W. H. SUMBLING.

COMBINED GRINDING WHEEL GUARD AND REST.

APPLICATION FILED FEB. 8, 1919.

1,332,009.

Patented Feb. 24, 1920.

2 SHEETS—SHEET 1.

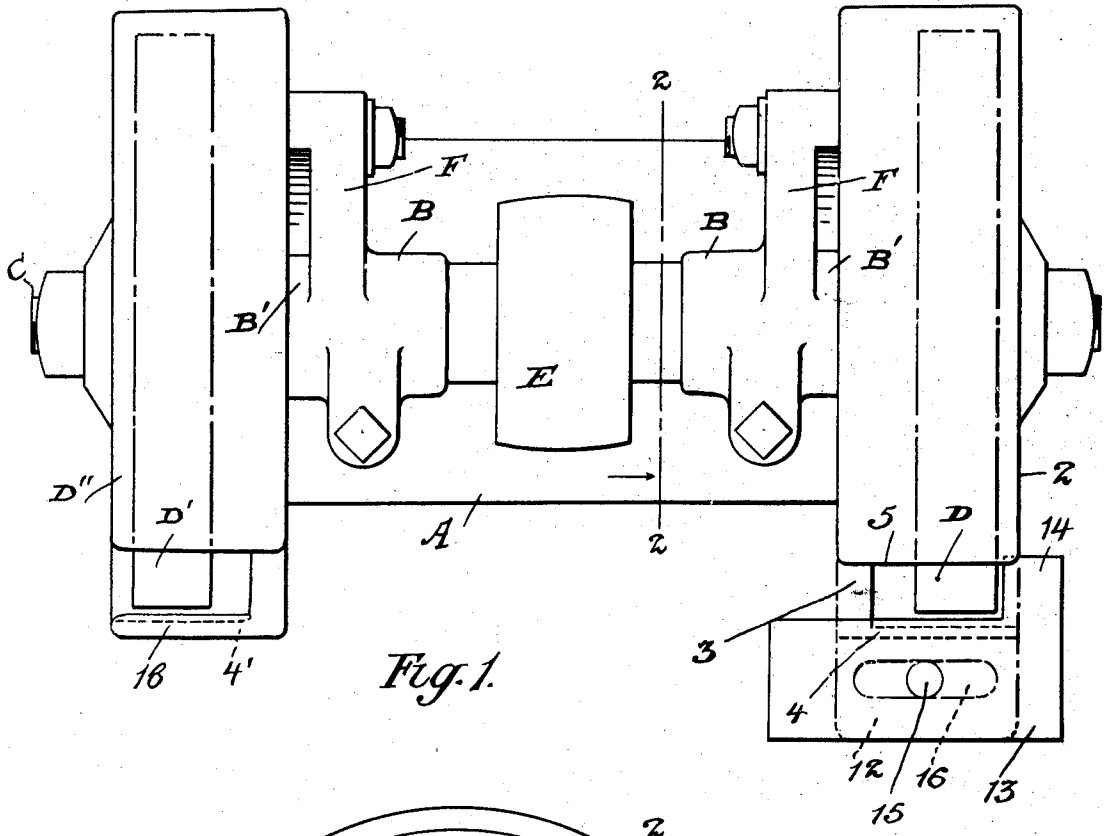


Fig. 1.

