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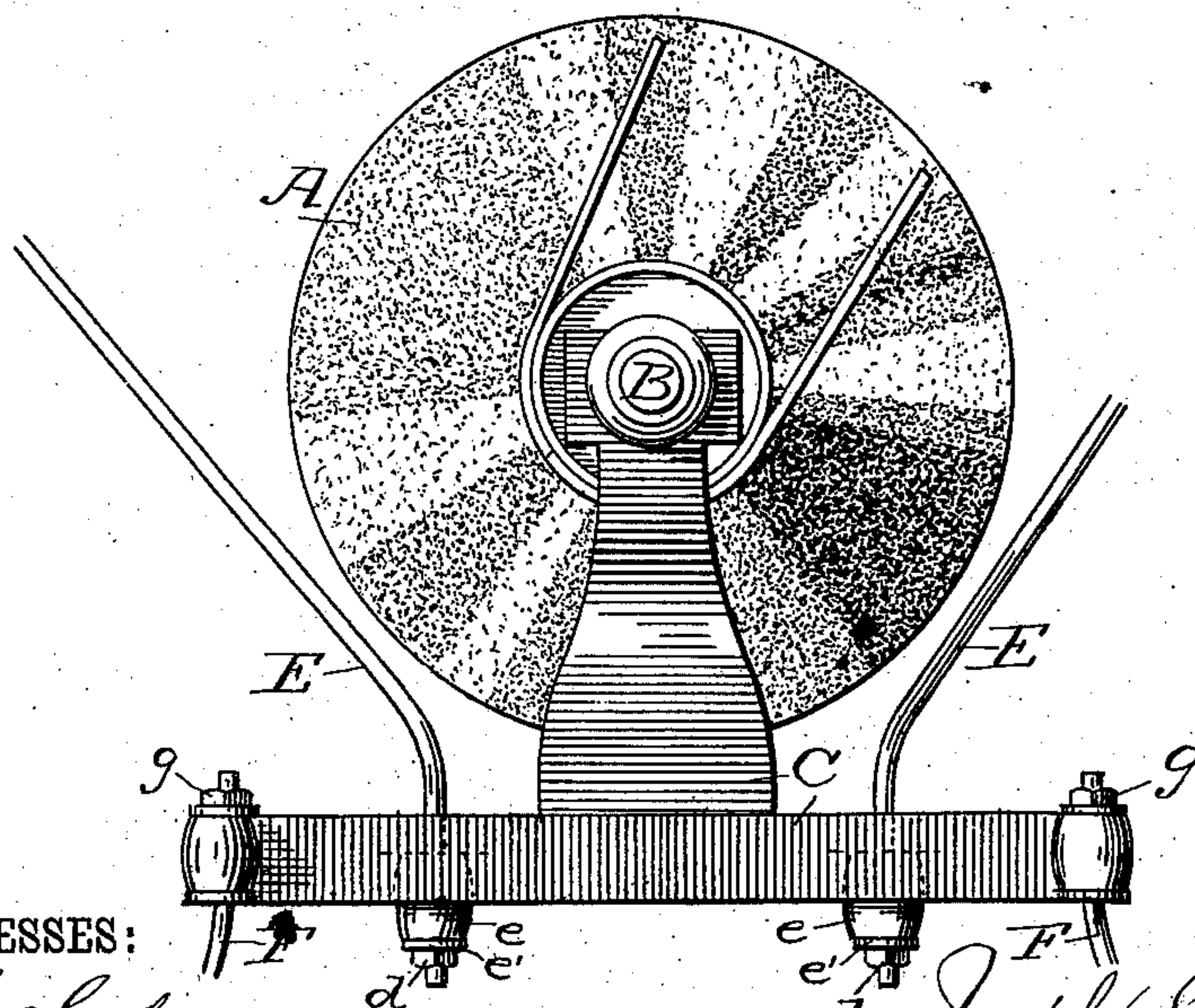
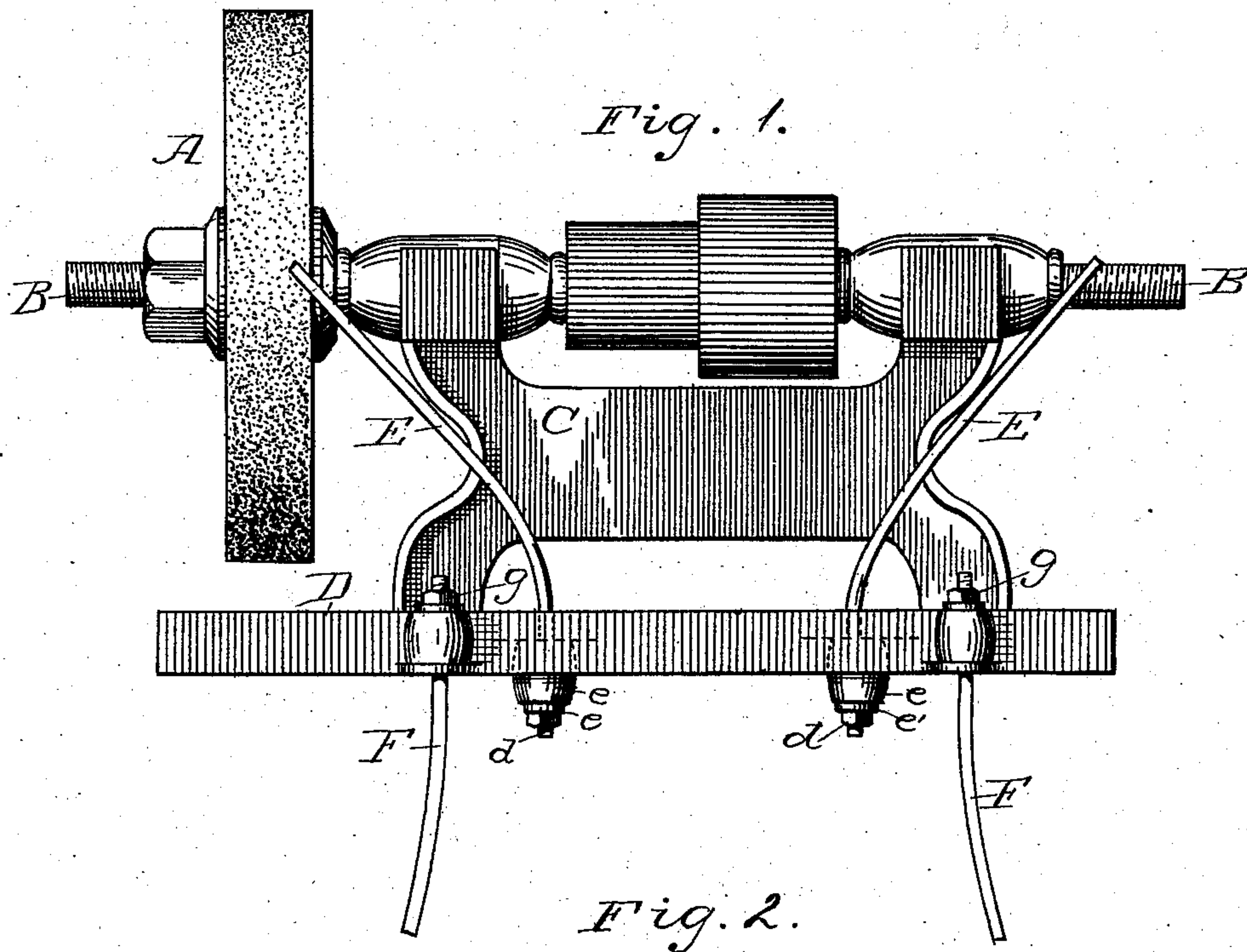
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METHOD OF OBTAINING ROTATING CENTERS OF EMERY AND  
POLISHING WHEELS.

