C. R. HARTMAN.

VEGETABLE CUTTER AND CRUSHER.

APPLICATION FILED SEPT. 3, 1921.

1,419,499. Patented June 13, 1922.

Fig. 1

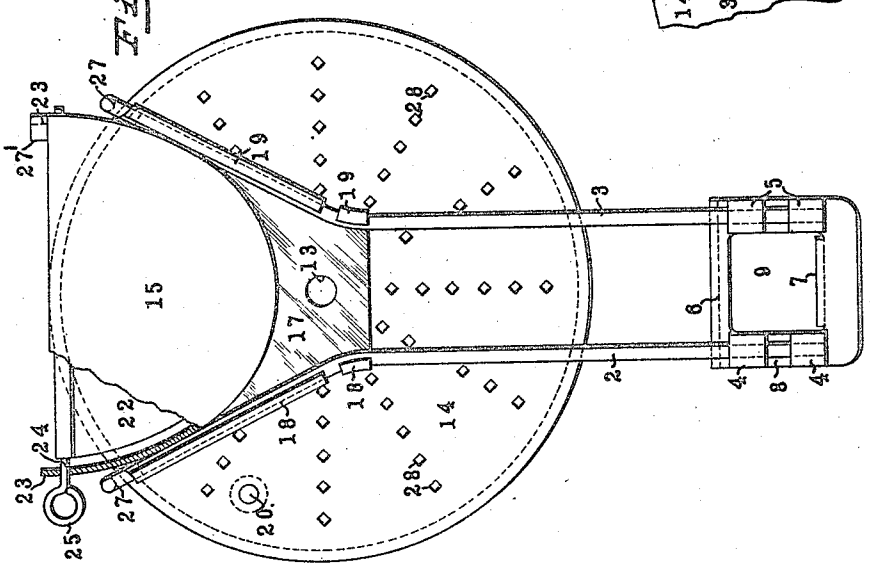


Fig. 4

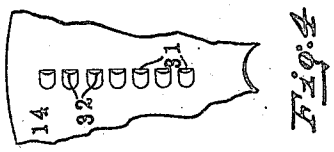


Fig. 2

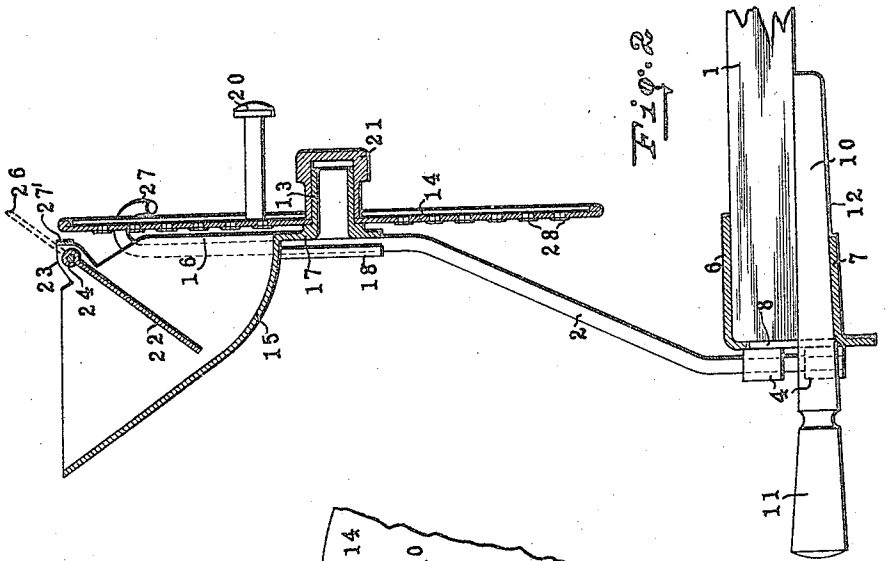
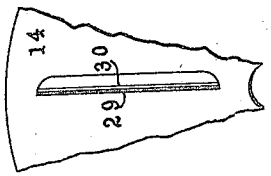


Fig. 3



INVENTOR

Carl R. Hartman

BY

Dull, Warfield & Dull.

ATTORNEY

UNITED STATES PATENT OFFICE.

CARL R. HARTMAN, OF MOUNT VERNON, NEW YORK.

VEGETABLE CUTTER AND CRUSHER.

1,419,499. Specification of Letters Patent. Patented June 13, 1922.

Application filed September 3, 1921. Serial No. 498,199.

To all whom it may concern:

Be it known that I, CARL R. HARTMAN, a citizen of the United States, residing at Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Vegetable Cutters and Crushers, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to devices for cutting and crushing soft material, and with respect to its more specific features to devices for shredding vegetables, fruits and the like.

One of the objects of the invention is the provision of a simple and efficiently operative device for the purpose referred to.

