

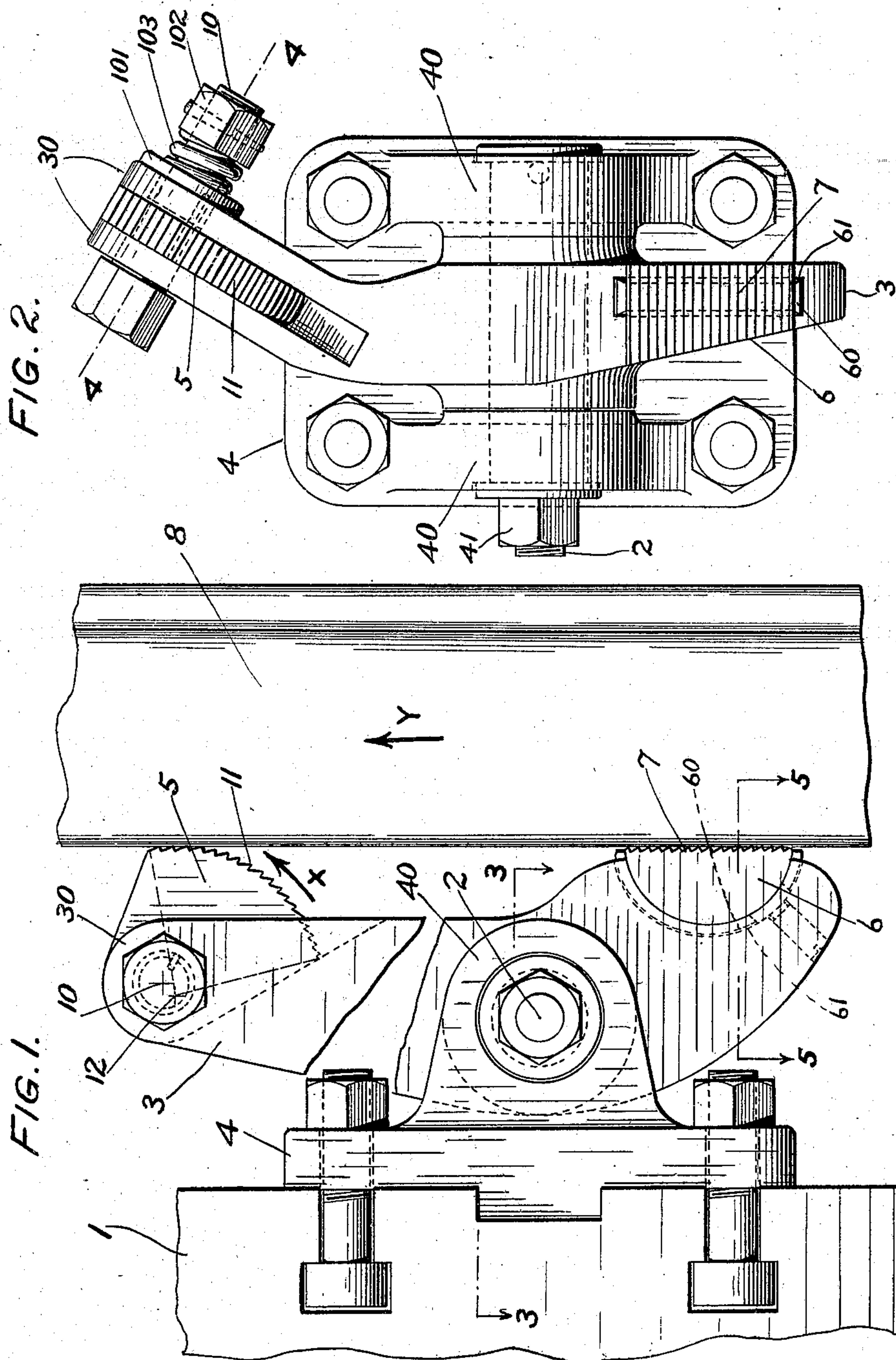
No. 881,373.

PATENTED MAR. 10, 1908.

