

No. 640,737.

Patented Jan. 9, 1900.

R. R. BOGGS.
HUB.

(Application filed Dec. 21, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

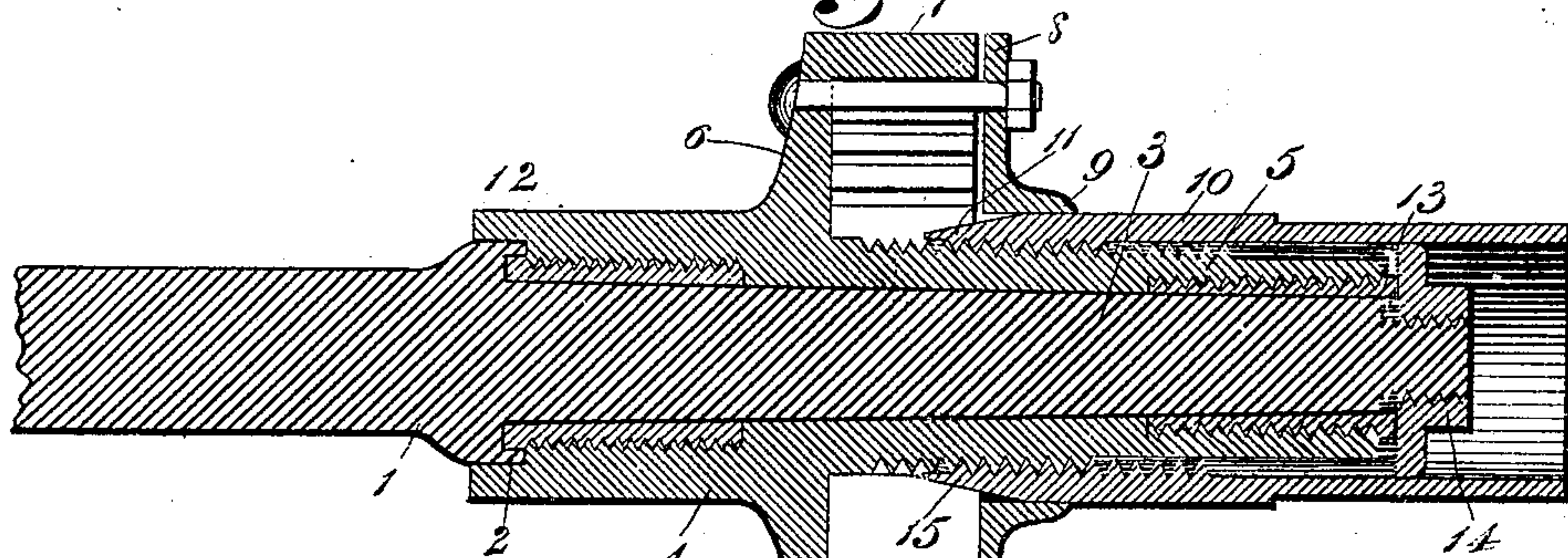


Fig. 4.