Another object of the invention is the provision of a practical shredder of inexpensive construction adapted for household use, and which may be readily operated, cleaned and repaired.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing forming part of this specification wherein similar reference characters refer to similar parts throughout the several views,

Figure 1 is a side elevation of a shredder embodying the invention, part of the instrument being illustrated in section for clearer disclosure;

Fig. 2 is a vertical section of Fig. 1, the shredder being shown as mounted on a shelf, or other convenient support;

Figs. 3 and 4 illustrate details of cutting or shredding disks which may be utilized.

Referring now more specifically to the drawing there is provided a standard, or frame, which may be removably supported by a shelf 1. Ordinarily this shelf will be represented by a kitchen table. In the present embodiment the standard comprises a pair of standard rods 2 and 3, which may be detachably but firmly connected to sockets 4 and 5 in a mounting clip comprising a pair of relatively stationary rigid clamping jaws 6 and 7 bent from a plate 8 having an opening 9. To attach the standard to the shelf 1 the mounting clip is applied thereto, as illustrated in Fig. 2. Thereupon the wooden wedge block 10, having a handle 11, is inserted through the opening 9 between the jaw 7 and the underface of the shelf 1, and pressed home to firmly affix the clip to the shelf. It will be perceived that the wedge 10 provides a removable tapered clamping face 12 for the jaw 7 so that the mounting clip may be attached to shelves of varying thicknesses.

The numeral 13 indicates a bearing member carried by the standard, this member being a cylindrical metal stud laterally projecting from the standard. The numeral 14 indicates a movable shredder or shredder disk, illustrated as rotatably mounted on the stud 13. The numeral 15 indicates a table which supports the material while being shredded, this table, in the present embodiment, being a sheet metal receptacle, or hopper, having a discharge opening or passageway 16 adjacent the face of the disk 14. In the embodiment illustrated, the hopper 15 and the stud 13 are made from an integral piece of sheet metal, the sheet being stamped into the shape to provide the hopper 15 with the integral depending flange 17, the stud 13 being provided from the flange 17 by a suitable drawing operation, and so as to project from the face of the flange 17. In the stamping operation which fashions the hopper 15, flanges will also be provided at the sides of the discharge opening 16, as indicated at 18 and 19, which latter flanges are utilized for attaching the hopper and its associated parts to the standard, as will hereinafter appear.

The shredder disk 14 has an opening by which it is journaled on the stud 13 and may be readily applied and removed over the end of the stud. This disk 14 faces the discharge opening of the hopper 15 and is operable in a plane close to such opening. A handle 20 is connected to the disk 14 for conveniently rotating the latter on the stud.

The numeral 21 indicates a keeper, or button, for retaining the disk 14 in operative position on the stud. As illustrated, the keeper 21 is a cylindrical metal piece having a close telescopic fit upon the outer cylindrical surface of the stud 13. When the keeper is applied there will be sufficient friction to retain it on the stud, and to hold the disk in operative position, but the keeper may be readily removed when desired.

The numeral 22 indicates a combined follower and finger guard which may be utilized to press the material into contact with the disk 14. As illustrated, the guard 22 is a metallic plate of a semi-circular outline, pivoted to the ears or flanges 23, which flanges may be produced in the stamping operation hereinbefore referred to. Specifically, the guard 22 may be fixed to rotate with a pin 24 rotatably supported in the ears 23 and having a manipulative handle 25. The guard 22 may therefore be oscillated in the hopper by manipulating the pin 24, and it may be turned into the position illustrated in the dotted lines at 26, so as to lie against a stop 27′ and be out of the way of material entering the hopper. The stop may be a bent portion of one of the ears 23, as illustrated.

In order to brace the shredder disk 14 against the pressure of the material being shredded and thereby assist in keeping the shredder disk in operative position, one or more abutments 27 are disposed at the side of the disk opposite the hopper. As illustrated, the abutments 27 co-operate with a smooth marginal portion of the disk 14 and are connected to the standard across the edge of said disk. These abutments may be provided by bending the upper ends of the standard rods 2 and 3 across the edge of the disk 14, so that the ends lie in the position referred to.

In operation the material to be shredded, as for instance, potatoes, cocoanut, etc., is introduced into the hopper and pressed through the discharge opening 16 against the disk 14. By grasping the handle 20 the disk 14 may be rotated and the material shredded. The shredded material will be discharged in the space between the disk and the edge of the hopper. When the material has been reduced in size to such an extent that the fingers of the operator may be in danger of coming in contact with the shredding teeth of the disk 14, the finger guard 22 may be turned to lie against the rear of the material and the fingers of the operator pressed against the guard so as to complete the shredding without danger of abrading the fingers.

All parts of the device may be made of metal, although it is convenient to make the wedge block of wood. By making the hopper, the flanges and the stud from an integral piece of sheet metal, as hereinbefore explained, the stud may be "drawn" from the depending flange 17, and the flanges 18 coiled around the standard rods 2 and 3, so as to secure the hopper and stud to the standard.

