

(No Model.)

2 Sheets—Sheet 1.

E. E. JOSEF.
CAR WHEEL.

No. 465,096.

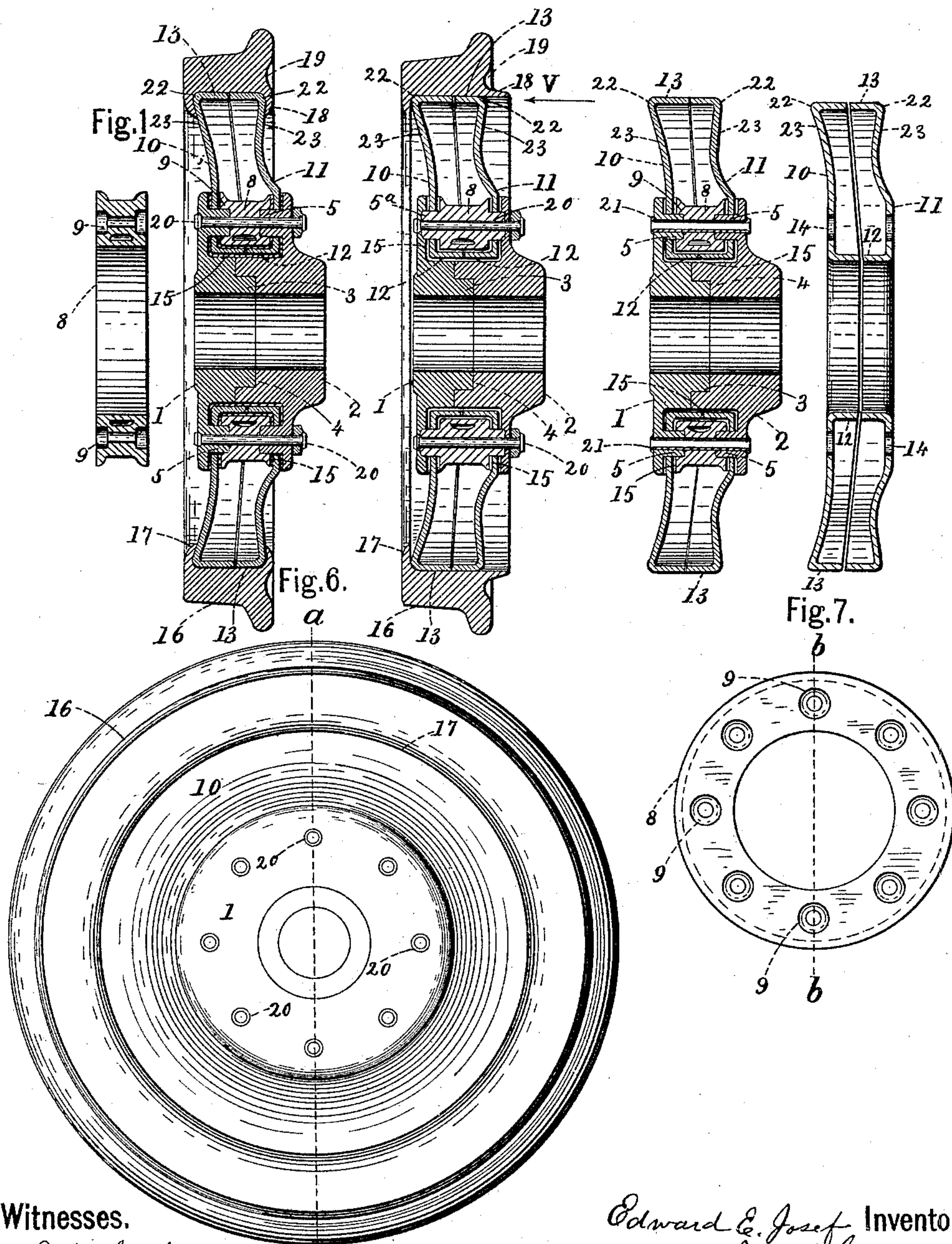
Patented Dec. 15, 1891.

Fig.2

Fig.3.

Fig.4.

Fig.5.



Witnesses.

