(Model.) 2 Sheets—Sheet 1.

R. T. HUNN.

Machine for Repairing Wagon Wheels.

No. 235,055. Patented Nov. 30, 1880.

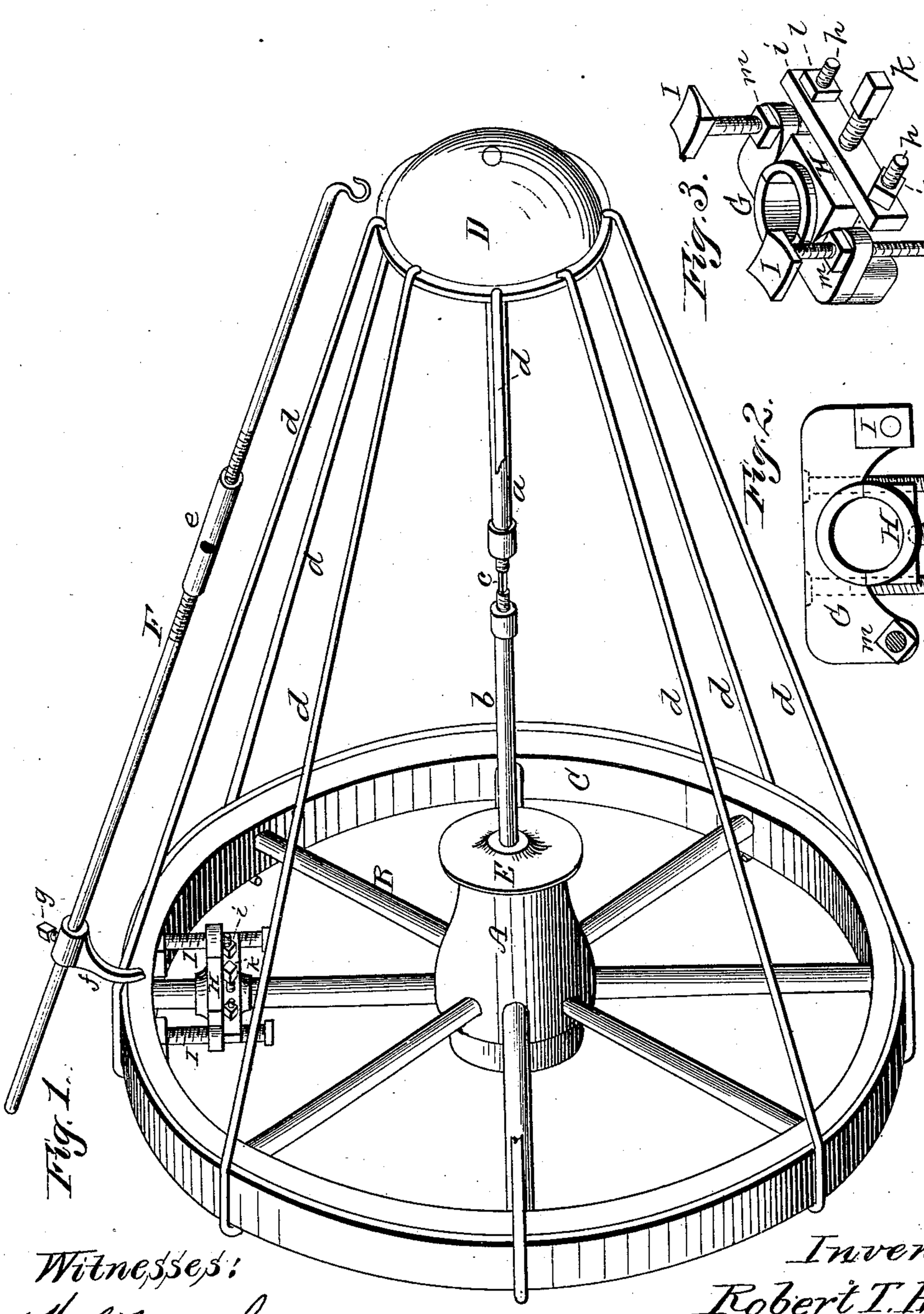

Fig. 1.

Fig. 3.

Fig. 2.

Witnesses:
H. C. McArthur
Geo. R. Porter.

Inventor:
Robert T. Hunn
Per Chas. H. Fowler.
Attorney.

(Model.) 2 Sheets—Sheet 2.

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Fig. 4.

