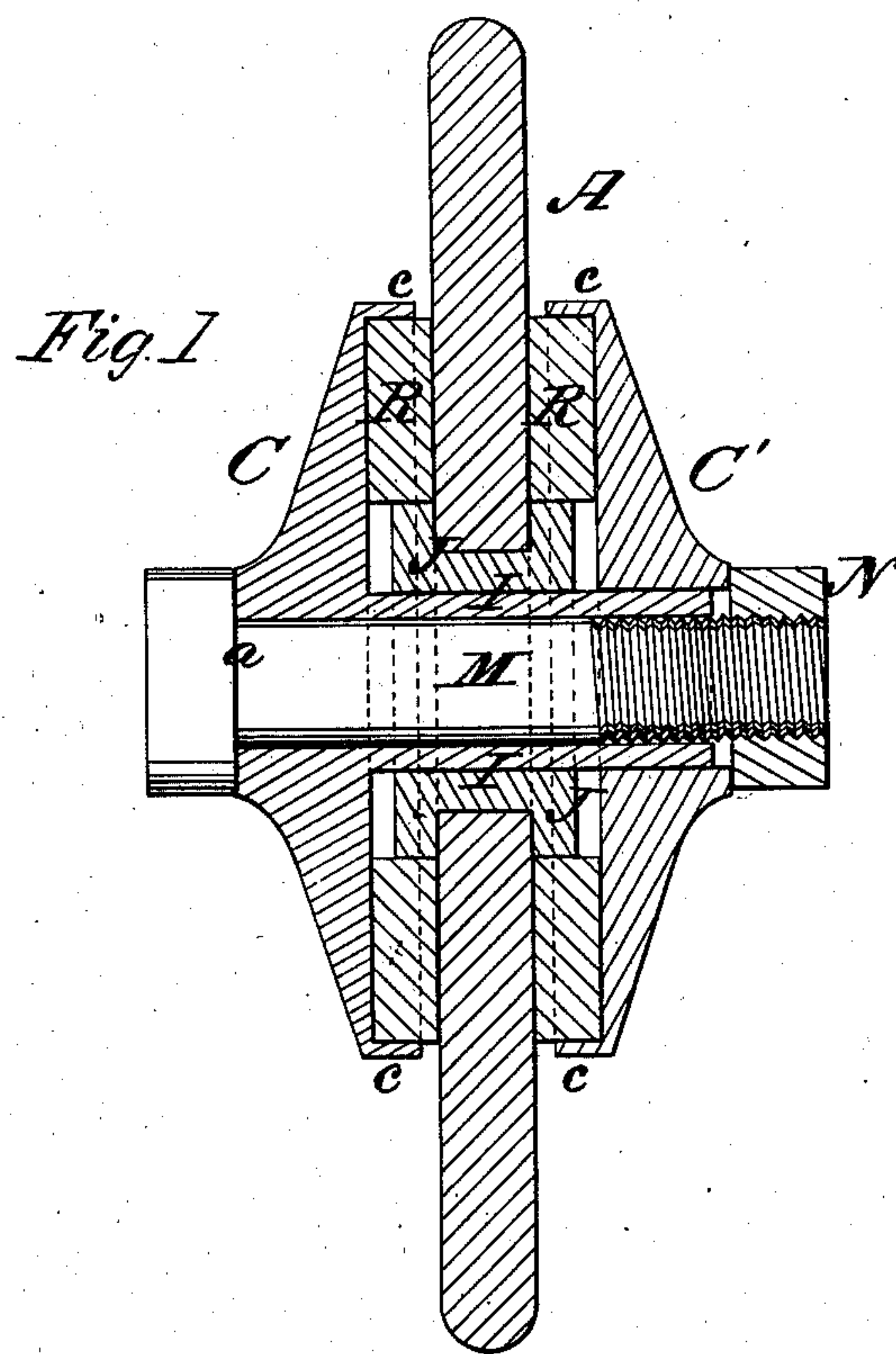


B. BANNISTER, J. C. PERKINS, & W. H. STODDARD.