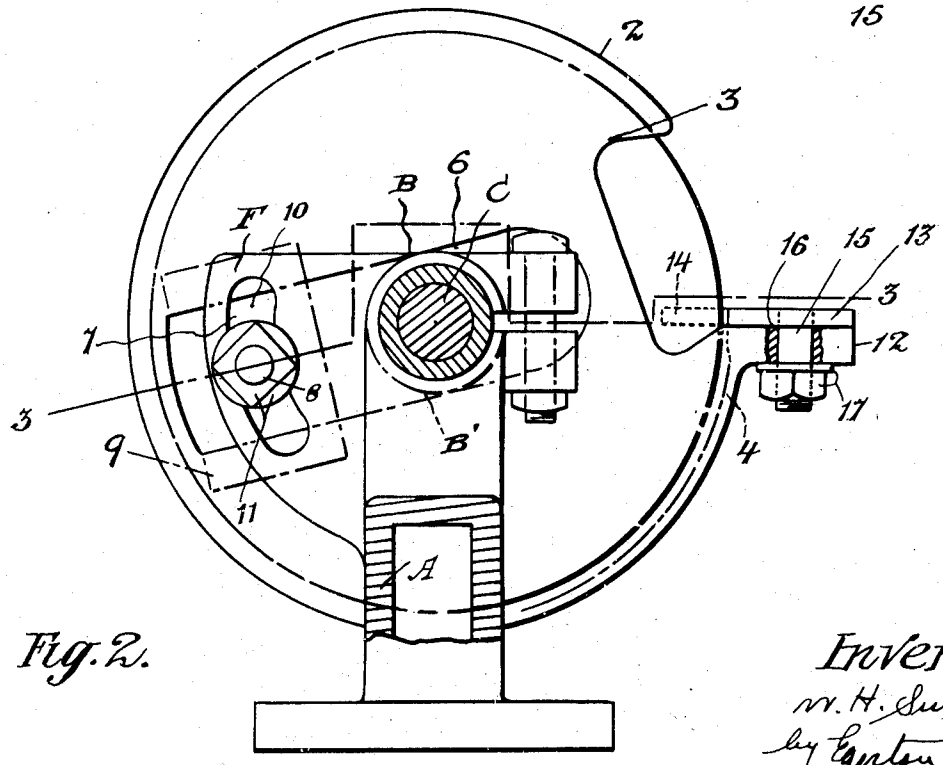


Fig. 2.

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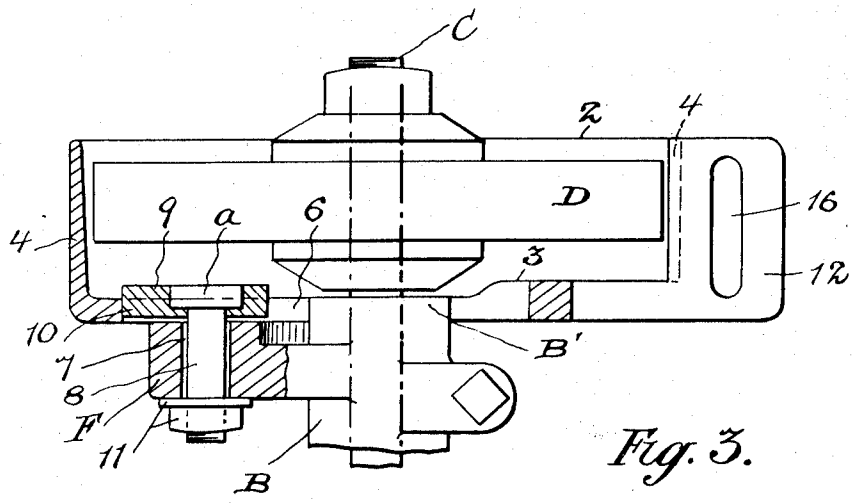


Fig. 3.

