Oct. 13, 1931. G. E. SMITH 1,827,270

GRINDING WHEEL GUARD

Filed Sept. 13, 1929

Fig. 1.

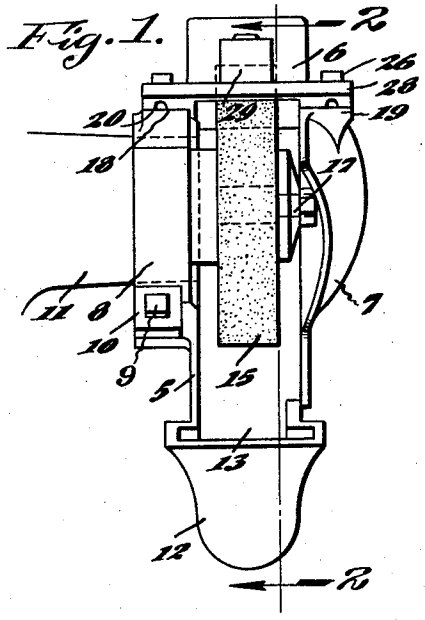
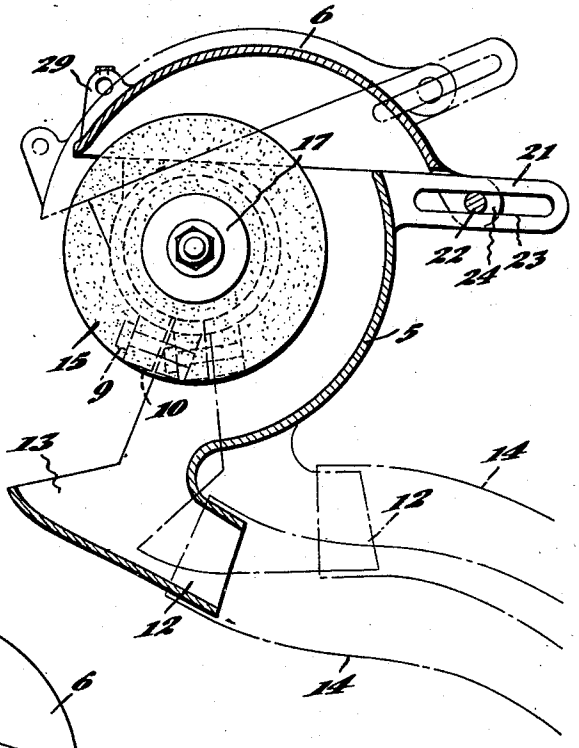


Fig. 2.



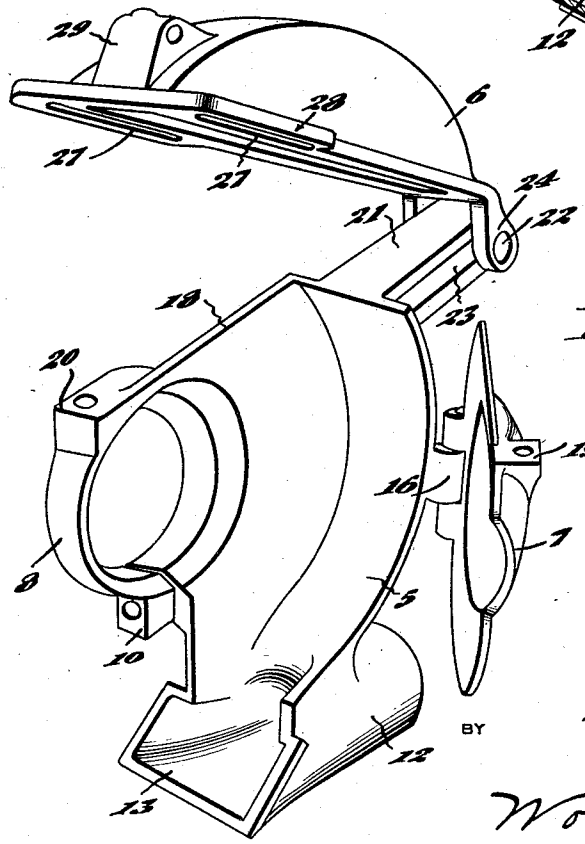


Fig. 3.

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UNITED STATES PATENT OFFICE

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GRINDING WHEEL GUARD

Application filed September 13, 1929. Serial No. 392,392.

This invention relates to grinder appliances and is particularly directed to a guard or hood for use on grinders, the guard having features of adjustability and adapted to enclose the grinding or emery wheel for the purpose of preventing injury to the worker, and for the proper collection of the dust, grindings, etc.

The guard of the present invention is in the nature of a safety device which completely protects the worker by efficiently housing the wheel to conform with all the requirements of the safety code without loss of efficiency or interference with the application of the articles to be ground to the wheel.

It is an object of this invention to provide a closure or guard for a grinding wheel which is conveniently and adjustably attached to the frame of the grinder. The guard is designed for rotative adjustment concentrically with the wheel for disposing the opening, through which the articles to be ground are applied, at the proper angle and elevation.

It is another object of this invention to provide a wheel guard of the above nature which is adjustable toward and from the working side of the wheel periphery to compensate for the wear of the grinding wheel and for disposing the guard in proximity to the wheel adjacent the point where the articles are applied.

It is another object of this invention to provide a guard arranged so as to efficiently direct the dust and grinding accumulation and flying particles into an exhaust duct, the connection of which duct is adjustable relative to the wheel.