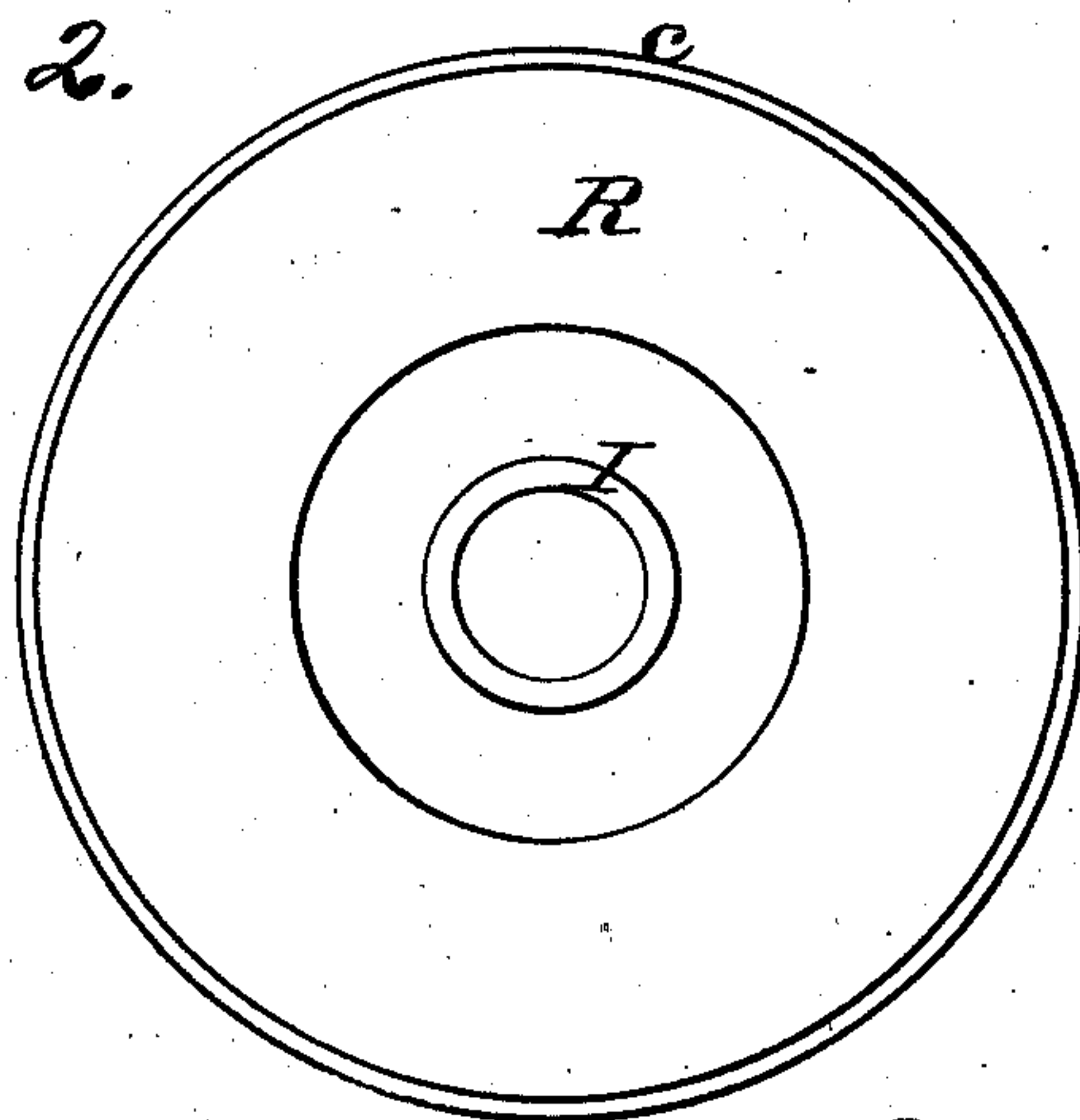
Elastic Clamps for Polishing and Grinding Wheels.

