

Perley Putnam's Impꝛ Changeable-Gauge Car Wheel and Axle.

Fig. 1.

[20.]

No. 118,642.

Patented Aug. 29, 1871.

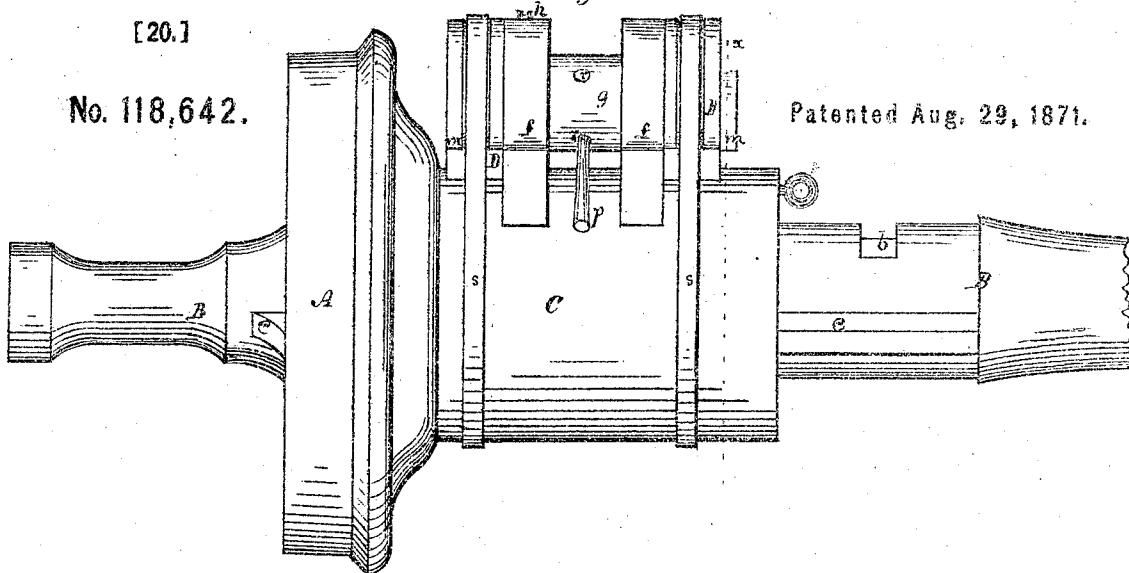


Fig. 2.

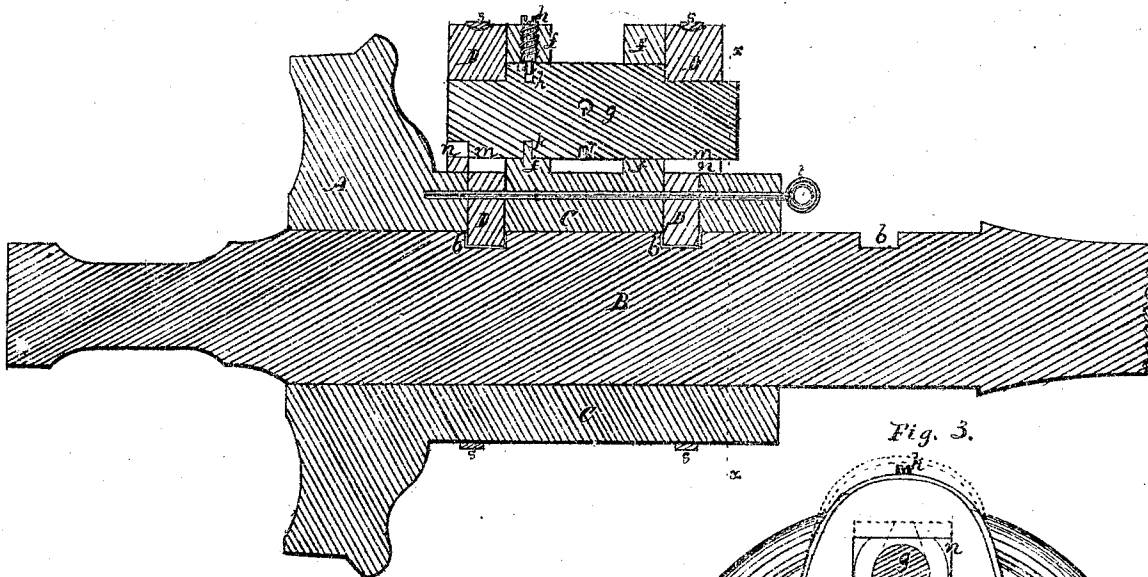


Fig. 3.

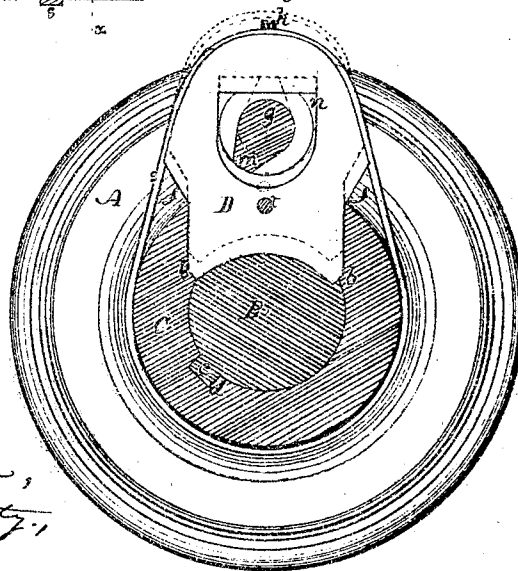


Fig. 4.

