No. 639,723. Patented Dec. 26, 1899.

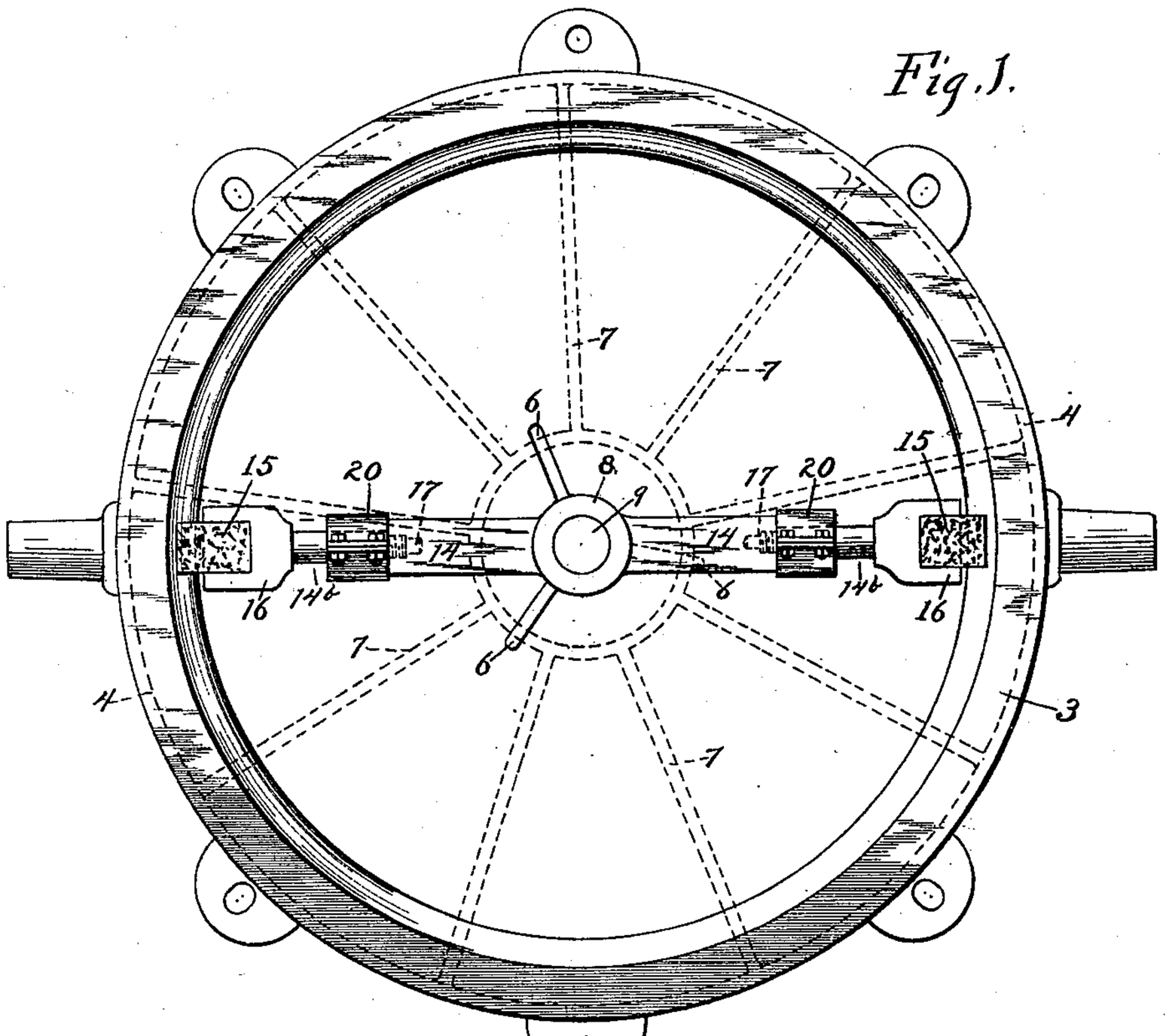
E. F. GANNON.

GRINDER FOR CHILLERS.

(Application filed Aug. 26, 1899.)

(No Model.)

Fig. 1.



