

No. 671,439.

Patented Apr. 9, 1901.

S. V. HUBER.
ROLLING MILL.

(Application filed June 18, 1900.)

(No Model.)

4 Sheets—Sheet 1.

FIG. 1.

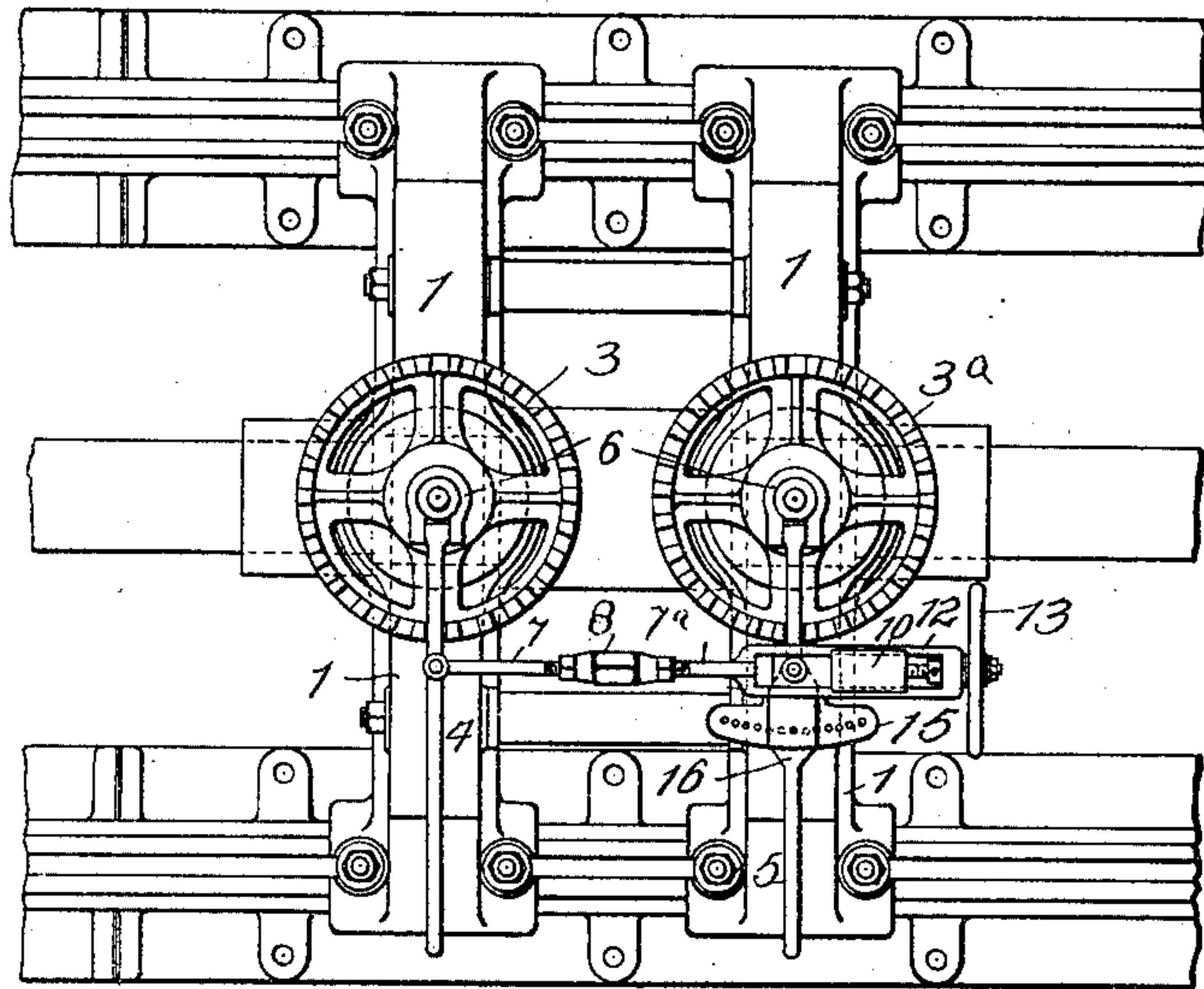
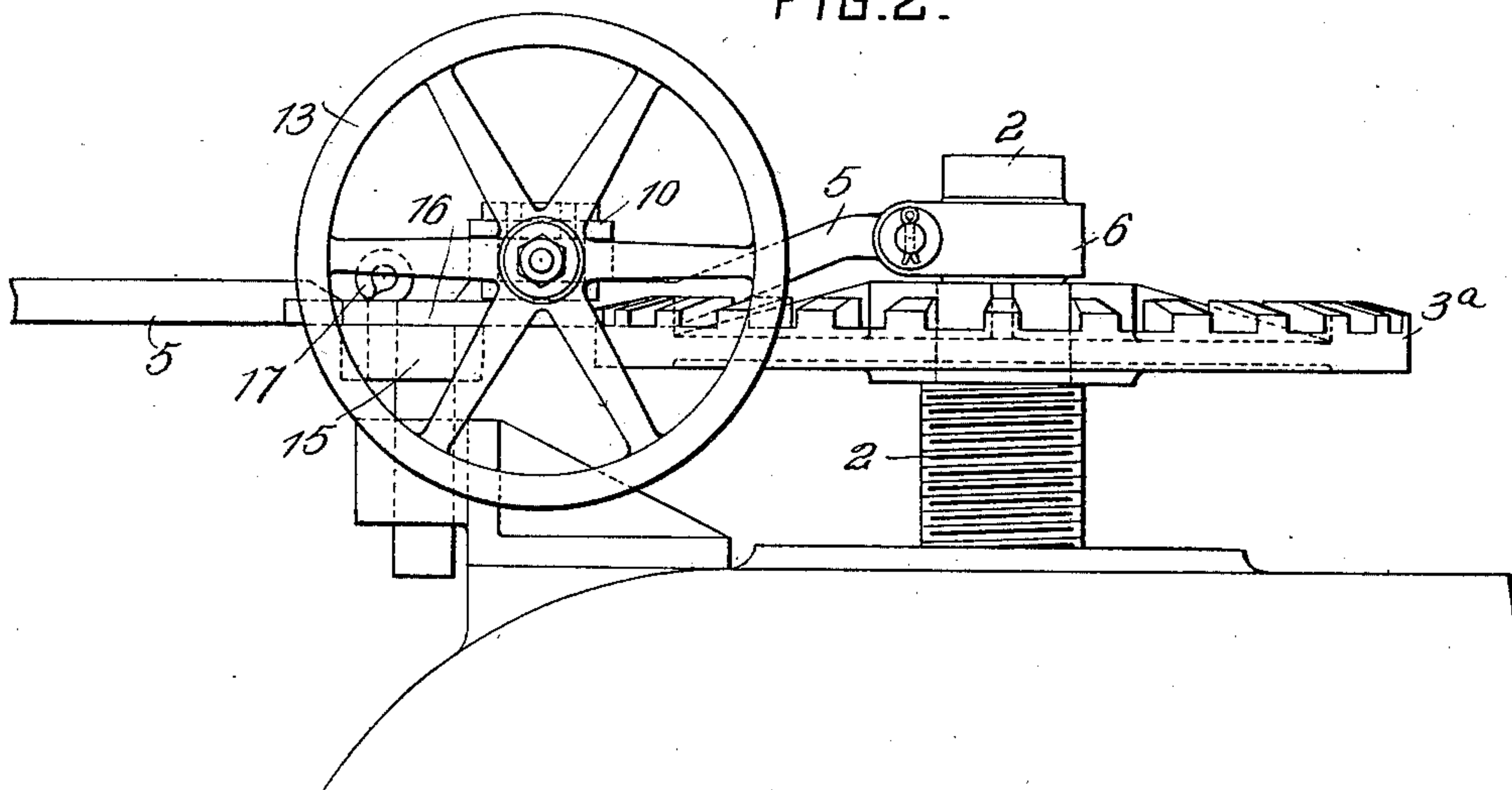


