

(No Model.)

F. W. STARR.
POLISHING WHEEL.

No. 395,720.

Patented Jan. 8, 1889.

Fig. 1.

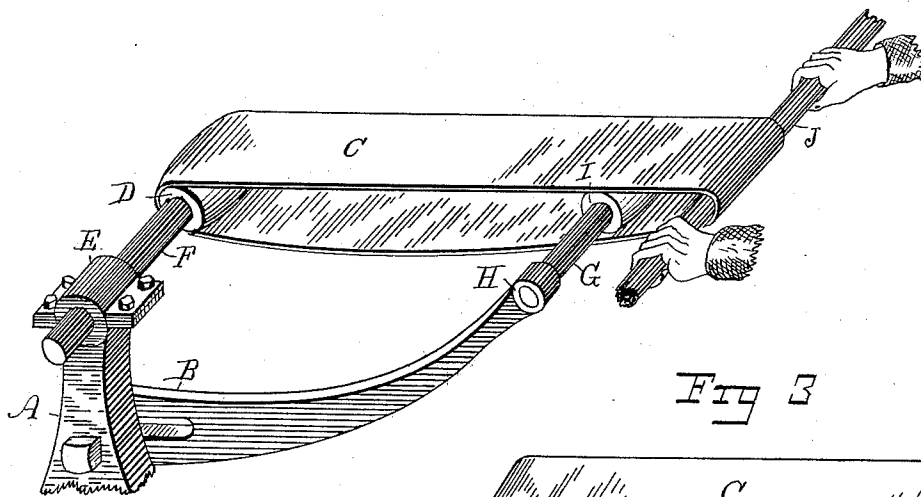


Fig. 3

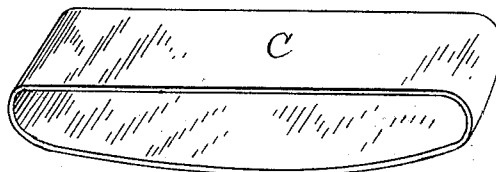


Fig. 2.

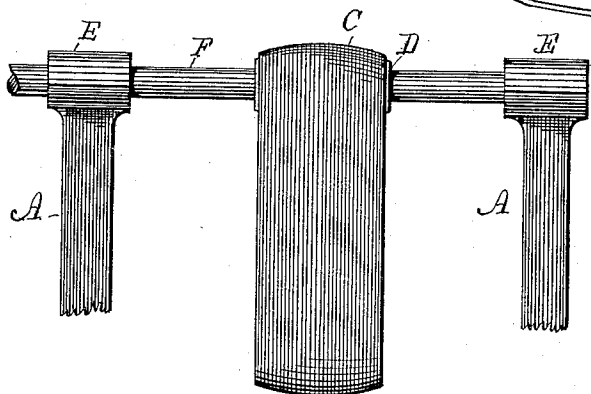
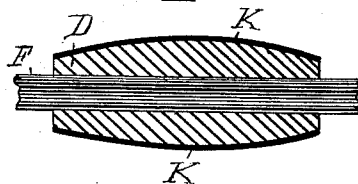


Fig. 4.



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UNITED STATES PATENT OFFICE.

FERDINAND W. STARR, OF SPRINGFIELD, OHIO.

POLISHING-WHEEL.

SPECIFICATION forming part of Letters Patent No. 395,720, dated January 8, 1889.

Application filed July 24, 1886. Serial No. 208,920. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND W. STARR, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented new and useful Improvements in Polishing-Machines, of which the following is a specification.

My invention relates to an improved machine for operating polishing-belts; and it consists, broadly, in so applying the work to be polished to the belt that the latter shall be caused to adhere to its driving-pulley with sufficient force to receive motion therefrom.

In the simplest form of machine the invention consists in passing an endless polishing-belt around a pulley and the work to be operated upon, the latter serving the twofold purpose of supporting the belt in working position and to stop and start the motion of the belt.

In the drawings, Figure 1 is a perspective view of a portion of a machine, showing one way in which my invention may be applied; Fig. 2, a front face view of a slightly different form of machine; Fig. 3, a perspective view of a polishing or abrading belt, and Fig. 4 sectional view through the rubber-covered driving-pulley.

My invention is designed, primarily, for finishing and smoothing the fellies of wheels and similar articles possessing a curved face, although it is applicable to the polishing and finishing of other articles.

