

G. WEEKS.
MACHINE FOR GRINDING ROLLERS.
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965,776.

Patented July 26, 1910.

Fig. 1.

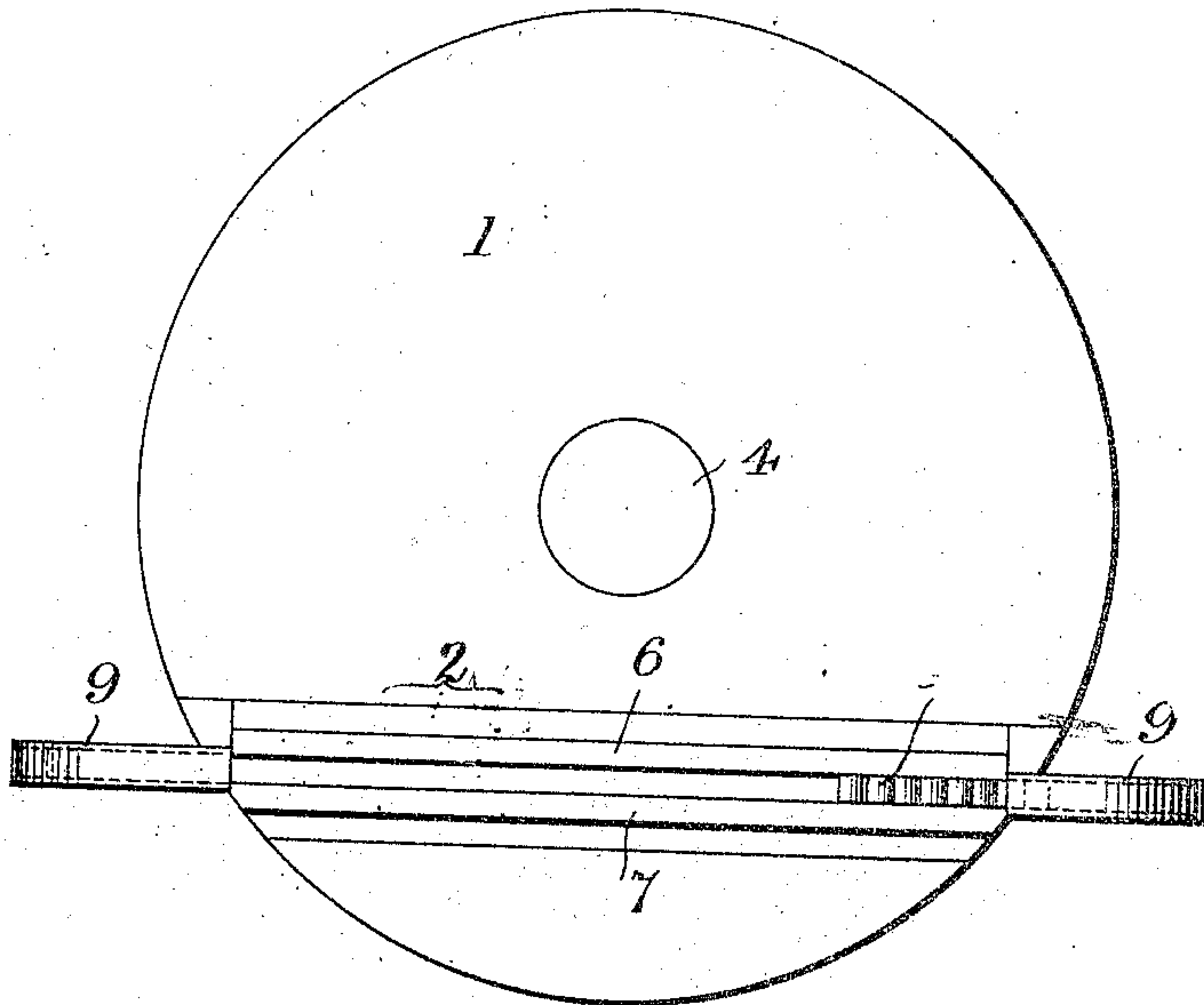


Fig. 2.