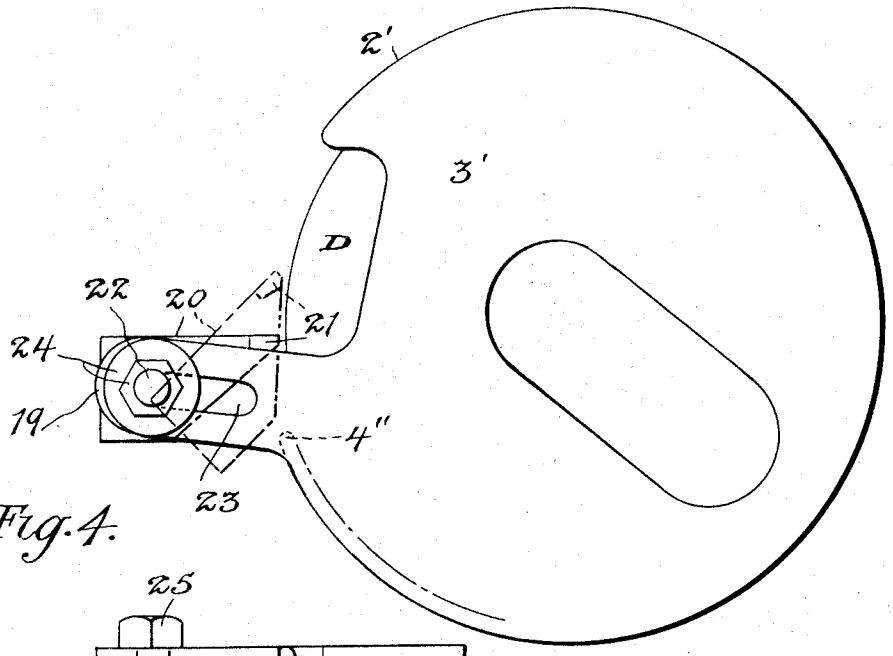


Fig. 4.

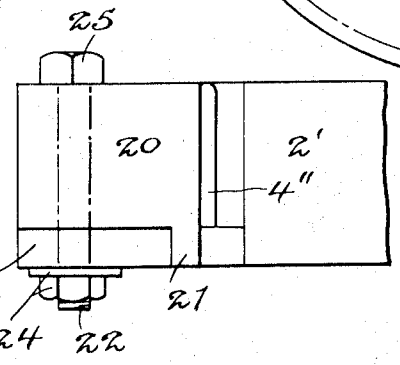


Fig. 5.

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UNITED STATES PATENT OFFICE.

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COMBINED GRINDING-WHEEL GUARD AND REST.

1,332,009. Specification of Letters Patent. Patented Feb. 24, 1920.

Application filed February 8, 1919. Serial No. 275,687.

To all whom it may concern:

Be it known that I, WILLIAM HENRY SUMBLING, of the city of Toronto, county of York, Province of Ontario, Dominion of Canada, a subject of the King of Great Britain, have invented certain new and useful Improvements in Combined Grinding-Wheel Guards and Rests, of which the following is a specification.

My invention relates to improvements in combined grinding-wheel guards and rests, and the object of my invention is to combine with a grinding-wheel guard, a rest in the sense that the said guard supports the said rest. Several disclosures within my invention will be hereinafter particularly set forth, and what I claim as new will be pointed out in the claims forming part of this specification.

Figure 1 is a plan view of a grinder showing in elevation the preferred form of rest within my invention, carried by one of the guards. Fig. 2 is a vertical cross section on the line 2—2, Fig. 1. Fig. 3 is a section substantially on the line 3—3, Fig. 2. Fig. 4 is a side elevation of a combined guard and rest within my invention, and Fig. 5 is a plan view of the rest and part of the guard illustrated in Fig. 4.

In the drawings, like characters of reference refer to the same parts.

It is well-known by one skilled in the art that it is common to attach the rests directly to the frame of the grinder. These rests support the article to be ground, and are so constructed as to be adjustable to permit of the ready manipulation of the work in hand. I have found that I can design a grinding-wheel guard with which I can combine the rest, and considerably cheapen the cost of manufacturing this class of tool, while at the same time improve the design thereof and insure firm support for the work.

In putting my invention into practice, I prefer to combine the rest with the grinding-wheel guard disclosed in my Patent 1294565, dated February 18, 1919, because this guard can be adjusted into any desired position for use, and is also adjustable to allow for the wear on the grinding wheel, while at the same time the guard is firmly and securely held in position on the frame of the tool, and this provides an ideal support for the rest.

A rest secured to, or formed a part of, the preferred type of guard, as disclosed, can be given all the adjustments that the ordinary type of rest can have.