J. BURT.
LATHE DRIVER.

APPLICATION FILED APR. 4, 1907

2 SHEETS—SHEET 1.



WITNESSES:

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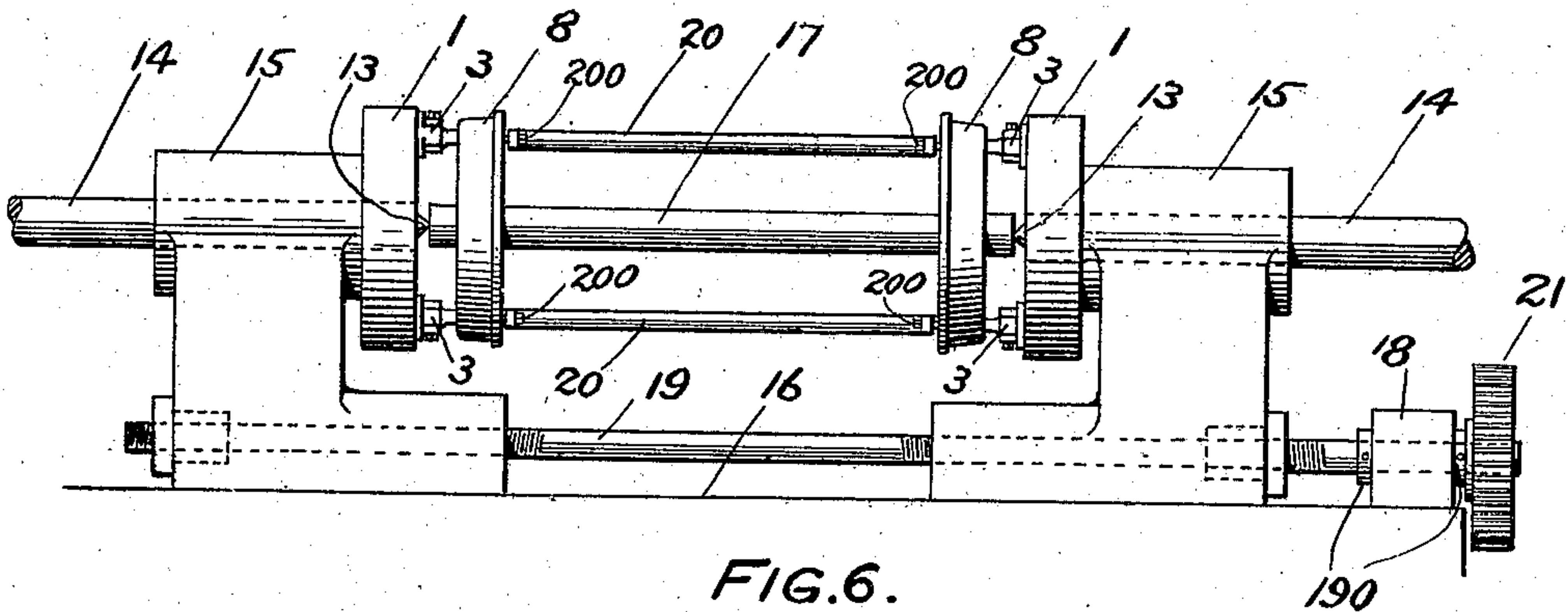


FIG. 6.