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(No Model.)

2 Sheets—Sheet 2.

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Fig.8.

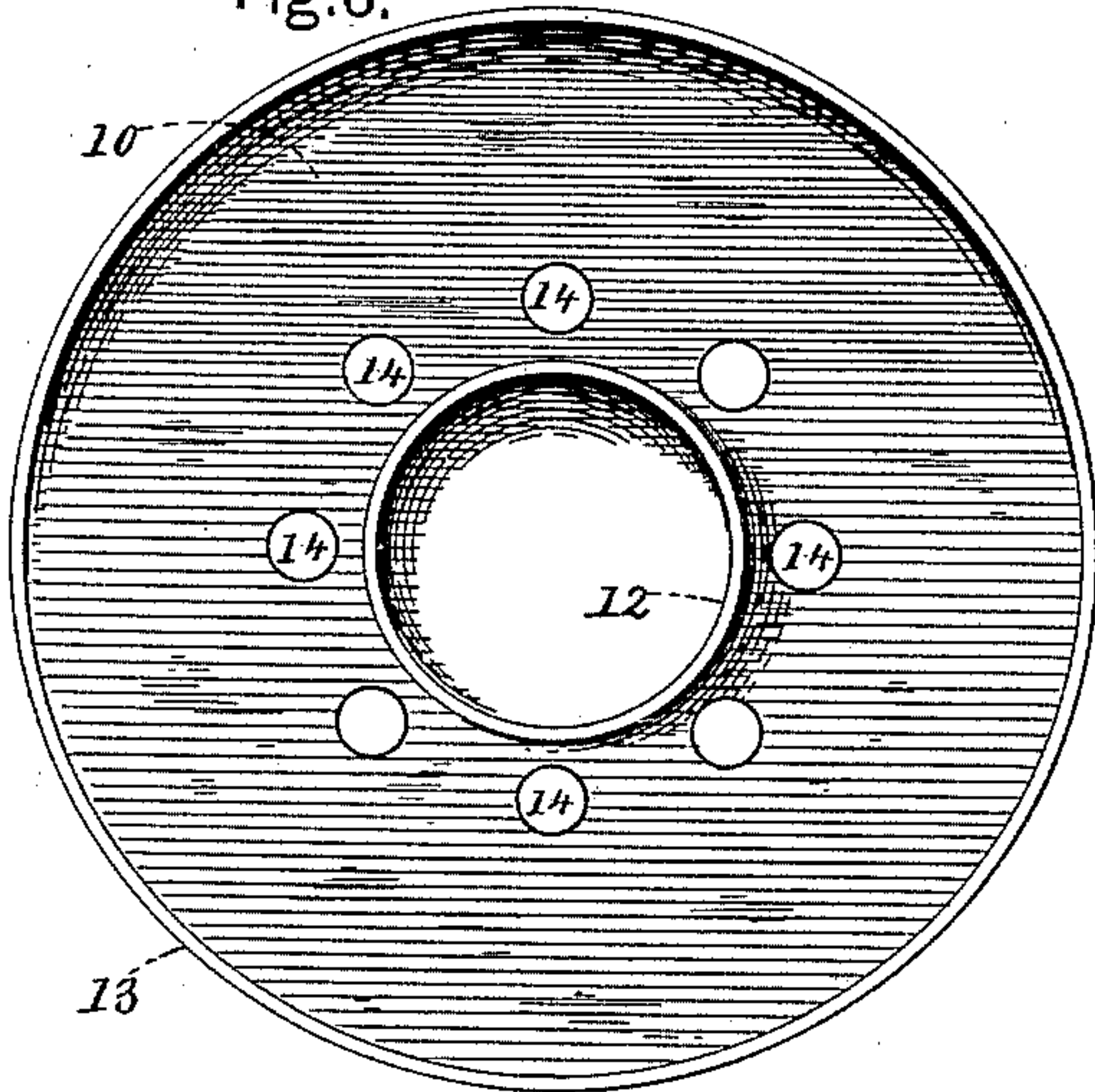


Fig.9.

