

No. 815,659.

PATENTED MAR. 20, 1906.

D. H. TEAS.
LATHE DRIVER.
APPLICATION FILED SEPT. 12, 1904.

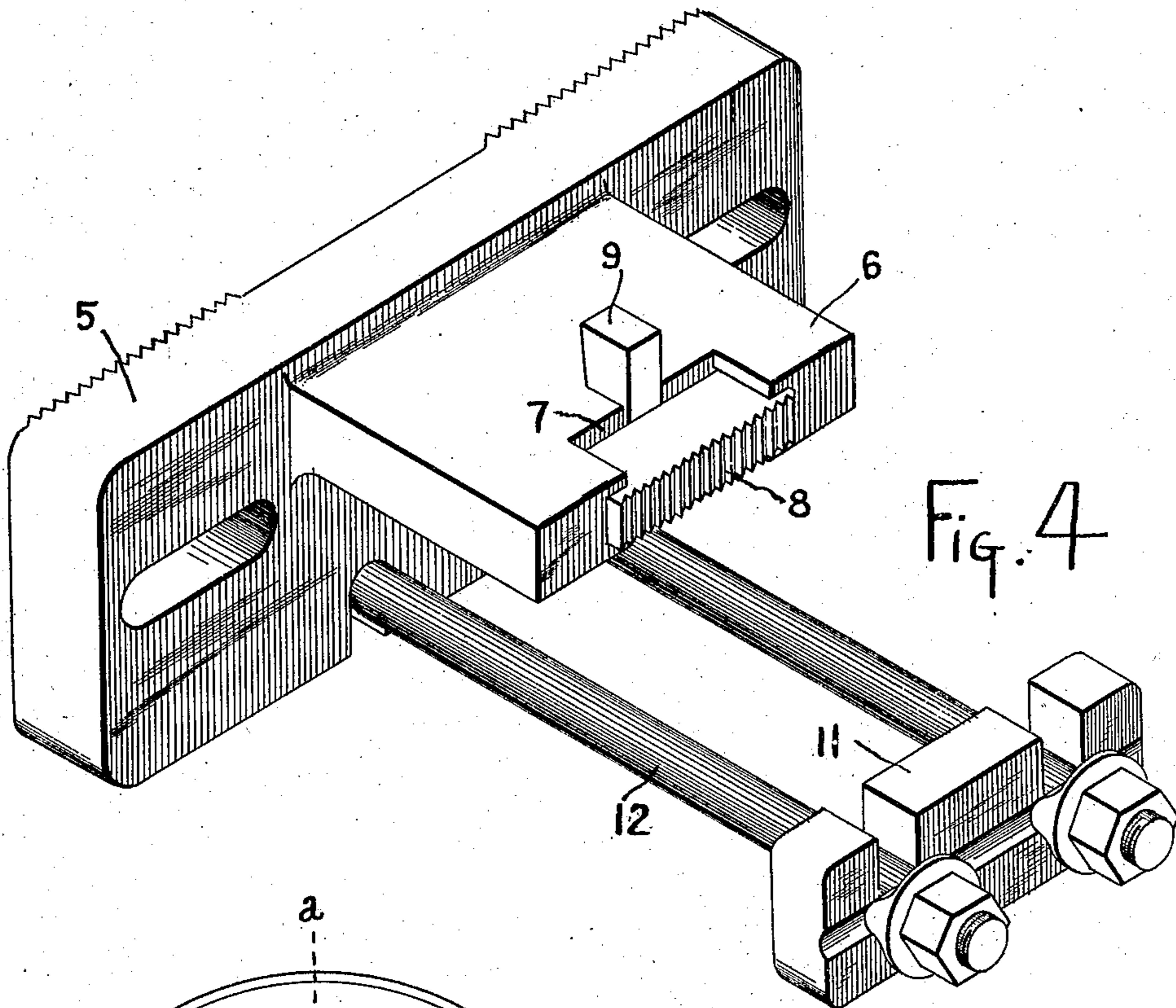


Fig. 4

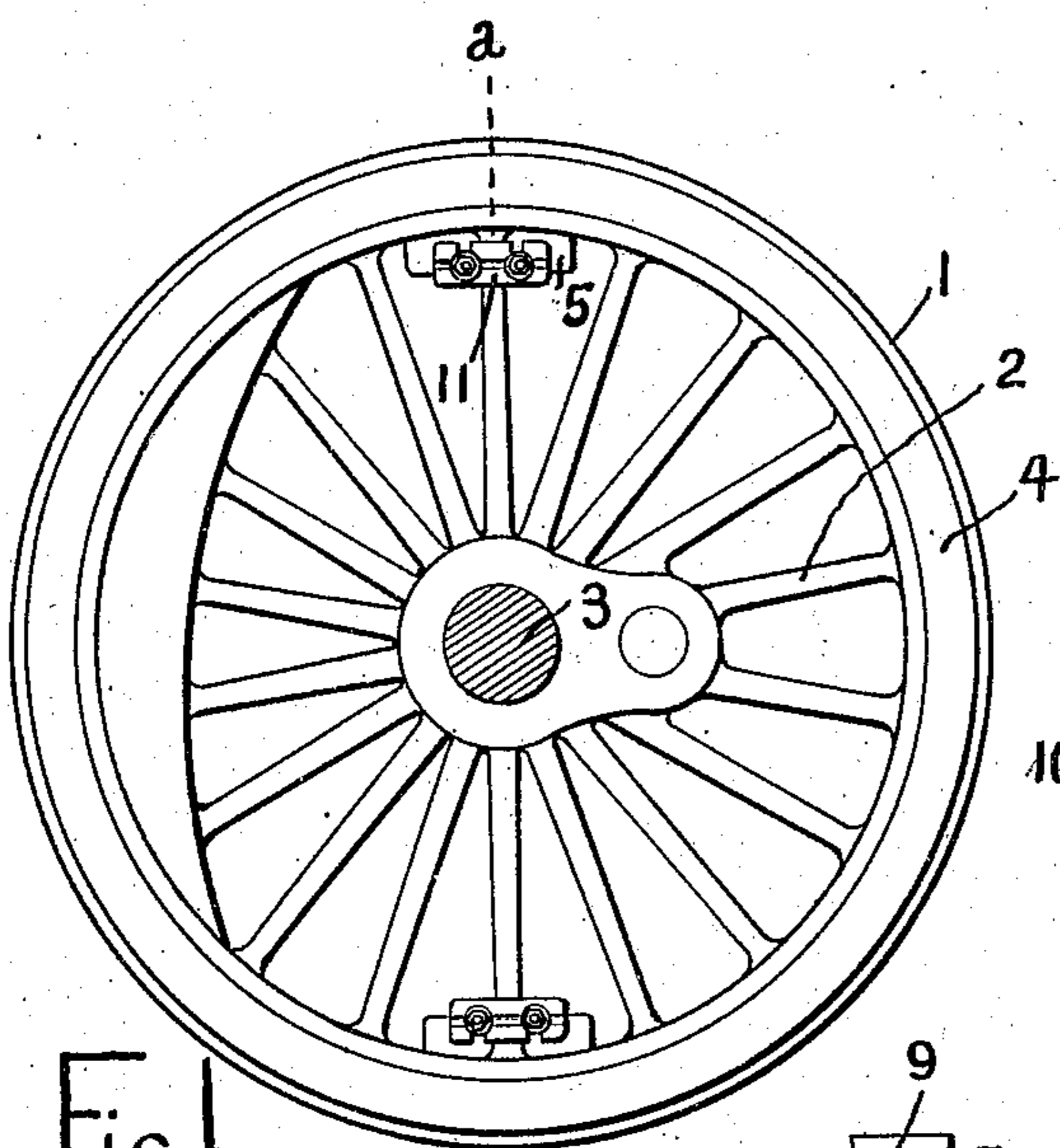


Fig. 1.