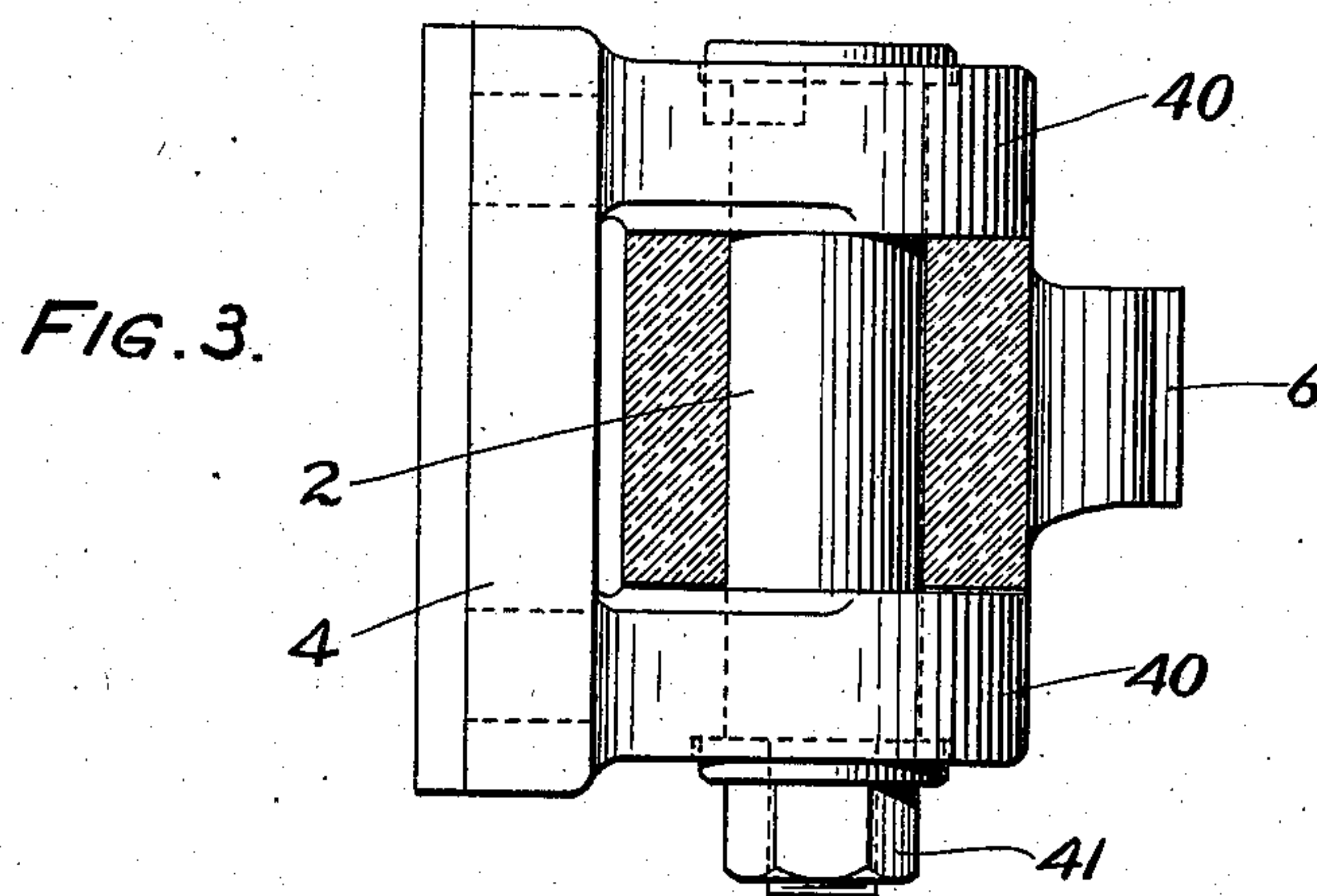


FIG. 3.

