(No Model.)

G. H. THOMAS.

GRATER.

No. 458,041. Patented Aug. 18, 1891.

Fig. 1.

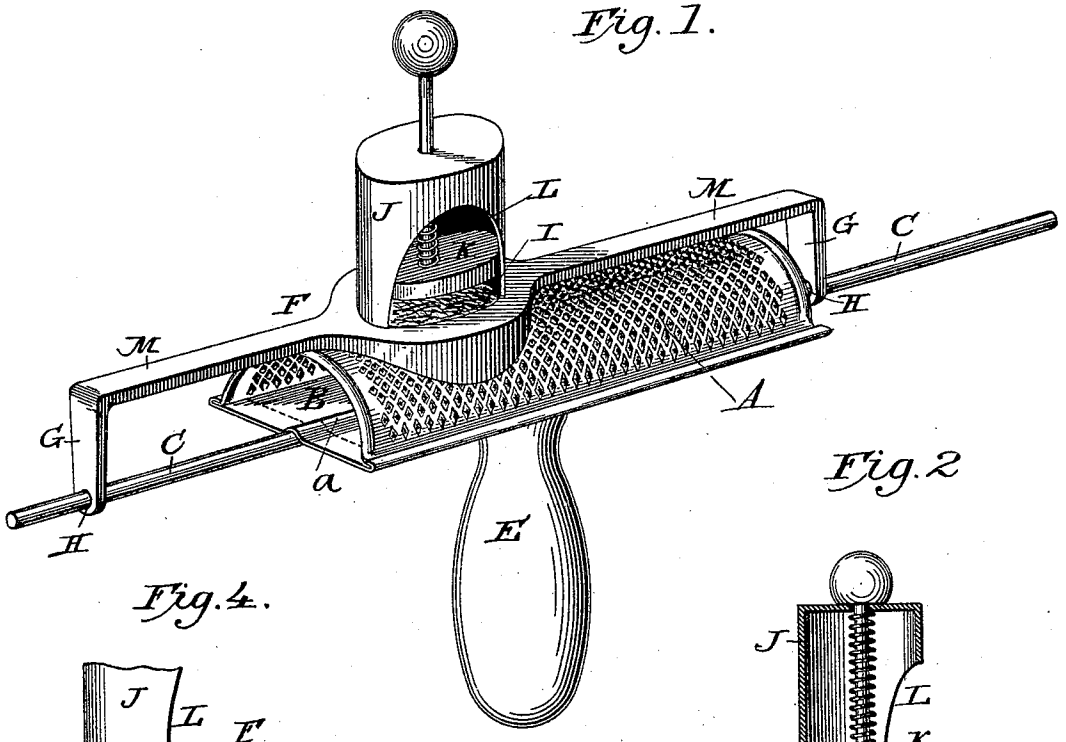


Fig. 2

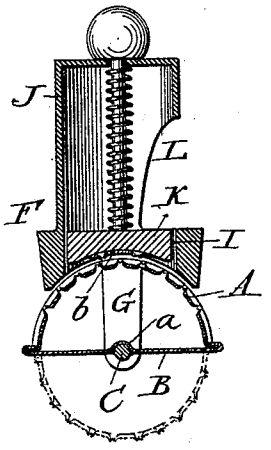


Fig. 4.

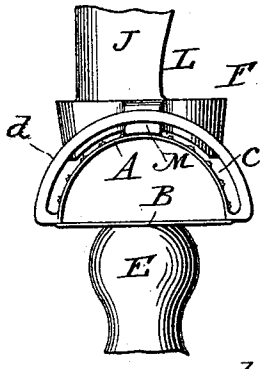


Fig. 3.

Fig. 5

Witnesses

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GRATER.

SPECIFICATION forming part of Letters Patent No. 458,041, dated August 18, 1891.

Application filed May 5, 1891. Serial No. 391,690. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. THOMAS, a citizen of the United States, residing at Chicopee Falls, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Graters, of which the following is a specification.

My invention relates to nutmeg-graters; and it consists in the combination, with an elongated curved grater-plate, of a shell or frame carrying the nutmeg and adapted to move lengthwise of the grater-plate to rock or oscillate upon an axis coincident with the axis of the said plate or to take an intermediate direction.

In the practical use of graters as generally constructed it is found that some of the detached portions of the nut or other article being grated adhere to the grating surface or plate, and, accumulating from time to time, form ridges, which soon render a large part of the grating-surface unserviceable. This objection is overcome by my construction, for it is clear that the accumulations forming themselves in ridges during the longitudinal movement of the nut-holder will readily be removed during the rocking or oscillating of the holder, and vice versa. Furthermore, inasmuch as the nut-holding shell or frame is free to take a diagonal or spiral direction the tendency of the detached portions of the nut to form themselves into ridges is overcome.

In the drawings, Figure 1 is a perspective view of the preferred form of grater; Fig. 2, a vertical transverse sectional view; Fig. 3, a vertical longitudinal sectional view, and Figs. 4 and 5 views of a slightly-modified form of grater.

A represents the grating-plate, which is made semicircular in cross-section and elongated in the direction of its axis. This plate will be made of sheet metal punched or indented from the rear face and bent to form, and in order to retain the plate in its proper shape its side edges will be connected by a plate B, as shown. The best results will be secured by extending this plate the full length of the grater-plate, as shown in Figs. 1 and 3, in which case the edges of the said plate B will be turned up over and upon the edges of the plate A. However, the bottom plate B may be omitted altogether if the grater-plate A is made of material of sufficient rigidity to retain its form; or if it be deemed advisable to retain some means for connecting the side edges of the grater-plate and prevent beyond any possibility the spreading of the latter one or more cross-bars may be substituted for the plate, such an idea being illustrated by dotted lines in Fig. 1.

