May 8, 1923.

1,454,579

T. FITZPATRICK

GRATER

Filed July 3, 1922

Fig. 1.

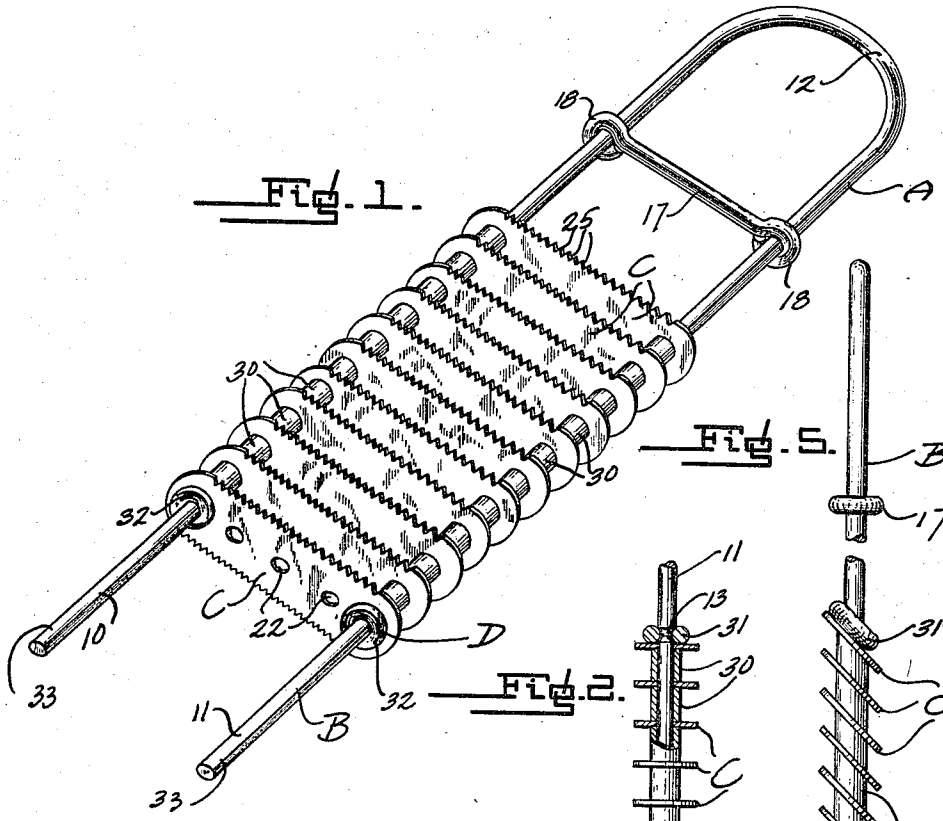
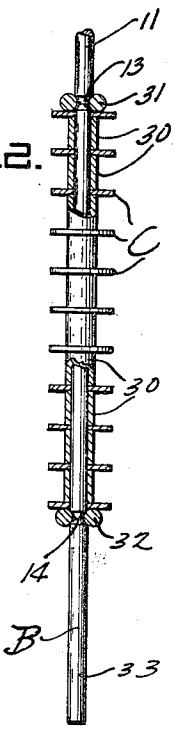


Fig. 5.

Fig. 2.



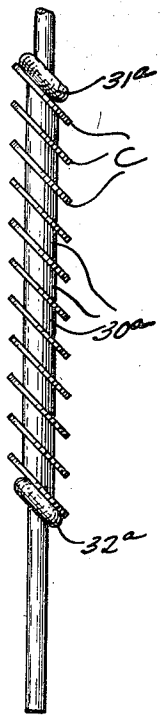


Fig. 3.

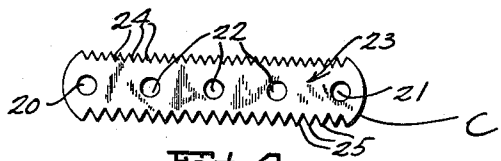
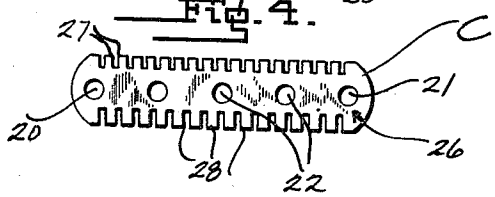


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS FITZ PATRICK, OF CUYAHOGA FALLS, OHIO.