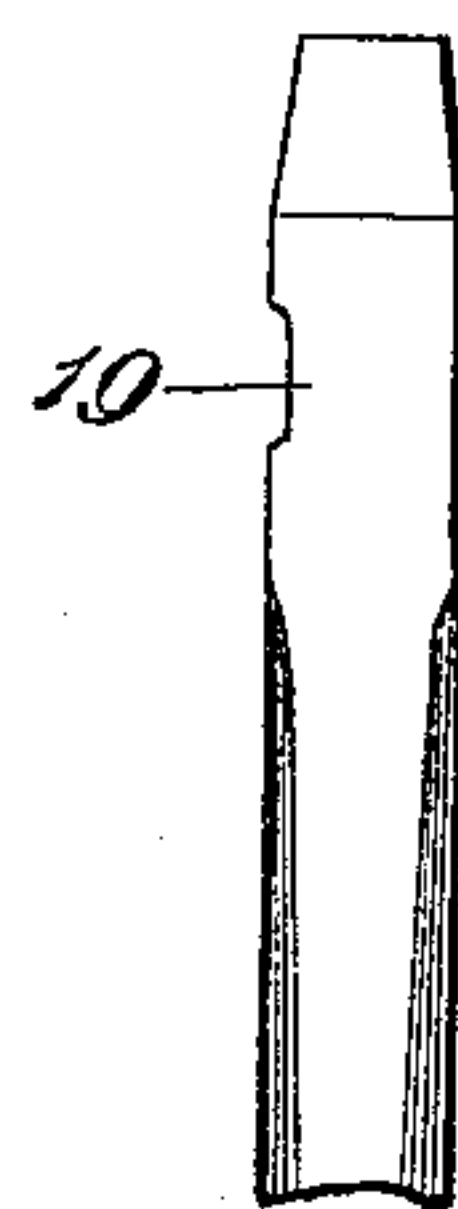
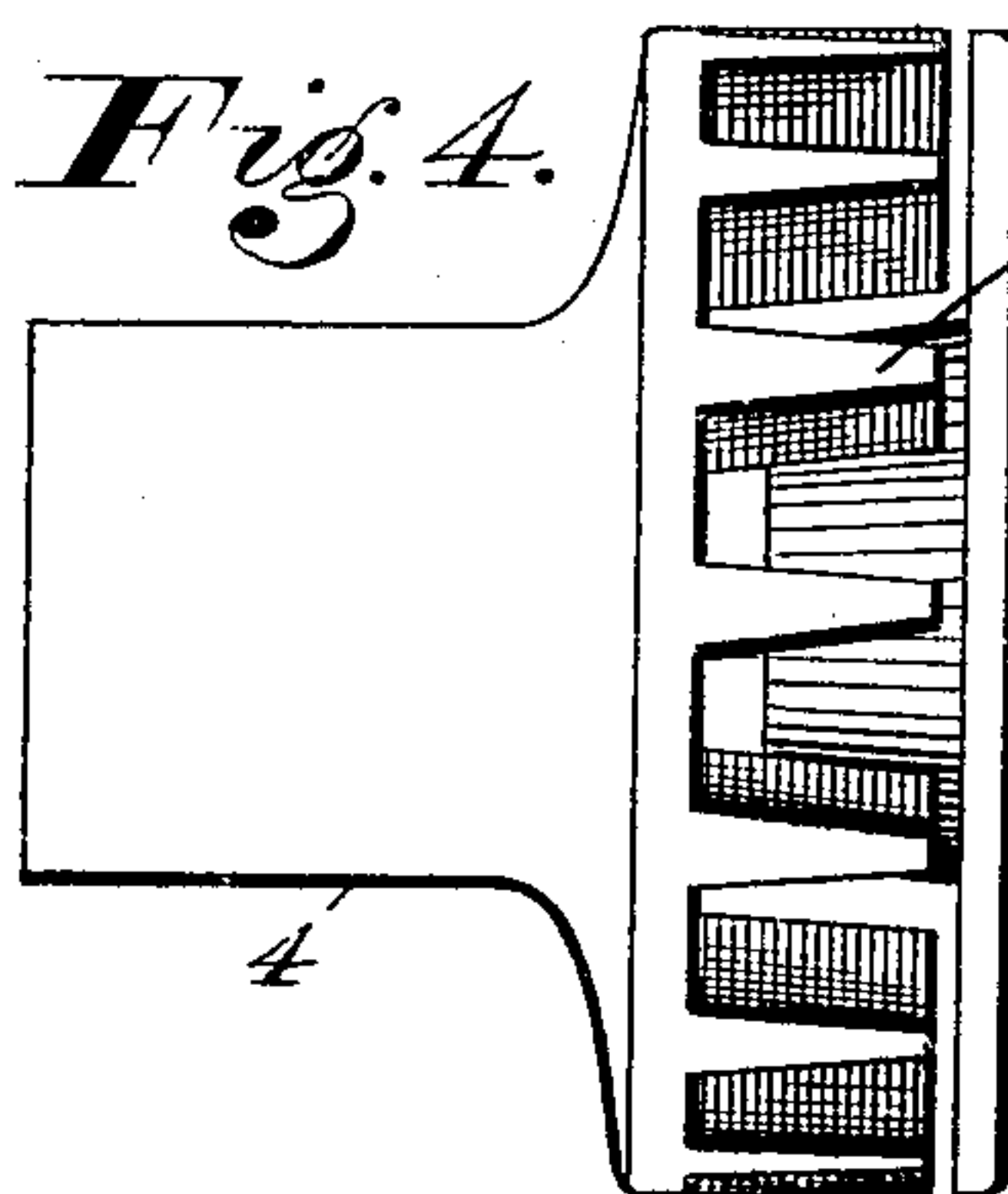
