

(No Model.)

H. TRENTA.
STEP FOR VERTICAL SHAFTS.

No. 572,282.

Patented Dec. 1, 1896.

FIG. 1.

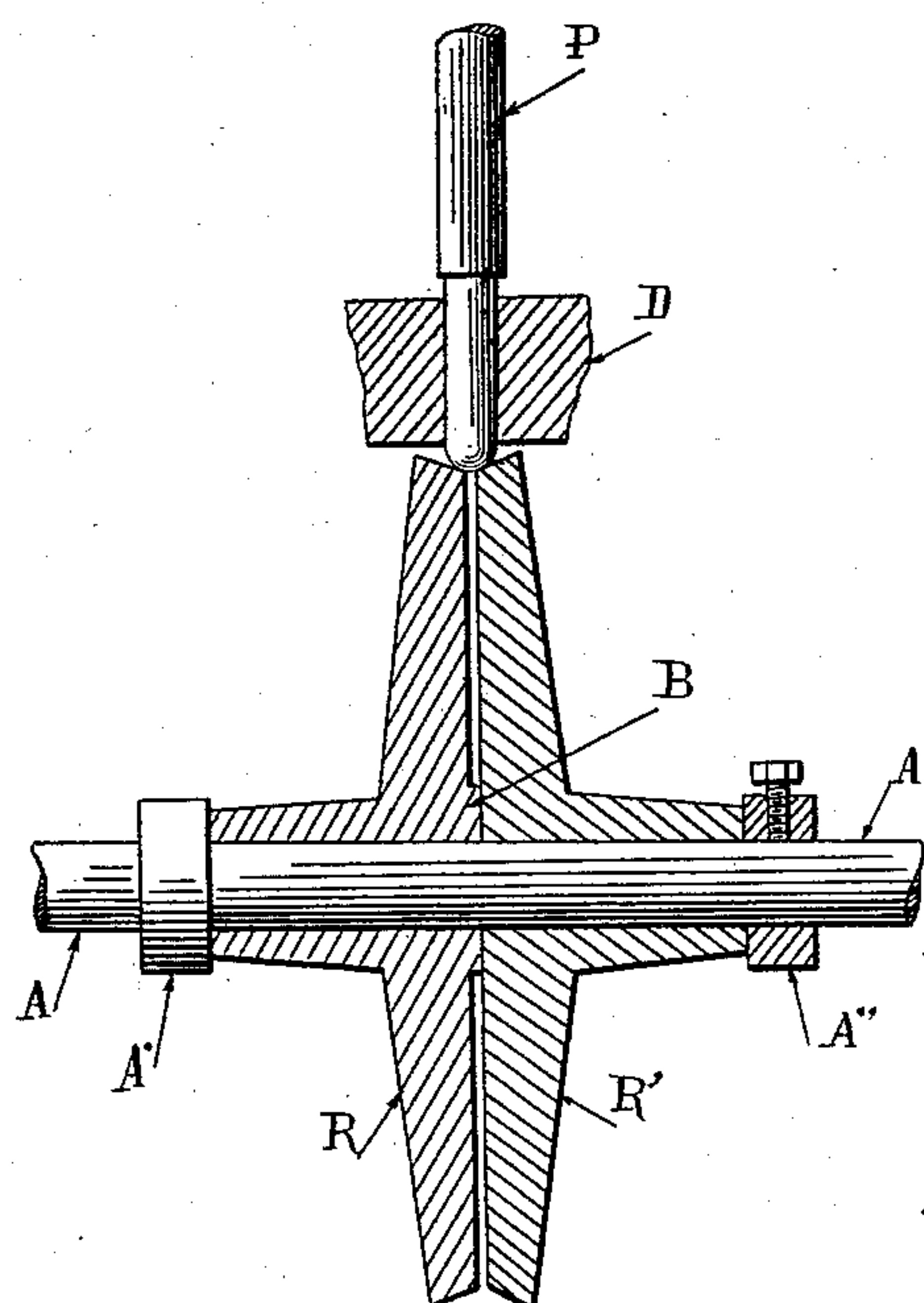


FIG. 2.

