

No. 782,275.

PATENTED FEB. 14, 1905.

F. H. RICHARDS.
HAND WHEEL.

APPLICATION FILED FEB. 26, 1902.

Fig. 1.

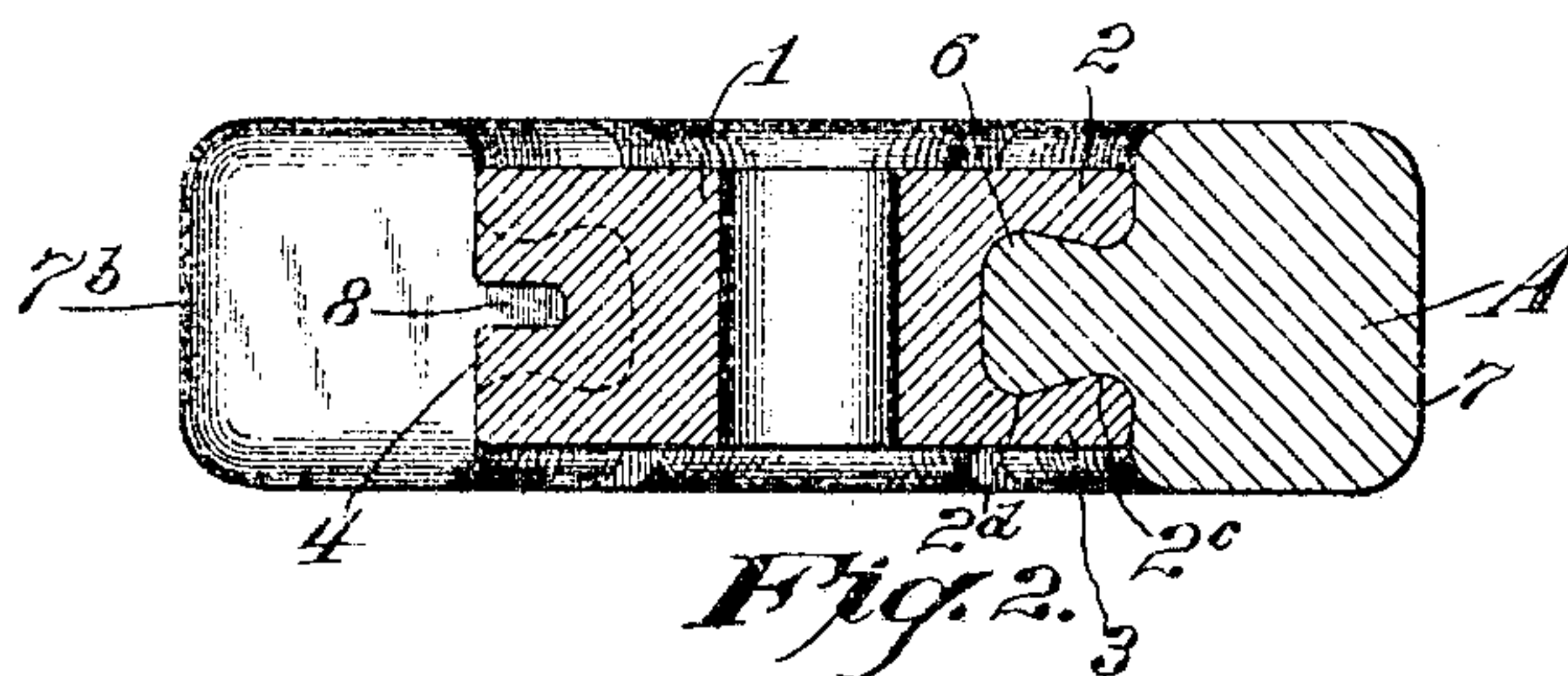
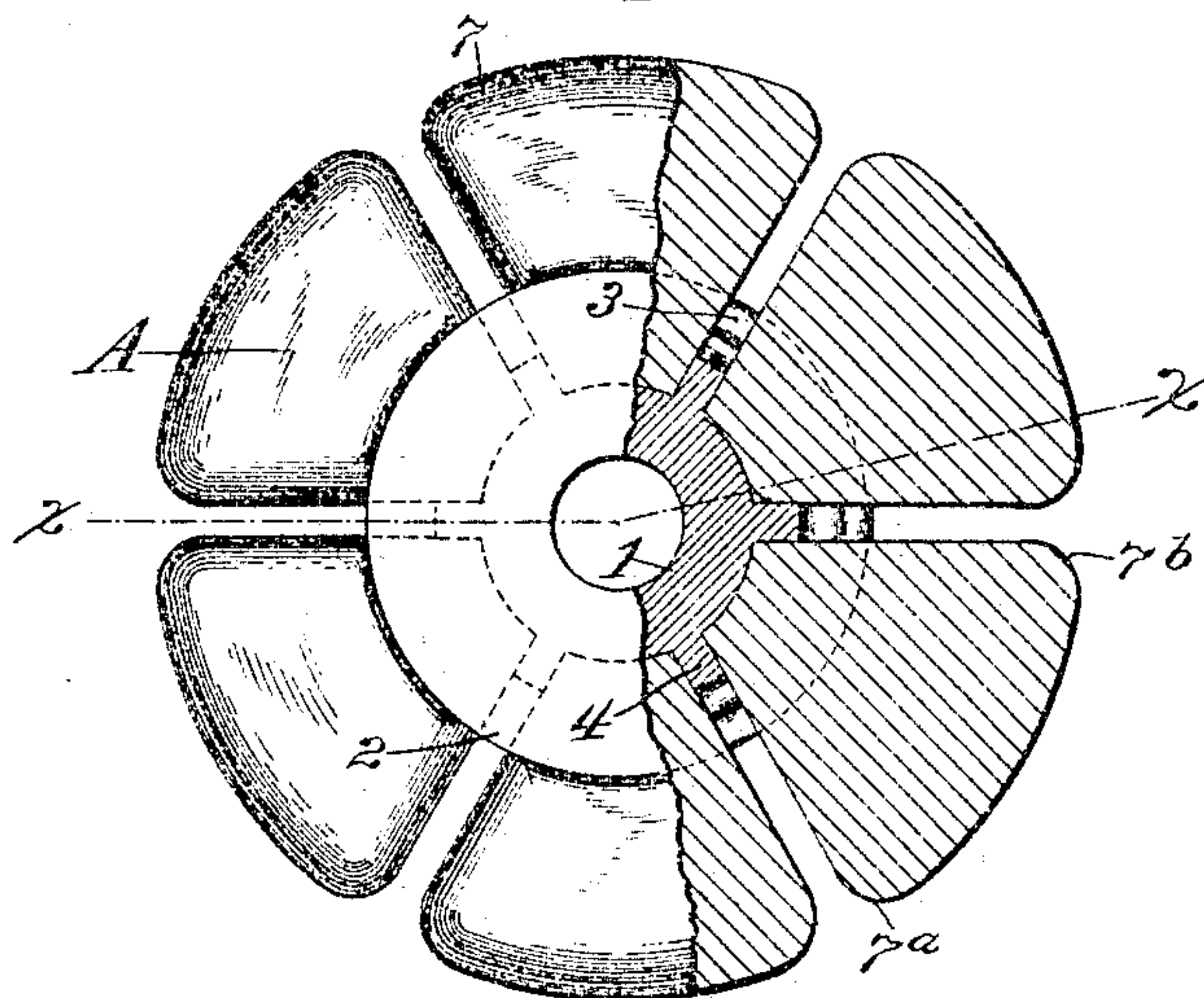