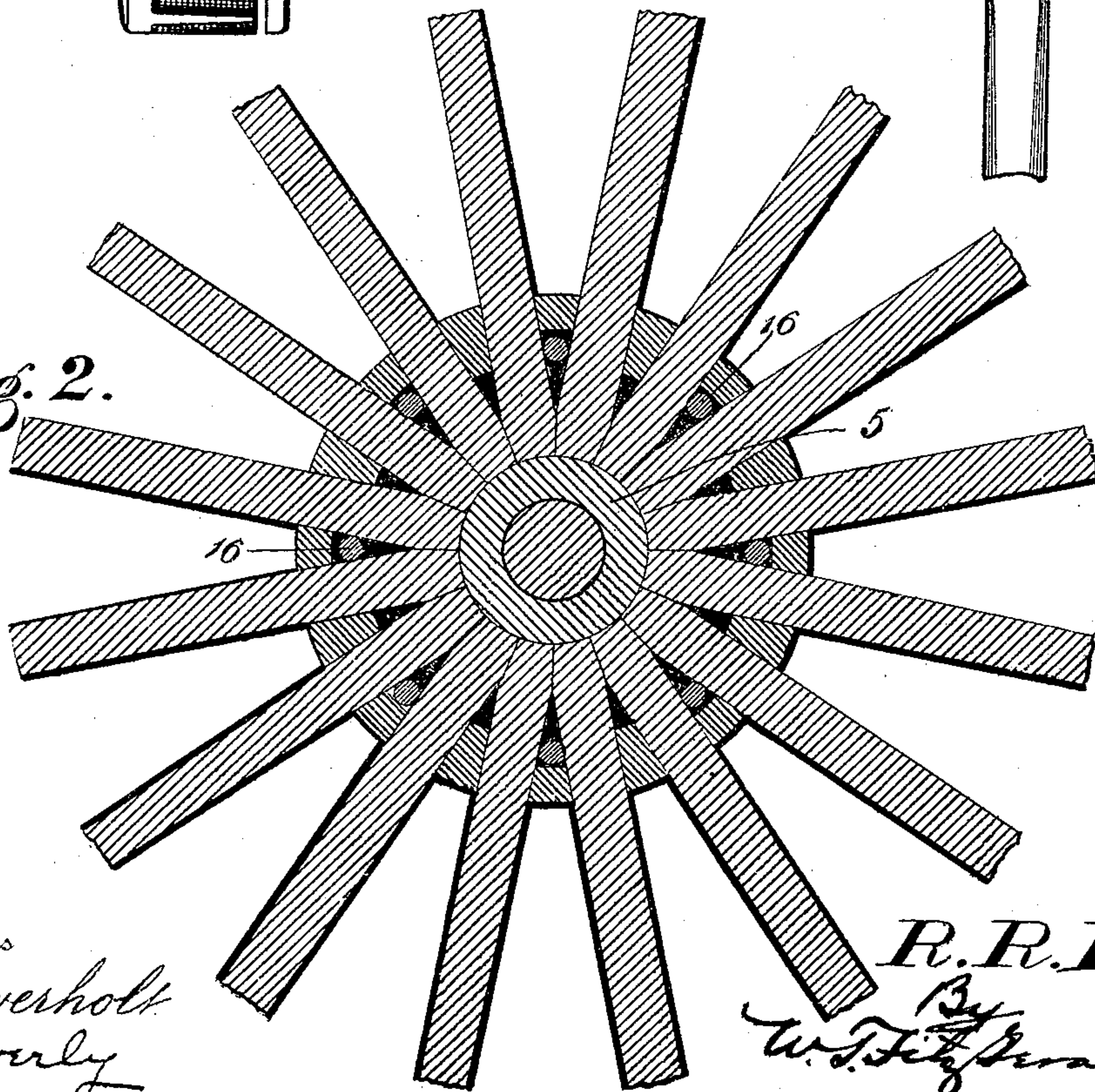