FIG. 2.



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FIG. 4.

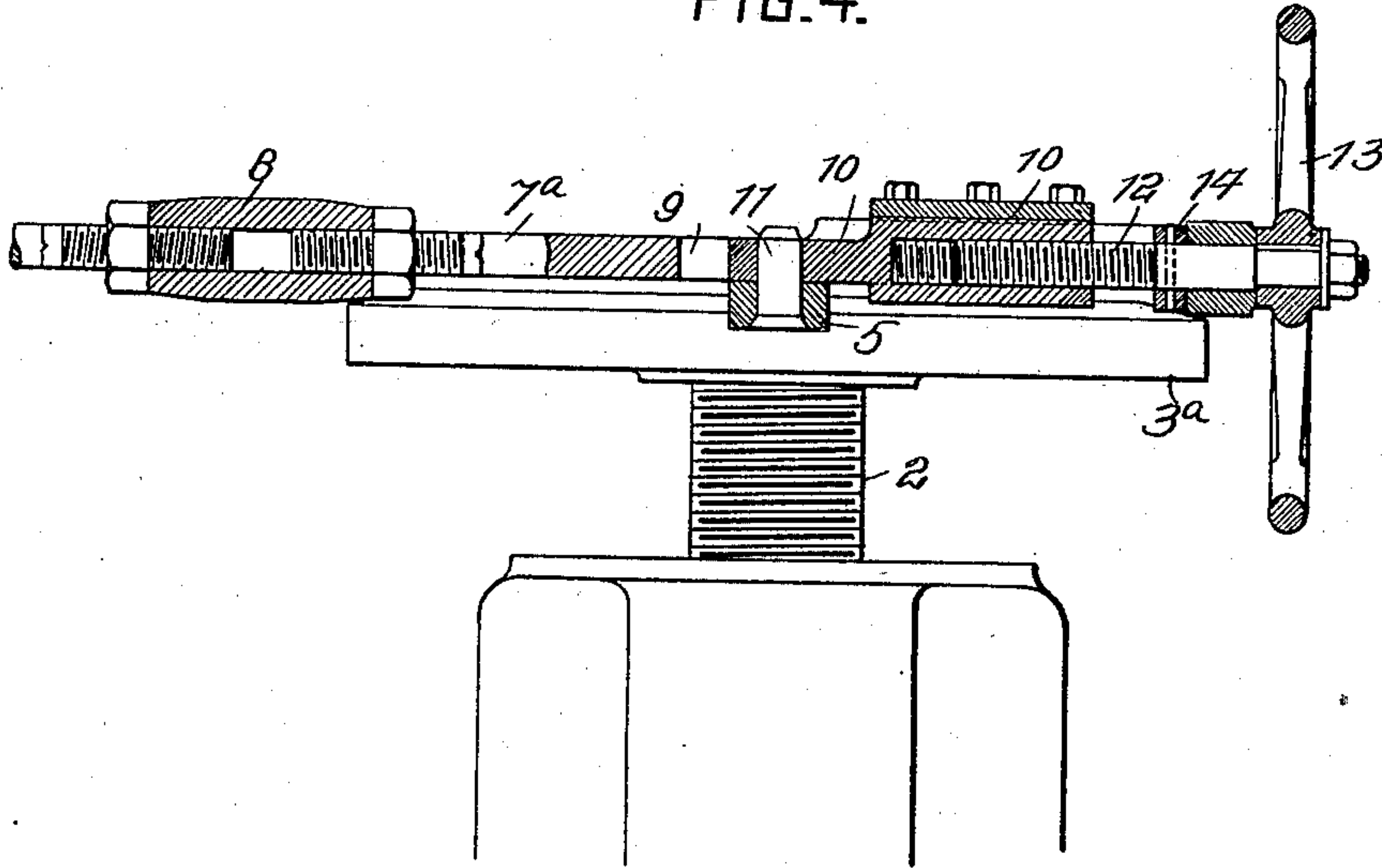
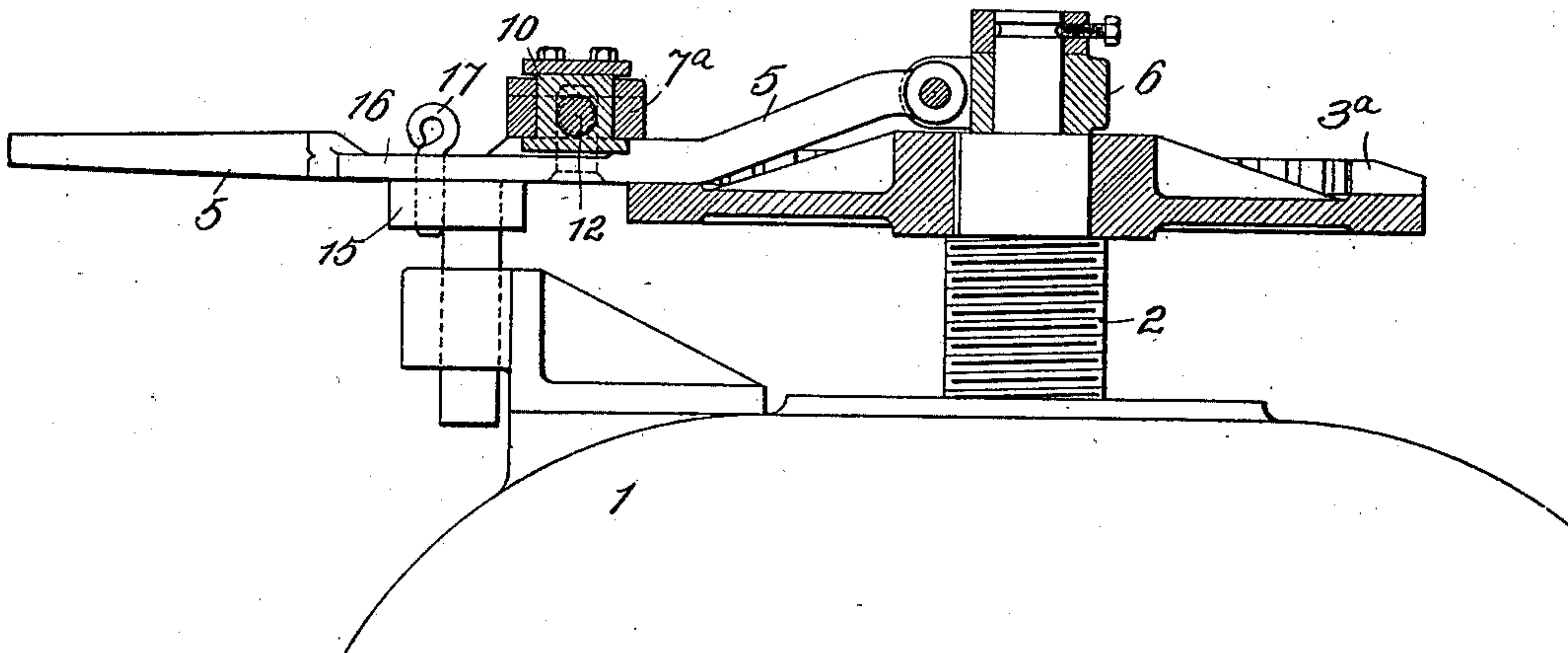