The grinder used to illustrate my invention comprises a suitable frame A provided with suitable standards B, spaced apart, and journaled therein is an arbor C, to which is attached, in any suitable way, the grinding-wheels D and D′. Each grinding-wheel is provided with a guard, and I shall describe one of the guards only. E is the pulley for driving the arbor C.

Though my broad idea may be embodied with various types of guards, I will disclose it in combination with the guard hereinbefore identified. Secured to, or formed a part of, each of the standards B is a slotted bracket F. The guard comprises a plate 3 which supports a flange 4 within which rotates the grinding-wheel D. The flange 4 is apertured as shown at 5 to permit the work to be brought into contact with the grinding-wheel D in two directions. Formed in the plate 3 is a slot 6 of the desired length, and it will be seen upon referring to Fig. 2 particularly that the arbor C passes through said slot. To prevent the sides of the slot 6 coming in contact with the arbor C, I prefer to provide the standards B each with a boss B′ (see Fig. 3) which extends preferably through to the inner side of the plate 3. Though I do not confine myself to using this boss, still the use thereof is preferred because I can keep the plate 3 out of contact with the said arbor, though at all times this plate is adjusted around the longitudinal axis of the said arbor. 7 is a slot formed in the bracket F, and extending through this slot is a bolt 8 which carries at its head-provided end, a plate 9, which overhangs the sides of the slot 6 as shown in Fig. 2. This plate really performs the function of a washer, and it is provided with a breast 10, projecting therebeyond, and into the slot 6. This breast does not project through to the opposite side of the slot, so that the plate 9 will not come in contact with the inner side of the bracket F. By means of the washer and nut designated by the common numeral of reference 11, mounted on the outer threaded end of the bolt 8, and acting against the outer side of the bracket F, the guard 2 is clamped firmly in adjusted position.

The slot 7 is preferably curved as shown, particularly in Fig. 2, though the shape thereof is not material.

By retracting the nut 11, the guard 2 can be released and adjusted by means of this slot 6 on the boss B′ into any desired position within the range provided by the construction disclosed. The preferred form of rest within my invention comprises a flange 12 secured to, or formed a part of, the flange 4, and located at the lower end of the aperture 5. The work to be ground can be supported upon the flange 12, as will be readily understood. In order to support the work so as to utilize one side of the wheel D when grinding, I provide a plate 13 which carries a lip 14 which overlaps the side of the wheel D, so as to provide a support laterally of the wheel D as before mentioned. This plate F is adjustable in respect of the flange 12, and a suitable means for allowing for the adjustment of this plate and the securing thereof fixedly in adjusted position comprises the post 15 which extends through a slot 16 formed in the flange 12. A washer and nut designated by the common numeral of reference 17, carried by the lower threaded end of the post 15, and operating against the underside of the flange 12, provides the necessary means to clamp the said plate 13 in adjusted position in co-action with the flange 12.

By retracting the nut 17, the plate 13 can be adjusted by the post 15. Obviously the said rest can be bodily moved toward or away from the wheel D, by adjusting the guard 2.

In some classes of work to be ground, for instance a tool with a handle or grip positioned near the cutting end, the style of rest just described will be too deep. Therefore, I have shown the guard D″, (Fig. 1) provided with a shallow rest in the form of a flange 18 which is formed by thickening the flange 4′ on its inner side. This type of rest will readily permit of the supporting of the class of tool before set forth so as to readily bring it into contact with the grinding-wheel.

A further modification within my invention is disclosed in Figs. 4 and 5 in which I show the plate 3′ as provided with an arm 19. This arm projects forwardly beyond the guard 2′, and provides a bracket which adjustably supports the rest 20. This rest is provided with a lip 21, which, when the rest is in the position illustrated by full lines in Figs. 4 and 5, rests upon the upper edge of the arm or bracket 19. Passing through the said rest is a bolt 22, which extends through a slot 23 formed in the arm or bracket 19, and substantially longitudinally thereof. By means of the nut and washer, designated by the common numeral of reference 24, co-acting with the head 25 of the bolt 22, the rest 20 can be supported in the desired position.

