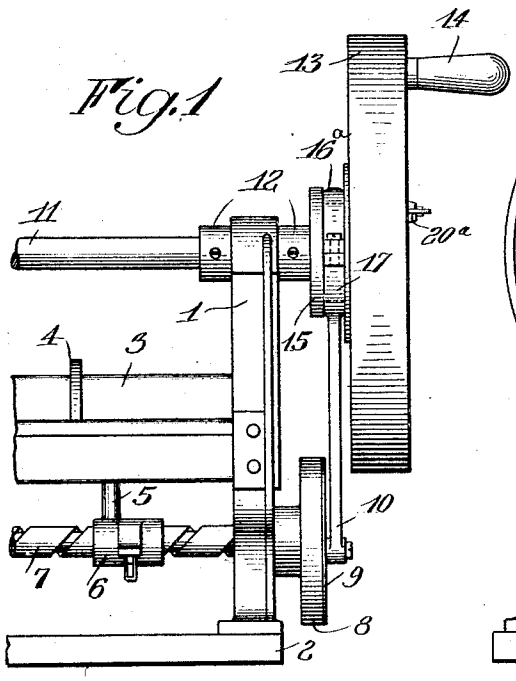


Fig. 2

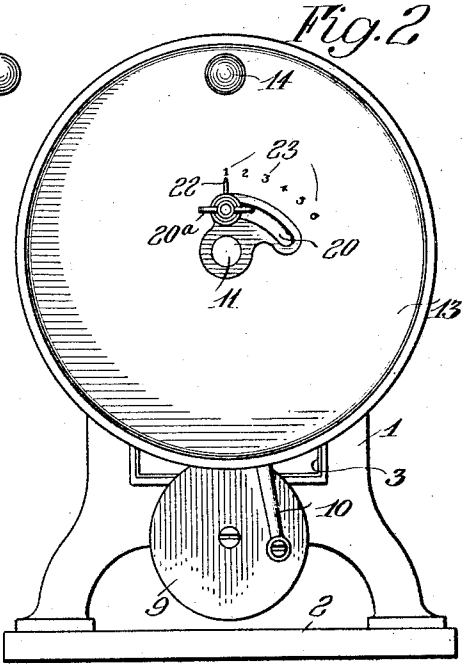


Fig. 3

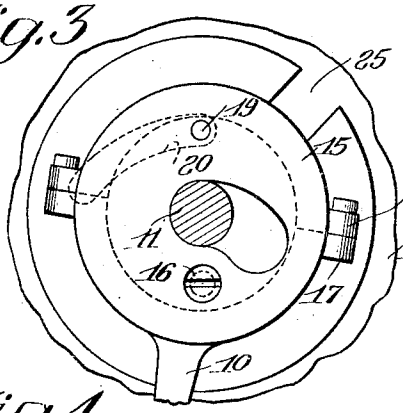


Fig. 4

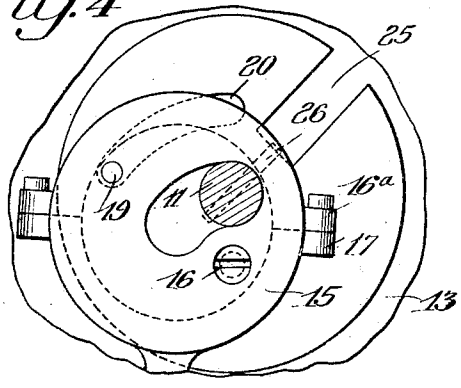


Fig. 6

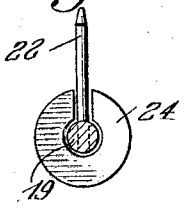


Fig. 5

INVENTOR.

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UNITED STATES PATENT OFFICE.

WALTER CHANDLER KNAPP, OF ROCHESTER, NEW YORK, ASSIGNOR TO LIBERTY BREAD SLICER INC., OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

SLICING MACHINE.

1,417,844. Specification of Letters Patent. **Patented May 30, 1922.**

Application filed June 5, 1920. Serial No. 386,742.

To all whom it may concern:

Be it known that I, WALTER CHANDLER KNAPP, a citizen of the United States, residing at Rochester, in the county of Monroe, State of New York, have invented certain new and useful Improvements in Slicing Machines, of which the following is a full, clear, and exact description, taken in connection with the accompanying drawings, forming a part of this specification.

My invention relates to slicing machines of the kind used for slicing bread, etc., in which the material to be sliced is moved intermittently relatively to the moving knife by means, comprising a worm operatively connected with the knife shaft by means of a clutch on the end of the worm and a collar adjustable eccentrically of the shaft on which the knife is mounted. The object of my present invention is to improve the means for adjusting the collar eccentrically of the knife shaft for varying the thickness of the slice to be cut. A further object of my invention is to provide means for indicating at all times the eccentricity of the collar which determines the thickness of the slice for which the machine is set. More specifically, the object of my invention is to provide a scale and cooperating pointer which will at all times indicate to the operator the thickness of the slice which the machine is set to cut. To these and other ends my invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, and particularly pointed out in the appended claims.

Referring to the drawings,

Fig. 1 is a side elevation of a slicing machine illustrating one application of my invention, parts being sectioned away to reserve space,

Fig. 2, is a front elevation of the same,

Fig. 3 is a transverse section through the knife shaft showing a detail of construction,

Fig. 4 is a similar view showing the parts in other relations,

Fig. 5 is a longitudinal section through the knife shaft and wheel mounted thereon, and

Fig. 6 shows a detail of the construction.