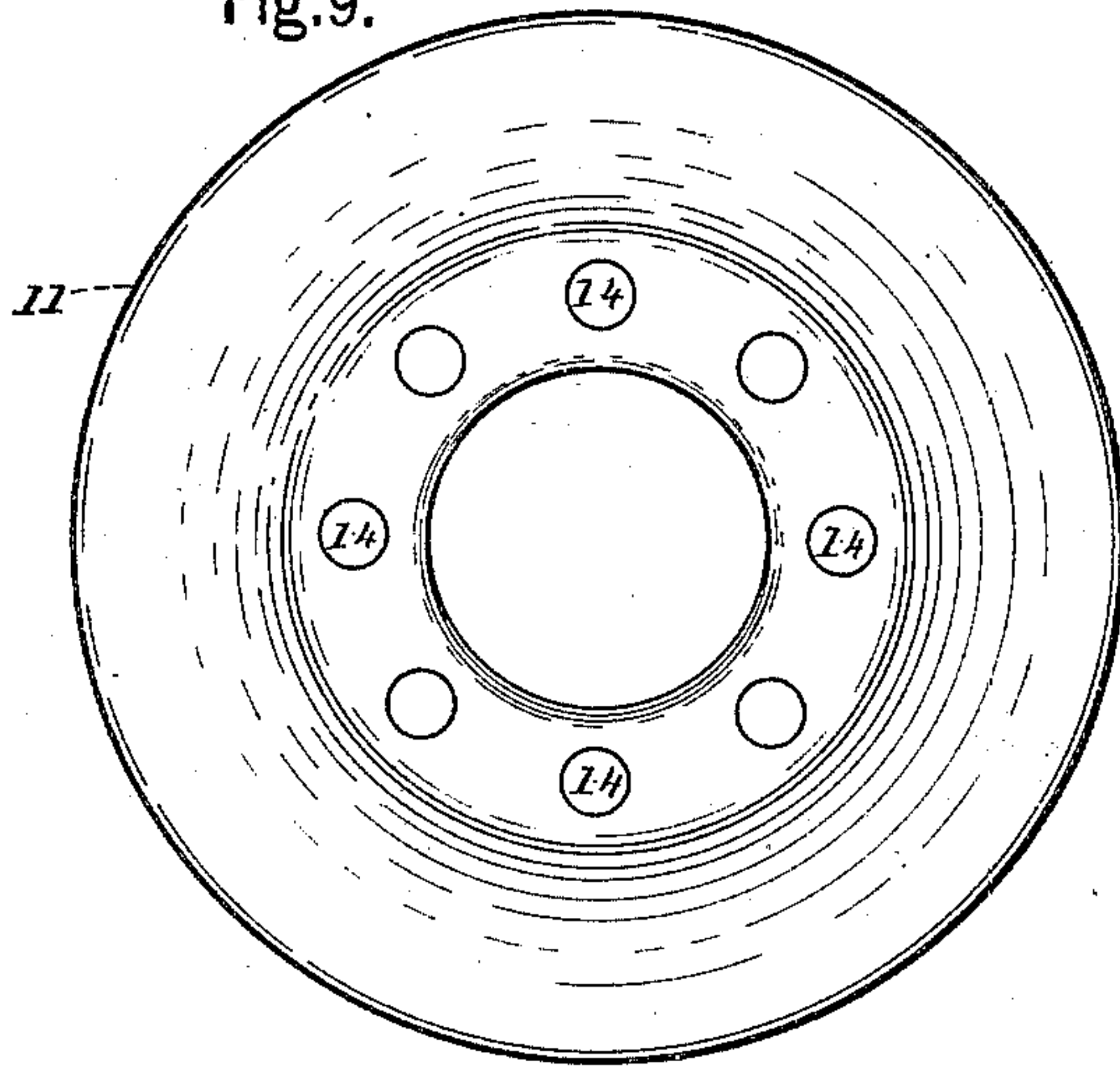


Fig.10

