

No. 751,945.

PATENTED FEB. 9, 1904.

H. F. SCATCHARD & M. B. WATERS.

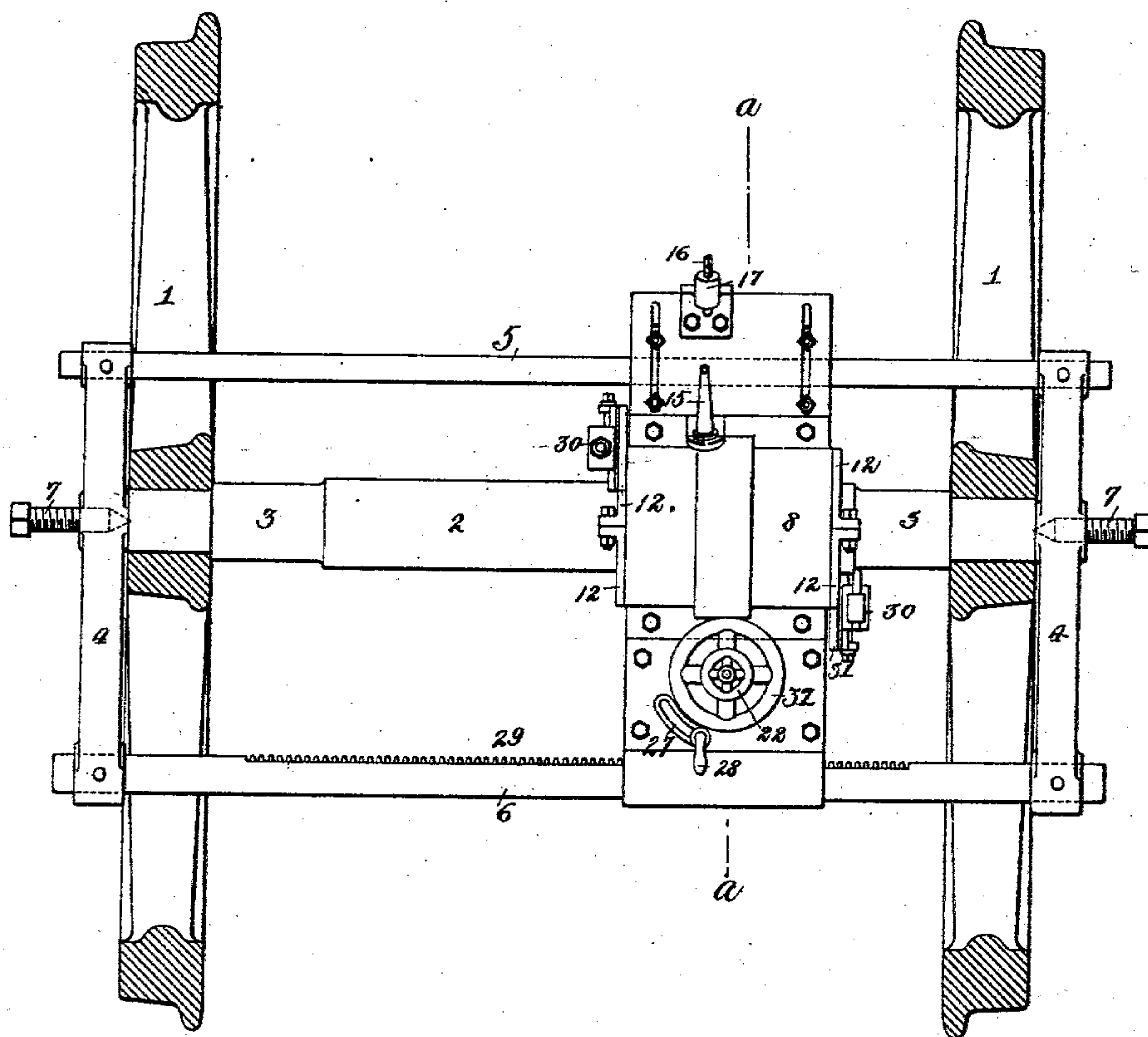
DEVICE FOR TRUING JOURNALS OF LOCOMOTIVE DRIVING WHEELS.

APPLICATION FILED OCT. 19, 1903.

NO MODEL.

3 SHEETS--SHEET 1.

Fig. 1.



Witnesses:—
Frank L. A. Graham.
Titus H. Jones.

Inventors,
Herbert F. Scatchard,
Michael B. Waters,
by their Attorneys,
Howan & Howan

No. 751,945.