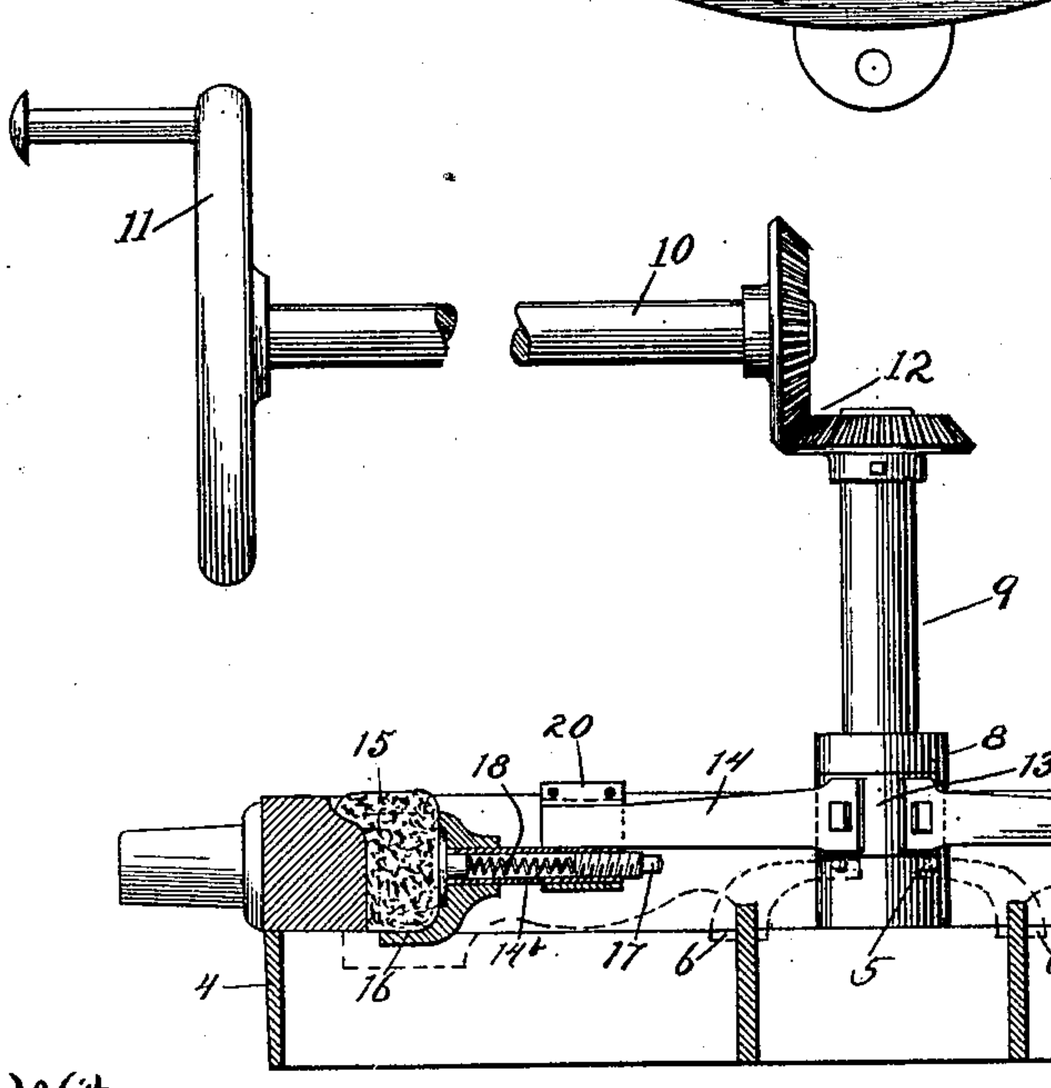


Fig. 2.

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UNITED STATES PATENT OFFICE.

EDWARD F. GANNON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE GRIFFIN WHEEL COMPANY, OF SAME PLACE.

GRINDER FOR CHILLERS.

SPECIFICATION forming part of Letters Patent No. 639,723, dated December 26, 1899.

Application filed August 26, 1899. Serial No. 728,644. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. GANNON, a citizen of the United States, residing in Chicago, Cook county, Illinois, have invented a new and useful Improvement in Grinders for Chillers, of which the following, taken in connection with the accompanying drawings, is a specification.

In the construction of certain forms of castings, particularly car-wheel castings, the outer or peripheral part of the casting bears against a chiller-ring of iron. These chiller-rings after a period of service are so affected by the heat as to be covered upon their inner faces with what are known as "fire-cracks," which are small cracks extending into the metal of the ring for a short distance and have at each side of the crack a raised portion projecting outwardly from the inner face of the ring. When these raised portions become too numerous and project too far, they form depressions upon the outer surface of the casting which, in the case of a car-wheel makes an uneven tread and prevents the wheel from running smoothly. Heretofore two methods have been employed to overcome the above-described difficulty. Either the projecting parts have been removed by hand and the use of emery cloth or paper grinding materials or the rings have been taken away from the molds and put upon a machine to be trimmed down by the cut of a tool. The first-mentioned process is slow and expensive, and the second is objectionable for the reason that the cut of the tool, even though it be very slight, will materially increase the diameter of the ring and therefore the size of the wheel.