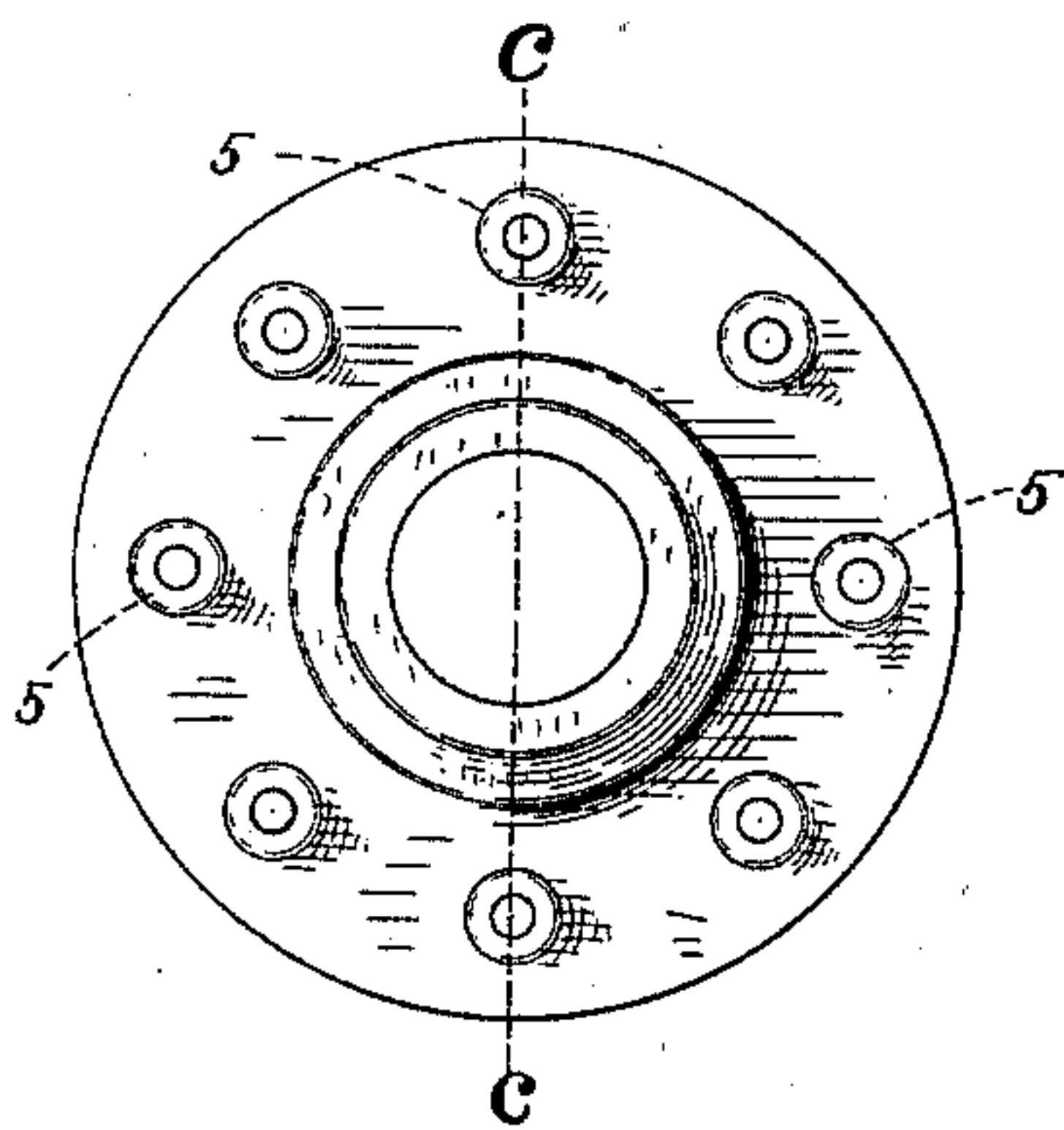


Fig.11.