GRATER.

Application filed July 3, 1922. Serial No. 572,574.

To all whom it may concern:

Be it known that I, THOMAS FITZ PATRICK, a citizen of the United States, residing at Cuyahoga Falls, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Graters, of which the following is a specification.

This invention relates to an improved grater.

The primary object of this invention is the provision of an improved device to facilitate the grating of material, such as food stuffs, the scraping blades or teeth of which are so disposed as to permit the grated materials to pass through the improved grater without clogging the same.

A further and important object of this invention is the provision of a grater, the elements of which are assembled in uniform compact arrangement, as to provide a device which may be easily cleaned and thereby kept sanitary at all times.

A further object of this invention is the provision of a grater embodying a frame, spaced cutting blades, and novel means for mounting of the blades in spaced relation upon the frame, whereby articles, such as food stuffs, may be speedily grated, without clogging of the grater, or without liability of injury to any parts thereof incident to force imposed upon the same.

Other objects and advantages of the invention will be apparent during the course of the following detailed description.

In the drawing, wherein similar reference characters designate corresponding parts throughout the several views.

Figure 1 is a perspective view of the improved grater, showing the various details thereof in assembled relation for grating of various articles.

Figure 2 is a fragmentary view, partly in section, showing the manner in which the various details of the improved grater are securely connected.

Figure 3 is a side elevation of a blade member which may be used with the improved grater.

Figure 4 is a second type of blade which may be used with the improved grater.

Figure 5 is a fragmentary edge elevation of a modified form of grater.

In the drawing, wherein for the purpose of illustration is shown the preferred arrangement of the improved grater, the letter A designates the grater, which includes a frame B; blade members C; and means D for the uniform retention of the blades C upon the frame B.

Referring to the frame B, the same is preferably of steel wire, or analogous material, bent in U-shaped manner to provide the straight side rod like portions 10 and 11, which are connected at one end by the arcuate bight portion 12. Each of the side portions 10 and 11 are provided with circumferential grooves 13 and 14, disposed in spaced relation thereon, the groove 13 being the upper groove and disposed nearest to the bight portion 12, while the grooves 14 are disposed adjacent the free ends of said side portions 10 and 11. A cross bar 17 is preferably provided as a part of the frame B, having the ends 18 thereof looped about the side portions 10 and 11, intermediate the grooves 13 and the bight portion 12; this cross piece 17 being arranged at right angles to the run of the rod like side portions 10 and 11 of frame B, and adapted for cooperation with the hand of the user in a manner to be subsequently set forth. The loops 18 may be soldered or otherwise secured to the frame B.

Referring to the blades C, the same are preferably flat, and a number of types may be provided as illustrated in Figures 3 and 4. These blades C each include the end apertures 20 and 21, which are adapted for respectively receiving the side portions 10 and 11 of the frame B. The intermediate apertures 22 may be provided upon the blade C, such as for receiving other rod portions therethrough for reinforcing purposes. The type of blade 23, illustrated in Figures 1 and 3, is the preferred type of blade, and has the small V-shaped teeth 24 arranged upon one marginal edge thereof, and the relatively coarse teeth 25 arranged upon the opposite marginal edge thereof. The type of blade 26, illustrated in Figure 4, has a plurality of fine rectangular teeth 27 ar-

ranged upon one marginal edge thereof, while the relatively coarse teeth 28 are arranged upon the opposite marginal edge thereof. Of course, any type of teeth may be employed upon the blade C, consistent with the use to which the improved grater A is to be put.