The object of my invention is to overcome the above-mentioned difficulties by the construction of a chiller-grinder comprising the combination, with a chiller-ring, of a frame adjacent thereto carrying a plurality of arms revolubly mounted in the frame, grinding-pieces carried by the arms, means for yieldingly holding the grinding-pieces against the inner face of the chiller-ring, and means for revolving the arms.

A further object of my invention is the construction of a chiller-grinder of the type generally described above having yielding holding means for the grinding-pieces made adjustable with reference to the frame, whereby the tension of the yielding devices may be nicely regulated.

A further object of my invention is the provision of a novel form of fastening device for holding the grinding-pieces in place on the outer ends of the arms.

A further object of my invention is the provision of a grinder of the type generally described above having arms the outer parts whereof are preferably tubular, so as to readily receive the adjusting devices and spring, and secured to the inner parts or frame by clamps or sockets, whereby arms of different lengths may be put in, so that the device can be accommodated to different sizes of grinder.

My invention is shown in preferred form in the accompanying drawings, in which—

Figure 1 is a plan view showing a chiller-ring having my invention applied thereto; and Fig. 2 is a side elevation thereof, the parts thereof being in section.

As ordinarily used the chiller-ring 3 is mounted upon the cope 4 in the manner shown in Fig. 2. Resting upon three arms 5, which are forked at 6 to embrace the ring 7 of the cope 4, is a frame 8, carrying a vertical shaft 9, which receives motion from the horizontal shaft 10, adapted to be driven by a driving-wheel 11, the motion of the latter being transmitted to the vertical shaft through the instrumentality of a pair of beveled gears 12. Upon a rotatable part 13, which is secured rigidly to the shaft 9, are mounted a plurality of arms 14, having clamped thereto tubular extensions 14^b, at the outer ends of which are carried some grinding-pieces 15, held in boxes 16 and yieldingly forced outward through the instrumentality of the springs 18 and adjusting-screws 17, the latter serving to regulate the tension or pressure of the springs.

The operation of my invention is as follows: By rotating the wheel 11 the shaft 9 is revolved and carries with it the arms 14, the grinding-pieces 15 being carried around by means of the arms and yieldingly held against the inner face of the ring 3 by the strength of the springs 18. As this pressure is quite light as usually adjusted, the effect of the grinding-pieces is to take off the projecting

ridges or edges at the sides of the fire-cracks; but the pressure is not sufficient to allow the grinding-pieces to have any material effect upon the inner face of the chiller-ring.

In order to adapt the device readily to different sizes of rings, the tubular extensions of the arms 14 are secured by clamps 20, whereby the parts may be adjusted relative to each other or the extensions may be removed and others of different length substituted.

It is obvious that my invention might be altered in numerous particulars without departing from the spirit thereof.

What I claim as new, and desire to secure by Letters Patent, is—

1. A chiller-grinder comprising the combination with a frame constructed to be mounted adjacent to the chiller, of a plurality of arms revolubly mounted in said frame, grinding-pieces carried by said arms, means for yieldingly holding said grinding-pieces against the inner face of the chiller and means for revolving said arms.

2. A chiller-grinder comprising the combination with a cope upon which the chiller is mounted, of a frame secured upon said cope, a plurality of arms revolubly mounted in said frame, grinding-pieces carried by said arms, means for yieldingly holding said grinding-pieces against the inner face of the chiller, and means for revolving said arms.

3. A chiller-grinder comprising the combination with a frame constructed to be mounted adjacent to the chiller, of a plurality of arms with adjustable extensions revolubly mounted in said frame, grinding-pieces carried by said arms, means for yieldingly holding the grinding-pieces against the inner face of said chiller, and means for revolving said arms.

4. A chiller-grinder comprising the combination with a frame constructed to be mounted adjacent to the chiller, of a plurality of arms revolubly mounted in said frame, extensions on said arms, grinding-pieces carried by a box at the outer extremity of said extensions, means for yieldingly holding said grinding-pieces against the inner face of the chiller, and means for revolving said arms.

5. A chiller-grinder comprising the combination with a frame constructed to be mounted adjacent to the chiller, of a plurality of arms revolubly mounted in said frame, adjustable extensions on said arms, grinding-pieces carried by a box at the outer extremity of said extensions, springs carried within said extensions arranged to press said grinding-pieces against the inner face of the chiller, and means for revolving said arms.

6. A chiller-grinder comprising the combination with a frame constructed to be mounted adjacent to the chiller, of a plurality of arms revolubly mounted in said frame and rigidly secured to a rotatable shaft carried thereby, grinding-pieces movably mounted at the outer ends of said arms, and means for yieldingly holding the grinding-pieces against the inner face of said chiller, and means for revolving said arms.

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