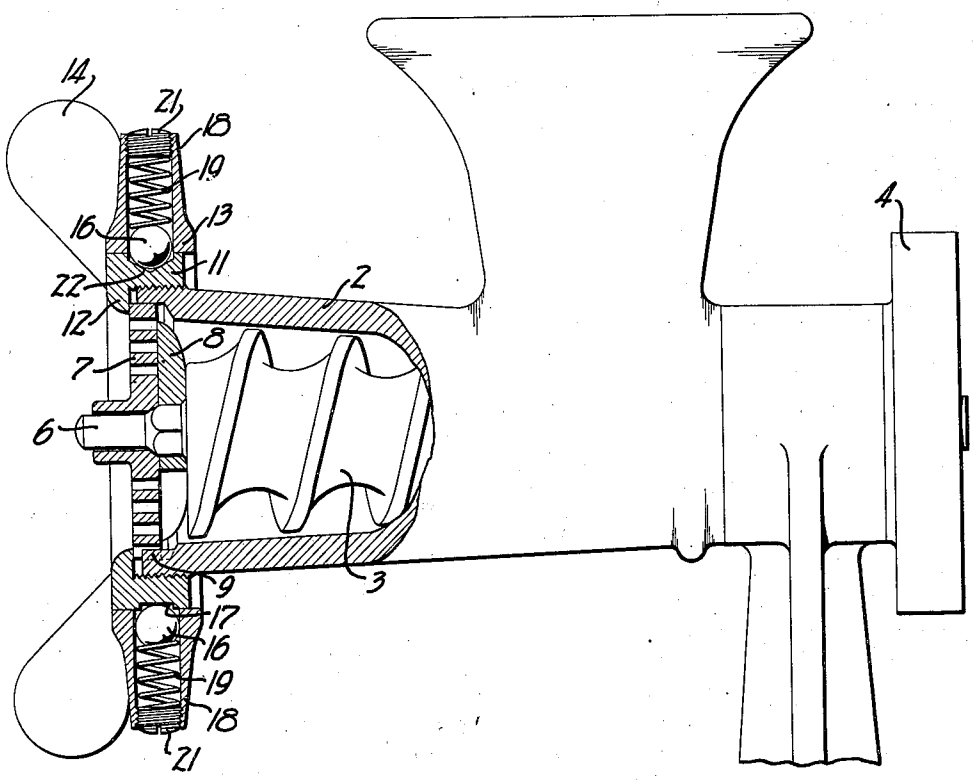
Jan. 25, 1938. G. J. FEDERIGHI 2,106,319

HANDWHEEL FOR GRINDERS

Filed May 4, 1936

Fig. 1



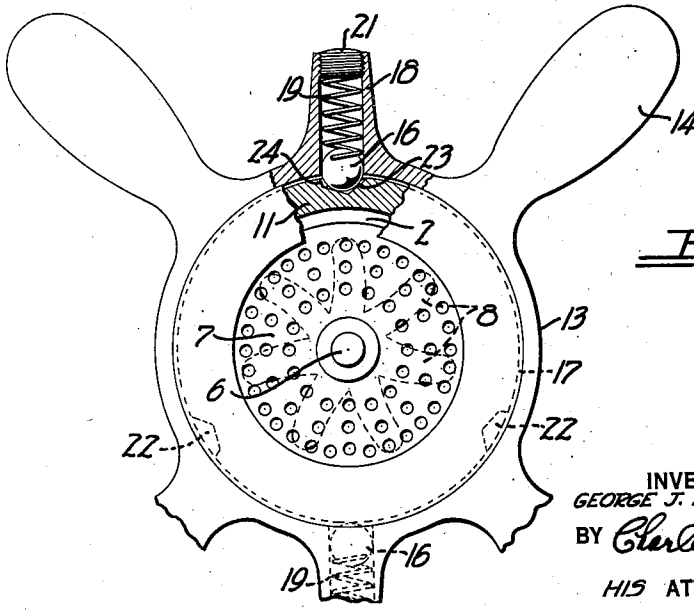


Fig. 2

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HANDWHEEL FOR GRINDERS

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3 Claims. (Cl. 146—189)

My invention relates to handwheels, such as used for applying pressure to the apertured face plates of grinders; and the broad object of the invention is to provide a handwheel which applies a predetermined pressure to the plate.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of my invention. It is to be understood that I do not limit myself to this disclosure of species of my invention, as I may adopt variant embodiments thereof within the scope of the claims.

Referring to the drawing:

Figure 1 is a side view, partly in section and partly in elevation, showing a grinder embodying the improvements of my invention; and

Figure 2 is a front view looking at the handwheel, also partly in section and partly in elevation.