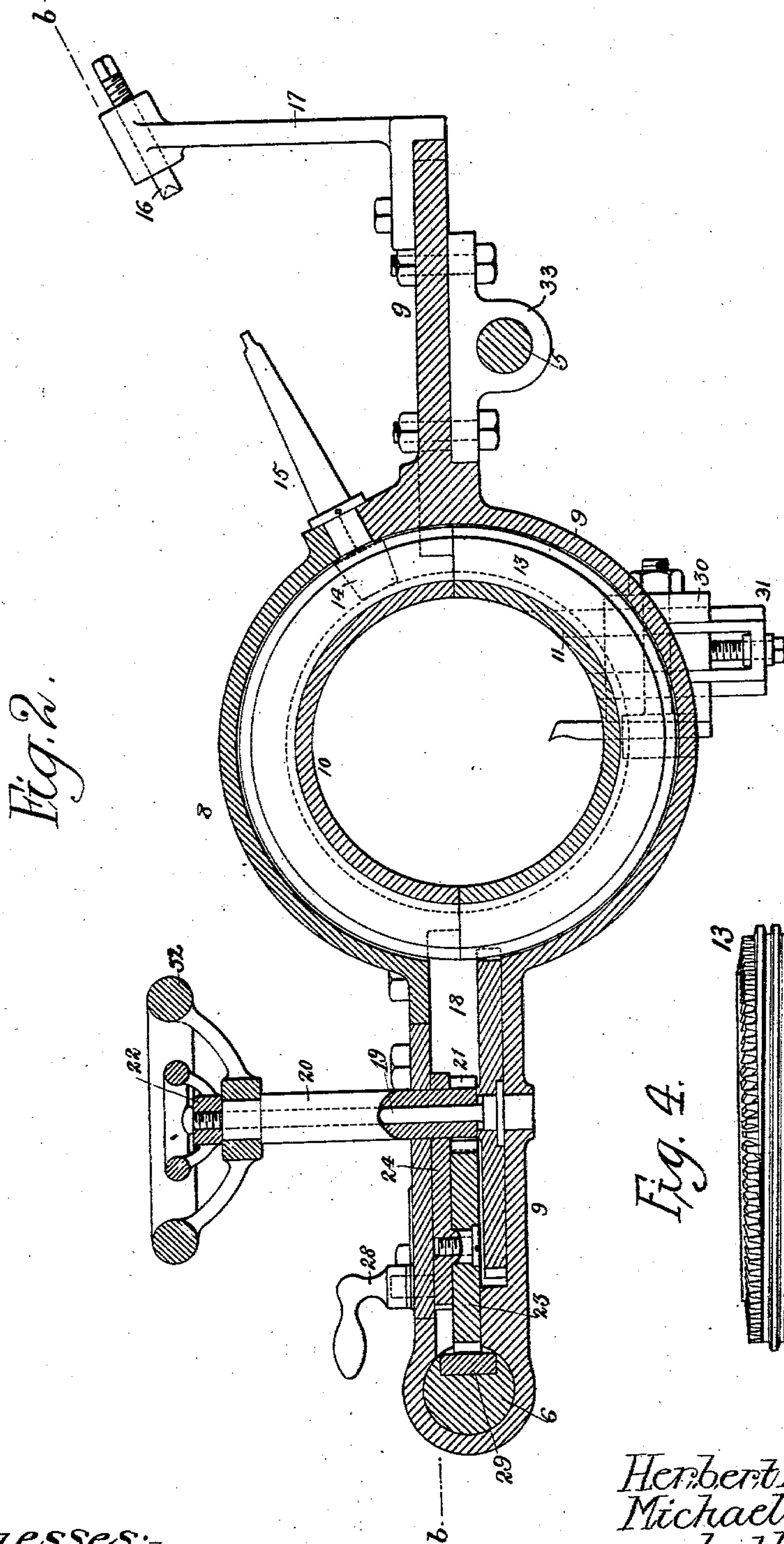
PATENTED FEB. 9, 1904.

H. F. SCATCHARD & M. B. WATERS.
DEVICE FOR TRUING JOURNALS OF LOCOMOTIVE DRIVING WHEELS.

APPLICATION FILED OCT. 19, 1903.

3 SHEETS—SHEET 2.

NO MODEL.



Witnesses:
Frank L. A. Graham.
Titus H. Lons.

Inventors,
Herbert F. Scatchard,
Michael B. Waters,
by their Attorneys,
Howarth & Howarth

No. 751,945.

PATENTED FEB. 9, 1904.

