W. H. SUMBLING.

GRINDING WHEEL GUARD.

APPLICATION FILED MAY 9, 1918.

1,294,565.

Patented Feb. 18, 1919.

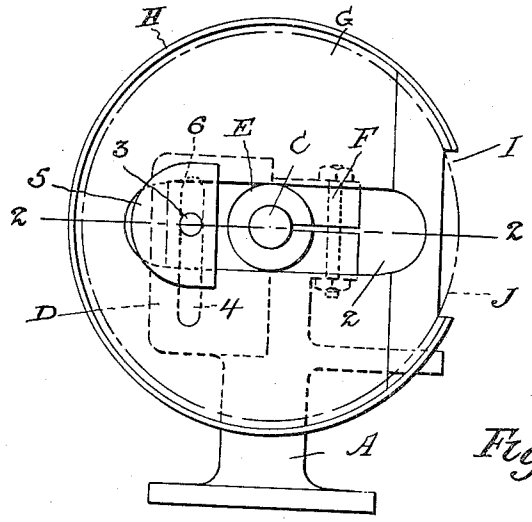


Fig. 1.

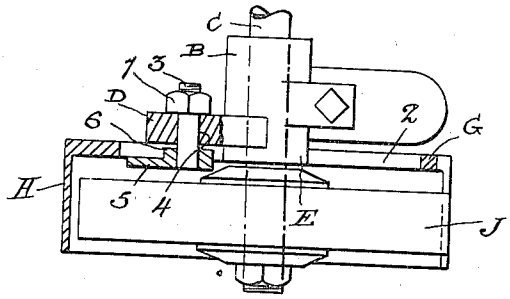


Fig. 2.

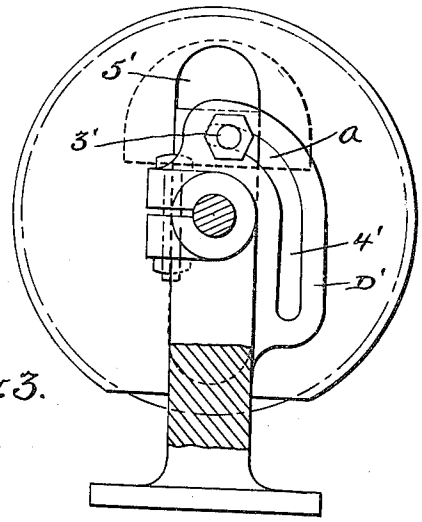


Fig. 3.

Inventor:
W. H. Sumbling
by Egerton R. [illegible]
Atty

UNITED STATES PATENT OFFICE.

WILLIAM HENRY SUMBLING, OF TORONTO, ONTARIO, CANADA.

GRINDING-WHEEL GUARD.

1,294,565. Specification of Letters Patent. Patented Feb. 18, 1919.

Application filed May 9, 1918. Serial No. 233,437.

To all whom it may concern:

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

My invention relates to improvements in grinding-wheel guards, and the object of my invention is to provide a guard of this class which can be adjusted into any desired angle for use, and which can also be adjusted according to the wear on the grinding-wheel. A still further object of my invention is to provide a guard of this class, which, while it will be strong and efficient, need not be so carefully finished in some respects, thereby enabling me to place on the market a guard at a price lower than that asked for the guards with which I am acquainted. A still further object of my invention is to relieve the arbor of all strain consequent upon the use of the guard, and to utilize a bracket integrally forming part of one or both of the standards of the grinder in order to positively lock the guard in adjusted position.

The preferred embodiment of my invention, and a modification thereof, 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 an end elevation of a grinding-machine, chiefly shown in dotted position, showing an outside elevation of my guard combined therewith. Fig. 2 is a horizontal cross section through the guard and portion of its supporting bracket on the line 2—2, Fig. 1, the remaining parts being shown in plan, and Fig. 3 is a side elevation of the inner side of one of the standards of a grinding machine, part of which is shown in section, showing a modification of the supporting bracket for the guard, which is also shown in elevation from the inner side.

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

While it is usual in this type of machine to mount two grinding-wheels, one at each end thereof, in the present disclosure I am only showing one grinding-wheel.