In this embodiment of my invention, it will be observed that the flange of the guard, as shown at 4″, is positioned well below the top of the arm or bracket 19 so as not to interfere with the manipulation of the rest 20.

Provided the guard is mounted so as to be firmly supported in adjusted position, a rest may be combined therewith and used with complete confidence by workmen using the said class of tool.

It will, of course, be understood that I do not necessarily provide the flange 12 with the slot 16, and, therefore, may dispense with the plate 13 without going outside the scope of my invention.

While I have described several embodiments within my invention, it must be understood that the principle of the invention may be embodied in many other different forms, and I desire not to be limited beyond the requirements of the prior art, and the terms of my claims.

Claims:

1. In a grinding machine, the combination with a standard thereof; an arbor journaled in said standard, and a grinding-wheel carried by said arbor, of a guard comprising a plate provided with a slot through which extends said arbor; means coacting with said standard and said plate and adapted to permit said guard to be moved transversely of said arbor and circumferentially of said wheel and held firmly in adjusted position; an apertured flange carried by said plate and projecting beyond one side thereof so as to overhang said grinding wheel, and a rest to support the article to be ground, carried by said guard.

2. In a grinding machine, the combination with a standard thereof; an arbor journaled in said standard, and a grinding-wheel carried by said arbor, of a guard comprising a plate provided with a slot through which extends said arbor; means co-acting with said standard and said plate and adapted to permit said guard to be moved transversely of said arbor and circumferentially of said wheel and held firmly in adjusted position; an apertured flange carried by said plate and projecting beyond one side thereof so as to overhang said grinding-wheel, and a rest to support the article to be ground carried by said flange and located at the lower end of said aperture.

3. In a grinding machine, the combination with a standard thereof; an arbor journaled in said standard, and a grinding-wheel carried by said arbor, of a guard comprising a plate provided with a slot through which extends said arbor; means co-acting with said standard and said plate and adapted to permit said guard to be moved transversely of said arbor and circumferentially of said wheel and held firmly in adjusted position; an apertured flange carried by said plate

and projecting beyond one side thereof so as to overhang said grinding-wheel, and a rest to support the article to be ground carried by said flange and located at the lower end of said aperture, and projecting beyond the front edge of said guard.

4. In a grinding machine, the combination with a standard thereof; an arbor journaled in said standard, and a grinding-wheel carried by said arbor, of a guard comprising a plate provided with a slot through which extends said arbor; means co-acting with said standard and said plate and adapted to permit said guard to be moved transversely of said arbor and circumferentially of said wheel and held firmly in adjusted position; an apertured flange carried by said plate and projecting beyond one side thereof so as to overhang said grinding-wheel; a supporting member carried by said flange and located at the lower end of said aperture and projecting beyond the front edge of said guard; a rest supported by said supporting member and adapted to support the work to be ground so as to utilize the side and front of the grinding-wheel, and means co-acting with said member and rest whereby the rest may be adjusted on said member.

5. In a grinding-machine, the combination with a standard thereof; an arbor journaled in said standard, and a grinding-wheel carried by said arbor, of a boss forming part of said standard, and projecting beyond the outer side thereof, and through which extends said arbor; a guard comprising a plate provided with a slot through which extends said boss; means co-acting with said standard and said plate whereby while said plate may be adjusted on said boss, it will be firmly held in adjusted position; an apertured flange carried by said plate and projecting beyond one side thereof so as to overhang said grinding-wheel, and a rest to support the articles to be ground integrally formed with said flange and projecting beyond the front edge thereof at the lower end of said aperture.

6. In a grinding-machine, the combination with a grinding-wheel journaled therein, of a guard for said wheel, and provided with an aperture to permit of access to said wheel; means coupled to the frame of said machine and adapted to permit said guard to be moved transversely of said machine and circumferentially of said wheel and designed to firmly support said guard in adjusted position, and a rest to support the article to be ground, carried by said guard and conveniently located in respect of said aperture.

WILLIAM HENRY SUMBLING.