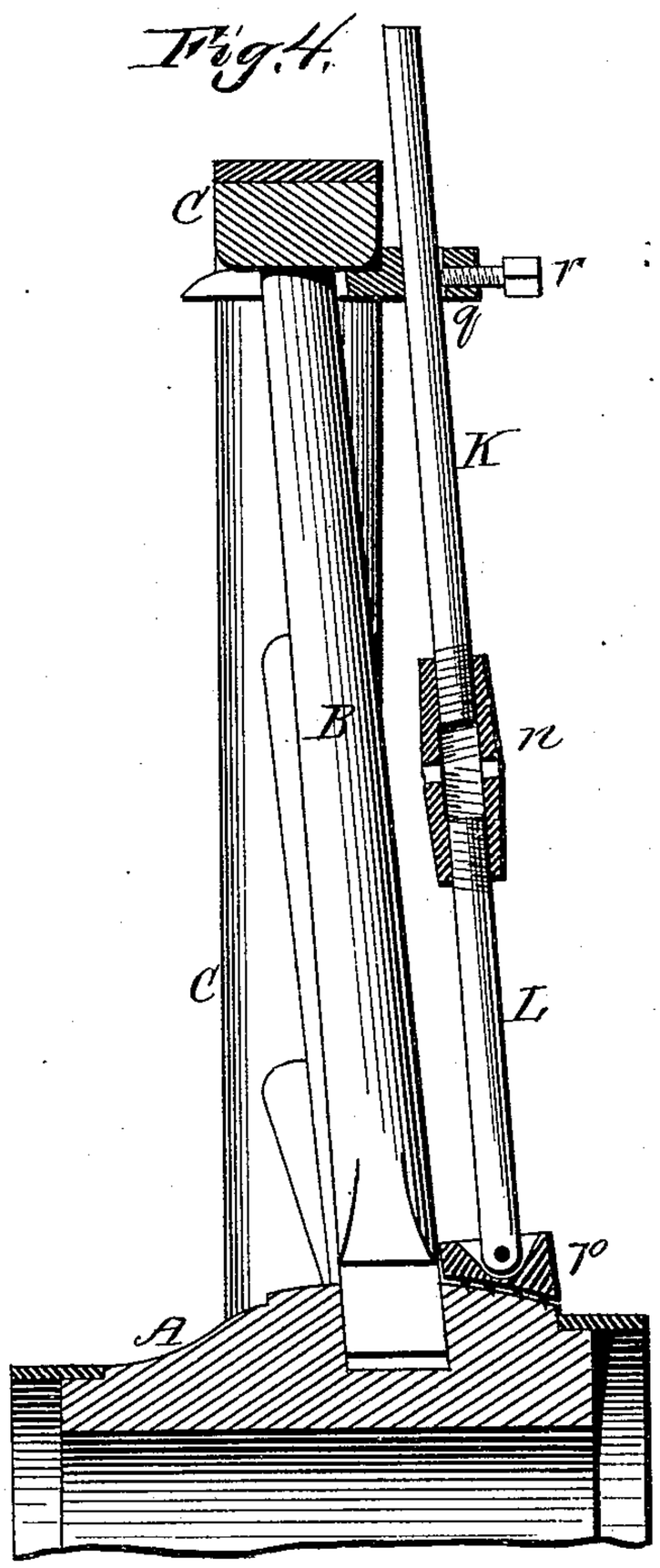
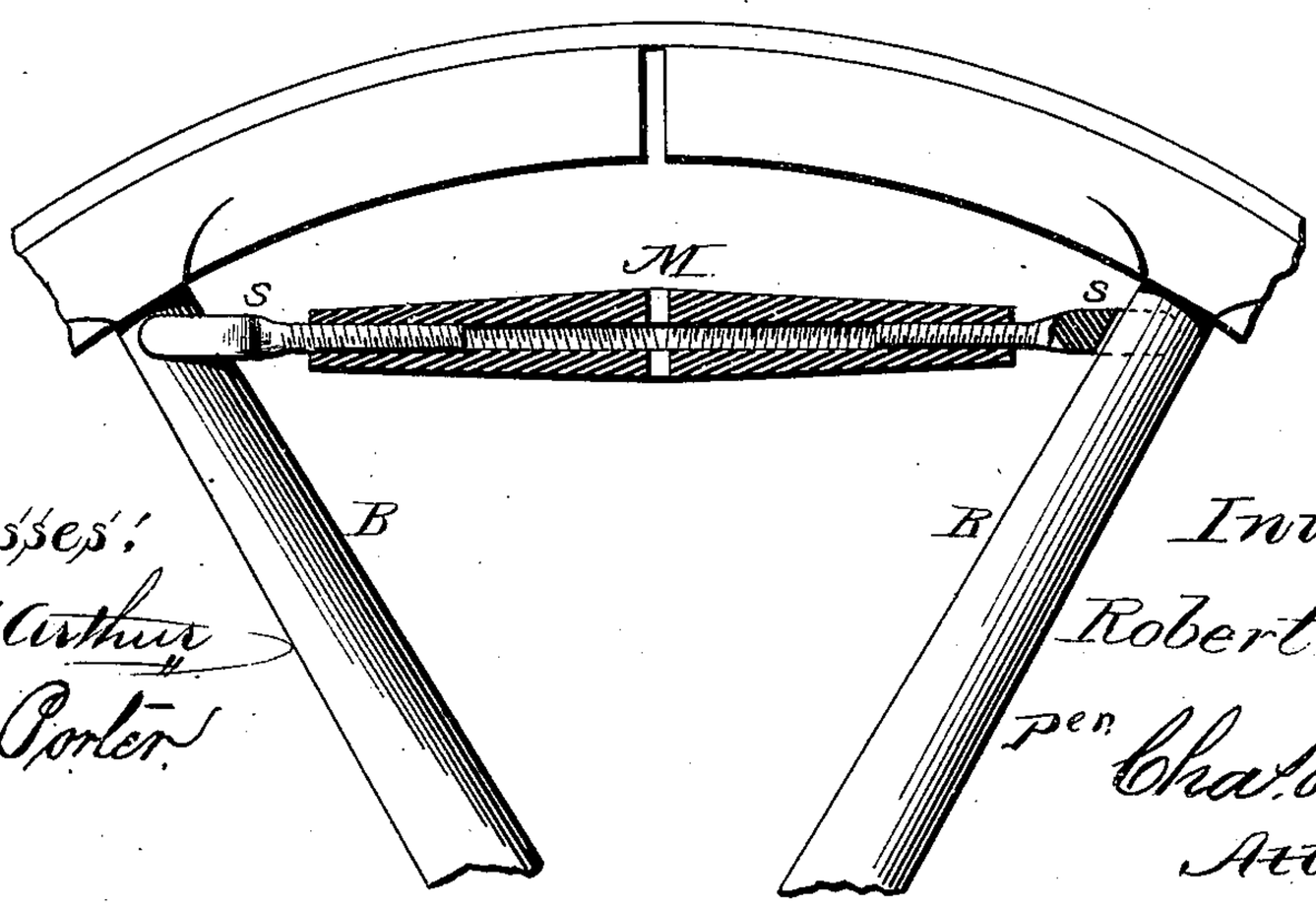