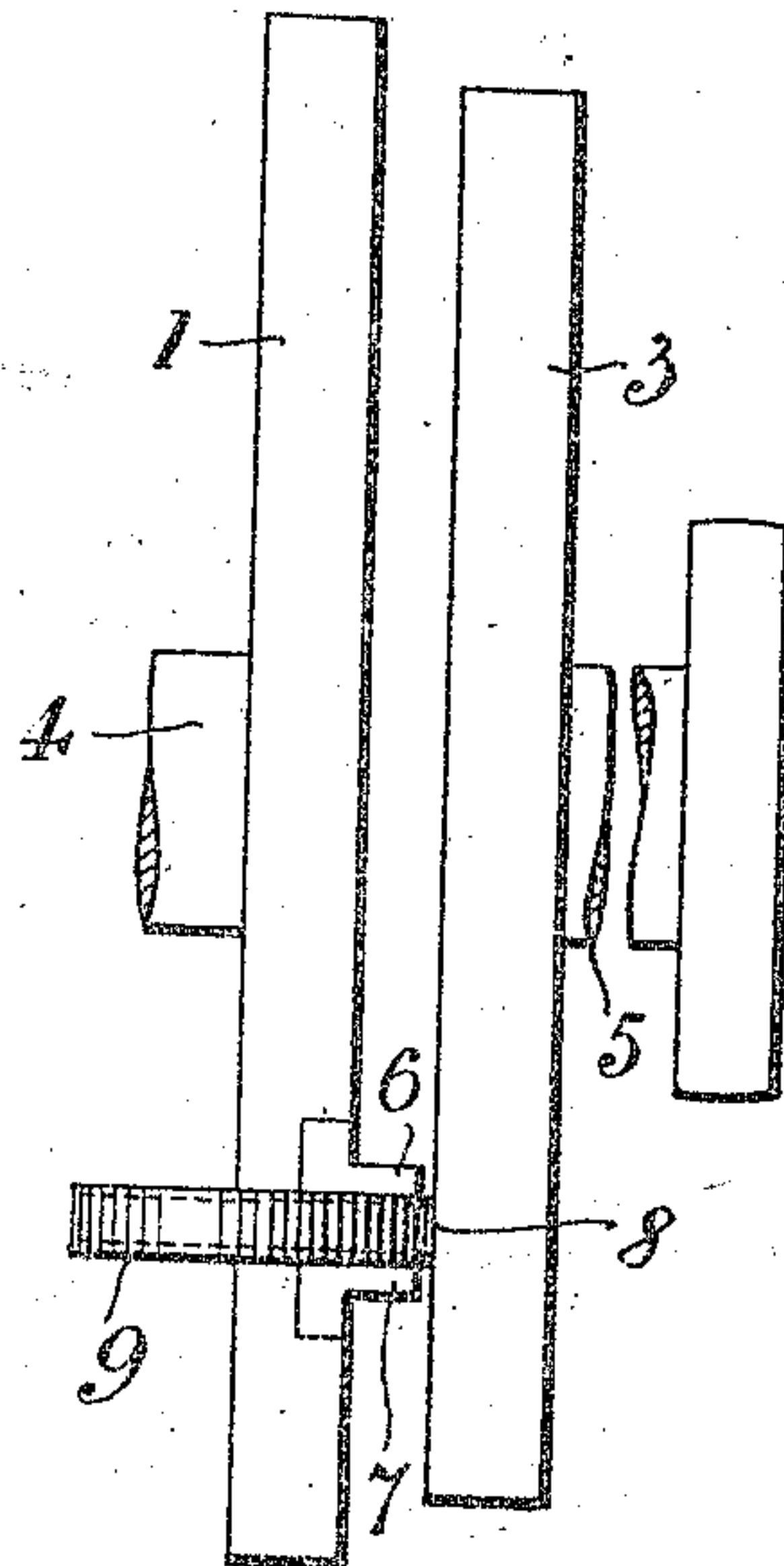