Fig. 2.

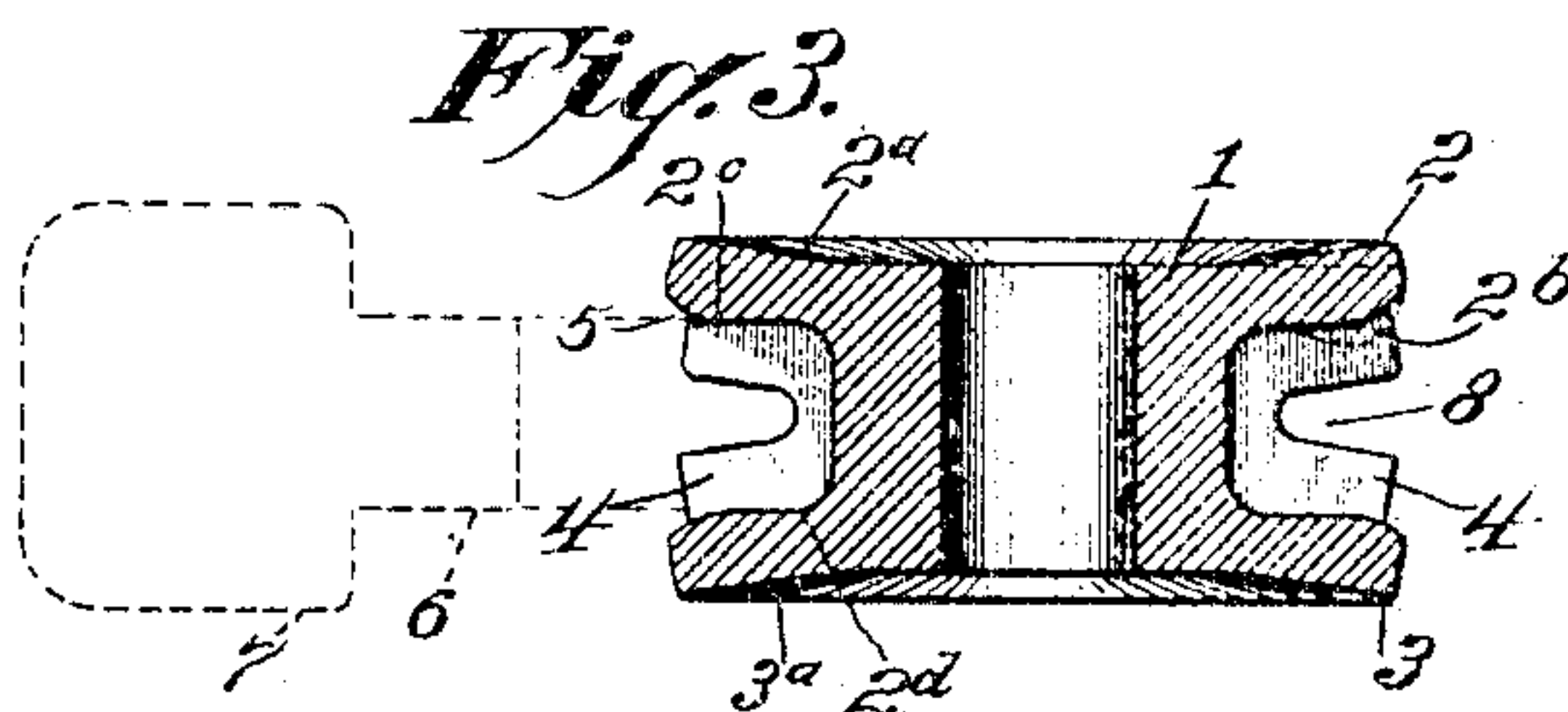


Fig. 3.