Fig. 5.



Witnesses:
M. C. McArthur
Geo. R. Porter

Inventor.
Robert T. Hunn.
per Chas. H. Fowler,
Attorney.

UNITED STATES PATENT OFFICE.

ROBERT T. HUNN, OF BATAVIA, NEW YORK.

MACHINE FOR REPAIRING WAGON-WHEELS.

SPECIFICATION forming part of Letters Patent No. 235,055, dated November 30, 1880.

Application filed October 7, 1880. (Model.)

To all whom it may concern:

Be it known that I, ROBERT T. HUNN, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, have invented certain new and useful Improvements in a Machine for Repairing Wagon-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 is a perspective view of a vehicle-wheel, showing the dish-regulator and spoke-clamp applied thereto. Fig. 2 is an end view of the spoke-clamp disconnected from the wheel; Fig. 3, a perspective view of the same. Fig. 4 is a view showing the device for raising the rim of the wheel. Fig. 5 is a view, partly in section, of the felly-spreader, showing it in position against and between the spokes of the wheel.

The present invention has relation to certain new and useful improvements in devices for repairing the wheels of all classes of vehicles; and the object thereof is to provide simple and effective means by which the wheel can be thoroughly and perfectly repaired, which object I attain by the mechanism illustrated in the drawings and hereinafter described.

In the drawings, A represents the hub, B the spokes, and C the rim, of an ordinary vehicle-wheel. The dish-regulator which is applied to this wheel consists of the head-plate D and hub-plate E, constructed of any suitable metal and of any desirable form and size. The head D has rigidly connected to it a tube, *a*, and to the hub-plate F is similarly connected a tube, *b*, having internal screw-threads near their ends, running in opposite directions, to receive a right-and-left-handed screw-bolt, *c*, the screw-threaded ends thereof engaging with the screw-threads upon the interior of the tubes *a b*. The bolt *c* midway of its ends is formed square to receive a wrench for turning it, which increases or diminishes the distance between the head-plate D and hub-plate E according to the direction in which the bolt *c* is turned. Although this means is considered as being the most practical for increasing or diminishing the distance between the head and hub plates, I do not desire to be understood as confining myself thereto, as other means may be employed so long as the object sought is obtained.

