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GUARD CASING FOR GRINDING MACHINES AND SUPPORT THEREFOR

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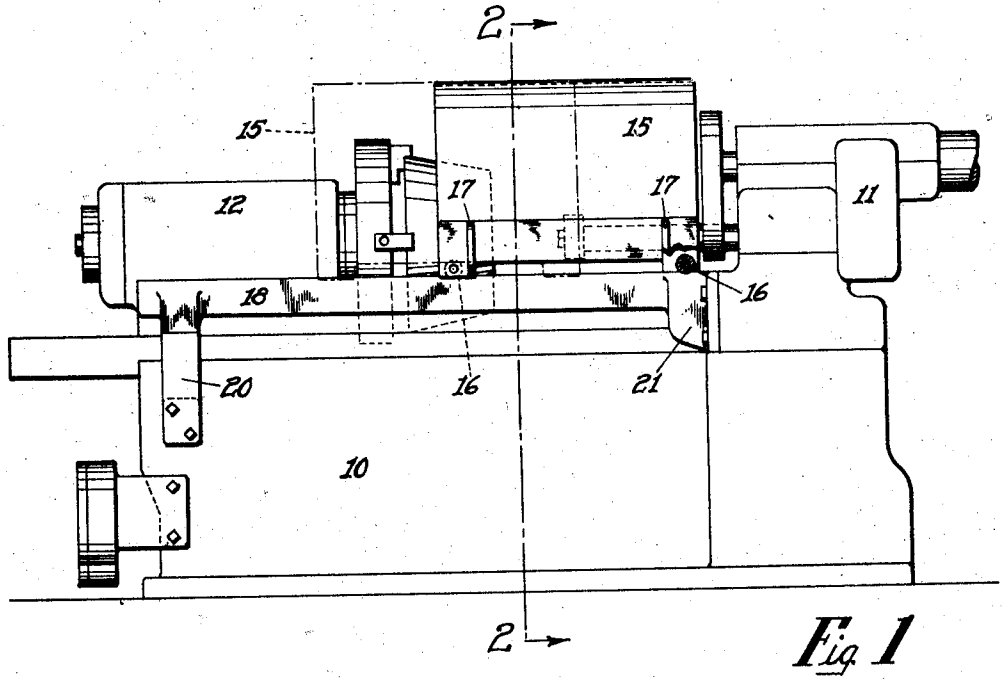


Fig. 1

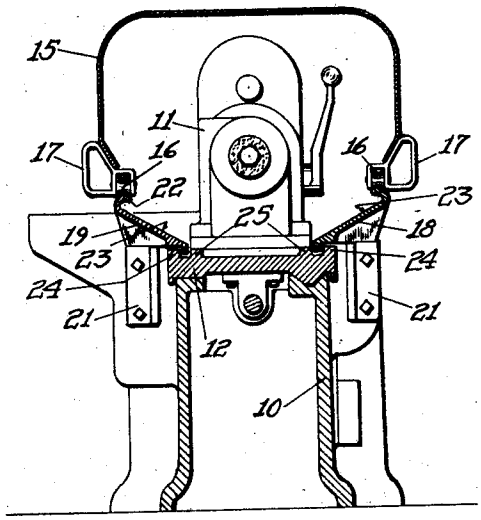


Fig. 2

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GUARD CASING FOR GRINDING MACHINES AND SUPPORT THEREFOR.

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This invention relates to a guard casing for a grinding machine or other similar machine tool, the guard being designed to protect the operator from danger or discomfort caused by flying abrasive, metal or grinding compound.

It is the object of my invention to provide an improved guard casing for such purposes, with particular reference to ease of removal of the casing from normal position to permit inspection of the work or the wheel or for other purposes. A further object of my invention is to provide an improved and efficient supporting structure for such a guard casing, said structure not only supporting the casing but supplementing the protective function thereof.

My invention further relates to certain arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawings in which

Fig. 1 is a side elevation of a grinding machine having my improved casing mounted thereon; and

Fig. 2 is a transverse sectional elevation, taken along the line 2—2 in Fig. 1.

Referring to the drawings, I have shown a grinding machine having a bed or frame 10, a wheel head 11, and a work supporting carriage 12. The work carriage 12 is preferably movable on the bed 10 toward and from the head 11 and a suitable mechanical or hydraulic operating mechanism may be provided for moving the carriage 12.

My invention relates particularly to a guard casing 15 for the wheel and work and to a supporting structure therefor. The casing 15 is shown as being of more or less semicircular section, but flattened at its upper portion. Rolls 16 and handles 17 are provided at each end of each lower edge of the casing 15 and these rolls are supported upon guard rails or flanges 18 and 19 extending along the front and rear sides of the bed 10 and work carriage 12.

The guard rails are secured in fixed position instead of being movable with the work carriage as is the usual practice. I have indicated the guard rails as having brackets 20 at their left hand ends, as viewed in Fig. 1, said brackets 20 being extended downward and bolted to the bed 10. The right hand ends of the guard rails are similarly provided with offset brackets 21 fixed to the head end of the bed 10.

Each guard rail, as shown in Fig. 2, is provided with an upwardly and inwardly projecting portion 22 for supporting the roll 16 and is also provided with a downwardly and inwardly inclined portion 23 extending over the flange edges 24 of the work carriage 12. The guard rails are also preferably provided with ribs or flanges 25 at their extreme inner edges, projecting downward between the flanges 24 of the work carriage. In this way the particles of abrasive or streams of grinding compound are kept away from the bearings of the work carriage 12 and are collected on the flanged upper surface of the work carriage, from which they may be drained or removed to any desired point.

It will be noted that the guard rails 18 and 19 extend from the wheel head 11 to the extreme opposite end of the machine, thus providing an extended support for the casing 15. The casing 15 is easily rolled along on the guard rails 18 and 19 to any desired position, so that the operator can advance or remove the heavy casing with slight effort and without lifting the casing or displacing it from the machine. As the casing does not require handling by the operator, it may be made of a more substantial construction, so that it will be better adapted to resist accidental injury and to more effectively protect the operator.

I consider it to be of special advantage that the casing is supported upon fixed guard rails which also may be of substantial construction and which are always in position for use, regardless of the position of the work carriage 12. While I have described my invention as applied to a grinding machine in which a movable work carriage is provided, it will be understood that the invention may also be used to great advantage in grinding machines where a movable wheel carriage is provided and also in many other kinds of machine tools.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed otherwise than as set forth in the claims, but what I claim is:—

1. In a grinding machine, a bed, a carriage slidable thereon, and a pair of guard rails fixed to said bed and forming protecting

flanges at each side of said bed, said guard rails being extended inwardly beyond the edges of said carriage and having depending inner edge portions positioned between upwardly projecting flanges on said carriage, and a guard casing enclosing said carriage and movable longitudinally on said guard rails toward and from operative position thereon.

2. In a grinding machine, a bed, a carriage slidable thereon, a pair of guard rails fixed to said bed and forming protecting flanges at each side of said bed, said guard rails being extended inwardly beyond the edges of said carriage, and a guard casing enclosing said carriage and mounted on said rails and movable along the same toward and from operative position thereover.

3. In a grinding machine, a bed, grinding mechanism supported thereby, a pair of guard rails fixed on said bed, and a substantially U-shaped guard casing enclosing the work and grinding mechanism and having rolls at the ends of its depending edges, said rolls resting on said guard rails and said casing being thereby easily movable longitudinally toward and from operative position over the work and grinding mechanism.

In testimony whereof I have hereunto affixed my signature.

ALDEN M. DRAKE.