It is another object of this invention to provide a guard having a door, which door, in combination with the adjustable upper section of the guard, permits the removal and replacement of grinder wheels without moving the entire guard from the grinder.

Other objects and advantages relate to the general construction of the device and will be apparent from the description of the accompanying drawings, in which:

Figure 1 is a front view of the guard in a position on the frame or casing of a grinder, the guard enclosing the wheel, this view being fragmentary of the grinder.

Figure 2 is a sectional view taken on line 2—2, Figure 1, illustrating the fabrication and form of the guard.

Figure 3 is a perspective view of the guard illustrating the cap or adjustable section thereof swung upwardly and showing the door slightly open.

The device comprises, in general, a main casing 5 attachable to the frame of the grinder for surrounding the lower portion or majority of the grinding wheel 15, a cap 6 adjustably mounted on the main casing for adjustment tangentially of the grinding wheel relative to the peripheral surface thereof and a door 7 hinged to the main casing and opening endwise or swinging from an axial position relative to the grinding wheel.

Referring to the drawings and describing a particular embodiment of the invention in detail, the main casing 5 includes a split ring portion 8 extending from the inner side thereof, a clamping or draw bolt 9 traversing the ears 10 of the ring portion. The ring portion 8 is adapted to encircle the extending end of the hub 11 of the grinder frame adjacent the inner face of the grinding wheel, disposing the main portion of the casing about the rear and lower sides of the grinding wheel.

A snout 12 is provided, integrally formed with the casing and depending from the lower portion thereof, this snout extending from a throat 13, which throat is toward the open side of the casing and below the grinding point. Any sort of flexible conduit, shown in dot and dash lines at 14, may be attached to the snout which is directed rearwardly for conveying the grindings, dust, abrasive, etc., from the vicinity of the operator. A suction device may be provided at the end of the hose for forcibly removing the flying particles within the guard or hood.

The door 7 is hinged to the main casing at one side thereof as at 16, this door being of bowl shape to clear the hub 17 of the grinding wheel and straight cut across its top in the same plane with the straight upper edge 18 of the main guard casings. Lugs 19, 20 are

provided, one, namely, 19 extending outwardly from the door, and the other, namely 20, extending outwardly from the casing 5, these lugs having their upper surfaces flush with the straight upper edges of the door and casing respectively. In the same plane with the lugs and straight edge of the door, a rearwardly extending surface is provided as the top of a lug 21 having an elongated slot therein. The cover or adjustable section 6 of the guard is supported on the surfaces just described and has an adjustable and sliding hinge connection to the casing by virtue of the following arrangement.

A hinge bolt 22 for a rotative connection of the cover plate to the casing traverses the elongated slot 23 of the casing and is secured in spaced ears 24 extending downwardly from the cap. The lugs 19, 20 of the casing are provided with screw-threaded bores into which are screwed clamping screws 26 traversing elongated slots 27 in a horizontal flange 28 of the cover plate. All the slots mentioned are disposed in parallelism for permitting sliding motion of the cover plate across the top of the casing, the rear bolt providing the hinge.

A lug 29 is provided in the outer periphery of the cover toward the forward end thereof, this lug having a bore therethrough for mounting the holder for an eye shield (not shown) adapted to transparently cover the point at which the work is being applied.

The manipulation of the guard is as follows:

Assuming that it is desired to place the entire guard on the machine, it is necessary to remove the grinding wheel. The guard is slid as a unit onto the end of the bearing extension of the grinder frame, and clamped thereto by means of the draw bolt in the split ring. The grinding wheel is placed in position on the driving shaft with the cover lifted and the door swung back as illustrated in the perspective view. The door is then swung shut and the cover plate slid on its supporting surface until its forward edge is properly spaced from the periphery of the grinding wheel, whereupon the bolts traversing the two forward slots are tightened, the hinge bolt being set in position for free swinging movement of the cap.

As wearing of the wheel takes place, the cover is moved inwardly. The entire guard is rotatably adjusted for properly disposing the open side of the guard for efficient application of the work to the surface of the grinding wheel, this being done after loosening the clamping bolt on the split ring portion. The exhaust passageway or snout may be at any point inasmuch as a flexible hose is used.

Having described my invention, I claim:

1. In combination with a grinding wheel of a grinder, a cover for the grinding wheel, comprising, a main casing mounted on the frame of the grinder concentric to the grinding wheel for rotative adjustment relative thereto, and a one-piece cap hinged on the main casing for enclosing the upper portion of the wheel and having its front edge adjustable toward and from the peripheral surface of the grinding wheel, said adjustment movement of the cap adapted to be imparted entirely independent of the hinged movement thereof.

2. A grinder wheel guard, comprising, a main casing having its forward side open, and a snout formed integral therewith extending from the lower rear side, said casing of sectional form, the upper section thereof hinged to the lower section for swinging movement away from the lower section for uncovering the grinder wheel and adjustable transversely to the axis of grinder wheel rotation for spacing the forward end of the upper section relative to the grinder wheel periphery, and a door swinging outwardly from the end face of the casing.

3. A grinder wheel guard, comprising, a main casing having a split ring attaching portion at one side, and a door hinged at the other side, a cover slidably mounted on the top surface of the main casing, said cover slidably hinged to the main casing and providing flanges at its forward end, and attaching means traversing said flanges and entering said main casing for securing the cap in position on the upper surface of the casing.

In witness whereof, I hereunto subscribe my name.

GEORGE E. SMITH.