Fig. 3.

Fig. 2.



Witnesses
E. E. Overholt
C. E. Early

Inventor
R. R. Boggs.
By
W. T. F. [Signature]
Attorney.

No. 640,737.

Patented Jan. 9, 1900.

R. R. BOGGS.

HUB.

(Application filed Dec. 21, 1898.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 5.

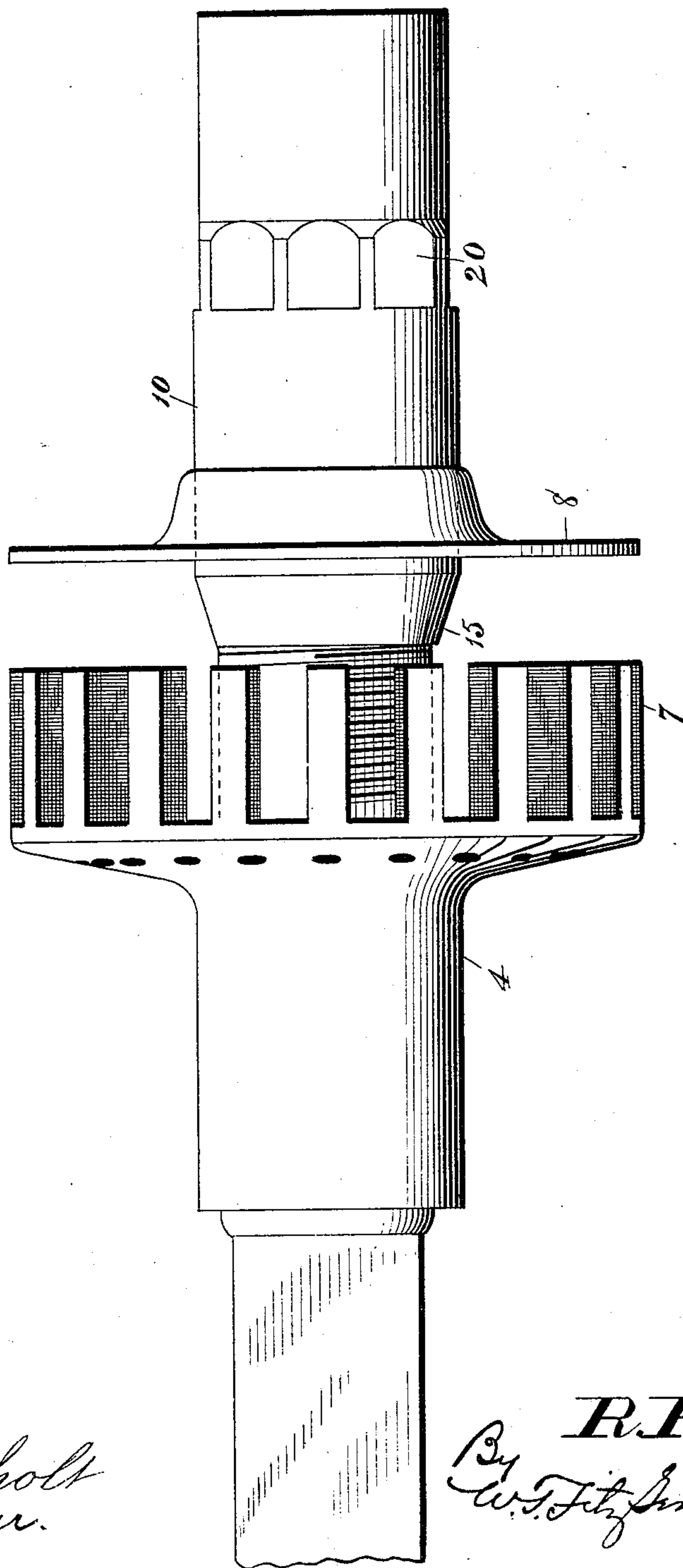
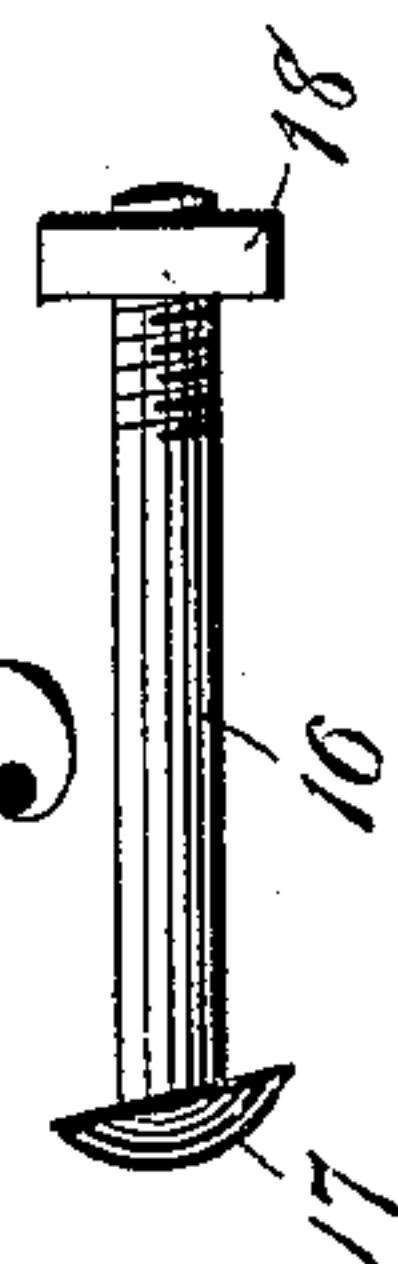