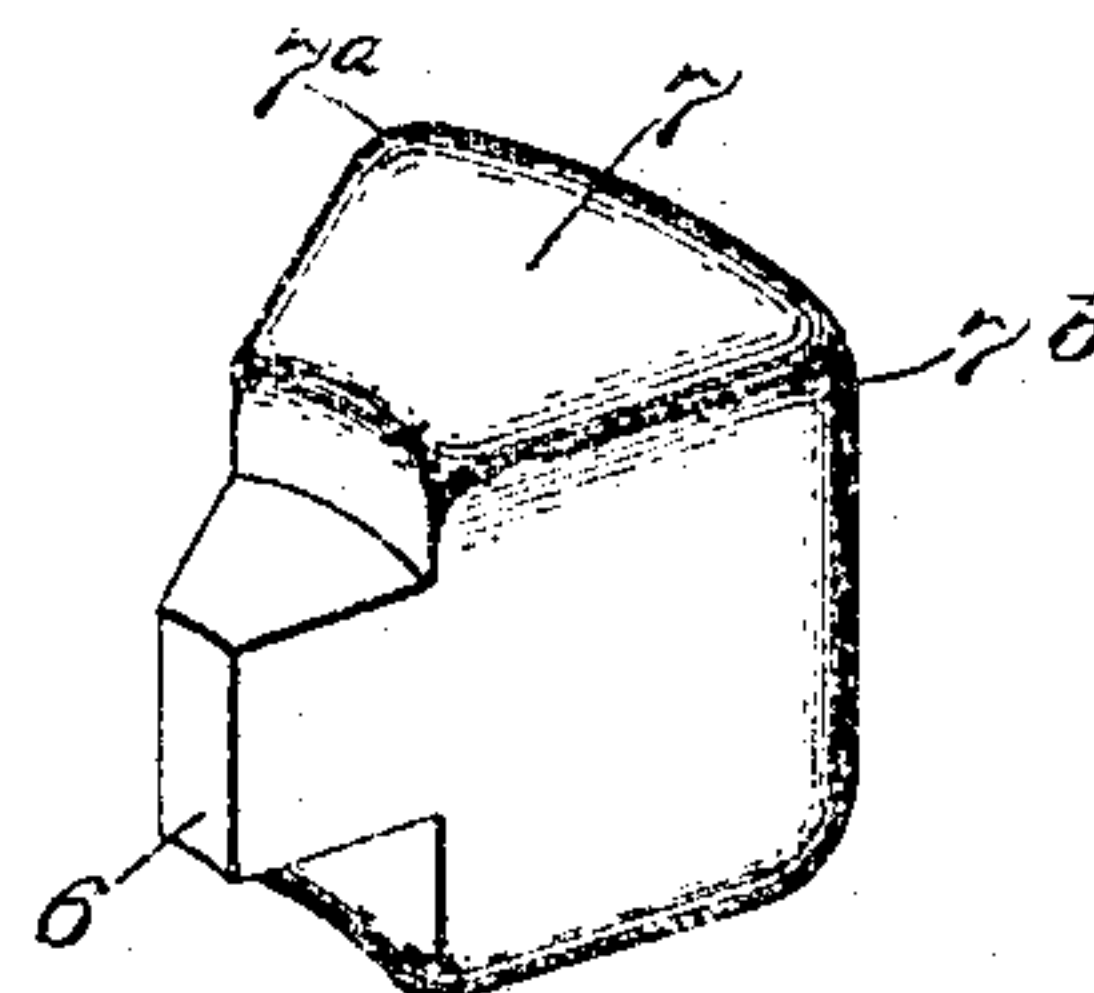


Fig. 4.