Connected to the head-plate D is a series of rods, *d*, hooked at their ends, one end of each rod embracing the edge of the rim C of the wheel. In regulating the dish of the wheel by the rods *d*, which are drawn tightly against the rim thereof by the screw-bolt *c* and tubes *a b*, if any section of the rim is out of line or twisted, the rod at that portion is removed and replaced by a screw-rod, F. This rod is formed in two sections, the inner ends thereof being screw-threaded to receive a screw-threaded sleeve, *e*, having a right and left screw-thread to correspond with the right and left screw-threads upon the sections of the rod F. One end of the rod F is hooked so as to be connected to the head-plate D, the opposite end of the rod having an adjustable or sliding dog, *f*, held in the desired position thereon by a set-screw, *g*, the dog, when in the position illustrated in Fig. 1, being used for the purpose of pulling the rim of the wheel in a direction toward the head-plate D. Thus it will be seen that, if any portion of the rim C does not come as fast as required to perfectly regulate the dish, the rod F is employed, and by turning the screw-sleeve *e* the rod is shortened until the rim at that point is properly dished. By removing the dog *f* from the rod F and replacing it in a reversed position the rod can be used to force the rim in a direction from the head-plate D by simply turning the sleeve *e* in a direction to lengthen the rod, thereby admitting the adjustment of the rim in either direction, as the case may require, to bring any portion thereof in a true circumference with the remainder of the rim. When the rim is properly and uniformly dished throughout its circumference and held in that position by the rods *d*, the remainder of the wheel—such as the spokes—is adjusted or repaired as found necessary, as were the rods *d*. Disconnected from the rim of the wheel or loosened, the rim would resume its original position.

It is essential, therefore, to complete the invention, that means should be employed to set, adjust, and repair the spokes B of the wheel, and also the fellies to retain the

original circumference of the rim while the same is held in the true position by the rods *d*. I therefore employ a spoke-clamp consisting of the clamp-plates G H, which embrace the spoke and are tightened against the same by screw-bolts *h*, follower *i*, set-screw *k*, and nuts *l*, jack-screws I being connected to the plate G and held at the desired height by lock-nuts *m*.

After the wheel has been properly dished, should any of the spokes be too short to adjust the rim C to the tire, the clamp is placed on the spoke and the plates G H tightened around the same, after which the jack-screws I are pressed against the interior of the rim C by turning the lock-nuts *m*, which elevate the jack-screws and hold them against the rim. This enables a leather washer to be inserted between the end of the spoke and rim of the wheel, which adjusts the rim to the tire, and also forces the spoke back into the hub in all cases of felly-bound wheels.

Should any of the spokes be broken either at the hub or rim of the wheel, or the wheel require additional spokes, I have provided means for raising the rim of the wheel, consisting of a jack composed of rods K L, screw-threaded upon their inner ends and engaging with a screw-sleeve, *n*, the screw-threads upon the sleeve, as well as the ends of the rods, being right and left, so that by turning the sleeve the rods may be lengthened or shortened, as required.

The outer end of the rod L has pivoted to it a foot, *p*, which bears against the hub A, and to the rod K is a bifurcated dog, *q*, for straddling the spoke, said dog being adjustable upon the rod K, and held at the required distance from the end thereof by a set-screw, *r*, as illustrated in Fig. 4.

In case the fellies do not fill the tire or band of the wheel I employ a spreader, M, having a right and left screw-thread upon its interior for the reception of the screw-shanks upon shoulder-bolts *s*, said bolts bearing against the spokes, as illustrated in Fig. 5. By this means the fellies are spread apart at their joints to admit the space between them being filled with leather or other similar material thus preventing, to a great extent, the wheel losing its dish again.

It will be seen that in connection with the dish-regulator the several devices employed for repairing the different parts of the wheel are essential, each being employed, with the assistance of the dish-regulator, to complete the operation. It is also essential that the dish-regulator should remain on the wheel while the spoke-clamp, jack, and the spreader are, in turn, performing their office; otherwise, were the dish-regulator removed, the rim would resume its former position. Therefore it will be seen that the dish-regulator co-operates with the several devices.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device for regulating the dish of vehicle-wheels, consisting of the head and hub plates D E, provided with an extensible rod or equivalent means for connecting them together, and regulating the distance between the same, in combination with the rods *d*, substantially as and for the purpose set forth.

2. In a dish-regulator, the combination, with the head-plate and rods *d* and means, substantially as described, for drawing the rod tightly against the rim of the wheel, of the screw-rod F, screw-sleeve *e*, and reversible and adjustable dog *f*, substantially as and for the purpose specified.

3. The combination, with the dish-regulator, substantially as described, of the spoke-clamp consisting of the plates G H, screws *h*, follower *i*, set-screw *k*, and jack-screws I, for raising the rim of the wheel and setting the spoke while the rim of the wheel is being dished, substantially as and for the purpose set forth.

4. The combination, with the dish-regulator, substantially as described, of the jack consisting of the screw-rods K L, screw-sleeve *n*, pivoted foot *p*, and adjustable bifurcated dog *q*, substantially as and for the purpose specified.

5. The combination, with the dish-regulator, substantially as described, of the spreader M and shoulder-bolts *s*, for spreading apart the fellies while the rim of the wheel is being dished, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ROBERT T. HUNN.

Witnesses:
J. W. JOHNSON,
CHARLES GREEN.