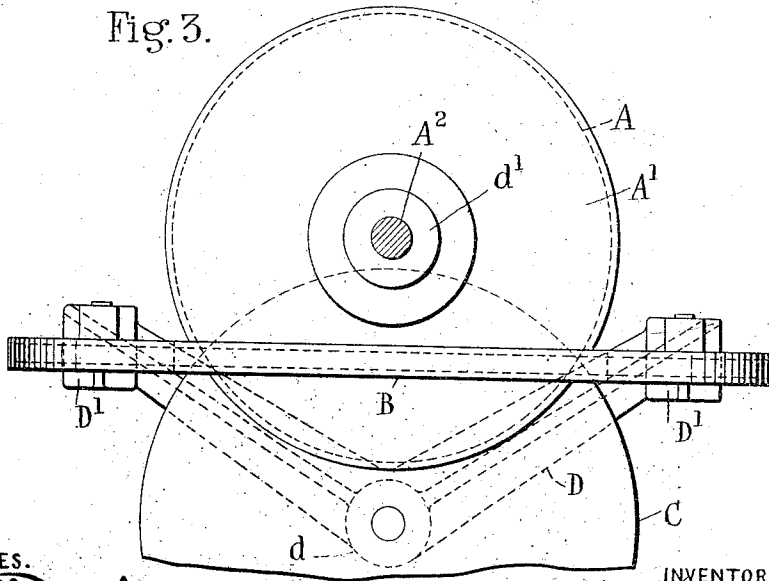
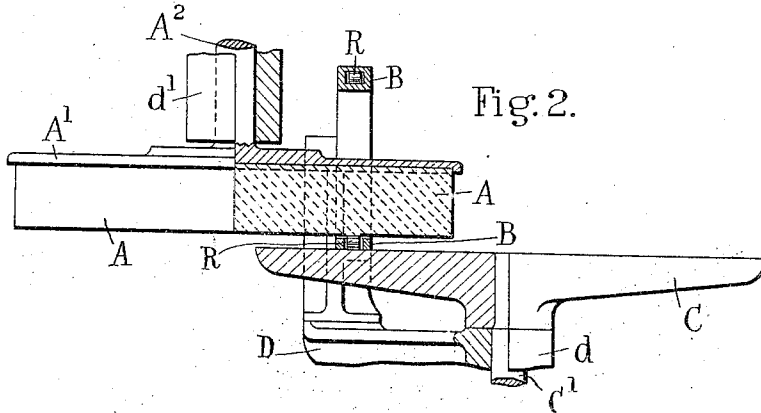
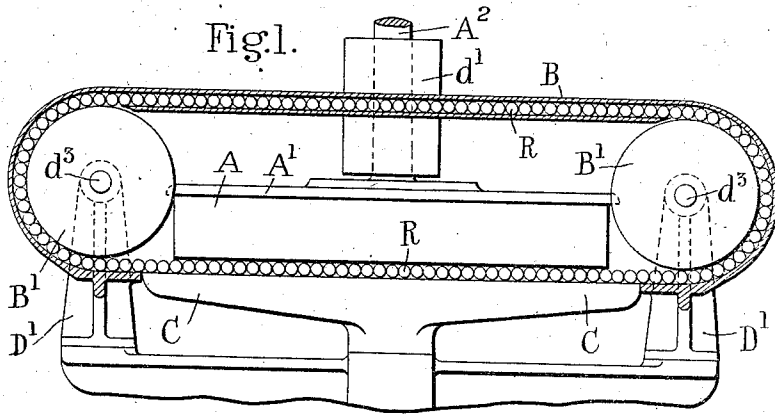


O. A. SCHMIDT.
 MACHINE FOR GRINDING ROLLERS.
 APPLICATION FILED SEPT. 15, 1910.

997,706.

Patented July 11, 1911



WITNESSES.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR GRINDING ROLLERS.

997,706.

Specification of Letters Patent. Patented July 11, 1911.

Application filed September 15, 1910. Serial No. 582,219.

To all whom it may concern:

Be it known that I, OTTO ALWIN SCHMIDT, a subject of His Majesty the German Emperor, residing at Chelmsford, in the county of Essex, England, have invented a certain new and useful Improvement in Machines for Grinding Rollers, of which the following is a specification.

