

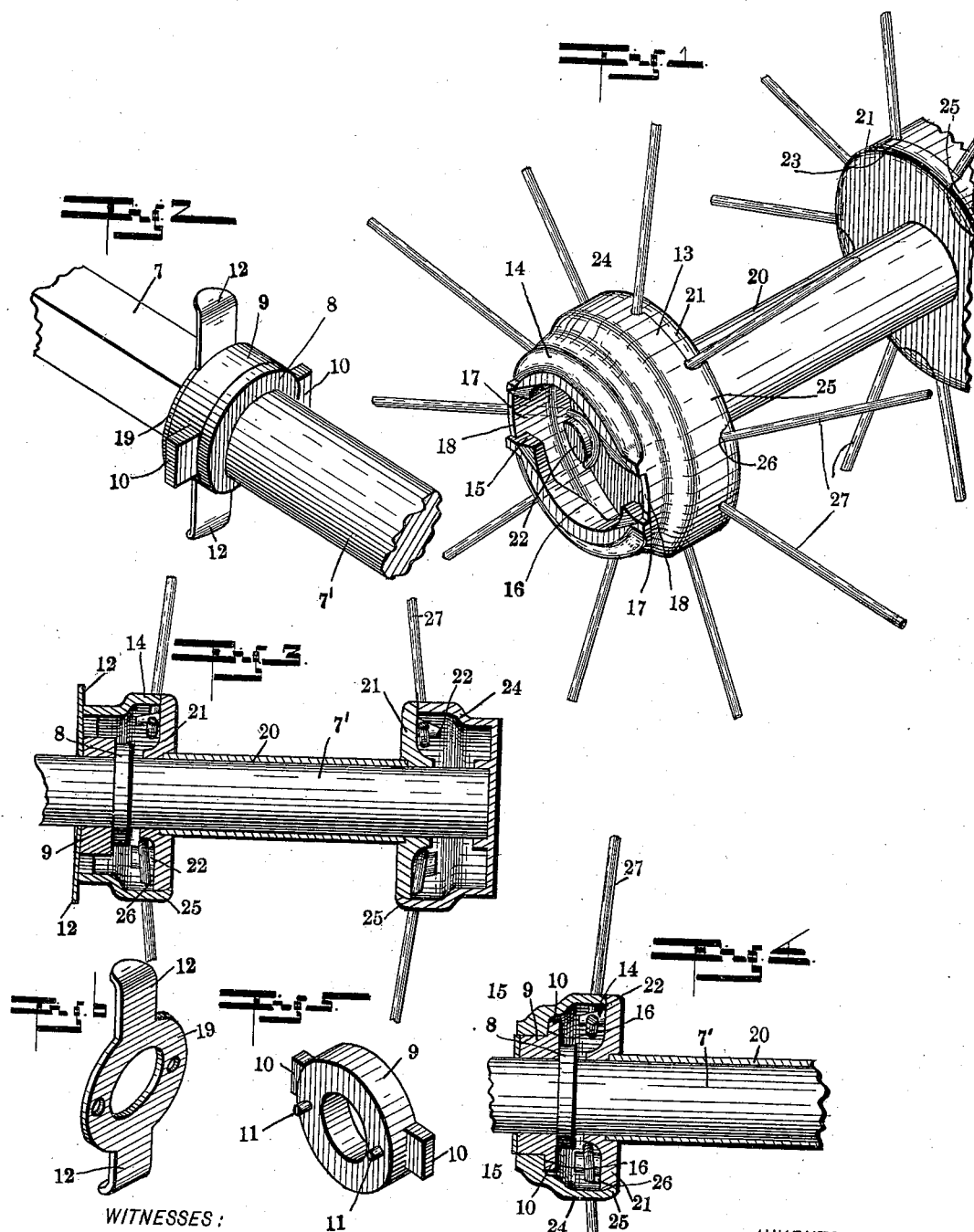
No. 649,130.

Patented May 8, 1900.

F. P. LANG.
WHEEL FASTENING.

(Application filed Mar. 10, 1900.)

(No Model.)



WITNESSES :

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FRED P. LANG, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE PIEL BROTHERS MANUFACTURING COMPANY, OF SAME PLACE.

WHEEL-FASTENING.

SPECIFICATION forming part of Letters Patent No. 649,130, dated May 8, 1900.

Application filed March 10, 1900. Serial No. 8,136. (No model.)

To all whom it may concern:

Be it known that I, FRED P. LANG, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Wheel-Fastening, of which the following is a specification.

My invention relates to an improvement in means for securing wheels to axles.

10 The object of my invention is to produce a fastening device which shall be efficient and simple in operation and the parts of which are of such form as to be cheaply manufactured and to require a minimum amount of labor for their assemblage.