Fig. 6.



Witnesses

E. E. Overholt
A. G. Miller.

Inventor

R. R. Boggs

By W. T. Fitzmaurice
Attorneys.

UNITED STATES PATENT OFFICE.

ROBERT RANELS BOGGS, OF SPRING RUN, PENNSYLVANIA.

HUB.

SPECIFICATION forming part of Letters Patent No. 640,737, dated January 9, 1900.

Application filed December 21, 1898. Serial No. 699,950. (No model.)

To all whom it may concern:

Be it known that I, ROBERT RANELS BOGGS, a citizen of the United States, residing at Spring Run, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Hubs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the construction of parts necessary to provide a wheel designed more especially for carriages, wagons, and other similar vehicles, the object being to provide means for compensating for the shrinkage of the wooden parts of the wheel, and thereby restore from time to time the desired tension or homogeneity of the parts.

By reference to the following specification and the accompanying drawings it will be seen that this result is easily accomplished without the necessity of separating the several parts composing the complete wheel or without shrinking or resetting the tire, as is now common practice.

In the accompanying drawings, Figure 1 is a central longitudinal section of my improved hub. Fig. 2 is a transverse section of Fig. 1, taken on a line central to the spokes. Fig. 3 is an edge view of one of the spokes. Fig. 4 shows a modified construction of the parts employed to hold the spokes in position, while Figs. 5 and 6 show the complete hub as constructed in Figs. 1 and 2 disassembled or slightly separated from each other.

Referring to the several details of my invention and the accessories required to illustrate the use thereof by numerals, 1 is the axle of the vehicle, which may be constructed substantially in the usual manner, except that I prefer to provide the integrally-extending flange 2, and designed to fit upon the usual spindle 3, formed on the axle 1, is the hub proper, which consists of the inwardly-extending sleeve 4 and the integrally-formed outwardly-extending sleeve 5, the latter being exteriorly threaded for a purpose which will be hereinafter specified. Integrally formed with said sleeves is the radial flange 6, so constructed that the outer edge thereof will carry or be provided with a series of spoke-retaining sections 7, designed to form parti-

tions between the spokes, and thereby hold them in their respective positions. A removable flange or washer 8 is provided in order to hold the spokes in place between the sections 7 and to reliably house and protect them from the grit, dust, or the like, said flange or washer 8 being provided with a central aperture formed by the outwardly-extending rib 9, said aperture being of sufficient size to freely receive the adjustable sleeve 10, the inner end of which is provided with the tapered or beveled face 11 and is also internally threaded to engage the exterior threads formed upon the sleeve or extension 5.

I prefer to provide interior threads upon the extreme outer ends of the hub proper in order to provide a seating for the bushings 12 and 13, said seats being preferably provided by reaming out or recessing each end and threading the same, the bushing 12 being preferably extended sufficiently to lie under the flange 2 in order to insure against the introduction of grit, inasmuch as the line of travel for the grit is increased or extended.