The bottom plate B is provided with a longitudinal groove or depression *a* in its lower face to receive the arms C C, which project beyond the ends of the grater-plate in a line coincident with the axis of the latter and form the axis of the nut-holder or holding-frame F. These arms C C will be soldered or otherwise rigidly affixed to the plate B and will advisably be formed of a single piece of wire bent at a point between its ends to form a tang D, to which is secured a handle E, as is shown in Fig. 3. Where the cross-bars are employed in lieu of the bottom plate, as before suggested, the arms C C may be secured thereto in the same manner as if the plate were used; but where neither the bottom plate nor the cross-bars are present the grinder-plate would have to be provided with means for attachment of the handle and the arms. A cheap and convenient mode is illustrated by dotted lines in Fig. 3, upon reference to which it will be observed that the tang is elongated and soldered or otherwise secured to the lower face of the grinding-plate. The grooved plate B is preferred because it affords a firm support for the inner ends of the arms, thereby rendering the device stronger and more serviceable. The arms need not, however, necessarily be made of a single piece of wire.

F indicates a holder for the nutmeg or other material to be grated. This holder comprises in its preferred form a bar M, having downwardly-turned end portions G, each of which has an eye or opening H in its lower end to receive the arms C C. In the bar M at about its center is formed an opening I, through which the nutmeg or other article to be grated projects against the face of the grating-plate, the said opening I being covered or inclosed by a cup or housing J, having an opening L on one side through which to insert the nut-

meg. The holder is further provided with a spring-pressed follower K, the lower face of which is roughened or provided with a roughened plate *b*, which shall take a firm hold upon the nutmeg and prevent its slipping. This cup or housing may be made integral with the bar or separate therefrom, this depending in a measure upon the nature of the metal used in making the bar. By making the opening L in the side of the cup or housing the insertion of is facilitated and the removable cap or cover for the cup dispensed with.

With the grater thus constructed the handle E is grasped firmly in the hand and the cup of the frame or holder taken hold of with the fingers of the opposite hand and reciprocated backward and forward longitudinally or rocked or tipped circumferentially or moved in an intermediate direction along and over the grating surface or plate. The holder or frame is guided in its longitudinal movements by the arms C C, upon which it may rock or oscillate. In order to prevent the holder from rocking too far, the edges of the plates A and B are extended laterally to form stops, as shown in Fig. 2.

Instead of employing the arms C C and downward extensions G G of the bar H, said downward extensions may be omitted and the ends of the bar arranged to project through curved slots *c*, formed in the upwardly-turned ends *d* of the grater-plate A or in separate pieces soldered thereto, such an arrangement being illustrated in Fig. 4. The slots are concentric with grater-surface, and while permitting the bar to move lengthwise therethrough also permit the bar and its cup to rock or oscillate in the same manner as in the construction first described.

In Fig. 5 another modification is illustrated. In this plan the bar M is provided with the downward extensions, which carry guide-arms *e*, which latter fit into bearings *f*, coincident with the axis of the grater-surface A. The frame F under this arrangement may be moved lengthwise, transversely, and spirally with reference to the grinding surface or plate A in the same manner, essentially, as in the constructions shown in Figs. 1 and 4.

It is not essential that the curved plate A be exactly semicircular. It may describe a greater or less portion or a complete circle, as indicated by dotted lines in Fig. 2, the handle in such case being attached to one of the arms C. So, too, it need not be in the form of a perfect arc—that is to say, it may be slightly polygonal in cross-section without departing from the spirit of my invention; but care should be taken not to make the angular faces broad enough to interfere with the free oscillation of the frame or holder or to render unserviceable any portion of the grating-surface.

Having thus described my invention, what I claim is—

1. A grater comprising a grating plate or surface curved in cross-section, and a holder for the substance to be grated connected with the grating-plate, substantially as shown and described, whereby the parts are rendered capable of being moved longitudinally, transversely, and angularly, one in relation to the other.

2. A grater comprising a curved grating-plate, and a frame or holder for the material to be grated mounted thereon and moved longitudinally and transversely thereof.

3. In combination with a grater-plate having a curved form in cross-section, a frame or holder for the nut applied substantially as shown and described, whereby the parts are adapted to move both longitudinally and transversely and angularly one in relation to the other.

4. In combination with curved grating-plate A, arms C C, projecting beyond the ends thereof in a line coincident with the axis of the plate, and frame F, provided with a nut-holder and with arms G G to fit upon the arms C C, substantially as shown and described.

5. In combination with curved grater-plate A, having its edges connected by a plate B, a rod bent at it middle to form a tang D and having its ends C C projecting beyond the ends of the plates, a handle E, applied to the tang, and a nut-holding frame F, applied to the arms, substantially as shown and described.

6. In combination with curved plate A and bottom plate B, arms C C, projecting beyond the ends of the plates, a handle E, and a frame F, comprising a bar M, having down-turned ends G to fit the arms C, a housing J, having an opening in one side and adapted to cover an opening I, formed in the bar, and a spring-pressed follower mounted in the housing.

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