H. F. SCATCHARD & M. B. WATERS.

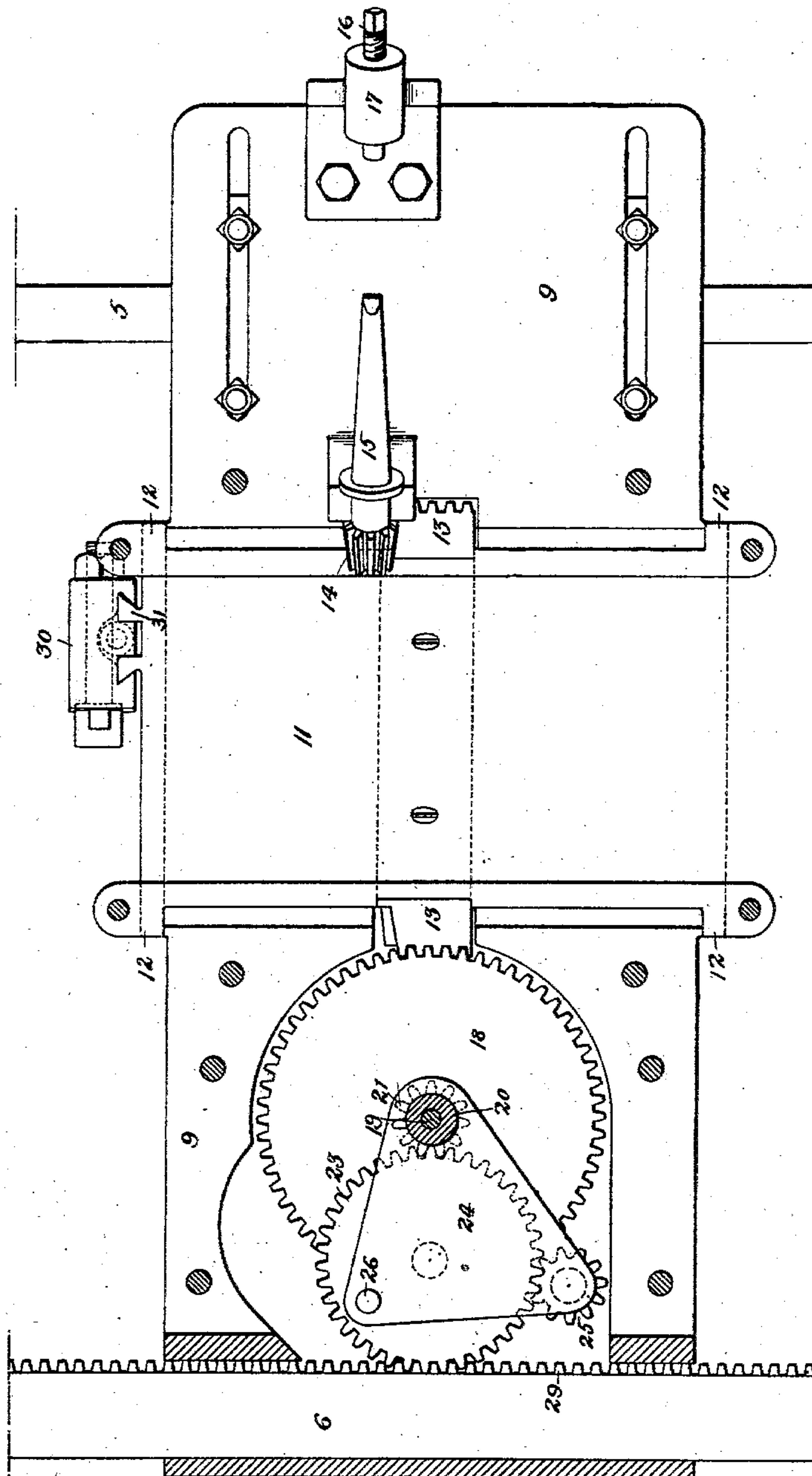
DEVICE FOR TRUING JOURNALS OF LOCOMOTIVE DRIVING WHEELS.

APPLICATION FILED OCT. 19, 1903.

NO MODEL.

3 SHEETS—SHEET 3.

Fig. 3.



Witnesses:
Frank L. Graham.
Titus H. Jones.

Inventors,
Herbert F. Scatchard,
Michael B. Waters,
by their Attorneys,
Howson & Howson

UNITED STATES PATENT OFFICE.

HERBERT F. SCATCHARD AND MICHAEL B. WATERS, OF ROANOKE,
VIRGINIA.