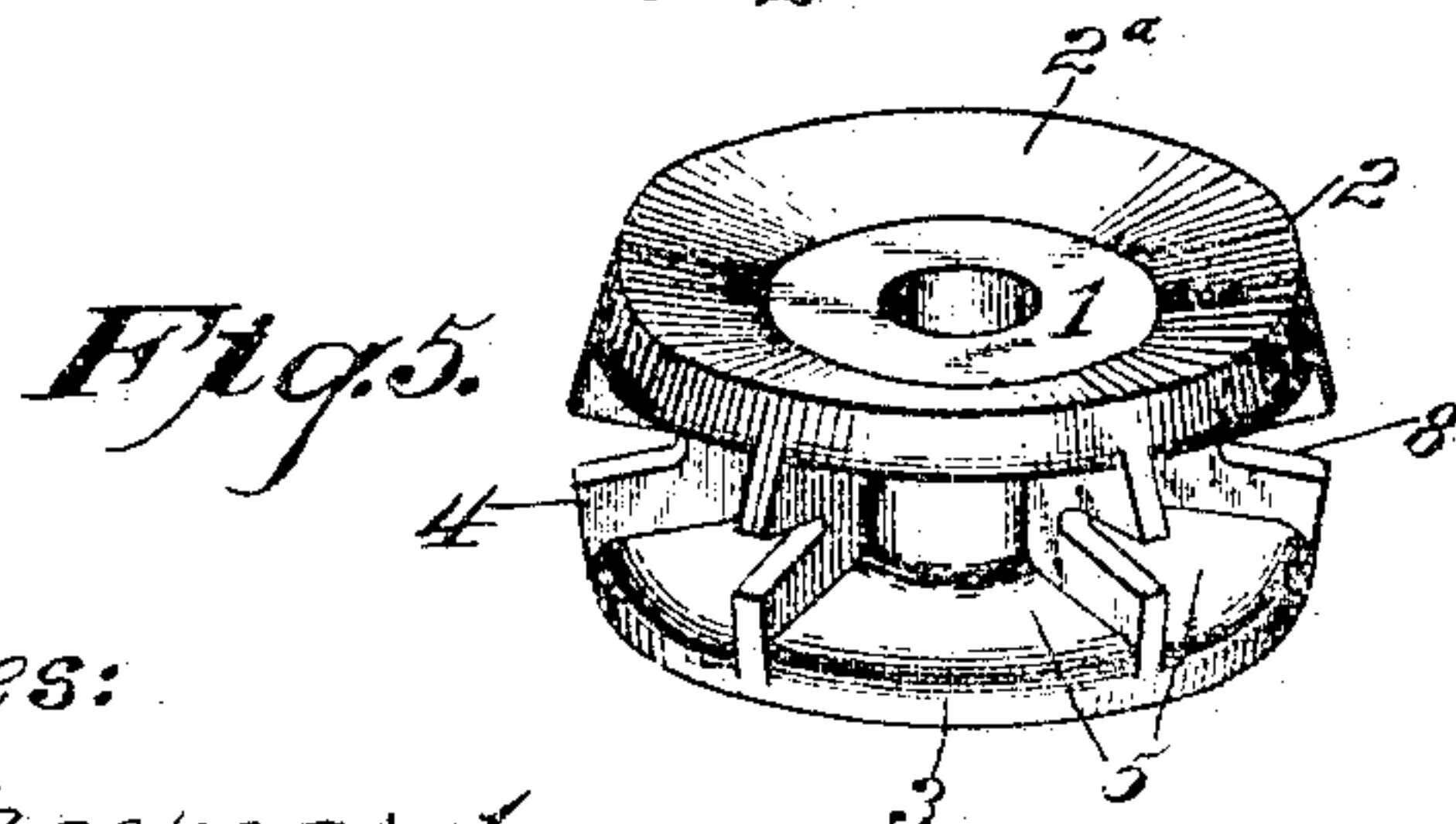


Fig. 5.

Witnesses:

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UNITED STATES PATENT OFFICE.

FRANCIS H. RICHARDS, OF HARTFORD, CONNECTICUT.

HAND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 782,275, dated February 14, 1905.

Application filed February 26, 1902. Serial No. 95,683.

To all whom it may concern:

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Hand-Wheels, of which the following is a specification.

This invention relates to hand-wheels such as used upon steam-valves and elsewhere; and its object is to make at a low cost a hand-wheel which is simple in construction, well adapted for use, and practically indestructible.

In the drawings forming part of this specification, Figure 1 is a face view of a hand-wheel made in accordance with my present improvements, the same being partly broken away to exhibit the construction. Fig. 2 is a sectional view of the wheel, taken on the line *x x* of Fig. 1. Fig. 3 shows a section of a metallic hub and also a dotted wooden wheel-section. Fig. 4 is a perspective of a wheel-section; and Fig. 5 is a perspective of a metallic hub-blank.

In the several views similar parts are designated by similar characters of reference.

I form a hub-blank, as at Figs. 3 and 5, preferably of a malleable metal, as brass, said blank consisting of a tubular central portion 1, having opposite flanges 2 and 3 of relatively great diameter, said flanges being preferably dished or flaring, as at 2^a and 3^a. The annular space between the flanges is divided by means of a series of partitions 4, forming series of sockets 5, said partitions being preferably radial and disposed at equal intervals and preferably cast or formed integral with the hub and flanges. The number of sockets may be varied; but I preferably form six. In each of said sockets or mortises I insert a root or tenon 6, formed upon the inner end of a segment-shaped rim-section 7, the sections taken together forming a nearly continuous rim, as at A, Fig. 1. The amount of separation of the sections is preferably equal to the thickness of the partitions 4, and the purpose of leaving a space between the sections is to give the attendant a better grip and also to afford extra heat-radiating surface, whereby the wheel is kept cool enough to handle without burning the fingers, and injury to the wheel from overheating is avoided. Each section preferably has rounded outer corners, as at