A is any suitable standard in the head B of which is journaled one end of the arbor C. Integrally formed with said standard, and projecting laterally thereof, is a bracket D. Also integrally formed with said standard and bracket is a boss E through which operates the arbor C. Though not essentially forming part of this invention, if desired, portion of the boss E may be split as well as portion of the head B to allow for the use of the adjusting bolt F to take up wear. The guard comprises a circular flat plate G integrally provided with a peripheral flange H projecting beyond one side thereof. This flange is apertured as shown at I so as to permit access to the grinding-wheel J mounted on the arbor C after any suitable manner, and within the flange H. Formed in the plate G is a longitudinal slot 2 of the desired length, and it will be seen, upon referring to Figs. 1 and 3 particularly, that the longitudinal axis of this slot passes horizontally through the horizontal axis of the circular plate G. The width of the slot 2 is slightly more than the diameter of the boss E so that the plate G may be placed over said boss and positioned against the bracket D as shown clearly in Fig. 2. Some means must be employed to firmly hold the guard in position in respect of the grinding-wheel J: the means used must pass through the slot 2 in order to give me a range of adjustment necessary to a commercial device of this class. My preferred means, for the purpose specified, comprises a bolt 3 which extends through a slot 4 preferably vertically formed in the bracket D. 5 is the head of the bolt 3 in the form of a plate which overhangs at all times the sides of the slot 2. The portion 6 of the head is offset so as to extend into the slot 2 and yet permit the plate 5 to be pulled tightly against the outer face of the plate G by reason of the nut 7 screwing on the threaded end of the bolt 3. By retracting the nut 7, the guard can be released and adjusted by means of its slot 2 on the boss E in any desired position within the range allowed by the construction disclosed.

Since the plate G does not come in contact with the arbor C, this arbor is not subjected to any friction therefrom, and although the said plate at all times is adjusted around the longitudinal axis of the arbor C, it is kept out of contact with this arbor by means of the boss E. It will not be necessary to machine the sides of the slot 2 in order to position the plate G over

the boss E since the guard can be cast accurately enough to effect the purpose in view.

It will be observed upon referring to Fig. 1 that the height of the offset portion 6 of the plate 5 is substantially of the width of the slot 2, thus insuring that the plate 5 at all times will overlap the sides of the slot 2.

In the modifications shown in Fig. 3, the bracket D′ is provided with a slot 4′, having a curved upper end *a*, through which extends the bolt 3′, which carries the plate 5′. This modified form of bracket permits the guard to have a wider range of adjustment than is possible with the construction disclosed in Figs. 1 and 2.

Though I prefer to use a boss E for the purpose set forth, still it is within the scope of my invention to dispense with said boss and make the width of the slot 2 sufficiently wider than the diameter of the arbor C to permit the guard to be slipped over said arbor. At all times the guard must be adjusted on the axis of the arbor C, and I prefer to keep the guard out of contact with the said arbor for the reasons before stated. Should the grinding-wheel J burst, it will be understood that since the strain against the guard would be distributed between the bolt 3 and the boss E, the fact that this boss is used will protect the arbor from possible damage.

Still further embodiments of the manner in which my guard can be mounted are possible, and I do not confine myself to the mounting means disclosed.

Claims:

1. In a grinding-machine, the combination with the standards thereof; an arbor journaled in said standards and a grinding-wheel carried by said arbor, of a bracket laterally carried by one of said standards and provided with a vertical slot extending therethrough and to one side of said arbor; a guard comprising a plate provided with a longitudinal slot into which opens the slot formed in said bracket, the axis of said longitudinal slot passing through the horizontal axis of said plate; a flange apertured at one side, carried by said plate and projecting beyond one side thereof so as to overhang said grinding-wheel; the said plate mounted by reason of its slot to have adjusting movement around the longitudinal axis of said arbor, and means operating through the slots formed in said plate and in said bracket to clamp said guard in adjusted position.

2. In a grinding-machine, the combination with the standards thereof; an arbor journaled in said standards and a grinding-wheel carried by said arbor, of a slotted bracket laterally carried by one of said standards; a boss forming part of one of said standards, through which extends said arbor. and projecting beyond the outer side of said standard; a guard comprising a plate provided with a longitudinal slot, the axis of which passes through the horizontal axis of said plate; a flange apertured at one side, carried by said plate and projecting beyond one side thereof so as to overhang said grinding-wheel; the slot in said plate being such as to permit said plate to be easily slipped over said boss, and adjustable clamping means operating through the slot in said plate and slot in said bracket whereby the position of the guard on said boss can be adjusted around the axis of said arbor, for the purpose specified.

WILLIAM HENRY SUMBLING.