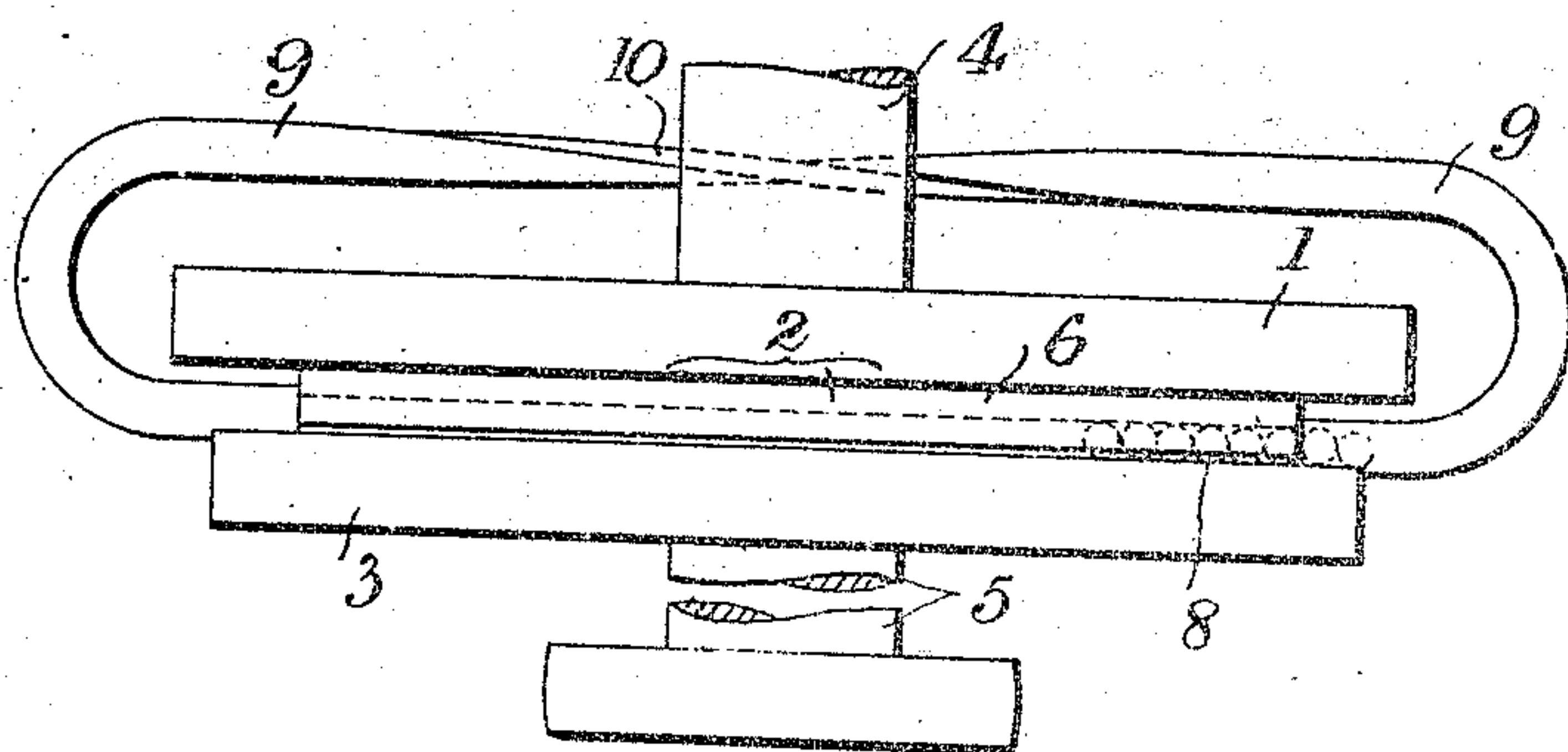