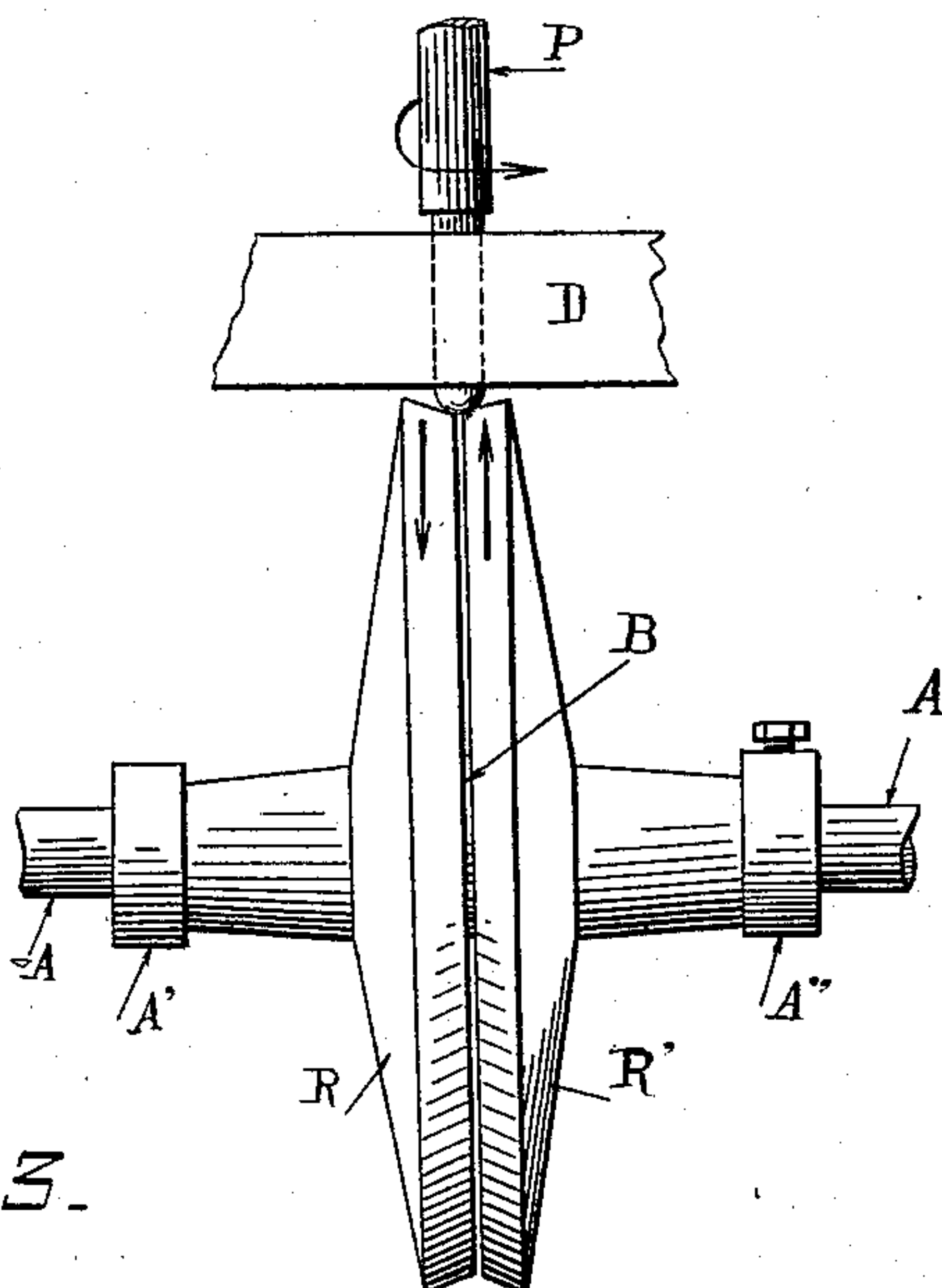
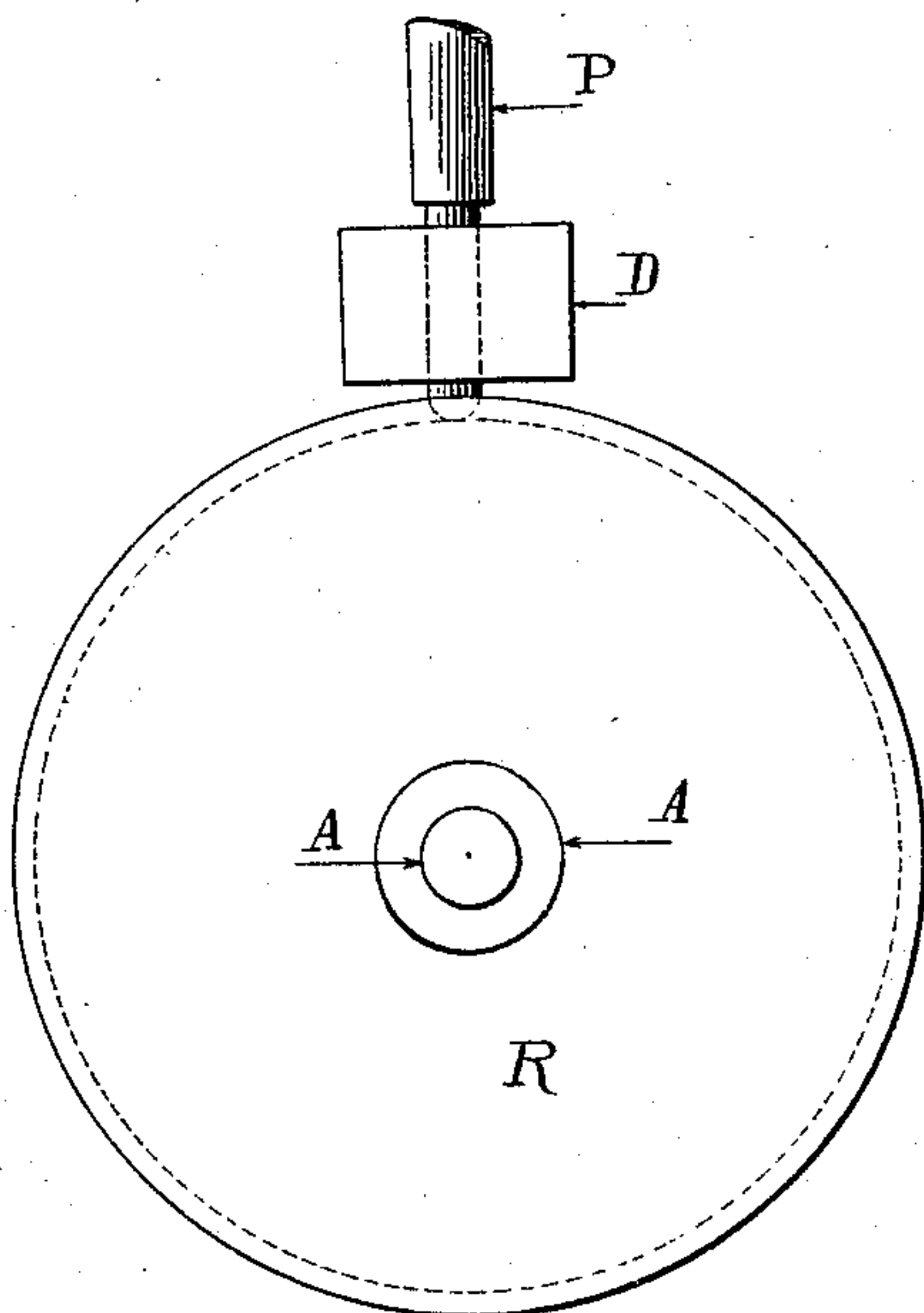