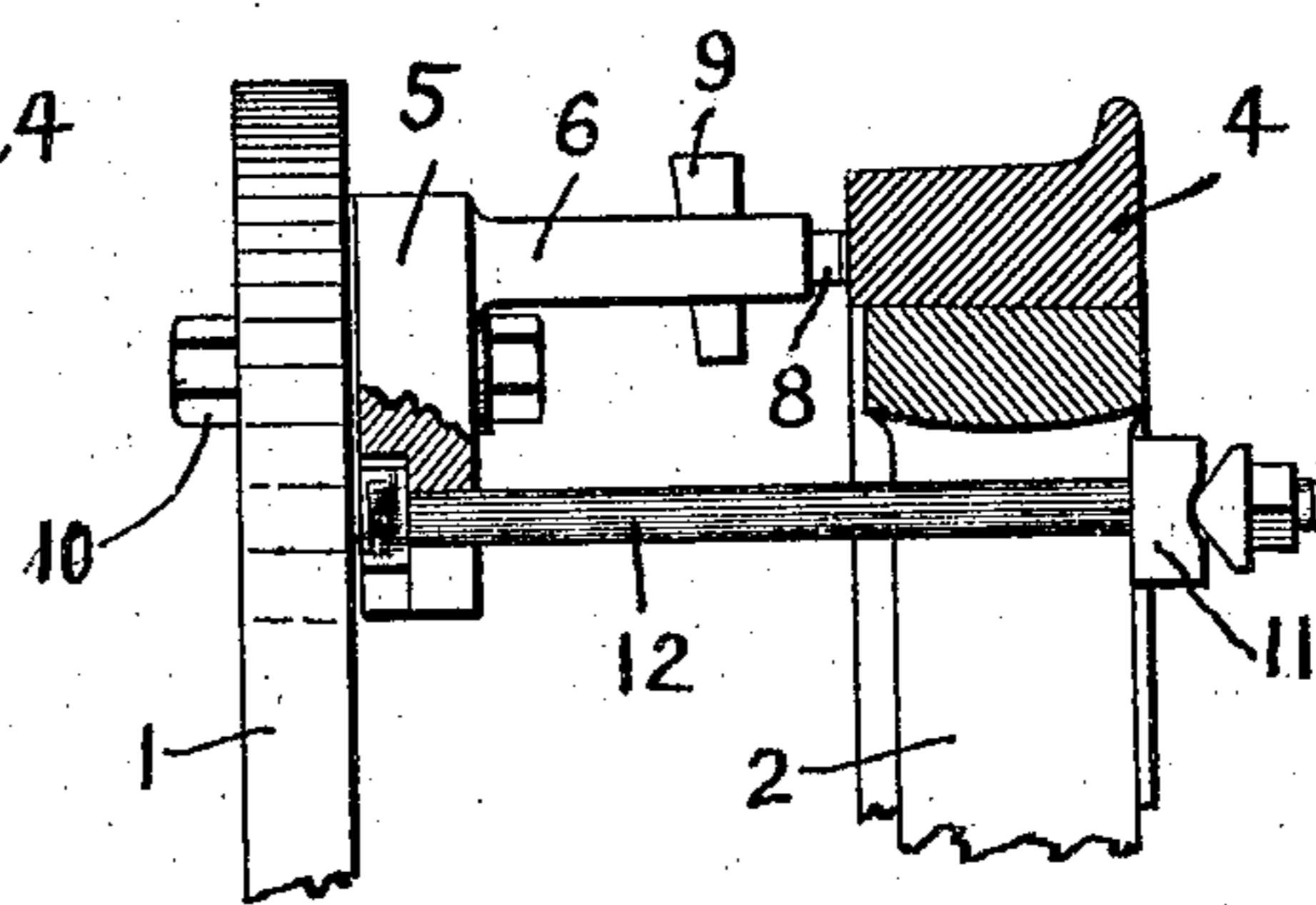


Fig. 2.