The usual retaining-nut 14 is provided for the spindle, while the sleeve 10 is preferably extended sufficiently to entirely inclose said nut, thereby more effectively protecting the bearing. Designed to cooperate with the beveled face 11 of the sleeve 10 are the several ends of the spokes, each of which is preferably cut away or beveled upon one side to provide the inclined face 15, and it is obvious that by rotating the sleeve 10 in the proper direction the beveled face 11 thereon will engage the ends of all the spokes and force them radially outward, thereby resulting in bringing them all tightly to bear against the felly or rim of the wheel, thus resulting in giving to the parts the desired tension requisite in a perfect wheel. It is also clear that a reverse rotation of the wheel 10 will withdraw the beveled face 11 from engagement with the several spokes, and thereby permit said spokes to extend inward sufficiently to readily disengage the tire from the rim of the wheel for the purpose of renewal or repair. The flange or washer 8 may be held in its operative position in any preferred way, as by a series of bolts 16, preferably having an inclined head 17 in case the radial flange 6 is provided, as in Fig. 1, with an inclined

face, said inclined head being designed, as is obvious, to bring the parts closely together in a neat and finished manner, said bolts being retained in position by any suitable means, as by the locking-nuts 18.

If deemed desirable, a notch or recess 19 may be provided upon the side of each of the spokes, as in case when the bolts 16 are of a larger size. By reference to Fig. 2 it will be seen that each alternate section 7 is of less extent than the other sections, the object in reducing the reach of each alternate section being for the purpose of providing room for the accommodation of the locking-bolts 16.

In Fig. 2 I have shown the several spokes truly alined at their inner ends and in close contact with the tapered end 11 of the sleeve 10, and it is clear that by this arrangement all the spokes will be simultaneously forced outward, thus distributing the pressure brought to bear upon the rim of the wheel equally throughout the circumference thereof.

The sleeve 10 is preferably provided with an octagonal face 20 or with other suitable wrench-coöperating surface, thus rendering it unnecessary to employ a pipe-wrench to adjust the sleeve.

In Fig. 4 I have shown another form of construction to be employed for the several sections 7, as it will be seen by reference to Fig. 5 that said sections are provided with parallel sides, thus making them of equal size or extent throughout, while in Fig. 4 said sections are replaced by a series of tapering sections or partitions 21, the object of which is to compensate for any shrinkage of the spokes, as it is clear that should any shrinkage take place all that is necessary in order to restore a perfect fit of the parts is to draw the flange 8 toward the free ends of the sections 21 by suitable locking-bolts. The other parts illustrated in Fig. 4 are substantially of the same construction shown in Fig. 1, and they are therefore designated by the same reference-numerals.

The several parts of my improved hub may be cheaply constructed and readily assembled in the respective operative positions, and it is clear that after the spokes have been properly mounted between the sections 7 or 21, as the case may be, and the tire of the wheel secured in position the wheel may be given the desired tension or a proper "dish"

may be imparted thereto by simply forcing the tapered end 11 inward by a proper rotation of the sleeve 10. After the wheel has been in use sufficiently to thoroughly season and shrink the wooden parts forming the same the original tension or dish may be quickly restored by forcing the sleeve inward to the desired extent as before. It is clear that a suitable washer may be placed between the flange 8 and the ends of the sections 7 or 21, which may be subsequently removed, as by so doing provision will be made for shrinkage of the spokes when the flange 8 will be forced directly in contact with the ends of said sections by means of the locking-bolts 16. It is also clear that, if deemed a preferable construction, the flange 9 may be threaded upon the sleeve 10, thus enabling the several locking-bolts 16 to be entirely dispensed with, as by rotating the flange 9 upon said sleeve the flange 8 will be brought snugly against the free ends of the sections 7.

While I have described the preferred construction deemed desirable to materialize my invention, I desire to comprehend in this application any substantial equivalent thereof. Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a spindle having an encircling bushing threaded on its exterior, a hub having an outwardly-extending sleeve threaded on its exterior and on its interior, the latter engaging said bushing, an outer sleeve 10 threaded on its interior and meshing with sleeve 5, and an outer removable flange 8 encircling the sleeve 10, all arranged as set forth.

2. A hub having a central portion provided with spokes and having right and left exteriorly-threaded bushings, also an inward sleeve threaded on its interior meshing with the left bushing and further an outward sleeve threaded on its exterior and on its interior, the latter engaging the right-hand bushing, an outer sleeve 10 and a flange 8 coöperating in the manner set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT RANELS BOGGS.

Witnesses:

F. Y. COONS,
WM. J. WIDNEY.