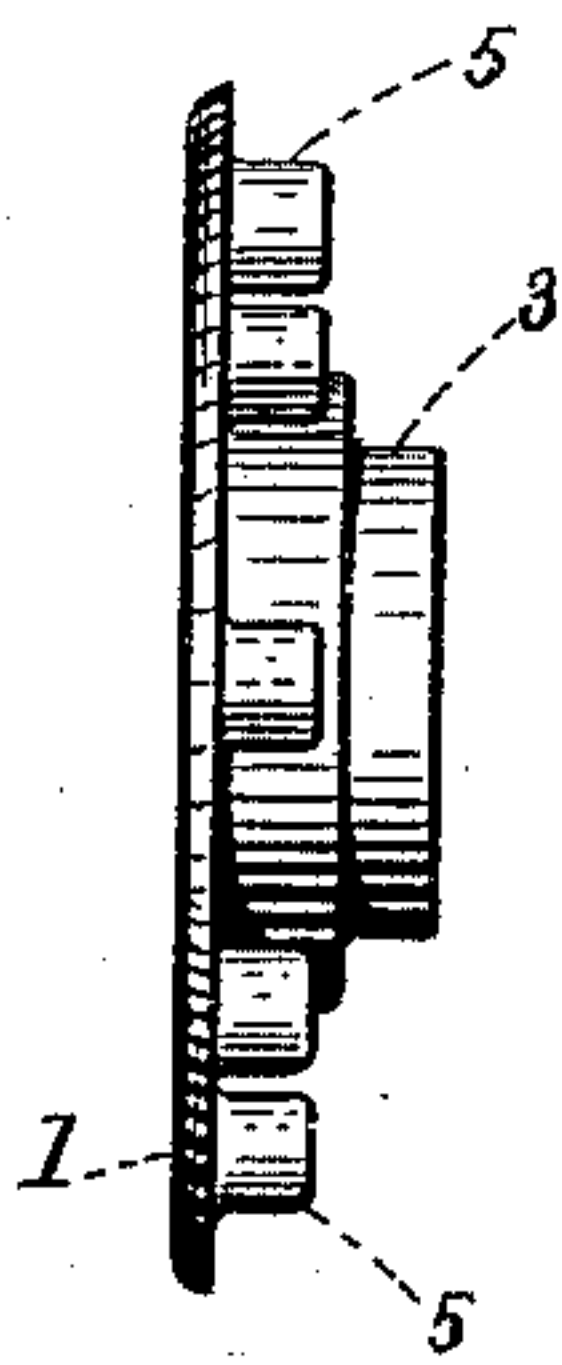


Fig.12.

