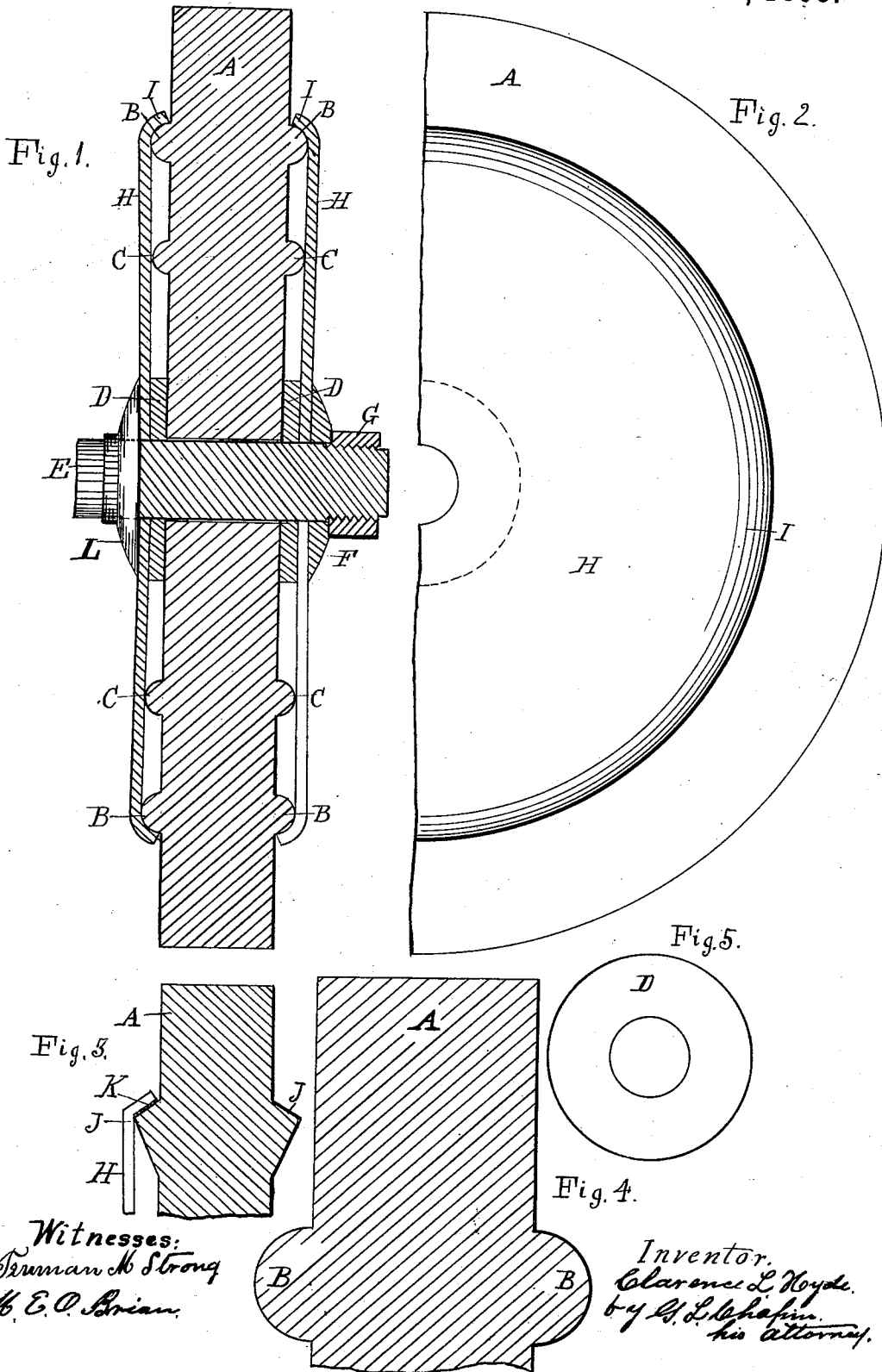


(No Model.)

C. L. HYDE.
EMERY WHEEL AND SUPPORT.

No. 507,223.

