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MEAT GRINDER HAVING HANDLE ADAPTED TO TURN BOTH THE FEED SCREW AND THE CLAMP SCREW

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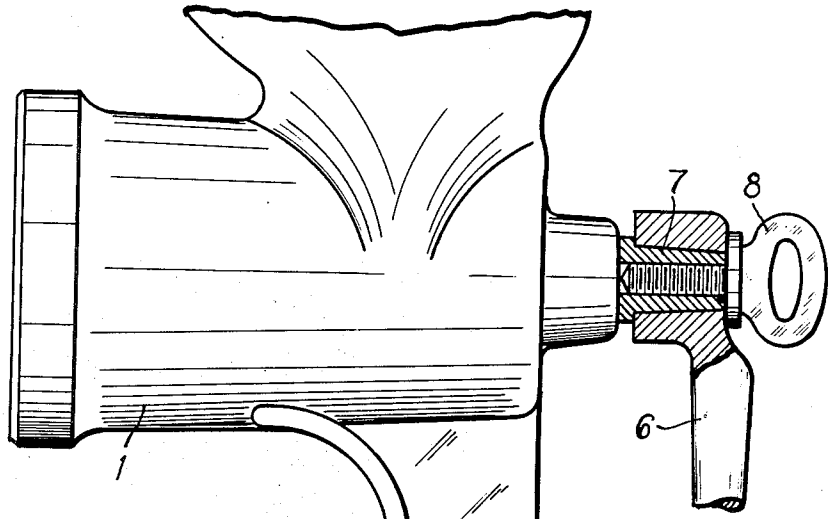


FIG.1

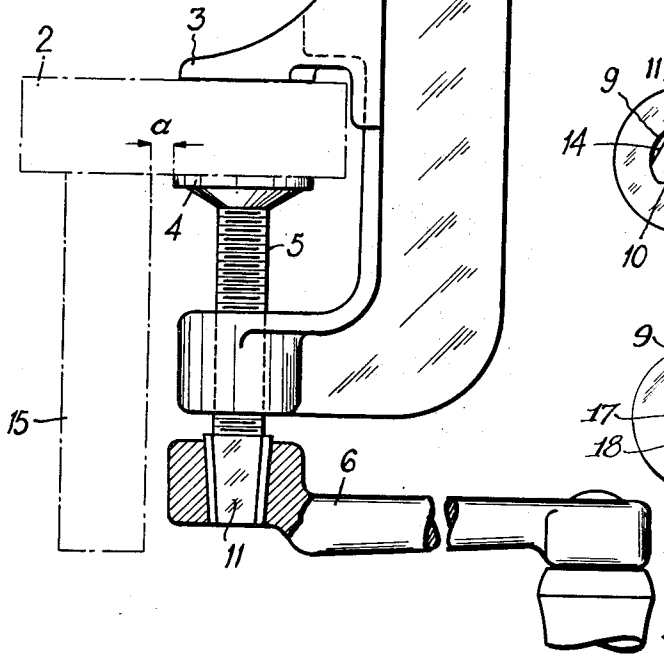


FIG.2

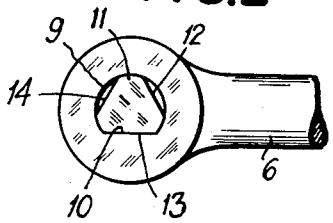
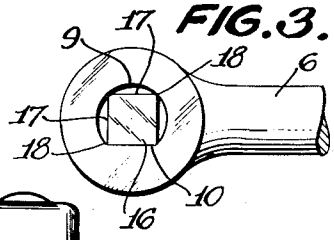


FIG.3.



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MEAT GRINDER HAVING HANDLE ADAPTED TO TURN BOTH THE FEED SCREW AND THE CLAMP SCREW

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1 Claim. (Cl. 146—182)

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The invention is for improvements in and relating to hand mills of the type used in households, as exemplified by meat mincing mills, corn and maize mills, and the like. Mills of this type have a handle removably and non-rotatably mounted on the head of a member, rotatably mounted in the housing of the mill, usually a feed screw, to be turned by the handle. They further have a clamping screw which at one end carries a clamping disc and at the other end a wing nut, the clamping screw being used for clamping the mill to the plate of a table or the like.