My machine comprises a frame 1 mounted on a suitable base or support 2. Supported in the frame is a chute 3 for bread or other material to be sliced. The bed of the chute 3 is slotted and a pusher 4 mounted in chute has an arm 5 extending through the slot and having a collar 6 at its lower end, mounted on a worm shaft 7, revolubly mounted in the frame. The shaft 7 is provided with a worm groove and at its forward end outside the frame is provided with a clutch member 8. The collar 6 is provided with means engaging the groove in the worm 7, comprising a pin adapted to be disengaged from the groove to permit the pusher 4 to be manually adjusted longitudinally of the chute. Cooperating with the member 8, is a clutch member 9 to which an arm 10 is pivoted. Revolubly mounted in the frame above the chute is a knife shaft 11, having a thrust bearing 12, and at its forward end, the wheel 13 is secured thereto. The wheel 13 is adapted to be driven by a belt connected with a source of power, or manually by the handle 14. A collar or disc 15 is pivoted to the wheel 13 by means of a headed screw 16 and at its periphery is provided with a groove forming a bearing for a strap connected with the arm 10. For purposes of assembling, the strap is formed of two parts 16^a and 17 secured to each other by screws or any other suitable means. The part 17 is or may be made integral with the rod 10. The collar 15 is movable or adjustable about its pivot 16, which, it will be noted, is eccentric to the wheel 13, and means are provided for securing the collar to the wheel in any position of adjustment. Said means comprises a rod 19 threaded at its ends and screwed into an opening in the collar 15, diametrically opposite its pivot 16. The collar 15 is also provided with an arcuate slot concentric with its pivot and forming a clearance for the knife shaft 11, as the collar moves about its pivot. An arcuate slot 20 is formed in the wheel 13 or its hub through which the rod 19 extends to the forward side thereof. At its forward end the rod 19 receives a nut 20^a adapted to frictionally engage the wheel 13 and securely clamp the collar 15 thereto, to rotate therewith. With the parts in the position shown in Fig. 3 the collar 15 is substantially concentric with the shaft 11 and the wheel 13. If now the nut 20^a is loosened and the rod 19 moved along the slot 20 which is concentric with the pivot 16, the collar is moved from the concentric position shown in Fig. 3, to an eccentric position, the extreme eccentric position being shown in Fig. 4. With the parts in the po-

sition shown in Fig. 3 substantially no longitudinal movement is transmitted to the rod 10 when the wheel 13 is rotated. As the collar 15 is adjusted from the position shown in Fig. 3 it occupies various positions of eccentricity, in which positions more or less longitudinal movement will be transmitted to the rod 10 when the shaft 11 is rotated. It will of course, be understood that by means of the nut 20^a the collar 15 can be clamped or secured to the wheel 13 in any position between that shown in Fig. 3 and that shown in Fig. 4 for the purpose of setting the machine for cutting slices of various thicknesses, since the greater the longitudinal movement transmitted to the rod 10, the greater the distance the pusher 4 will be moved at each rotation of the shaft 11 and hence the greater the thickness of the slices which are to be cut.

In order to indicate to the operator at any time the thickness of the slice, which the machine is set to cut, I provide means visible to the operator to indicate the position of adjustment of the collar 15 with respect to the wheel 13. Said means comprises a pointer 22 secured in the rod 19 and adapted to cooperate with a scale 23 formed on the outer face of the wheel 13 adjacent the slot 20. In order to protect the pointer 22 from the nut 20^a, a split ring or washer 24 may be inserted between the nut 20 and the outer face of the wheel 13. The gradations of the scale 23 in the illustrated embodiment range from one to six and indicate a thickness of slice from substantially zero in the one position to the greatest thickness possible to be cut within the range of adjustment provided for.

In order to facilitate assembling of the parts I have shown a radial slot 25 in the hub of the wheel 13 through which a key or pin 26 is inserted in the shaft 11 to secure the wheel 13 to said shaft.

Having described my invention what I claim and desire to secure by Letters Patent is:

1. In a slicing machine, the combination of a frame, a chute for the material to be sliced mounted in said frame, a pusher in said chute, a worm rotatably mounted in said frame, means operatively connecting said worm with said pusher, a knife shaft revolubly mounted in said frame, a wheel on said shaft, a collar eccentrically pivoted to said wheel and adjustable relatively to the shaft to vary the thickness of the slice, and means operatively connecting said collar with said worm.

2. In a slicing machine, the combination of a frame, a chute for the material to be sliced mounted in said frame, a pusher in said chute, a worm rotatably mounted in said frame, means operatively connecting said worm with said pusher, a knife shaft revolubly mounted in said frame, a wheel secured to said shaft, a collar eccentrically pivoted to said wheel, means for securing the collar to the wheel, and means operatively connecting said collar with said worm.

3. In a slicing machine, the combination of a frame, a chute for the material to be sliced mounted in said frame, a pusher in said chute, a worm rotatably mounted in said frame, means operatively connecting said worm with said pusher, a knife shaft revolubly mounted in said frame, a wheel on said shaft, a collar eccentrically pivoted to said wheel and adjustable relatively to the shaft to vary the thickness of the slice, and a pointer on said collar cooperating with a relatively fixed scale for indicating the degree of eccentricity of said collar.

4. In a slicing machine, the combination of a frame, a chute for the material to be sliced mounted in said frame, a pusher in said chute, a worm rotatably mounted in said frame, means operatively connecting said worm with said pusher, a knife shaft revolubly mounted in said frame, a wheel on said shaft, a collar movable on said wheel from a concentric to an eccentric position, a rod on said collar extending through a slot in the wheel, indicating means on said rod, and means operatively connecting said collar with the worm.

WALTER CHANDLER KNAPP.