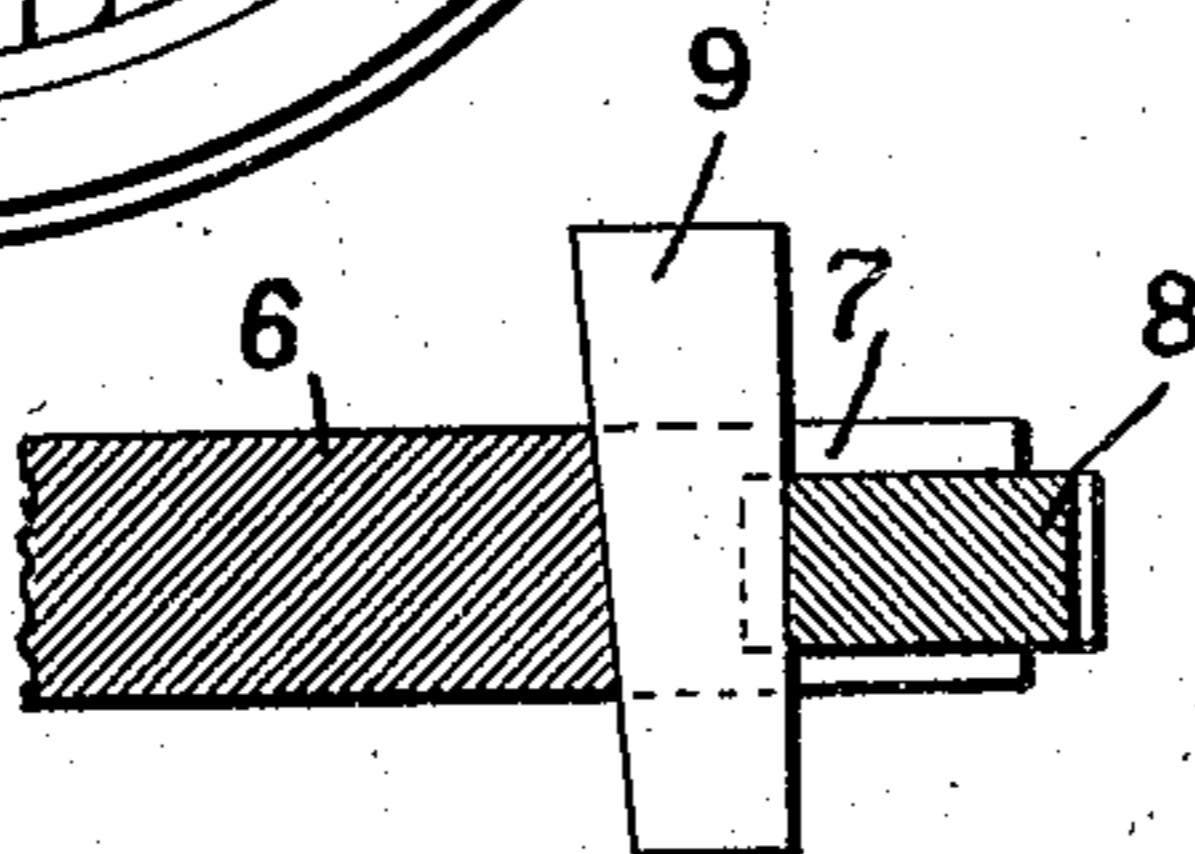


Fig. 3.

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LATHE-DRIVER.

No. 815,659.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DANIEL H. TEAS, a citizen of the United States, residing at New Haven, New Haven county, Connecticut, have invented certain new and useful Improvements in Lathe-Drivers, of which the following is a specification.