FIG. 5.



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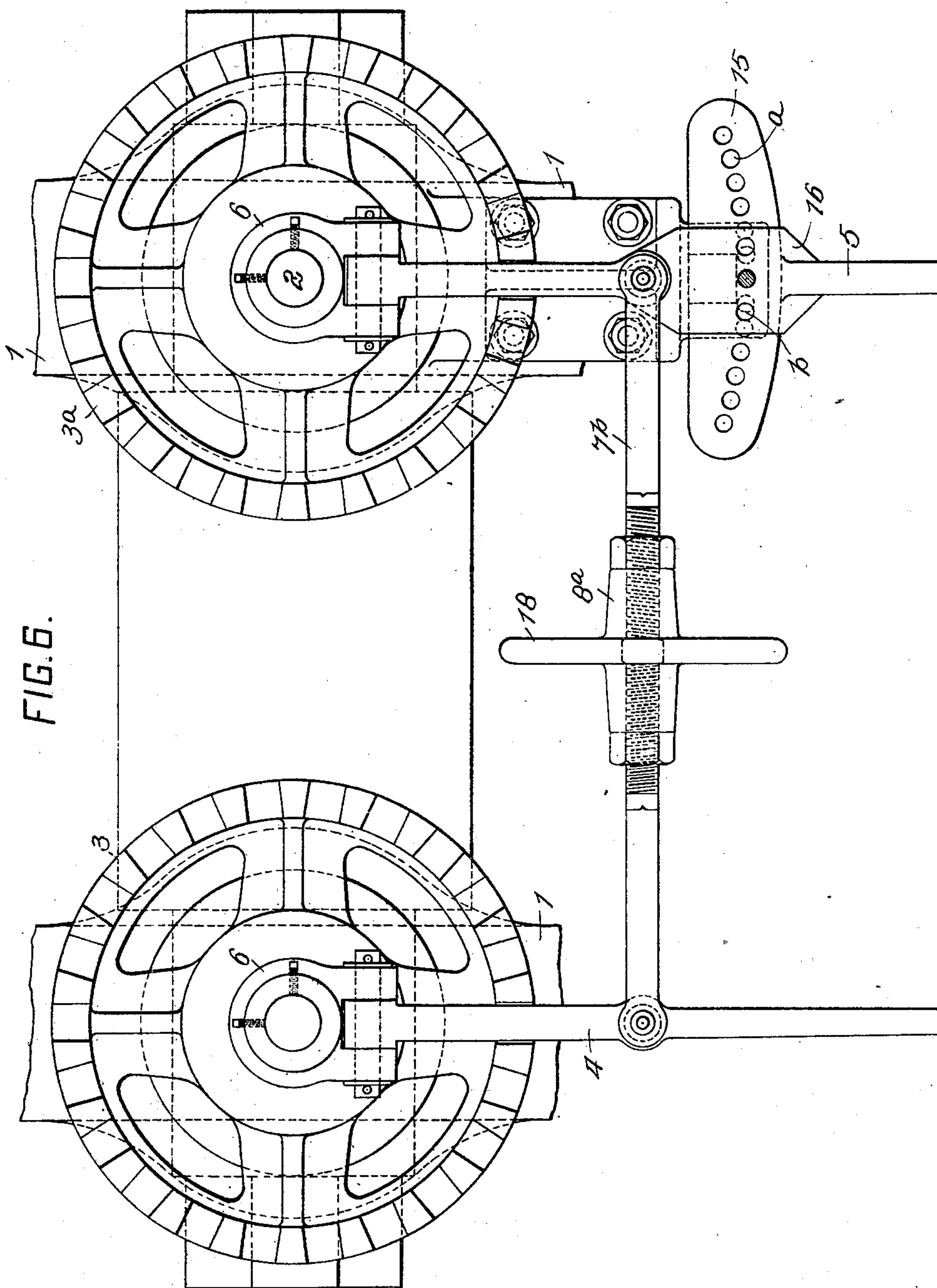
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4 Sheets—Sheet 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SIGMUND V. HUBER, OF PITTSBURG, PENNSYLVANIA.

ROLLING-MILL.

SPECIFICATION forming part of Letters Patent No. 671,439, dated April 9, 1901.

Application filed June 18, 1900. Serial No. 20,665. (No model.)

To all whom it may concern:

Be it known that I, SIGMUND V. HUBER, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Rolling-Mills, of which improvements the following is a specification.

The invention described herein relates to certain improvements in adjusting mechanism for rolls both of the two-high and the three-high type.

The invention has for its object a construction or arrangement of mechanism whereby both ends of a roll may be simultaneously adjusted and also whereby one end of the roll may be adjusted so as to produce equal reduction or any desired difference of reduction on the edges of the article to be rolled.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a top plan view of a mill having my improvement applied thereto. Fig. 2 is a side elevation of the upper portion of the mill and the adjusting mechanism of the top roll. Fig. 3 is a view similar to Fig. 1 on an enlarged scale. Fig. 4 is a sectional view, the plane of section being indicated by the line IV IV, Fig. 3. Fig. 5 is a sectional view on the plane indicated by the line V V, Fig. 3; and Fig. 6 is a view similar to Fig. 3, illustrating a modification of the construction shown in the latter figure.