In machines in which endless polishing-belts have heretofore been employed it has been customary to apply the work to the outer surface of the belt after the latter has been stretched upon its pulleys, and in polishing round or curved surfaces upon belts mounted and operated in the usual way much expert labor is required to bring said surfaces into uniformly-rubbing contact with the belt. The continual travel of the belt over its pulleys causes the former to become elongated and the abrading material to become disengaged from the belt, thereby in a comparatively short time rendering the belt useless. In my method of driving the belt the latter travels only when the work is being operated upon, and hence the belt is not necessarily weakened nor its abrading-surface destroyed by travel over pulleys when not in use. Besides the saving

of the belts a much more simple machine is produced, and considerably less power is required to operate it.

Referring now to Fig. 1, A is a portion of the frame-work of the machine, having boxes E, in which the driving shaft or spindle F is mounted, said spindle being provided with a driving-pulley, D, covered with a layer, K, of rubber or equivalent material, as shown in Fig. 4.

C represents an endless polishing-belt, which may be constructed in any approved manner and of any desired material, and provided on one or both faces, as may be preferred, with abrading material. The belt C is passed over the end of pulley D, and the work (which is represented by the letter J in Fig. 1) is always inserted between the opposing faces of the belt, as shown. If motion is imparted to the pulley D, either before or after inserting the work between the belt, it will not cause the effective travel of the belt until the work is brought into contact with the belt with sufficient force to cause the latter to bite or take a firm hold upon its pulley, which, being covered with rubber, tends not only to give the belt a good hold, but also prevents injury to its abrading-surface.

Owing to the flexibility of the belt the latter readily adapts itself to the different sizes and shapes of the article being finished, and in this particular is specially adapted for finishing fellies which have both a longitudinal and a transverse curvature. As soon as the work is removed from the belt the latter again becomes slack, and may rest loosely upon the pulley D, or upon pulley D and a second pulley, I, carried at the upper end of an arm, B, secured to the frame-work A, as shown in Fig. 1.

Pulley I is mounted rigidly upon shaft G, carried in bearings H on arm B, so that the pulley may serve not only to support the belt when not in use, but also to permit the different-sized belts to be applied to the pulleys D I. Instead of having a special support for the belt C when not in use, I may dispense with the same and allow the belt to hang down from its pulley D, as shown in Fig. 2, or remove the same from its driving-pulley as often as the work is removed.

The driving-pulleys and polishing-belts may be made of such various sizes and lengths as circumstances may require, and may be made so small as to be attached to sewing-machines, 5 jewelers' lathes, or any light foot-power machine, or to any convenient rotating shaft. It will also be found advisable to have a variety of these belts prepared with different qualities or degrees of abrading material 10 upon them, and to provide both the inner and outer side of the belt with a polishing material, so that the belt may be turned in order to polish with either side.

If it is desired to polish an article having 15 both flat and curved surfaces, the curved surface may be quickly polished upon the inner side of the belt, and upon removing the article being polished from between the belt and bringing the carrying-pulley forward to 20 tighten the polishing-belt the flat surface of the article will be polished by the outer face of the belt.

It is also obvious that it is not necessary under all circumstances for the operator to 25 hold the article being polished to the belt, as the work might be presented to the belt by machinery.

It is obvious that the pulley D may be omitted and the belt applied directly to the 30 shaft, but not with such good results.

Having thus described my invention, what I claim is—

1. In a machine for polishing and finishing surfaces, the combination, with a main driving-shaft, of a slack polishing-belt passing 35 loosely about a pulley upon said shaft and adapted to be brought into frictional contact with the pulley by the work to be operated upon.

2. In combination with a shaft, mechanism 40 for imparting motion thereto, a polishing-belt passing loosely about said shaft and adapted to be brought into frictional contact with a pulley thereon by the work to be operated upon, and a support for said belt, arranged 45 substantially as shown, whereby when the work is removed from the belt the latter will be prevented by its support from traveling.

3. The herein-described method of mounting and operating polishing belts or cords— 50 that is to say, mounting or hanging an endless polishing belt or cord loosely on its driving-pulley, so that the belt or cord will remain practically stationary when not in use, and then applying to said belt or cord the article 55 to be polished with the force necessary to cause the belt or cord to adhere to its driving-pulley and receive motion therefrom, substantially as shown and described.

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