This invention pertains to improvements in lathe-drivers for use in turning the tires of locomotive driving-wheels while mounted upon their axles. It is usual in doing such turning to mount the axle, with its wheels, on the centers of a double-head driving-wheel lathe, such lathes, as is well known, presenting a face-plate contiguous to the outer face of each of the driving-wheels. These two face-plates are driven in unison, and driving-studs of one kind or another project from the face-plates to between the spokes of the driving-wheels, thus enforcing the rotary motion of the work, as is usual in lathe-work. The drivers employed are usually arranged with a view merely to the enforcement of the forward motion of the wheels, though sometimes the drivers so engage between the spokes or so straddle the spokes as to in some degree prevent forward jumping of the wheel as soft or low spots are reached by the turning-tools. Driving-wheel tires as now often employed are rather hard, and the desire is to turn them quickly with heavy cuts and rather coarse feeds. The strains resulting from the action of the tools are transmitted radially to the rather delicate lathe-centers on which the work is supported, and the lateral strains due to the action of the tool have a tendency to spring the wheels and the axles, as well as to impose additional strains upon the lathe-centers.

My improved lathe-drivers are designed for use in turning driving-wheels when on their axles and mounted on lathe-centers in the usual type of driving-wheel lathes, the design being to permit the heavy work of turning to be accomplished with rapidity without excessive strain upon lathe-centers or wheels or axle and with unusual accuracy.

My improved lathe-driver will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a face view of one of the face-plates of a driving-wheel lathe in connection with a driving-wheel and axle, the axle ap-

pearing in vertical section and the wheel being carried by a pair of my improved lathe-drivers; Fig. 2, a side elevation of one of the drivers shown in connection with a portion of the face-plate and with a portion of one of the driving-wheels, the latter appearing in diametrical section in the plane of line *a* of Fig. 1; Fig. 3, a vertical section of a portion of the lathe-driver in the plane of line *a* of Fig. 1, and Fig. 4 a perspective view of one of the drivers.

In the drawings, 1 indicates the face-plate of the lathe, having no peculiarities; 2, one of the driving-wheels of a pair mounted on its axle and supported on the lathe-centers precisely as usual in the turning of driving-wheels when on their axles; 3, the axle; 4, the tire of the wheel; 5, a flange firmly bolted against the face-plate at a radial distance from the center of the face-plate corresponding substantially with the radius of the wheel, the rear face of this flange being preferably serrated, so as to secure a better grip against the face-plate; 6, an arm projecting rigidly from the flange toward and fairly close to the outer face of the tire; 7, a recess in the end of the arm toward the tire, this recess being open toward the tire and also preferably open at its top and bottom; 8, a block, preferably of hard steel, sliding in the recess of the arm and projecting outwardly therefrom and having a serrated face engaging the outer face of the tire, this block having such width relative to the depth of the recess that when its front face engages the tire of the wheel its rear face will be at some distance from the rear wall of the recess; 9, a tapering key fitting in the arm to the rear of the block and serving when adjusted inwardly to set the serrated face of the block firmly against the side of the tire; 10, bolts passing through slots in the flange of the driver and serving to bolt the driver firmly to the face-plate; 11, a clamp-bar disposed across the inner face of one of the spokes of the wheel, and 12 a pair of studs disposed radially inward from block 8 and having their heels anchored in the flange 5, these studs straddling one of the spokes of the wheel and projecting through the clamp-bar and having nuts and washers exterior to the clamp-bar.

In applying and using this driver it is to be firmly secured to the face-plate in radial position to suit the wheel to be dealt with, and