A plurality of shredder disks may be employed, the disks being similar except as to their teeth. In Figure 1 the shredding teeth are indicated at 28 extending in generally radial lines from the center of the disk and formed by punching the disk with a small tool so as to upset the metal of the disk and provide relatively fine teeth suitable for shredding, as by grating the material. In Fig. 3, which illustrates another form of tooth, the disk is slit radially along a plurality of lines 29 and the material of the disk at one side of the slit pressed laterally to provide long shredding teeth, one tooth being indicated at 30, adapted to slice the material. In the modification illustrated in Fig. 4, a series of radial slits 31 is made in the disk and the material of the disk pressed laterally to provide short slicing, mashing, or stripping teeth, as indicated at 32. Other forms of teeth may be utilized as will be understood.

It will be perceived that the structure described provides an inexpensive shredder readily operated and adapted for household use. In the embodiment illustrated the structure is very simple, there being no screw threads and no complicated details. The shredding disks may be readily interchanged on removing the keeper 21, and this keeper has a smooth sliding fit on the stud 13 so that it will not jam. The instrument may be readily fixed in position by simply applying the mounting clip to the shelf, as illustrated in Fig. 2, and inserting the wedge block 10. Giving the block a blow with the hand will fix the instrument in place. To remove the instrument, the handle 11 may be struck a lateral blow to loosen the wedge whereupon the clip may be readily demounted.

Thus by the above described construction are accomplished among others the objects hereinbefore referred to.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

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

1. In a shredder, in combination, a frame, a bearing member carried by said frame, and a shredder disk keeper attachably connected to said bearing member and adapted to frictionally engage therewith.

2. In a shredder, in combination, a frame, a bearing member carried by said frame, a shredder disk rotatable on said bearing

member, a shredder disk keeper detachably connected to said bearing member and adapted to frictionally engage therewith, and a shredder disk brace on said frame.

3. In a shredder, in combination, a frame, a bearing member carried by said frame, a shredder disk rotatable on said bearing member, a shredder disk keeper detachably connected to said bearing member and adapted to frictionally engage therewith, a shredder disk brace on said frame, and a handle on said shredder disk.

4. In a shredder, in combination, a standard, a cylindrical stud carried by said standard, a shredder disk mounted to rotate on said stud and removable over the end of the latter, and a button adapted to telescope with said stud to keep said disk on said stud.

5. In a shredder, in combination, a standard, a cylindrical stud carried by said standard, a shredder disk mounted to rotate on said stud and removable over the end of the latter, a button adapted to telescope with said stud to keep said disk on said stud, and one or more abutments at one side of said disk and connected to said standard across the edge of said disk.

6. In a shredder, in combination, a standard, a cylindrical stud carried by said standard, a shredder disk mounted to rotate on said stud and removable over the end of the latter, a button adapted to telescope with said stud to keep said disk on said stud, and a hopper projecting from said standard on the side opposite said disk.

7. In a shredder, in combination, a standard, a cylindrical stud carried by said standard, a shredder disk mounted to rotate on said stud and removable over the end of the latter, a button adapted to telescope with said stud to keep said disk on said stud, a hopper projecting from said standard on the side opposite said disk, and a guard pivoted to said standard operative in said hopper.

8. In a shredder, in combination, a standard, a cylindrical stud carried by said standard, a shredder disk mounted to rotate on said stud and removable over the end of the latter, a button adapted to telescope with said stud to keep said disk on said stud, one or more abutments at one side of said disk and connected to said standard across the edge of said disk, a hopper projecting from said standard on the side opposite said disk, and a guard pivoted to said standard operative in said hopper.

9. In a shredder, in combination, a sheet metal receptacle having a discharge opening and integral flange, a cylindrical metal stud integral with said flange and projecting from the face thereof, a pair of standard rods around which parts of said flange are coiled, and a shredder disk journaled on said stud and operable in a plane close to said discharge opening.

10. In a shredder, in combination, a sheet metal receptacle having a discharge opening and integral flange, a cylindrical metal stud integral with said flange and projecting from the face thereof, a pair of standard rods around which parts of said flange are coiled, a shredder disk journaled on said stud and operable in a plane close to said discharge opening, and a pivoted guard, oscillatable in said hopper.

11. In a shredder, in combination, a sheet metal receptacle having a discharge opening and integral flange, a cylindrical metal stud integral with said flange and projecting from the face thereof, a pair of standard rods around which parts of said flange are coiled, and a shredder disk journaled on said stud and operable in a plane close to said discharge opening, parts of said rods being extended across the edge of said disk into disk bracing position.

In testimony whereof I affix my signature, in the presence of two witnesses.

CARL R. HARTMAN.

Witnesses:

E. C. ROBINSON,

M. A. CASKIN.