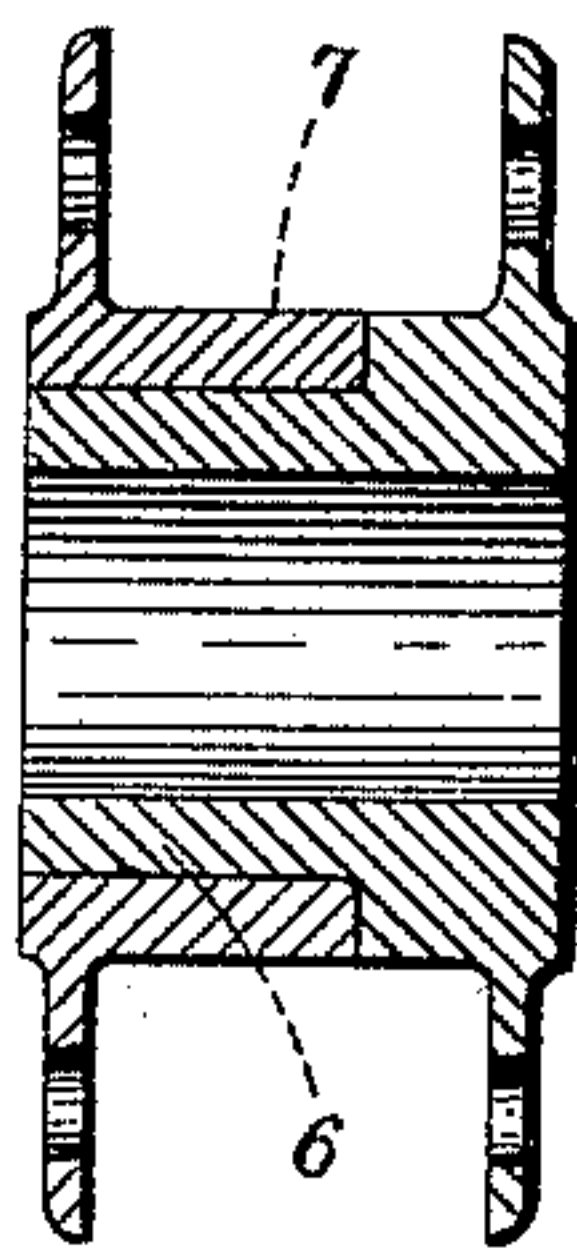
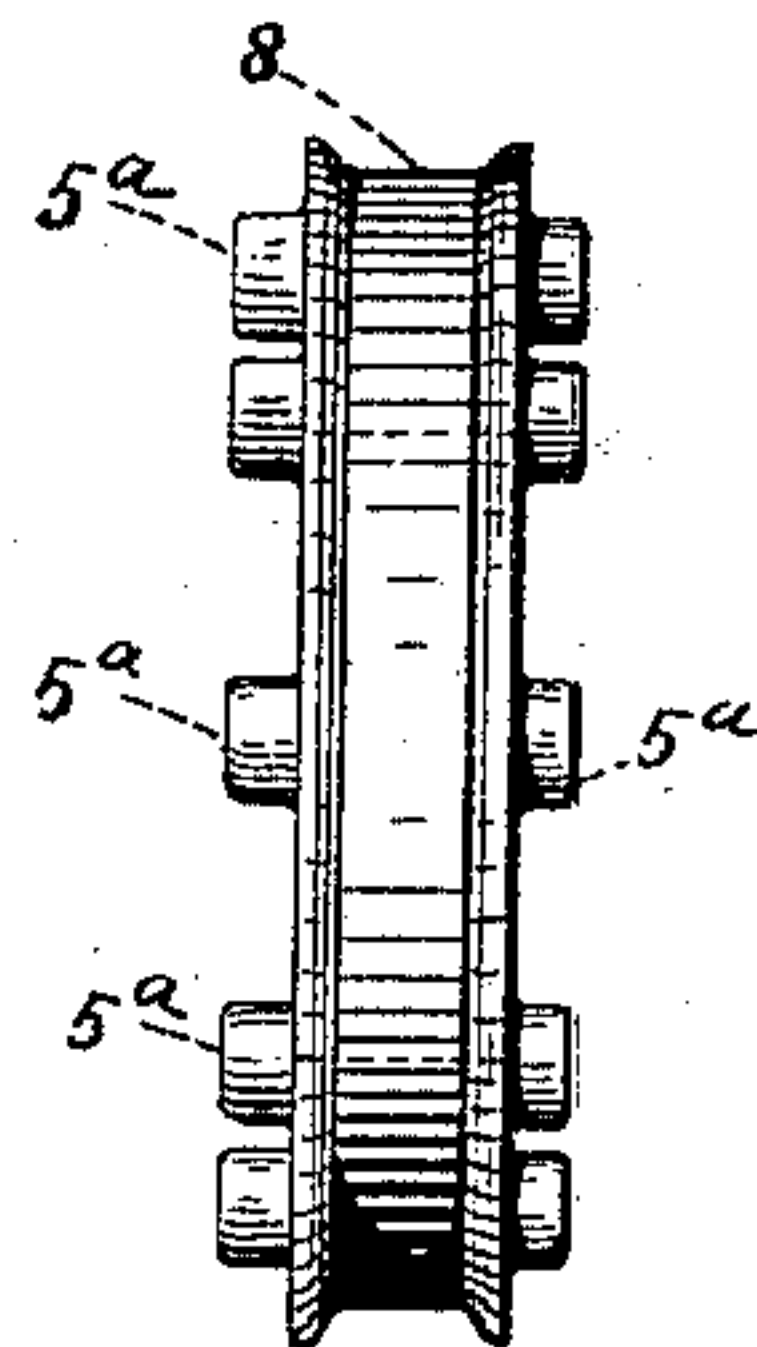


Fig.13.



Witnesses.

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UNITED STATES PATENT OFFICE.

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CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 465,096, dated December 15, 1891.