The wing nut must not be too small as otherwise too much force is required for the clamping of the mill to the plate of the table. On the other hand, that part of the table which projects from the frame of the table and which is available for the clamping of the mill is often so narrow that the screwing in or screwing out of the clamping screw by means of the wing nut meets with considerable difficulty. The object of the invention is to overcome this difficulty and provide means whereby the clamping of a hand mill of the type referred to is considerably facilitated. According to the invention this is accomplished by adapting the clamping screw for mounting the handle thereon for turning the clamping screw. In many cases the construction of the table will be such as to prevent turning of the handle, when mounted on the clamping screw, through a complete turn, and in a preferred embodiment of the invention the arrangement is therefore such that the handle can be attached to the clamping screw in different, angularly displaced positions, for example two, three or four positions. By shifting the handle from one position to another on the clamping screw the latter can be tightened or loosened by turning the handle for each change of position through an angle of 180° or less. In most cases it will be preferable to provide for a turning of the handle of less than 180°. In a standard type of mill of the kind referred to the head of the handle has a hole of such shape as in section to be circumscribed by part of a circle and a straight line. The clamping screw may then have a head having three substantially plane surfaces substantially parallel with the axis of the clamping screw, the hole in the head of the handle fitting non-rotatably on the head of the clamping screw, so that the handle can be placed on the clamping screw in three different, angularly displaced positions. Thus each operation of detaching

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the handle from the clamping screw, replacing it thereon in a different position and turning it provides for a turning of the clamping screw through an angle of about 120°. It is also a practical proposition, the hole in the head of the handle having the shape referred to, to provide the head of the clamping screw with four plane surfaces. In this case, for each shifting of the handle on the head of the clamping screw the latter will be turned through an angle of about 90°, unless there is space enough for turning the handle 180° for each shifting thereof on the head of the clamping screw.

Although three or four surfaces are the most practical propositions it is of course also possible to use more than four surfaces. It will also be understood that many other embodiments are possible within the scope of the invention as long as the clamping screw is made for connecting the handle thereto for turning the clamping screw. The embodiments described above are, however, important, as for example most meat mincing mills are made to a standard pattern, the hole in the head of the handle having the shape described, and it is therefore preferable that the head of the clamping screw is made to fit the standard handle.

One advantage of the invention is that the mill can be clamped to a table even when the part of the plate projecting from the frame of the table is comparatively narrow. This is because the head of the handle can be made considerably smaller than a wing nut. Another advantage is that greater power is available for tightening or loosening the clamping screw owing to the greater lever action of the handle. A further advantage is that the cost of manufacture can be reduced as a wing nut is no longer required and as the shaping of the clamping screw is simplified.

One embodiment of the invention will be described in the following in detail with reference to the accompanying drawing. In the drawing Fig. 1 shows an elevation of a meat mincing mill according to the invention attached to the plate of a table, Fig. 2 shows an end view of the clamping screw and the handle attached thereto as seen from the underside, and Fig. 3 is a view similar to Fig. 2 showing a modified form of clamping head screw.

The mill 1 is intended to be clamped to the projecting portion of a table plate 2, and for this purpose is provided with a projecting shoulder 3 for cooperation with a clamping disc 4 on the clamping screw 5. A handle 6 can

be mounted on the head 7 of the member (a feed screw, not shown in the drawing) to be turned by the handle and is secured to the head by means of a screw 8. The hole in the handle has the shape shown in Fig. 2, i. e. in section is circumscribed by part of a circle 9 and a straight line 10, and the head 7 in section has the same shape, so that a non-rotatable connection is formed.

According to the invention the head 11 of the clamping screw has three plane surfaces 12, 13 and 14, all at approximately the same distance from the centre line of the clamping screw as the plane surface 10 of the handle. The adjacent sides of the plane surfaces 12, 13, and 14 (Fig. 2) are connected by curved corner portions 11'. Thus, it will be seen that one of the plane surfaces such as 13, contacts with the straight side or surface 10 of the wall in the opening of the handle 6, and coacts with the spaced corner portions 11' to lock the handle to the head 11 when the parts are assembled. The hole in the handle fits on the head 11, and the handle can therefore be used for turning the clamping screw. As the handle fits on the head 11 in three different positions, angularly displaced by 120°, the handle can always be placed on the clamping screw in a position in which it is not interfered with by the frame 15 of the table. The length of the handle will enable considerable force to be exerted in the operation of clamping the mill to the table or removing it therefrom. It will also be observed that the distance a between the inner edge of the clamping disc 4 and the frame 15 of the table can be comparatively small, so that the mill without difficulty can be clamped to a table when there would not be room enough for a wing nut.

It will easily be seen that instead of the three surfaces 12, 13 and 14 the head 11 of the clamping screw may be provided with four similar plane surfaces, the dimensions of the head of the clamping screw also in this case being such that it will fit snugly in the hole 9 of the head of the handle. The advantage of this latter modification is that such a square head is easily made by drop-forging or similar operations. As shown in Figure 3, the square head 16 has four plane or straight sides 17 with adjacent sides connected by the curved corner portions 18, so that one of these sides engages the straight side of the wall of the opening in the handle, and coacts with the spaced corner portions 18 to non-rotatably connect the handle to the head 11 when the parts are assembled.

What I claim is:

A household hand mill having a feed screw head, said head having a conical surface with a flat portion therealong, an operating handle having an opening therethrough of conical shape with a flat surface mating said head surface, and a clamping screw operatively associated with said mill and having a head portion of polygonal cross section adapted to fit in the opening of said handle and having a plurality of flat faces one of which may engage the flat face of said handle opening.

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