FIG. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

HYACINTHE TRENTA, OF LYONS, FRANCE.

STEP FOR VERTICAL SHAFTS.

SPECIFICATION forming part of Letters Patent No. 572,282, dated December 1, 1896.

Application filed May 19, 1896. Serial No. 592,206. (No model.) Patented in France April 15, 1896, No. 252,839.

To all whom it may concern:

Be it known that I, HYACINTHE TRENTA, a citizen of the Republic of France, residing at Lyons, France, have invented certain new and useful Improvements in Steps for Vertical Shafts of all Kinds, (patented in France, No. 252,839, dated April 15, 1896,) of which the following is a specification.

The present invention relates to a device to be used as a substitute for steps for vertical shafts of all kinds, and is especially used to great advantage in apparatus working at a great speed, such as steam or water turbines, hydro-extractors, and the like. Its object is to transform in a rolling motion the sliding friction which takes place between the base of the pivot and the surface which supports it, which friction absorbs a considerable quantity of work and produces overheating at the least decrease of lubrication.

The accompanying drawings show the device adapted to shafts turning at a great rate of speed.

Figure 1 is a vertical section on the axle of the pivot. Figs. 2 and 3 are respectively a profile and an elevation thereof.

A is a horizontal shaft having one or both extremities rigidly fixed in the frame of the apparatus, which is not shown in the drawings. Two wheels revolve upon this shaft. Their plane surfaces are in juxtaposition with a little play, so that there is not the least friction between the same except that of a circular shoulder B, cast on at the center of one of them, the projection of which determines the play between the two wheels. The latter are held together by two collars A' A'', one at least of which is adjustable so as to allow the regulation. The edges of the wheels are slightly conical and form a circular groove, the section of which forms a flattened V. The pivot P rests upon the upper part of the groove and is guided by a bracket D, which holds it in position. The point of the pivot, which

has a semispherical shape, can have only two contact-points with the oblique edges of the wheels. These points will be more or less distant, according to the obliquity of the edges and according to the radius of the spherical part of the pivot. When the pivot is in motion, these contact-points will be the seat of a rolling, which will carry along the disks R R' in reversed direction and at a rate of speed considerably less than that of the pivot and in proportion with the distance between the contact-points upon the two wheels or the diameter of said wheels.

The lubricating will be easily established by plunging a little part of the edge of the wheels R R' in an oil-reservoir placed below the same. The oil will run along their outside and inside surfaces and will lubricate the horizontal shaft and its shoulders. The bearing D may be lubricated by a suitable oil-cup, the excess of which, running into the lower reservoir, will easily be utilized again. I of course reserve the right to still further reduce the friction by mounting the wheels R R' upon balls, cylinders, rollers, &c., and to use for their construction all metals or other suitable materials.

The shape and devices in detail will also vary according to the object for which the apparatus must serve.

What I claim is—

In combination, the shaft P to be supported, having a semispherical end, the two contiguous disks, the peripheries of which form a V-shaped groove, and the shaft carrying said disks, said semispherical end of the shaft P resting at only two points on the two disks, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HYACINTHE TRENTA.

Witnesses:

GASTON JEAUNIAUX,
MARIUS VACHON.