

Patented Sep. 3, 1867.

Fig. 1.

Fig. 2.

Fig. 3.

Witnesses.

Wm M Gooding

Harry Wilson

Inventor

Chas. J. Clifford

Witnesses.

Wm M Gooding
Henry Wilson

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United States Patent Office.

CHARLES J. CLIFFORD, OF NEW HAMPTON, NEW JERSEY.

Letters Patent No. 68,415, dated September 3, 1867.

IMPROVED APPARATUS FOR TURNING CRANK-PINS ON LOCOMOTIVE DRIVING-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES J. CLIFFORD, of the town of New Hampton, in the county of Hunterdon, and State of New Jersey, have invented certain Improvements in Machines for Turning and Truing Crank-Pins in Locomotive Wheels without removing the pin from the wheel; and I do hereby declare the following to be a full and exact description of the same, reference being herein had to the drawings that accompany this specification, and which make part of the same.

The nature of my improvement consists in making use of the centre in the outer extremity of the pin that remains as when the pin was first turned in its original truth; and also of the collar on the inner extremity next the wheel, which having been without friction or wear remains as originally turned, as the guides and base of the movements of the machinery by which the worn pin is restored to its originally true bearing after having been worn oblong or cut from friction by use.

I construct a frame, A, with two end pieces, *a* and *b*, two cross-bars, *c* and *d*, and a slide, *e*, for a tool-post, *f*, and tool, *g*; the arms or end pieces *a* and *b* being so curved or bent as to make the face of the slide *e* stand upon a line radiating from the centre or middle of the crank-pin B while resting on the two cross-bars *c* and *d*. The arm *a* has a projection, *h*, on its outside. Inside of the projection is a screw, *i*, with a centre pin, *j*, in its inner end, as shown in fig. 2. The screw *i* is also hollow, and has inside a centre bolt, *k*, thus forming centre points easily adjustable to varied distances by the use of pins inserted in the holes shown in the screws. The arm *b*, as shown in fig. 3, has a circular hole larger than the collar on the crank-pin, into which rings, *m*, are closely fitted. As crank-pins and their collars vary in size in different wheels, the loose rings are easily fitted thereto and inserted for use into the arm *b*, and are kept from turning thereon by dowel-pins. The centre pin *j* being inserted in the original centre in outer extremity of crank-pin, with the arm *b* set upon the collar at the other end of the crank-pin, the whole machine is held in place for its operation by the pressure upon the centre pin of the bolt *k* of the bar C, which bar is held in place by bolts clamped to the rim of the locomotive wheel, and by adjustable nuts at the end of the bolts passing through the bar C at its extremities. The machine being adjusted to its required steadiness for operation by the adjustable screws on the arm *a*, is secured in position by the jam-nut *s* on the screw *i*, and jam-nut *t* on *k*. The machine is caused to revolve round the crank-pin by means of the wheel E fast to the arm *a*, which revolves therewith, motion being communicated by the pinion G that is attached to and operated upon the stationary bar C.

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

The frame A, constructed as described, in combination with the screws *i* and *k*, frame C, and the operating mechanism, all constructed and arranged as set forth.

CHAS. J. CLIFFORD.

Witnesses:

W. M. GOODING,
HENRY WILSON.