No. 158,617.

Patented Jan. 12, 1875.



*Fig. 2.*



WITNESSES

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# UNITED STATES PATENT OFFICE.

BURR BANNISTER, JOHN C. PERKINS, AND WILLIAM H. STODDARD, OF  
KALAMAZOO, MICHIGAN.

## IMPROVEMENT IN ELASTIC CLAMPS FOR POLISHING AND GRINDING WHEELS.

Specification forming part of Letters Patent No. 158,617, dated January 12, 1875; application filed  
June 6, 1874.

*To all whom it may concern:*

Be it known that we, BURR BANNISTER, JOHN C. PERKINS, and WILLIAM H. STODDARD, of Kalamazoo, in the county of Kalamazoo, and State of Michigan, have invented a new and valuable Improvement in Elastic Clamps for Polishing Wheels; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a sectional view of our device, and Fig. 2 is a detail view.

This invention has relation to elastic clamps which are designed for emery or grinding wheels, wherein it is desired to allow such wheels to center themselves automatically. The invention consists in the employment, in combination with an elastic center, an emery or grinding wheel and elastic side clamps, of two dished clamping-collars, one of which is constructed with a sleeve, which passes through the said elastic center, and receives upon it the other movable collar, the whole being rigidly confined by means of a mandrel and a nut, as will be hereinafter explained.

In the annexed drawings, A designates a grinding-wheel, which may be composed in whole or part of emery or other suitable substance, with a hole centrally through it. In this hole is confined a circular flanged eye-piece, J, which is composed of india-rubber, and which is held in place by means of its flanges. C C' designate two clamping-collars of any required diameter less than the diameter of the wheel A, which collars are constructed with rims c on their edges that give them a dished shape, as shown in Fig. 1. The collar C has constructed centrally on it a sleeve or tube, I, which is passed through the center of the eye-piece, J, and which receives through it a mandrel, M, having a shoulder, a, on one end, and a screw-thread on the other end. R R designate two elastic rings of india-rubber, whose interior diameter is such that they receive into them the flanges on the eye-piece J, and whose exterior diameter is

such that they are received snugly in the clamping-collars C C', and prevented from displacement by the annular rims or flanges c c of these collars. When the eye J is adjusted in the center of the wheel A, the clamping-collars are applied to this wheel with the elastic rings R R between them and the wheel A, the mandrel M is inserted through the collar C and sleeve I and collar C', and through the said eye J, and receives on its end the nut N, by screwing up which the collars C C' and the intermediate rubber rings R R will be firmly clamped to the sides of the wheel A.

The advantages derived from this form of clamp are as follows, to wit: The bearing upon the mandrel is greater than the thickness of the wheel, being the thickness of the wheel with the additional thickness of the body of the clamps or collars. The benefit gained is a greater bearing-surface when in use on the mandrel. The clamping-collars, when adjusted to the wheel, being a part of this wheel, can be taken from the mandrel and mounted without centering or turning up the wheel at each change. This form of clamp, when once fitted to the wheel, remains with the wheel. The clamp C and thimble I being made of metal, a very accurate fit to the mandrel is obtained. In screwing up clamp C' it is guided centrally by the thimble or sleeve, and will adjust itself perfectly to the wheel, and bring all the parts in proper place.

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

The clamping-collar C, formed entire with the sleeve I, and receiving through it the mandrel M, in combination with the elastic eye J, elastic rings R R, loose collar C, and clamping-nut N, and with the grinding-wheel A, substantially as described.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

BURR BANNISTER.  
JOHN C. PERKINS.  
WILLIAM H. STODDARD.

Witnesses:  
W. W. PECK,  
JAMES W. HOPKINS.