Application filed February 28, 1891. Serial No. 383,164. (No model.)

To all whom it may concern:

Be it known that I, EDWARD E. JOSEF, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Car-Wheels, of which the following is a specification.

My invention consists in certain improvements in wrought-metal car and locomotive wheels, whereby great strength and durability are obtained, and it will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical cross-section through line *b b*, Fig. 7, showing the inner supporting ring or collar. Fig. 2 is a vertical cutting section in or about line *a a*, Fig. 6, cutting through a completed wheel. Fig. 3 is a similar section showing a slight modification of the inner supporting ring and hubs, showing also the tire-flanges before being turned in to bind the tire to the wheel. Fig. 4 is a vertical central cross-section through the body of the wheel, consisting of the two disks, central supporting-ring, and hub, the tire being omitted. Fig. 5 is a vertical central cross-section through the two disks composing the body of the wheel. Fig. 6 is a front elevation of a completed wheel. Fig. 7 is a side elevation of the central supporting ring or collar. Fig. 8 is an inside face view of one of the disks forming one half of the body of the wheel. Fig. 9 is an outside face view of the opposite disk, which forms the other half of the body of the wheel. Fig. 10 is an inside face view of the hub. Fig. 11 is a side elevation of the same. Fig. 12 represents a vertical central cross-section showing a modification of the hub. Fig. 13 is a side elevation showing a modification of the central supporting-ring.

The object of my invention is to produce a locomotive or car wheel that will combine great strength and durability combined with lightness and truth of balance, and consequently be not liable to break or otherwise get out of order.

In said drawings the hub of the wheel, it will be seen, is composed of two parts 1 and 2. (See Figs. 2, 3, and 4, also Figs. 10 and 11 on Sheet 2.) The part 1 of the hub is provided with a portion 3 of reduced diameter,

adapted to be fitted nicely in the recessed portion 4 of the opposite part 2 of the hub, so that when the two are put together they form a hub substantially as shown in Figs. 2, 3, and 4. On the inner side of each portion of the hub is a series of projecting sleeves 5, (see Figs. 2, 4, 10, and 11,) the object of which will more clearly hereinafter appear. This hub is preferably made of steel casting, but malleable iron or other suitable material may be used.

A modification of the hub is shown in Fig. 12, in which it will be seen that one part of it is provided with a reduced portion 6, that extends the full thickness of the hub, and the other part 7 is bored out sufficiently large to fit closely over it. The inner supporting-ring 8 is adapted to fit around the inner portion of the wheel near the hub, and is provided with a series of depressions 9, corresponding in size with the sleeves 5, which fit nicely into them when the wheel is together. In Fig. 13 I have shown a modification of this inner supporting-ring, having projecting sleeves 5^a thereon instead of the depressions 9. In this case the sleeves 5 on the hub would be dispensed with and in their place a corresponding series of holes would be provided to receive the sleeves 5^a. Either construction will answer the same purpose. The body of the wheel is composed of two disks 10 and 11. (See Figs. 5, 8, and 9, also the sectional views Figs. 2, 3, and 4. These disks are formed, preferably, of sheet-steel for a car-wheel from one-quarter to one-half inch thick, more or less; but for other wheels other thicknesses can be used. They are either stamped up into shape in suitable dies or formed by a flanging-machine, and each are provided with a central flange 12, which surrounds the hub. At the periphery of each of these disks is another flange 13, the construction being such that when the two disks are put together the edges of the flanges meet, substantially as shown in Fig. 5. Around the central flange 12 is a series of holes 14 to receive the sleeves 5 or 5^a. Between the hub-flanges, the body of the hub, the disks 10 and 11, and the central flanges 12 is interposed a thin layer of asbestos or other similar material 15 to relieve the several parts from the concussion incident to said road-service. I also place a layer of similar material 15 between the inner sides