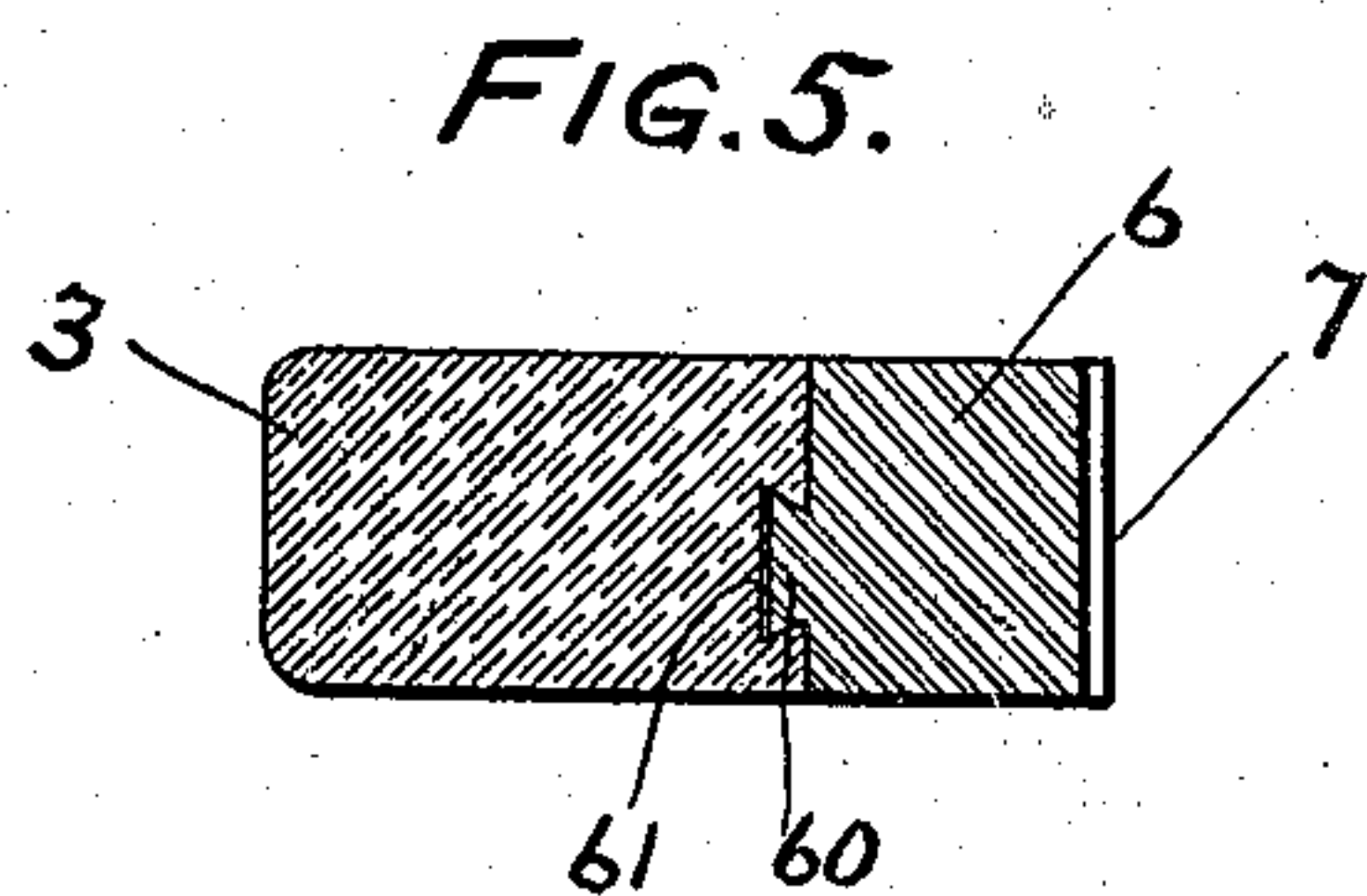


FIG. 5.