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE WEEKS, OF CHELMSFORD, ENGLAND, ASSIGNOR TO THE HOFFMANN MANUFACTURING COMPANY LIMITED, OF LONDON, ENGLAND.

MACHINE FOR GRINDING ROLLERS.

965,776.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE WEEKS, a subject of His Majesty the King of Great Britain, residing at Chelmsford, 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 an improvement in machines for grinding rollers particularly comparatively small rollers such as are used for roller bearings.

According to the invention rollers are ground and finished between members or disks, preferably a fixed member (of iron) and a movable one or disk (of abrasive material) one of such members having a groove or grooves formed therein for holding such rollers or roller blanks in such a manner that they may have a traveling rolling movement therein in part for the purpose of enabling them to be changed end for end as hereinafter described in relation to the groove or grooves if desired and in part to enable them to travel easily through the groove and also to be best ground or abraded for which purpose the holding member presents only one face of the roller to the grinding member as is done in ball grinding with this class of machine. The machine by the traveling rolling movement of the rollers is alone distinguished from machines for grinding rollers in which the rollers have a traveling axial movement in their holding device apart from other fundamental differences between them. The machine is preferably further provided with a device or devices adapted to guide and transfer the rollers from groove to groove or from an exit to an entrance end of the same groove and at the same time if desired reverse the end for end positions of said rollers relative to the groove or grooves of the holding member. In practice it is found that the use of the end reversing device described above, prevents to a large extent, uneven grinding of the rollers.

To enable the invention to be fully understood it will now be described with reference to the accompanying drawings, in which is illustrated a portion of a machine sufficient to show an example of same.

Figure 1 is a face view of the holding device or member; Fig. 2 is an end view of the

holding member and grinding member or disk; and Fig. 3 is a plan of Fig. 2 at right angles to same.

In these drawings, 1 is a fixed disk on which the holding device 2 (one only being shown) is mounted, and 3 is the grinding or abrading member or disk, the fixed disk being shown as supported by a shaft 4 and the grinding disk by a shaft 5 which latter is capable of being rotated as by a suitable pulley. The holding device in the form shown is straight, and consists of two bracket shaped bars 6, 7, the bases of which are let into the disk 1 while their flanges oppose one another with a space between, which flanges guide and through which space can travel and rotate at right angles to the flanges the rollers 8 to be ground, for which purpose the depth of the flanges is such that a portion of the faces of the rollers can project therefrom. The holding device is arranged as shown to form a chord in respect of the face of the abrading disk as has been before proposed for roller holding devices in other forms of machines. In the form actually shown although a fixed disk 1 is illustrated it will be obvious that it is acting only as a support for a straight holder 2 applied to the face of same, and which holder could be otherwise carried.

To each end of the holding device is connected the ends of a transfer device or chute 9 so that an endless passage is formed with the groove of the holder. This chute 9 has a half turn formed in it at 10 (Fig. 3) so that the rollers are reversed end for end during their travel through same so that after leaving the exit end of the grooved holder 6 they are presented again to it the other way up at the entrance end.

It will be seen that the rotation of the grinding disk 3 against the faces of the rollers will not only grind same but will traverse them through the grooved holder 6 with a rolling motion, the abrasive action being greatest toward the outer edges of the disk while the rolling action is greatest midway between these points.

What I claim is:—

1. A machine for grinding rollers, comprising in combination an abrading member having a plain surface, a holding member having a groove to hold the rollers at right angles longitudinally of the groove so that

they have a traveling rolling movement therein, and whereby they are prevented from twisting, and to present them in a straight line to the abrading member, and
5 means for moving one of the members.

2. A machine for grinding rollers comprising in combination a holding member having a groove to hold the rollers so that they have a traveling rolling movement
10 therein, an abrading member to which they are presented by such holding member, means for changing the end for end positions of the rollers relative to the groove, and means for moving one of the members.

15 3. A machine for grinding rollers comprising in combination an abrading member, a holding member provided with a straight groove arranged to form a chord in respect of the face of the abrading disk, and to hold
20 the rollers so that they have a traveling

rolling movement therein, and means for moving one of the members.

4. A machine for grinding rollers comprising in combination an abrading member having a plain surface, a holding member
25 having a groove to hold the rollers so that they have a traveling rolling movement therein and to present them to the abrading member, a transferring device to transfer the rollers from the exit to the entrance of
30 a groove and means for moving one of the members.

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

GEORGE WEEKS.

Witnesses:

G. F. BARRETT,

C. A. BARRETT.