of the disks and their flanges 12 and the central supporting-ring. The object of this construction is to provide the means for absorbing the concussion incidental to and created by the running of wheels over railroad-tracks, especially where the ends of the rails abut together, and by this means prevent the concussive blows from being transmitted through the wheel and hub to crystallize the axle, thereby rendering it liable to break and cause accidents. The tire 16 (see Figs. 2, 3, and 6) is made of the usual material—rolled steel—and is provided with an inner flange 17 projecting toward the center and an outwardly-projecting flange 18. Above the flange 18 is a depression 19, which allows the flange 18 to be turned over more easily when completing the wheel. This construction permits the wheel after being secured together, as shown in Fig. 4, by the bolts 20 or by tubular bolts 21, (shown in said Fig. 4,) to be slipped into the tire, passing in the direction of the arrow V, Fig. 3. After the tire is thus put in place by shrinking in the usual and well-known way both flanges are forced over close to the disk, so as to bring them rigidly in place, substantially as shown in Fig. 2, thereby completing the wheel.

It will be noticed that both sides 22 of the periphery of the wheel project outward beyond the portions 23, so that even if the tire should become broken it could not come off. From this construction it will be seen that the tire of the completed wheel is formed with two flanges on the inside edges, both projecting toward the center of the wheel, the object of which is to give strength to and stiffen the tire, so as to allow it to be worn thinner in the tread, allowing more service of the tire before being discarded and a new one to be placed on the wheel. A further use of the tire-flanges is the strengthening of the wheel by being turned down over the peripheral edges and sides.

The object of the annular depression or groove 19 in the side of the tire is to lighten it, and also to allow the flange 18 to be more readily bent or flanged down over the edge and side of the wheel to thoroughly hug and embrace it. The annular groove 19, surrounding the flange 18, is an important element, because the flange could not be practically turned down over the edge 22 without it so as to hug it closely over every portion over which it fits, as it will be readily seen the groove practically lengthens the flange so that it can be more readily turned over the edge of the wheel.

In some cases the inner supporting-ring may be dispensed with—for other kinds or smaller lighter wheels, for instance. In this case the sleeves 5 should be made long enough to come together in the center of the wheel, so that when the bolts are put in all the parts are secured together, and, if desired, the asbestos or its equivalent may be omitted.

I claim as my invention—

1. The combination of a double inwardly-

flanged tire for holding the wheel together and the tire rigidly in place, two sheet-metal disks having flanges projecting inward, so that their edges meet when the wheel is completed, a hub formed in two parts, provided with a series of inwardly-projecting sleeves, which pass through the holes in the disks, an inner supporting-ring provided with a series of depressions on each side corresponding with the sleeves on the opposite sides of the hub, into which the sleeves project when the several parts are in place, and bolts for securing the disks and inner supporting-ring to the hub, substantially as described.

2. The combination, with a car-wheel body, of a tire provided with two flanges 17 and 18 on its opposite inner edges, the flange 18 projecting outward, and an annular groove 19, surrounding the flange 18, substantially as and for the purposes described.

3. A car-wheel consisting of two disks, each disk having a peripheral flange 13 and a central flange 12, so that when the two disks are put together the edges of the flanges meet and form a wheel, a tire surrounding said disks and having two flanges projecting inward from its two inner edges, one flange having a groove 19 surrounding it for clamping over and holding the peripheral flange and their disks rigidly together, and a divided hub, and bolts for securing the central flanges firmly together, substantially as described.

4. In a wheel, the combination of two disks, each provided with a central and a peripheral flange, both flanges projecting inward, so that the edges of the opposite flanges will meet when the wheel is put together, and bolts for securing the disks to the hubs, substantially as described.

5. In a car-wheel, the combination of a hub consisting of two parts, one part overlapping a reduced portion of the other, an inner supporting-ring surrounding the hub, two concave double-flanged disks forming the body of the wheel, means for securing them to the hub, substantially as specified, and a tire provided with two flanges on its two inner opposite edges projecting inward toward the center of the wheel and toward each other, substantially as and for the purposes described.

6. A compound hub for wheels, consisting of the part 1, provided with a reduced portion 3 and having a series of sleeves 5, by which it is secured to the body of the wheel, in combination with the portion 2, having the recessed portion 4 to receive the reduced portion 3 of the part 1, and a corresponding series of sleeves 5, through which the bolts pass for securing it to the body of the wheel, substantially as described.

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Witnesses:

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