DEVICE FOR TRUING JOURNALS OF LOCOMOTIVE DRIVING-WHEELS.

SPECIFICATION forming part of Letters Patent No. 751,945, dated February 9, 1904.

Application filed October 19, 1903. Serial No. 177,682. (No model.)

To all whom it may concern:

Be it known that we, HERBERT F. SCATCHARD and MICHAEL B. WATERS, both citizens of the United States, and residents of Roanoke, Virginia, have invented certain Improvements in Devices for Truing Journals of Locomotive Driving-Wheels, of which the following is a specification.

The object of our invention is to provide a simple and effective form of portable apparatus for turning journals of locomotive driving-wheel axles as to permit of the truing of said axles, either initially or when they have become worn, without the necessity of using expensive turning-lathes or even of transporting the wheels to a shop. This object we attain by providing a portable cross-head traversing longitudinally on a frame which is secured to the driving-wheels, said cross-head having a separable and rotatable sleeve embracing the axle and carrying the turning-tool, which can be made to act upon either of the journals. The cross-head also carries mechanism for traversing it and for rotating said sleeve.

In the accompanying drawings, Figure 1 is a view illustrating a journal-truing device constructed in accordance with our invention as it appears when applied to the driving-wheels and axle. Fig. 2 is a transverse section of the same on the line *a a*, Fig. 1, and on a larger scale than said figure. Fig. 3 is a sectional plan view on the line *b b*, Fig. 2; and Fig. 4 is a plan view of one of the elements of the device.

Referring in the first instance to Fig. 1 of the drawings, 1 1 represent a pair of locomotive driving-wheels, and 2 the axle of the same, said axle having just inside of each wheel a journal 3, which it is the purpose of our invention either to turn up true in the first instance or to true up after they have become worn after use. Secured to the driving-wheels is a frame comprising end bars 4 4 and a pair of cross-rods 5 and 6, the end bars 4 having centerscrews 7, which engage with the opposite ends of the axle 2 in line with the axis of the same. The frame comprising the

bars 4 and rods 5 and 6 is therefore mounted upon the driving-wheel structure and is prevented from rotating by contact of said rods 5 and 6, or either of them, with spokes of the driving-wheels. Bars 4 of different lengths may be used to suit the size and character of the driving-wheels, or the bars may have a series of openings, so that the rods 5 and 6 can be set nearer to or farther from each other, as the character of the wheels may render necessary. Mounted upon the rods 5 and 6 is a cross-head so constructed that it can be readily applied to or removed from the axle 2. In the present instance such application and removal is provided for by constructing the cross-head with upper and lower members 8 and 9 separable from each other, these members being so formed as to provide a cylindrical chamber in which is mounted a separable two-part sleeve 10 11, said parts of the sleeve being bolted or otherwise suitably secured together and provided at the ends with flanges 12, whereby they are longitudinally confined to the cross-head, but are free to rotate therein and around the axle. The members of the separable sleeve are centrally recessed for the reception of a combined worm and bevel wheel 13, likewise by preference made in two parts in order to facilitate its application to the sleeve and suitably secured to the latter. The bevel-toothed portion of the wheel 13 meshes with a bevel-pinion 14 on a spindle 15, which is mounted in suitable bearings in the cross-head and is intended to be driven by any suitable form of power-actuated motor or by hand when such motor is not available. In the present instance the spindle is intended to be motor-driven and outer support for the motor-casing is provided by a set-screw 16, which is adapted to a threaded opening in a bracket 17, the latter being mounted upon the lower member 9 of the cross-head, as shown in Figs. 2 and 3. The motor is introduced between the set-screw 16 and the spindle 15, the rotating member of the motor serving to drive said spindle. The motor may be either an electric motor or a motor driven by air,