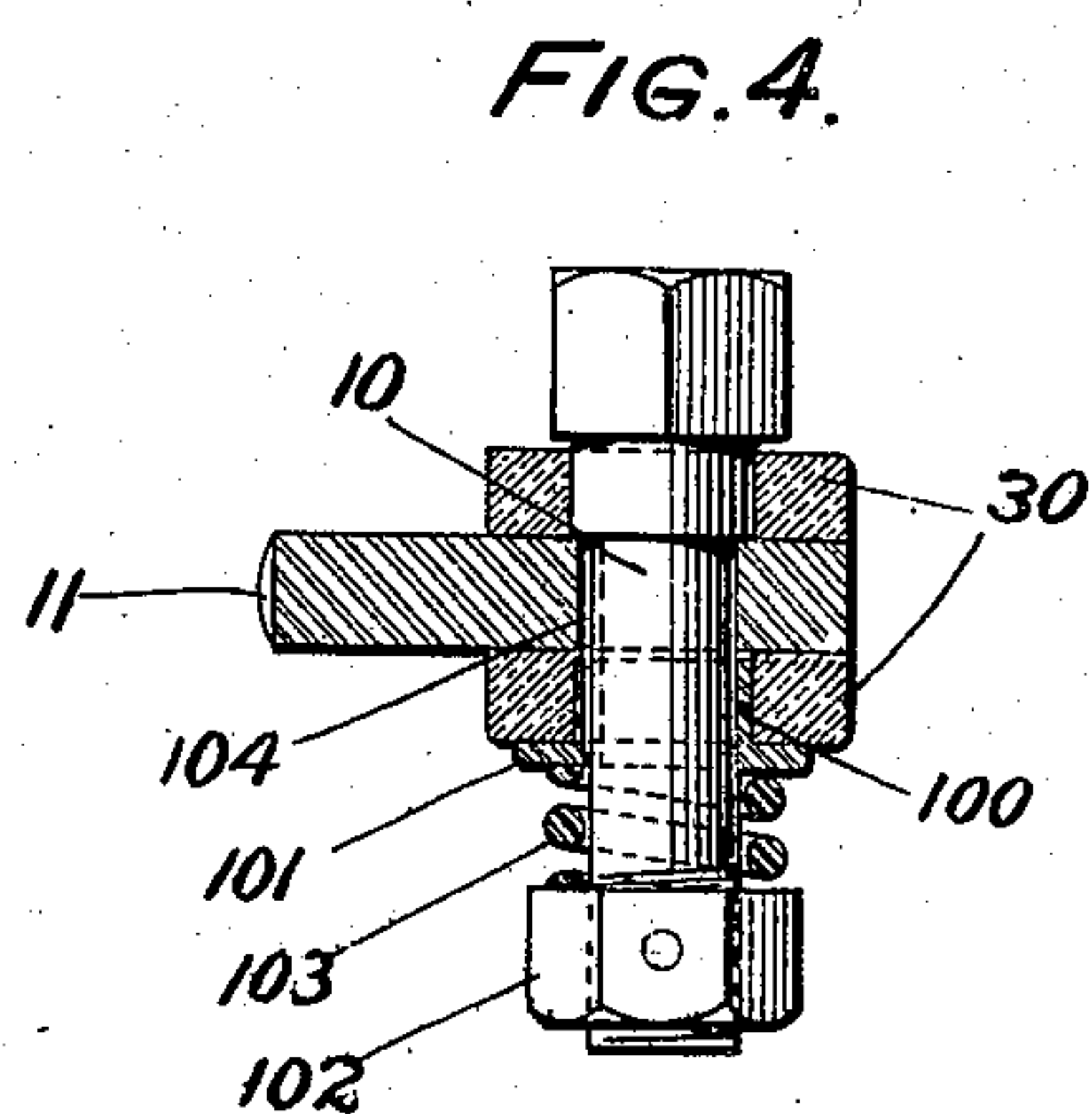


FIG. 4.

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UNITED STATES PATENT OFFICE.

JOHN BURT, OF NARBERTH, PENNSYLVANIA, ASSIGNOR TO WILLIAM SELLERS & COMPANY, INCORPORATED, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

LATHE-DRIVER.

No. 881,373.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed April 4, 1907. Serial No. 366,361.

To all whom it may concern:

Be it known that I, JOHN BURT, a citizen of the United States, residing at Narberth, county of Montgomery, and State of Pennsylvania, have invented a new and useful Improvement in Lathe - Drivers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

The main object of my invention is to provide a means by which a wheel or a pair of wheels mounted on an axle centered between the centers of a wheel lathe, can be effectively secured to the face plate or face plates, and made to rotate against the resistance of a heavy cut applied to the rim of the wheel in such a manner that the gripping tendency of the driver upon the wheel adjusts itself automatically to the resistance of the cut.

It is a further object of my invention to avoid any special effort or hard labor on the part of the operator in the application of the driver to the wheel, such as would be required to handle and use heavy wrenches or sledge hammers.

It is a further object of my invention to provide a fixed open position of the driver, so that work can be placed and removed with ease, and also to combine all the parts necessary for its functions in one unit with no loose pieces to handle, and to thus avoid the risk of losing or mislaying such pieces and consequent loss of time.

A driver attaining the objects hereinbefore mentioned has been heretofore invented by Lars H. Vold and forms the subject matter of an application heretofore filed by him.

Another special object of my invention is to devise a driver, embodying the essential features of the Vold driver, but adapted and arranged for application to the outside only of a piece of work such as a pair of wheels, with solid webs, mounted on an axle centered between the centers of a wheel lathe, thereby enabling the hereinbefore stated objects to be attained when the nature of the work is such as to preclude the work being gripped between gripping or clamping parts carried on the same face plate, although it will be understood that the invention is capable of use even with work to which the Vold driver is applicable.

In the drawings: Figure 1 is an elevation of the driver attached to a face plate of a lathe. 55 Fig. 2 is an end view of the driver. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a section on the line 4—4 of Fig. 2. Fig. 5 is a section on the line 5—5 of Fig. 1. Fig. 6 is a side elevation of the main parts of the lathe showing the application of the driver 60 and the struts for preventing distortion of the work.