Referring to the means D, the blades C are preferably assembled as is illustrated in Figure 2 of the drawing, with the blades in parallel relation and disposed in a plane at right angles to the plane defined by the wire frame B. In this relation, the spacing sleeves 30 are employed intermediate the facing surfaces of adjacent blades C, in order to retain said blade C in exactly spaced parallel relation upon the frame B. Retaining rings 31, preferably of metal, are shrunk into the upper grooves 13 of the frame side portions 10 and 11, and the upper blade C has the upper surface thereof disposed against these retaining rings 31. The blades C are arranged in spaced parallel relation upon the frame B substantially as above described, and as illustrated in Figures 1 and 2 of the drawing, and held in fixed assembled relation upon the frame B by means of the rings 32, similar to rings 31, which are shrunk in the lower circumferential grooves 14 of the frame side portions 10 and 11. It is of course understood, that there is no loose play of the blades C and spacing sleeves 30 intermediate the upper and lower retaining rings 31 and 32, so that the parts of the grater A are assembled in rigid and fixed relation for grating purposes.

In operation, the user will grasp the frame B with one hand, the bight portion 12 of frame B resting in the palm of the hand with the fingers engaging the cross bar 17. The lower extending portions 33 of the side rod like pieces 10 and 11 may rest upon any suitable supporting surface, and the user may then reciprocate the article to be grated back and forth over the blades C, and the matter scraped from the article being grated will drop through the relatively large spaces intermediate adjacent blades C, to fall unobstructed from the grater A.

In lieu of the relation of the blades upon the frame, as is illustrated in Figure 2, the blades C may be assembled in parallel relation, so that the plane of each blade C is disposed in acute angled relation to the plane of the frame B, substantially as is illustrated in Figure 5 of the drawing. In this relation, the upper and lower retaining rings 31^a and 32^a of the modified arrangement are, of course, disposed in acute angled relation upon the sides of the frame B, substantially as is illustrated in Figure 5, to cooperate with the blades C, and the novel type of spacer sleeves 30^a.

From the foregoing description of the improved grater, it can be seen that the blades C thereof are assembled in uniform and durable relation upon the frame B against any liability of their working loose. By reason of each blade C engaging the opposite sides 10 and 11 of frame B, through the apertures 20 and 21 respectively therein, there will be no liability of the frame B buckling or becoming out of shape incident to force placed upon the grater A.

Various changes in the shape, size and arrangement of parts may be made to the forms of the improved grater herein shown and described, without departing from the spirit of this invention or the scope of the claims, such as the sleeve portions being formed integral with the blades; the upper or lower blades soldered or otherwise secured to the frame instead of utilizing the retaining rings 31 and 32 and likewise the grater may be stamped from a single sheet of metal and the blades twisted at right angles to the frame portions and the frame reinforced.

I claim:

1. A grater comprising a one piece U-shaped frame including side rod like portions, blades apertured at their ends to receive the side rod like portions of said frame, and means to maintain said blades in uniform spaced relation upon said frame.

2. A grater comprising a frame including spaced side portions of rod like formation, a plurality of blades having apertures in the ends thereof for receiving the side portions of said frame so that each blade may be disposed transversely of the side portions of said frame, cylinder like sleeves disposed up on the side portions of said frame intermediate adjacent blades, and retaining rings affixed to the side portions of said frame engaging the upper and lower blades thereupon, for maintaining said blades and spacing sleeves in fixed determined relation upon said frame.

3. A grater comprising a substantially U-shaped frame providing straight side portions in parallel relation connected by an arcuate bight portion, a hand engaging cross bar connecting said side portions in transverse relation adjacent the arcuate bight portion of said frame, and blades arranged in spaced relation upon the straight side portions of said frame intermediate the cross piece thereon and the free ends of said side portions.

4. A grater comprising a substantially U-shaped frame including spaced parallel side portions connected at an end of each by an arcuate bight portion, a cross piece connected to the straight portions of said frame in spaced relation adjacent said bight portion, each of said side portions of the frame having a pair of circumferential spaced grooves therein, flat blades having apertures

in the ends thereof adapted for receiving the side portions of said frame therethrough, cylindrical shaped spacing sleeves adapted for disposal over the side portions of said frame to be disposed intermediate adacently positioned blades, so that said blades may be held in spaced relation on said frame, and retaining rings shrunk into the grooves upon the side portions of said frame and engaging the upper and lower blades of said frame so that said blades and spacer sleeves may be held in rigid relation upon said frame with said blades in spaced parallel relation for grating purposes.

THOMAS FITZ PATRICK.