The accompanying drawings illustrate my invention.

15 Figure 1 is a perspective view of a wheel-hub embodying my invention. Fig. 2 is a similar view of the axle and parts carried thereby. Fig. 3 is a central axial section. Fig. 4 is a similar section at right angles to Fig. 3. Figs. 5 and 6 are details of two parts before assemblage.

25 In the drawings, 7 indicates an axle having secured thereto at each end a collar 8. Inside the collar 8 is mounted a rotatable collar 9, provided with a pair of radially-extending ears 10. Collar 9 has projecting from its inner face a pair of short pins 11. The collar 9 may preferably be formed of malleable iron or other like ductile material and the pins 11 cast integral therewith. Secured to the inner face of collar 9, by means of pins 11, is a pair of spring-arms 12, which when secured to the collar 9 lie preferably at right angles to ears 10, there being a short axial space between the adjacent faces of the arms and ears. The wheel 13 may be of any desired form and is provided upon its inner side with a hub 14, having at its end an annular inwardly-projecting flange 15, upon the inner face of which is formed a pair of diametrically-opposed openings 17, which openings are adapted to allow the passage therethrough of ears 10 of collar 9, and which openings should preferably be placed in the neighborhood of ninety degrees from the cam-faces 16. Adjacent each opening 17 in the face of hub 14 I form a shallow notch 18, which is substantially of the

same width and depth as the width and thickness of the spring-arms 12.

The operation is as follows: The axle 7 is secured to the vehicle in any desired manner with the ends 7' and the adjacent collar 8 and rotatable collar 9 projecting outside of the securing means. The wheel 13 is then slipped upon the end 7' of the axle, with the hub 14 inside, and openings 17 are slipped over the ears 10 of the rotatable collar 9. The operator then by grasping spring-arms 12 rotates collar 9 upon the axle, thus carrying ears 10 around inside flange 15 and against cams 16, this movement drawing the wheel still farther onto the axle, so that when the ears 10 have reached the highest points of the cooperating cam-faces 16 the spring-arms 12 will snap down into the notches 18 and be retained therein. The wheel, together with collar 9, which is by this means attached thereto, will rotate freely upon axle, collar 8 on the axle preventing the accidental withdrawal of the wheel. The wheel may be as easily detached by the reversal of the operation just described.

It will be noticed that in the construction described the collar 9 and hub 14 may be cast in the form required and spring-arms 12 may be both carried or stamped out integral with a connecting annulus 19, so that the only work of assembling required is a riveting of the pins 11. It will of course be understood that a pair of collars 9, together with the detached spring-arms 12, is slipped upon the axle before the collars 8 are placed thereon, said collars being usually driven on against a very slight shoulder. For the sake of lightness I prefer to form the wheel of a pair of hubs, connected by a tubular sleeve 20, which hub consists of an inner collar 21, carrying upon its outer face a series of spuds 22, equal in number to half of the number of spokes. I also form upon the periphery of said collar 21 a series of notches 23. The other member of the hub is an annulus 24, having a series of tongues 25, adapted to enter and be radially bent into notches 23. Said member is also provided adjacent each tongue 25 with a pair of spoke-openings 26. Each pair of spokes is formed of a single wire 27, the bight of which passes around the corresponding

spud 22, the spoke being thus held in position in the hubs as soon as the tongues 25 are bent down into the notches 23.

I claim as my invention—

5 1. In a wheel-fastening the combination with the axle, of a collar rotatably mounted thereon and carrying a pair of diametrically-opposed ears, a wheel-hub having a pair of semi-annular flanges adapted to be engaged
10 by said ears and having axially-extending cams thereon, and means for holding said collar in a fixed relation to said hub.

2. In a wheel-fastening, the combination with the axle, of a collar rotatably mounted
15 thereon, and carrying a pair of diametrically-extending ears, a pair of spring-arms carried by said collar, a wheel-hub having a pair of semi-annular flanges adapted to be engaged by said ears, each having formed thereon an
20 axially-extending cam, a shoulder formed on said hub for engaging said spring-arms when

the ears have been forced into engagement with the cams.

3. In a wheel-fastening, the combination with the axle, of a collar 9 rotatably mounted 25 thereon and carrying a pair of extending ears 10, a pair of pins 11 formed integral with said collar and extending from one face thereof, an annulus 19 carrying a pair of spring-arms 12 and adapted to be secured to collar 9 by 30 means of pins 11, a wheel-hub having a pair of semi-annular flanges each having formed upon its inner face an axially-extending cam-face 16 and a pair of diametrically-opposed notches 18, arranged to receive the spring- 35 arms 12 when the ears 10 have been forced into engagement with the cams 16.

FRED P. LANG.

Witnesses:

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