7^a and 7^b. When the sections 7 are assembled upon the hub, the whole is placed between suitable dies, whereby the flanges 2 and 3 are set toward each other, as indicated by full lines at Fig. 2 and by dotted lines 2^b at Fig. 3, thereby firmly compressing all the wooden tenons 6 and effectually and permanently securing the latter to the hub. The outer portions of the flanges are beaded or thickened at 2^c, Fig. 2, so as to pinch or crease the tongues 6. Practically a dovetail joint is made between the wood and the metal, as at Fig. 2, since the material of the flanges near the hub is thinner, as at 2^d, so that when the die-pressure is applied the setting of the metal occurs over a considerable area, so that very little strain occurs at any point, and liability of breaking the metal is avoided. Each partition may be cleft, as at 8, about midway between the flanges 2 and 3, so as not to prevent the approach of said flanges toward each other under the action of the dies.

It will be seen that I produce at small expense an extremely simple, solid, durable, and cool hand-wheel, which is readily attachable in the usual manner to valve-stems and other devices.

Having thus described my invention, I claim—

1. A hand-wheel comprising a hub having a plurality of sockets and rim-sections compressed by said sockets.

2. A hand-wheel comprising a hub having a plurality of sockets, and rim-sections compressed by said sockets; the compressed portions of said sections being solid.

3. A hand-wheel consisting of a series of separated rim-sections each broader at its outer end than at its inner end, and metallic flanges between which the inner ends of said sections are secured.

4. A hand-wheel comprising a hub having flanges, and separated rim-sections having tenons dovetailed between said flanges.

5. A hand-wheel comprising a hub having flanges, and separated rim-sections having solid tenons compressed between said flanges.

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Witnesses:

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