No. 290,056.

Patented Dec. 11, 1883.



WITNESSES:

*H. E. Schoff*  
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INVENTOR

*Joseph D. Huntington*  
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ATTORNEY

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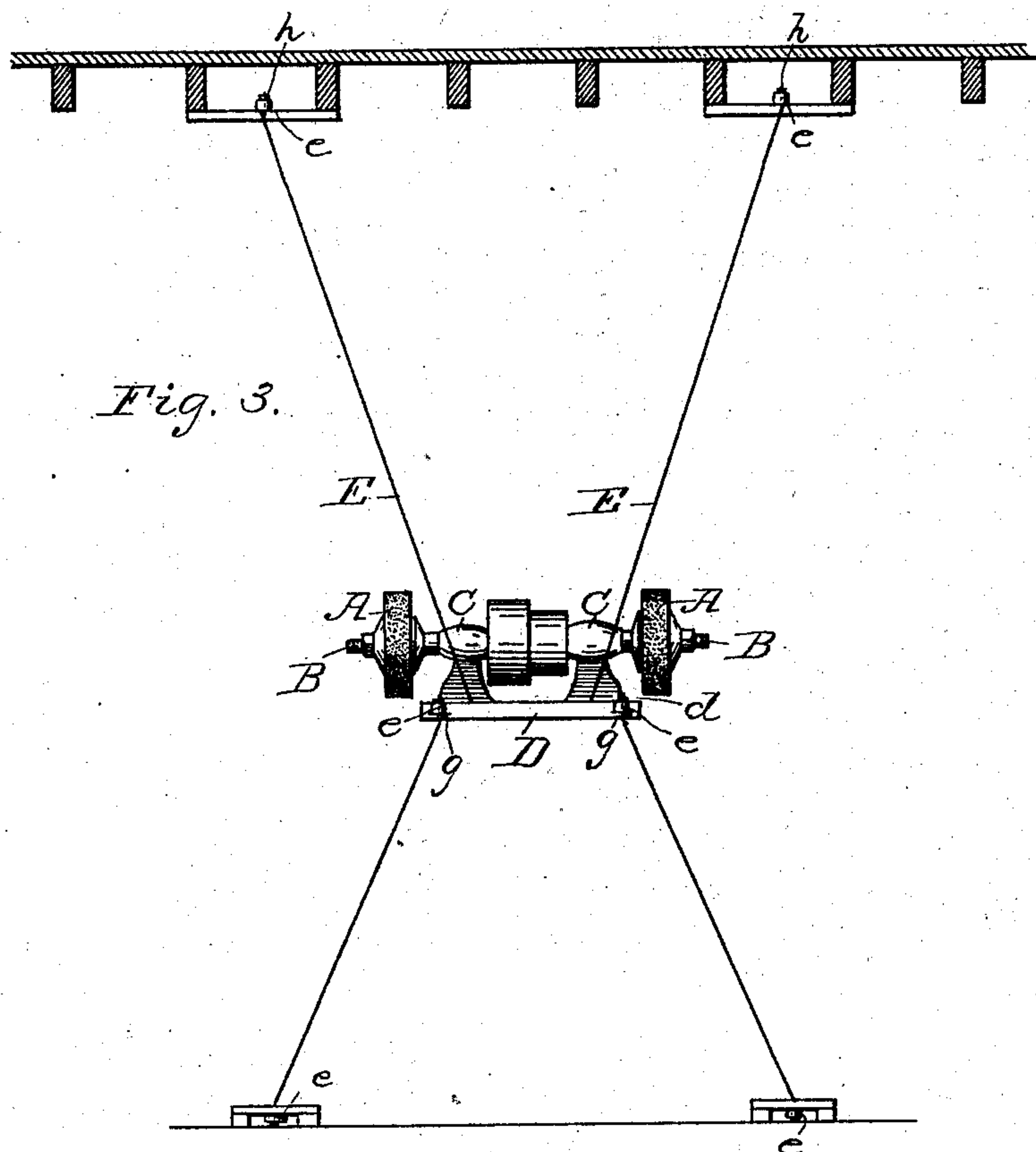
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# UNITED STATES PATENT OFFICE.

JOSEPH D. HUNTINGTON, OF CHICAGO, ILLINOIS.

METHOD OF OBTAINING ROTATING CENTERS OF EMERY AND POLISHING WHEELS.

SPECIFICATION forming part of Letters Patent No. 290,056, dated December 11, 1883.

Application filed August 3, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH D. HUNTINGTON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Means for Obtaining Rotating Centers of Emery and Polishing Wheels; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Heretofore emery and polishing wheels have been mounted on rigid frames, which, because of the difficulty in fixing their rotating centers, and because of the rapidity with which it is necessary they should be run, creates great vibration, abnormal centrifugal force, and friction, thus lessening their period of durability and increasing the possibilities of the wheel exploding, with the consequent loss of life and property.