Patented Oct. 24, 1893.



UNITED STATES PATENT OFFICE.

CLARENCE L. HYDE, OF CHICAGO, ILLINOIS.

EMERY-WHEEL AND SUPPORT.

SPECIFICATION forming part of Letters Patent No. 507,223, dated October 24, 1893.

Application filed April 19, 1892. Serial No. 429,747. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE L. HYDE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Emery-Wheels and Supports, of which the following is a specification, reference being had to the accompanying drawings, illustrating the invention, in which—

Figure 1 is a vertical central sectional elevation of an emery wheel and supports, in which is embodied my invention. Fig. 2 is a side elevation of half of the wheel and half of one support removed from the other portions; Fig. 3, a detail and modification of the construction at Fig. 1. Fig. 4 is a section of a portion of the wheel at Fig. 1 enlarged to double size; Fig. 5, an elevation of one internal washer removed from the other parts.

This invention relates to the construction of an emery wheel and clamping supports; whereby the wheel is prevented from bursting by centrifugal force engendered by velocity.

The novelty of the invention will be fully comprehended by reference to the following detail description.

A represents the emery wheel whose sides are parallel, except there are formed on the opposite portions of its flat sides at a distance from the eye, substantially as shown, two or more beads, or outwardly projecting annular rings B and C, each of which at Fig. 1 is semi-circular in cross-section, but a modified form is shown at J. J. Fig. 3, the same being V-shaped. The purpose of these annular projections is to engage clamping plates H. H. which are constructed as follows: Metal plates, preferably of steel, are cut in annular form and the marginal portions I are curved or bent to engage the outer surface of the beads, or projections B. J. from the eye of the wheel as shown at Figs. 1 and 3. When struck up, the surface of the plates H. H. are formed substantially flat, except the curved portions mentioned, but when the plates are secured to the emery wheel the middle portion of the outsides of the plates are forced in, in dished or concave form, in order that said curved portions I, may be brought with considerable

force onto the beads, or projections B or J. By this means the wheel is prevented from bursting, by a positive force on both sides of the wheel; and the force tends to act toward the eye of the wheel, and thereby the centrifugal force of the wheel is largely counteracted by the clamping force of said plates. In order that the plates may, at their middle portions, be set in as stated, the beads C have less projection outward from the flat side of the wheel than the beads B, as shown in Fig. 1. Fig. 1 is drawn half the size of a sixteen-inch emery wheel, Fig. 4 being a portion of a wheel of the latter size. In practice, I use only one set of clamping plates on the wheel at a time; and when the wheel is worn down near to the curves I, the plates are to be removed and substituted by like plates, but of such diameters that their curved portions will engage the beads C in the same manner that the plates engage the beads B. In this construction, the central portions of the plates do not come in contact with the emery wheel, but a suitable metal washer D is placed between each plate and the wheel, and by means of the ordinary fixed collar L, collar F and the jam nut G, the wheel A, washers D and plates H are so closely clamped together near to the eye of the wheel that the wheel is held fast to rotate with the shaft E. In this construction, the washers D are made thicker at their peripheries than at their eye portions to correspond to the dish of the plates H; that the pressure on the washers may be substantially equal throughout their surface. To avoid making different thicknesses of washers, as in some cases might be required, packing-washers of paper or other suitable material may be employed of a thickness, or more, as shown at K, Fig. 3. For a sixteen-inch wheel, steel clamping plates one-fourth of an inch each thick are found to serve a good purpose and prevent the wheel from bursting, when the surface of the wheel travels a mile and a half per minute.

I am aware that several devices have been heretofore employed to support emery wheels. I therefore limit my invention to the elements and combinations set forth in the following claim.

I claim as new and desire to secure by Letters Patent of the United States—

In combination, the emery wheel having the annular beads projecting laterally from its sides and forming annular free spaces
5 about the sides of the wheel and the clamping plates having flanges adapted to bear on the rib with its body portion extending over

the free spaces to be sprung toward the side of the wheel and the clamping means whereby the wheel will be pressed inwardly toward its center, substantially as described. 10

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Witnesses:

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