In the practice of my invention the housings 1 are constructed in the usual or any suitable manner and the rolls mounted therein, as is customary. Suitable adjusting-screws 2 are provided for adjusting the upper roll. On the upper end of these screws are secured wheels 3, provided on the upper surface of their perimeter with a series of teeth which are adapted to be engaged by portions of levers 4 and 5, which have their inner ends pivotally connected to yokes 6, loosely mounted on the upper ends of the adjusting-screws. These levers 4 and 5 are connected together by means of a strap formed in two sections 7 and 7^a, connected together by a turnbuckle 8, whereby the straps may be lengthened or shortened, as required, for purposes of adjustment, as hereinafter described. The sec-

tion 7 is pivotally connected to the lever 4, as clearly shown in Figs. 1, 3, and 6. In my preferred construction the section 7^a is provided with a slot 9, in which is mounted a block 10. This block is adapted to be detachably connected to the lever 5 by a pin 11 on one of said parts projecting through an opening formed in the other part. The block is adapted to be adjusted back and forth in the slot in the section 7^a by means of a screw 12, passing loosely through the end wall of the slot and engaging a threaded opening in the block 10. The screw is held from longitudinal movement through the end wall of the slot by a hand-wheel 13 on the other end of the screw and a collar 14, secured to the screw inside the wall of the slot, as shown in Figs. 3 and 4.

When it is desired to adjust the upper roll, the levers 4 and 5 are raised up out of engagement with the crown-toothed wheels 3 and 3^a and then shifted to the right or left, according to the adjustment required, and lowered to take new engagement with the said wheels. The levers are then shifted to the left or right, and this operation is repeated until the roll has been properly adjusted. As the levers are tied together, so as to move equally and simultaneously in the operation described, and as the teeth on the wheels 3 3^a are spaced equally, both ends of the roll will be raised or lowered an equal amount.

If it is found that one end of the roll effects a little greater reduction than the other end, the hand-wheel 13 is operated, thereby shifting the lever 4, the block 10 and the lever 5 having been previously locked as against movement. The block 10 being held stationary, it is evident that the rotation of the screw 12 will shift the connection 7 and 7^a, and with it the lever 4, and thereby raising and lowering the end of the roll with which the screw operated by the lever 4 is in engagement.

The means for locking and holding screws in their adjusted position consists of a plate 15, secured upon one of the housings and provided with a series of holes *a*, a plate 16, formed on or secured to one of the levers, as 5, and provided with a series of holes *b* and a locking-pin 17. The holes in plate 16 are spaced a greater distance apart than the holes

in the plate 15, thereby permitting of a finer adjustment of the roll than would be possible were a single pin on the lever and a series of holes in the plate 15 employed.

5 As shown in Fig. 6, the adjustment of one end of the roll may be effected by rotating the turnbuckle. When the turnbuckle is to be employed for that purpose, the strap 7^b is pivotally connected directly to the lever 5 and
10 the turnbuckle 8^a is provided with a hand-wheel 18, whereby said turnbuckle may be rotated. As the ends of the sections 7 and 7^b are oppositely threaded and the turnbuckle has right and left hand threads at its respec-
15 tive ends, the rotation of the turnbuckle will effect a lengthening or shortening of the connection between the levers. If now the lever 5 be locked as against any movement, a rotation of the turnbuckle will effect a shifting
20 of the lever 4, and thereby a raising or lowering, as the case may be, of one end of the upper roll.

I claim herein as my invention—

25 1. In a rolling-mill the combination of mechanism for simultaneously raising or lowering both ends of one of the rolls, a lock for holding a portion of the mechanism stationary, and means for shifting another portion of the adjusting mechanism and thereby

raise or lower one end of said roll, substantially as set forth. 30

2. In a rolling-mill, the combination of screws for adjusting one of the rolls, arms for shifting said screws, means for locking one of said arms, and means for shifting the
35 other arm toward and from the first arm, substantially as set forth.

3. In a rolling-mill the combination of screws, arms for rotating said screws, a connection between said arms, whereby they may
40 be moved equally and simultaneously, means for locking one of said arms, and means for shortening and lengthening said connection, substantially as set forth.

4. In a rolling-mill, the combination of
45 screws, toothed wheels secured to said screws, connected arms pivotally mounted and adapted to engage said wheels, means for locking one of said arms, and means for shifting the
50 other arm toward and from the first, substantially as set forth.

In testimony whereof I have hereunto set my hand.

SIGMUND V. HUBER.

Witnesses:

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