This invention relates to machines for grinding rollers such as those used in roller bearings, and has reference to machines of the above stated kind in which the rollers are carried and guided in a straight line grooved holder or holders that presents or present them to the flat face of an abrading disk or member and in which the rollers are placed in the groove or grooves so as to have a rolling traveling motion therein as distinct from an axial motion.

In machines of the kind described above it is desirable in some cases to control the travel of the rollers from one end or part of the groove to the other and for this purpose according to this invention, means are provided for positively giving to such rollers the desired movement of rotation. The grooved holder or holders may be formed with parts for guiding the ends of the rollers in such a way that the peripheral faces of the rollers project on both sides, and the said holder or holders is or are so arranged that the rollers are at right angles to the line of travel and so that one portion of the peripheral face of each roller being ground is in contact with the abrading face while the opposite portion is in contact with a driven part, which will effect the desired rotation. Such driven part may be a disk, a traveling belt or the like suitably supported or a further abrading disk or member.

The arrangement described above is particularly useful where the straight line holder is arranged radially or diametrically, or approximately radially or diametrically, of the abrading disk: since in such cases the said abrading disk has but little effect in rotating or traveling the rollers. In such cases a driving or further abrading disk having its center offset from the center of the other abrading disk may for example be satisfactorily employed.

The accompanying drawings show a construction of roller grinding machine according to this invention in which a single holder is arranged to form a chord of the grinding

disk and in which the axes of the grinding and driving disks are out of alinement.

In these drawings, Figure 1 is a front elevation, partly in section, Fig. 2 is a side elevation, partly in section, and Fig. 3 is a plan.

A is an abrading disk of carborundum, emery, or other suitable material fixed to a carrier A' having a spindle A² mounted in a bearing d' and rotated by any suitable means.

C is a driving disk mounted by means of a spindle C' in a bearing d of a frame D and rotated, by any suitable means, the spindle or axis of the driving disk C being offset from or out of alinement with the spindle or axis of the abrading disk A.

The direction in which the two disks A and C are rotated and the speed of rotation relatively to each other depends upon the amount of rotating or traveling effect that it is desired to impart to the rollers.

B is a grooved holder for guiding the rollers. Between the adjacent faces of the two disks A C the holder B merely consists of side members that control the ends of the rollers and allow their peripheral surfaces to be in contact with the two disks A C as shown in Fig. 2. At the ends of the grooved holder the inner portion is, in the example shown, removed and rollers B' are mounted in bearings d² d² of the brackets D'. These rollers B' facilitate the travel through the holder of the rollers R and owing to the continuous form of the holder in the construction illustrated enable the rollers to be readily transferred from the exit to the entrance sides of the grinding disk. A suitable opening or openings (not shown) in the holder enable the rollers to be inserted or removed or to be inspected for progress.

It has been proposed to employ a pair of overlapping grinding disks eccentrically arranged and to guide the rollers between the disks in a straight line so that the longitudinal axes of the rollers lie in a plane through equal and opposite chords on the overlapping portions of the grinding disks; the present invention, however, relates to machines of the kind in which a rolling traveling motion is given to the rollers for the purpose of reducing the action of abrasion and thereby enabling numerous samples to be taken and the machine to be stopped at the desired point of reduction.

What is claimed is:—

1. In a roller grinding machine and in combination a moving abrading member, a straight line guiding holder for presenting a series of rollers to the abrading member, and holding them at right angles to their line of rolling travel, and means for positively controlling the rotation of the rollers in said holder.
2. In a roller grinding machine and in combination a moving abrading member, a straight line guiding holder for presenting a series of rollers to the abrading member and holding them at right angles to their line of rolling travel and so that they project on both sides, and a driven member in frictional contact with the rollers on one side of the holder to positively control the rotation of the rollers in said holder.

3. In a roller grinding machine and in combination a moving abrading disk, a straight line guiding holder for presenting a series of rollers to the abrading member and holding them at right angles to their line of rolling travel and so that they project on both sides, and a driven disk in frictional contact with the rollers on one side of the holder, such disk having its axis out of alignment with the axis of the abrading disk.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

OTTO ALWIN SCHMIDT.

Witnesses:

W. BARRETT,
H. BARRETT.