The object of my invention is to find a permanent and fixed rotating center, to which the said emery or polishing wheel will adjust itself when revolving rapidly, thus overcoming the objections above enumerated. This I accomplish by suspending and cushioning the frame in or on which the emery-wheel shaft has its bearings.

In the drawings, Figure 1 is a side elevation of an emery-wheel suspended by my improved means, and Fig. 2 is an end elevation of the same. Fig. 3 is a view showing the device of Fig. 2, with its springs attached to floor and ceiling.

In the drawings, A represents an emery-wheel, B the shaft on which the same is placed, C the bearings of said shaft, and D the rectangular frame supporting the said bearings.

Between the two bearings of the shaft is fixed a stepped or speed pulley, through the medium of which motion is transmitted from a suitable source to the said emery-wheel.

It is necessary in every perfect-acting grinding or polishing machine that its rotating parts should have a permanent axis, for otherwise vibrations will be created, and the friction and centrifugal force will increase to an abnormal extent, thus tending to crystallize

the particles thereof by the rapid succession of blows which otherwise would be produced. In order to acquire this axis, I suspend the frame D by wires E, which are placed two on either side, and pass downward through suitable apertures in the frame to the under side, where, after passing through the rubber cushions *e* and washer *e'*, their screw-threaded ends are provided with nuts *d*. The opposite ends of the wires E are secured in the ceiling of the room in which the machine is located, and provided with a cushion, *e*, washer *e'*, and nut *d*, in substantially the same manner as the ends which are connected to the frame.

In order to prevent any motion of the frame, I also provide wires F, which, passing upward from the floor through apertures in the lugs *h*, projecting laterally from the sides of the frame and through cushions and washers similar to those on the ends of wires E, are also screw-threaded at their ends to receive the nuts *g*. The manner of connecting the other ends of the wires F are substantially the same as those which are connected to the frame.

By manipulation of the nuts *d* and *g* the frame is maintained in a horizontal plane, and so steady that it has no independent motion. When the emery-wheel is slightly eccentric to the shaft, there is created a vibration or lateral movement, which is not only inconvenient but dangerous. This in the old method is anticipated by making the frame of the machine heavy and permanent, the eccentric movements of the emery-wheel being accepted as a necessary evil; but by my improved method this lateral movement is assimilated in the frame, but received and modified in the cushions and wires supporting the frame. Thus the emery or polishing wheel finds a center to which every point is concentric.

I do not consider the location or exact means for suspending the frame on the wires material, for that would be attended to according to circumstances and as best adapted to maintain the center of gravity of the frame; nor do I consider the substitution of metal or other springs, or the changing of the wires for ropes, cable-chains, or springs, or the lessening or increasing of their number, as may be desirable, a departure from the principle of my invention, which is in substance the suspension



of the frame supporting the bearings of an emery or polishing wheel by elastic and flexible supports, so that the rapidly-revolving particles may be free to find a common center of rotation, which is, in fact, its center of gravity.

What I claim as new is—

1. The means for centering emery-wheels, consisting of the frame in which said emery-wheel has its bearings, and the medium for connecting the same to the floor and ceiling between which said frame is suspended.

2. The combination, with the frame in which the emery or polishing wheel has its bearings, of the wires E, connected at their lower ends to the frame and at their upper ends to the ceiling, and the wires F, connected at their upper ends to said frame and at their lower ends to the floor, in the manner hereinbefore set forth.

3. The combination, with the frame in which an emery or polishing wheel has its bearings,

of suitable wires connected to the said frame at one end and to the ceiling or floor, respectively, whereby the frame is suspended between the floor and ceiling, and of rubber or spring cushions placed, respectively, at each end of said wires at or near their points of connection to the frame and to the ceiling or floor.

4. The means for centering emery-wheels, consisting of the frame on which said wheels have bearings, the elastic and flexible medium for connecting said frame to the means for suspending the same, and said means of suspension, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

JOSEPH D. HUNTINGTON.

Witnesses:

JAMES H. COYNE,

FRANK D. THOMASON.