the key is to be retreated or withdrawn and the clamp-bar is to be removed. The pair of wheels on their axle is then to be mounted in the lathe precisely as usual, so as to be carried by the lathe-centers. One of the spokes of the wheel is to come between the studs. The wedge is then to be adjusted in such manner that the face of the block will take a firm bearing against the face of the tire without laterally springing the work in any manner. The clamp-bar is then to be applied and its nuts screwed up so as to clamp the wheel solidly between the clamp-bar and the block. A driver is of course to be applied at each of the two face-plates of a double-headed lathe, and it is highly desirable that each face-plate be provided with a plurality of the drivers, Fig. 1 illustrating a pair of the drivers disposed diametrically opposite each other. In doing the clamping the user may, if desired, adjust the clamp-bar first and then apply the heavier clamping strain by driving the key so as to force the block to its work. Again, the user may, if desired, first mount the work in the lathe upon the lathe-centers, as usual, and then secure the drivers to the face-plates. The bolt-holes in the flange for the engagement of bolts are preferably slotted, as indicated, thus permitting the tangential shifting of the driver upon the face-plate to suit the position of the spoke of the wheel, and the clamp-bar is preferably slotted, as indicated, so that it may be removed without the necessity for removing the nuts from the studs.

It will be manifest that when the work is mounted in a lathe in the manner indicated and the wheel clamped by means of these drivers the wheel becomes rigidly unified with the face-plate without straining the wheel or axle or bringing strains upon the lathe-centers, and it will also be manifest that the strains due to the action of the turning-tools will be imposed upon the face-plates instead of upon the lathe-centers and axle.

The outer face of the tire is continuous and substantially at right angles with the axis of the wheel, and the blocks 8 bear on this tire-surface and give the wheel a support quite independent of the spokes. The blocks 8 being serrated and of hardened steel are capable of having their facial teeth forced into the metal of the tire, for even the hardest tires employed in practice are not sufficiently hard to resist the penetration of these teeth. The teeth thus get a driving grip upon the outer face of the tire. In practice it has been found that with a pair of driving-wheels on an axle mounted between the centers of a double-headed driving-wheel lathe and having a plurality of the serrated blocks forced against the outer face of each tire with sufficient force to embed the teeth of the blocks somewhat into the tire sufficient driving power is obtained to take from the tire the

heaviest needed cuts and at speeds producing the modern characteristic blue chips.

I claim as my invention—

1. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of an arm arranged to be secured rigidly to the face-plate of the lathe and to project toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, mechanism carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, and clamping mechanism to be carried by the face-plate and project through the wheel and engage its inner surface and clamp the wheel against the block.

2. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of a flange arranged to be rigidly secured to the face-plate of the lathe, an arm projecting rigidly from the flange toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, mechanism carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, and clamping mechanism to be carried by the face-plate and project through the wheel and engage its inner surface and clamp the wheel against the block.

3. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of a flange arranged to be rigidly secured to the face-plate of the lathe, an arm projecting rigidly from the flange toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, mechanism carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, and clamping mechanism to be carried by the flange and project through the wheel and engage its inner surface and clamp the wheel against the block.

4. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of a flange arranged to be rigidly secured to the face-plate of the lathe, an arm projecting rigidly from the flange toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, mechanism carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, studs projecting from the flange through the wheel, and a clamp-bar at the outer ends of the studs to engage the inner face of the wheel.

5. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of an arm arranged to be secured rigidly to the face-plate of the lathe and to project toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, mechanism carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, and clamping mechanism to be carried by the face-plate and project through the wheel and engage its inner surface and clamp the wheel against the block.

idly to the face-plate of the lathe and to project toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, a tapering key carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, and clamping mechanism to be carried by the face-plate and project through the wheel and engage its inner surface and clamp the wheel against the block.

6. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of an arm arranged to be secured rigidly to the face-plate of the lathe and to project toward the wheel and having a recess presenting toward the wheel, a block carried in said recess and movable therein to and from the wheel, a tapering key carried by the arm to the rear of the block for forcibly ad-

justing the block away from the face-plate and against the face of the wheel, studs projecting rigidly from the face-plate through the wheel, and a clamp-bar disposed at the outer ends of the studs and arranged to engage the inner face of the wheel.

7. In driving devices for use in turning tired wheels fast on their axle while supported between the centers of a driving-wheel lathe, the combination, substantially as set forth, of a plurality of driving-blocks having serrated faces in contact with the outer faces of the tires, and means for forcing the blocks toward the wheels so as to embed the teeth of the blocks into the metal of the faces of the tires.

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