steam, gas, or other fluid, as may be found most convenient. The worm-teeth on the wheel 13 mesh with a worm-wheel 18, which is adapted to a suitable chamber in the lower member 9 of the cross-head and is mounted upon the lower end of a shaft 19, which passes upwardly through the tubular shaft or spindle 20 of a pinion 21, the upper end of the shaft 19 being threaded for the reception of a handled nut 22, which bears upon the upper end of the tubular shaft 20, so that by tightening said nut the worm-wheel 18 can be caused to press against the under face of the pinion 21 with any desired degree of pressure and frictional clutching contact of the two gears can thereby be effected in order that the pinion 21 may receive motion from the worm-wheel 18, the latter, however, being permitted to slip or continue its motion without imparting movement to the pinion 21 when an undue amount of resistance to such movement is presented. The pinion 21 meshes with a spur-wheel 23, which is free to turn upon a stud depending from a frame 24, and said spur-wheel also meshes with a pinion 25, likewise free to turn upon a stud depending from the frame 24. The said frame 24 is mounted so as to be free to swing upon the shaft 20 and has a stud 26 projecting through a segmental slot 27 in the upper member 8 of the cross-head, the projecting portion of said stud 26 being threaded for the reception of a handled nut 26, whereby the frame 24 can be caused to assume different angular relations to the shaft 20 and can be secured in either of its different positions of adjustment. When the frame is in the position shown in Fig. 3, the spur-wheel 23 meshes with a rack 29, formed on or secured to the supporting-rod 6 of the fixed frame. Hence rotation of the spindle 15 would have the double effect of imparting rotating movement to the sleeve 10 11 and causing the cross-head to travel upon the supporting-rods 5 and 6, the direction of this movement being dependent upon the direction of rotation of the spindle 15. By swinging the frame 24 so as to carry the spur-wheel 23 out of engagement with the rack 29 and bring the pinion 25 into engagement with said rack the direction of movement of the cross-head may be reversed without reversing the direction of movement of the spindle 15. Hence a cutting-tool mounted upon the rotating sleeve can be traversed back and forth across the journal of the axle without interfering with its continuous movement of rotation.

The separable sleeve 10 11 has at each end an adjustable tool-carrier 30, guided on an extension 31 of the sleeve, so as to be movable from and toward the axle, any suitable feed-screw device being employed for thus traversing the tool-holder and the latter being provided with any available form of clamp for the tool. When one of the journals has been

properly trued by means of a tool carried by the tool-holder at one end of the rotating sleeve, the tool is shifted to the tool-holder at the opposite end of the sleeve, and the cross-head is then shifted on its guides, so as to cause said tool to act upon the opposite journal.

The shaft 20 is provided with a hand-wheel 32, whereby the traversing of the cross-head may be effected by hand when desired, the worm-wheel 18 in this case being first freed from its frictional connection with the pinion 21.

The cross-rod 5 is applied to a bearing 33, adjustable on the under side of the member 9 of the cross-head, so as to permit of the use of rods 5 and 6, located at different distances apart.

Having thus described our invention, we claim and desire to secure by Letters Patent—

1. The combination in a device for truing the journals of locomotive driving-wheels, of a frame, a cross-head mounted upon transverse rods of said frame, a separable tool-carrying sleeve rotatably mounted in said cross-head, and mechanism carried by the cross-head for rotating said sleeve, said mechanism having a projecting power-receiving spindle and an opposed support for a motor-casing, substantially as specified.

2. The combination in a device for truing the journals of locomotive driving-wheels, of a frame, a cross-head mounted upon transverse rods of said frame, a separable tool-carrying sleeve rotatably mounted in said cross-head, and mechanism for simultaneously rotating said sleeve and traversing the cross-head upon its supporting-rods, said mechanism comprising a combined worm and bevel wheel mounted on the sleeve, a power-receiving shaft with pinion engaging said bevel-wheel, a rack on one of the supporting-rods of the frame, and gearing interposed between the worm-wheel and said rack, substantially as specified.

3. The combination in a device for truing the journals of locomotive driving-wheels, of a frame, a cross-head mounted upon transverse rods of said frame, a separable tool-carrying sleeve rotatably mounted in said cross-head, and mechanism for simultaneously rotating said sleeve and traversing the cross-head upon its supporting-rods, said mechanism comprising a combined worm and bevel wheel mounted on the sleeve, a power-receiving shaft with pinion engaging said bevel-wheel, a rack on one of the supporting-rods, and gearing interposed between the worm-wheel and said rack, said gearing having as an element, a swinging frame carrying two spur-wheels either of which may, by movement of the frame, be caused to engage with the rack, substantially as specified.

4. The combination in a device for truing the journals of locomotive driving-wheels, of

the supporting-frame, the cross-head, the
tool-carrying sleeve, rotatably mounted there-
in, and having a worm thereon, a worm-wheel
meshing with said worm, gearing driven by
5 said worm-wheel, and a rack on one of the
supporting-rods for the cross-head in mesh
with said gearing, substantially as specified.

In testimony whereof we have signed our

names to this specification in the presence of
two subscribing witnesses.

HERBERT F. SCATCHARD.
MICHAEL B. WATERS.

Witnesses:

R. C. ROYER,
LAWRENCE S. DAVIS.