In terms of broad inclusion, the handwheel of my invention is designed to apply a predetermined adjusted pressure on an element, such as a face plate of a grinder; and comprises a threaded ring for pressing against the element, a manually turnable ring rotatably mounted on the pressure ring, and means for releasably holding the rings against relative rotation when the manually turnable ring is rotated in one direction and for positively locking the rings together when the manually turnable ring is rotated in the opposite direction.

In greater detail, and referring to the drawing, the handwheel of my invention is shown in conjunction with a grinder comprising a housing 2 enclosing a feed screw 3 rotated by a suitable pulley 4. The forward end of the feed screw has a reduced shaft portion 6 journaled in an apertured face plate 7, and also carries a series of knife blades 8 fixed for rotation with the screw and interposed between the latter and the face plate 7.

Face plate 7 is slidably mounted in the end of the housing and also on the stub shaft 6 of the feed screw, so that when the elements are assembled the plate 7 may be pressed against the knife blades 8. The plate is held against rotation by a lug 9 on the housing engaging a suitable slot in the periphery of the plate. By this arrangement the knives 8 wipe over the face of the apertured plate to effect the desired cutting action.

In such a grinder it is very important to have the plate 7 pressing just the proper amount against the knife blades 8. If not enough pressure is applied the blades do not cut properly, and if too much pressure is appplied the blades tend to cut into the plate, ruining both the knives and plate. In order to insure the proper pressure, I provide a handwheel which places an adjusted pressure on the face plate.

The handwheel comprises an inner ring 11 threaded on the housing 2 and having a flange 12 for pressing against the face plate 7. This ring therefore applies a certain pressure on the face plate, depending upon how tightly the ring is threaded on the housing. A manually turnable ring 13 having handles 14 is rotatably mounted on the pressure ring 11, and is connected to the latter by a pair of locking elements or balls 16 running in a peripheral groove 17 provided in the pressure ring.

Balls 16 are slidably mounted in radially positioned hollow bosses 18 formed on the opposite sides of the manually turnable ring 13, and are pressed toward the pressure ring 11 by springs 19. The spring pressure on the balls is adjusted by plugs 21 threaded in the ends of the bosses 18. In order to lock the rings together a plurality of sockets 22, say three, are provided in the peripheral portions of the pressure ring 11, into which the balls 16 may seat.

These sockets are cut at an angle into the pressure ring to provide an inclined forward wall 23 and an upright back wall 24. See Figure 2. The action of the ball and socket is to hold the rings together, thereby allowing the two-part handwheel to be threaded on the housing by turning the handles 14. When the pressure ring 11 tightens up on the face plate 7 however, the inclined wall 23 of the socket tends to back out or retract the ball 16; and when a predetermined pressure has been applied, depending on the resistance offered by spring 19, the ball 16 will be forced out of its socket and added rotation of handles 14 will have no further effect.

By this arrangement a predetermined adjusted pressure is always applied to the face plate 7, and too great or too little a pressure is avoided. When it is desired to remove the plate it is only necessary to turn back the handles 14. A positive lock for the elements, in reverse, is provided by the upright wall 24 of the socket. This wall engages the ball 16 and prevents the latter from being retracted when the handles 14 are turned counter-clockwise to unscrew the pressure ring as viewed in Figure 2.

I claim:

1. A handwheel for applying a predetermined pressure to an element, comprising a threaded ring for pressing against the element, a manually turnable ring rotatably mounted on the pressure

ring, said pressure ring having a socket, an element carried by the manually turnable ring and adapted to engage said socket, and a spring for pressing said element into the socket, said socket having an inclined wall for retracting the spring pressed element when the manually turnable ring is rotated in one direction and having an upright wall to prevent retraction of the element when the manually turnable ring is rotated in the opposite direction.

2. In a grinder, a housing, a feed screw in the housing, a knife mounted for rotation on the end of the screw, an apertured plate slidably mounted ahead of the knife, a ring threaded on the housing for pressing against the plate, a manually turnable ring rotatably mounted on the pressure ring, said pressure ring having a socket, an element carried by the manually turnable ring and adapted to engage said socket, and a spring for pressing said element into the socket, said socket having an inclined wall for retracting the spring pressed element when the manually turnable ring is rotated in one direction and having an upright wall to prevent retraction of the element when the manually turnable ring is rotated in the opposite direction.

3. In a grinder having a housing for holding a plate with extrusion apertures and also a rotatable knife against which the plate presses for wiping the inside of said plate, the combination of a handwheel for applying a predetermined pressure between the plate and knife and comprising a ring threaded on the housing and pressing against the plate, a manually turnable ring rotatably mounted on the first ring, and means releasable under pressure for yieldably holding the rings against relative rotation to screw up the pressure ring until a predetermined pressure is applied between said plate and knife when the manually turnable ring is rotated.

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