1 is the face plate of the lathe. To the face-plate is bolted the stand 4 having projections 40, to which an arm or lever 3 is pivoted between its ends by means of a bolt 2 passing through the lever and secured to the projections 40 by means of the nut 41. One end of the lever is provided with a semicircular bearing face in which is seated a block 6 provided with a dove-tail projection 60 extending within a dovetail recess 61 formed in the semicircular bearing face. The block 6 is also provided with a saw-toothed gripping face 7 arranged to come up against the work 8 and drive the same against the resistance of the cut, the semi-circular seat enabling the block to adjust itself to seat itself properly against the face of the work. The opposite end of the lever 3 is provided with flanges 30 forming a recess into which extends an eccentric 5 pivoted to the flanges 30 by means of a bolt 10. One flange 30 is of sufficiently greater diameter than the bolt to receive a bushing 100 between whose flange 101 and the nut 102 is confined the coil spring 103. The bushing, eccentric, and bolt are keyed together by means of the key 104. The part of the bolt passing through the other flange 30 of the lever 3 is somewhat enlarged so as to be shouldered against the eccentric 5. The described construction is such that the spring tends to hold the eccentric in the position to which it has been moved, while permitting it to turn on the bolt 10 as hereinafter described.

The eccentric 5 is provided with a saw-toothed clamping face 11, curved on an arc described about the point 12, and adapted to bear against the work 8. The center 12 is so located with reference to lever 3 and its pivot 10 on the one hand, and a plane coincident with the face of the work on the other hand, that if the eccentric be swung around in the direction of the arrow x , keeping its saw-

tooth face in contact with the said plane, the axis of the bolt 10 will be moved outwardly away from the work, carrying the corresponding end of lever 3 with it, and moving
5 inwardly the other end carrying block 6.

If, now, the driver be applied to the face of the work, the parts assuming the position shown in Fig. 1 in which one edge of the eccentric 5 is forced against the oblique edge of the recess formed between the flanges 30 of the lever 3, and the lathe rotated and a cutting tool applied to the work, resistance of
10 the work to rotation sufficient to cause a slipping of the saw toothed face 7 will cause the work to move in the direction of the arrow y relatively to the driver. This motion will cause the eccentric 5, biting with its saw toothed face 11 in the face of the work 8, to swing in the direction of the arrow x around
15 its pivot 10, thus causing a corresponding movement of block 6 around pivot 2 against the work. As both the work 8 and stand 4 are solidly backed up and unyielding, the saw-toothed face 7 of the block 6 will be
25 driven into the work 8 and continue to be so until the relative motion between stand 4 and work 8 stops; that is, until the gripping of the saw-toothed face 7 of block 6 has overcome the cutting pressure and slippage of the
30 work ceases. It is evident that such an arrangement of drive will set up a heavy pressure between the work and the face-plate, and means to resist same must be adopted.

In Fig. 6 is shown a car-wheel lathe for
35 which this method of chucking is especially adapted. The work 8 is shown as a pair of car wheels on their axle 17 centered between the centers 13 of the lathe and a plurality of drivers is attached to each face plate. 14 are
40 spindles carrying the centers 13 and adapted to slide in the heads 15 respectively but not to move with same when the heads are adjusted to and from the work on bed 16. The spindles are adjusted by means, not shown,
45 attached directly to the bed 16. The wheels 8, on their axle 7, can be centered between the centers 13 and held centrally while the heads 15 are moved up until the drivers touch the wheel rims. The heads 15 are ad-
50 justed on the bed by a right and left hand screw 19, supported on the bed 16 by stand 18, and having the collars 190 limiting its endwise movement to a working clearance each side of the ideal central position. 21 is
55 a gear on the end of the screw shaft by means of which the screw is driven.

As the drivers, as previously described, tend to create pressure between the work and the face-plate, and as there are a pair of
60 wheels and a pair of face-plates facing each other, there will necessarily be a pressure across between the car wheels tending to spring, distort, or dish the wheels. To neutralize this crushing tendency, struts 20
65 are placed directly opposite the drivers and

extended between the wheels and provided with set-screws 200 adjustable against the wheel rims.