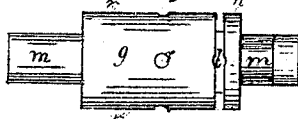


Fig. 5.



Witnesses,

D. J. Brown

Chas. A. Harkness.

Perley Putnam,
By his atty.

J. S. Brown.

UNITED STATES PATENT OFFICE.

PERLEY PUTNAM, OF LACONIA, NEW HAMPSHIRE, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES M. FOSS, OF ST. ALBANS, VERMONT.

IMPROVEMENT IN CHANGEABLE-GAUGE CAR-WHEELS AND AXLES.

Specification forming part of Letters Patent No. 118,642, dated August 29, 1871.

To all whom it may concern:

Be it known that I, PERLEY PUTNAM, of Laconia, in the county of Belknap and State of New Hampshire, have invented certain Improvements in Changeable-Gauge Car-Wheels and Axles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making part of this specification—

Figure 1 being a side view of one of my improved car-wheels and of the end of the axle to which it is attached; Fig. 2, a central section of the wheel and axle, through the axis of the axle and in the vertical plane thereof, as in the position shown in Fig. 1; Fig. 3, a transverse section in a plane indicated by the line *x x*, Figs 1 and 2; Figs. 4 and 5, views of parts detached.

Like letters designate corresponding parts in all of the figures.

Let A represent the car-wheel, and B its axle. Upon the inner face of the car-wheel is cast an extended hub or tube, C, fitting closely around the axle, and in transverse mortises of this hub are fitted locking-blocks or bolts, D D, which, when forced inward, enter transverse notches *b b* in one side of the axle for holding the car-wheel fixedly in the desired position on the axle. There is a series of notches, *b b*, at regular distances apart, so that on withdrawing the locking-blocks D D (of which there may be one or more for each wheel) from one set of notches the wheel may be shifted to another position on the axle and locked into another set of notches, thereby changing the distance apart of the wheels on the axle to suit any change of gauge on railroads. A feather, *e*, projecting from one side of the axle, fits a longitudinal groove, *d*, in one side of the aperture of the wheel and its hub, to prevent the turning of the wheel on the axle and to keep the notches *b b* of the axle always in proper position in relation to the locking-blocks D D, at the same time allowing a free movement of the wheel longitudinally on the axle.

My invention consists in an improved device for securing the locking-bolts D D fast in the notches *b b* during the running of the cars, and for unlocking and relocking them when the gauge of the wheels is to be changed; the objects being to enhance the simplicity and cheapness of construction, the convenience and facility of operation, and the strength and safety of the locking.

First, the parts by which the blocks D D are unlocked and relocked are mounted in projections *f f* cast upon the hub C, so that cheapness of construction is obtained and security of attachment is insured. These projections form bearings in which a cam or eccentric shaft, *g*, turns, for lifting the blocks from their notches. This cam-shaft is secured in its bearings by means of a screw, *h*, of peculiar construction. On the inner end of the screw is a bit, *i*, the width of which is considerably greater than its thickness, as indicated by the two views in Fig. 5. This bit is to fit edgewise in a groove, *k*, encircling the periphery of the said shaft, as shown. It can not be turned into nor out of this groove except in one position of the shaft, where there is a round hole or an enlargement, *l*, (Fig. 4,) in the shaft to allow the screw to turn round therein for inserting or withdrawing. The position of the enlargement *k* is such as to be opposite to the screw *h* only when the shaft is turned for unlocking the blocks, and never when they are held locked, so that there is never any danger of the shaft working out of its bearings while the cars are running. The screw passes down through one of the bearings *f f*. There are cams *m m* projecting from the shaft *g*, situated respectively inside of apertures *n n* in the blocks D D. The said apertures are of such a shape (as indicated in Fig. 3) that the cams turn in them, without acting upon the blocks, in all positions, except when raised to a position directly outward from the center of the axle, (as shown by dotted lines in Fig. 3,) in which position the blocks are lifted by the cams entirely out of the notches of the axle, leaving the wheel free to be shifted in position. And it matters not which way the cams turn, whether to the right or left, the action is the same on the blocks. To turn the cam-shaft a lever, *p*, is inserted into one of a set of holes, *r r*, in the shaft, as seen in Fig. 1. After the wheel has been shifted into position on the axle the cam-shaft is turned back so as to bring the cams away from contact with the blocks. The blocks are forced into the notches by the same springs or elastic bands *s s* which are employed to retain them in the notches, the said bands extending around the outer surfaces of the blocks and around the hub of the wheel, as represented. Thus additional springs or other means for forcing the blocks into their notches, when withdrawn, are dispensed with. The

cams *m m* require only a quarter turn of the shaft *p* in order to lift the blocks out of the notches. This renders it convenient to move them under the car-trucks—a matter of essential importance. At the same time the movement of the blocks is easy. For additional security in holding the blocks *D D* in the notches of the axle a bolt or pin, *t*, is inserted in a longitudinal hole in the hub of the wheel, and through holes of the blocks, as shown in Fig. 2.

I do not claim a cam-shaft and cams for lifting the locking-blocks or keys from the notches of the car-axle, as described in the Letters Patent of Richard Eaton, dated February 1, 1870; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The bearing-projections *f f* cast in one piece with the hub *C* of the car-wheel, and arranged to receive and securely retain the cam-shaft *g* therein, substantially as herein specified.

2. The combination of the screw *h*, formed substantially as described, and the groove *k* with its enlargement *l* in the periphery of the cam-shaft *g*, for the purpose herein specified.

Specification signed by me this 24th day of October, 1870.

PERLEY PUTNAM.

Witnesses:

JOHN C. MOULTON,

D. S. DINSMORE.