Having now fully described my invention, what I claim and desire to protect by Letters Patent is: 70

1. A driver for work centered between the centers of a lathe and adapted for application to one face only of the work, comprising two parts adapted to engage the same face of the work, one part being movable in a direction substantially parallel to the axis of the lathe and the other part being relatively movable in substantially the direction of rotation of the lathe, and connections between the parts adapted, by the stated action of the second part, to be actuated to produce the stated movement of the first part, thereby increasing the gripping force applied to the work proportionately to its resistance to rotation. 75 80 85

2. A driver for work centered between the centers of a lathe, comprising a support adapted to be attached to the face plate of the lathe, a part having a gripping face arranged to abut against one face of the work, a clamping part adapted to engage the same face of the work and partake of its movement, a lever carrying the gripping part and pivotally connected to the support and to the clamping part and adapted, by the action of the clamping part, to be swung on its pivot to embed the gripping face into the work. 90 95

3. A driver for work centered between the centers of a lathe, comprising a support adapted for attachment to the face plate of a lathe, a lever pivoted thereto on an axis substantially perpendicular to the axis of rotation, a gripping part on said lever adapted to engage the face of the work, and a clamping part, adapted to engage the face of the work, pivoted to the lever on an axis substantially parallel to the axis on which the lever is pivoted. 100 105

4. A driver for work centered between the centers of a lathe, comprising a support adapted for attachment to the face plate of a lathe, a lever pivoted thereto on an axis substantially perpendicular to the axis of rotation, a gripping part at one end thereof adapted to engage the face of the work, and a clamping part, adapted to engage the face of the work, pivoted at the other end of the lever on an axis substantially parallel to the axis on which the lever is pivoted. 110 115 120

5. A driver for work centered between the centers of a lathe, comprising a support adapted for attachment to the face plate of a lathe, a gripping part, a lever carrying the gripping part and pivoted on the support and adapted, while turning on its pivot, to move the gripping part in a direction substantially parallel to the axis of the lathe, and an eccentric, having a toothed face, attached to the lever and adapted, in its actuation by the 125 130

work in the latter's resistance to rotation, to operate the lever and cause its gripping part to embed itself in the work.

6. A driver for work centered between the
5 centers of a lathe, comprising a support adapted for attachment to the face-plate of a lathe, a lever pivoted on the support, a gripping part carried on one end of the lever, and an eccentric, having a toothed face, attached
10 to the other end of the lever.

7. A driver for work centered between the centers of a lathe, comprising a support adapted for attachment to the face plate of a lathe, a lever pivoted to the support on an
15 axis substantially perpendicular to the axis of rotation, a gripping part carried on one end of said lever, and an eccentric, having a toothed face, pivoted to the other end of the lever on an axis substantially parallel to the
20 axis on which the lever is pivoted.

8. A driver for work centered between the centers of a lathe, comprising a support adapted for attachment to the face-plate of a lathe, a lever pivoted to the support having
25 a concave bearing face, a gripping part having a convex face turnable within said bearing face, and means movably attached to the lever and adapted to engage and be actuated by the work in the latter's resistance to rotation and actuate the lever.
30

9. A driver for work centered between the centers of a lathe, comprising a support adapted for attachment to the face-plate of a lathe, a lever pivoted to the support having
35 a concave bearing face, a gripping part having a convex face turnable within said bearing face, a projection on the convex face of the gripping part engaging a groove in the bearing face of the lever and permitting said

turning movement while restraining it from 40 lateral movement, and means movably attached to the lever and adapted to engage and be actuated by the work in the latter's resistance to rotation and actuate the lever.

10. A driver for work centered between 45 the centers of a lathe, comprising a support adapted for attachment to the face-plate of a lathe, a gripping part adapted for engagement with the face of the work, a lever carrying the gripping part and having flanges 50 forming a recess, an eccentric inserted within the flanges, having a toothed face adapted for engagement with the work, a bolt extending through said flanges and eccentric, a bushing surrounding said bolt and extending 55 within the bolt orifice in one of the flanges, a key engaging said bushing, bolt and eccentric, a nut on the bolt and a spring confined between the bushing and nut.

11. A driver for work centered between 60 the centers of a lathe, comprising a support adapted for attachment to the face-plate of a lathe, a lever, pivoted to the support on an axis substantially perpendicular to the axis of rotation of the lathe and having a concave 65 bearing face at one end, a block, having a toothed face, turnable within the bearing face of the lever, and an eccentric, having a toothed face, pivoted to the other end of the lever. 70

In testimony of which invention, I have hereunto set my hand, at Philadelphia, on this first day of April, 1907.

JOHN BURT.

Witnesses:

MARY I. BRADLEY,
HELEN FAHNESTOCK.