

T. A. Goff.

Turning Wrist-Pins &c.

N<sup>o</sup> 78733

Patented Jun. 9, 1868

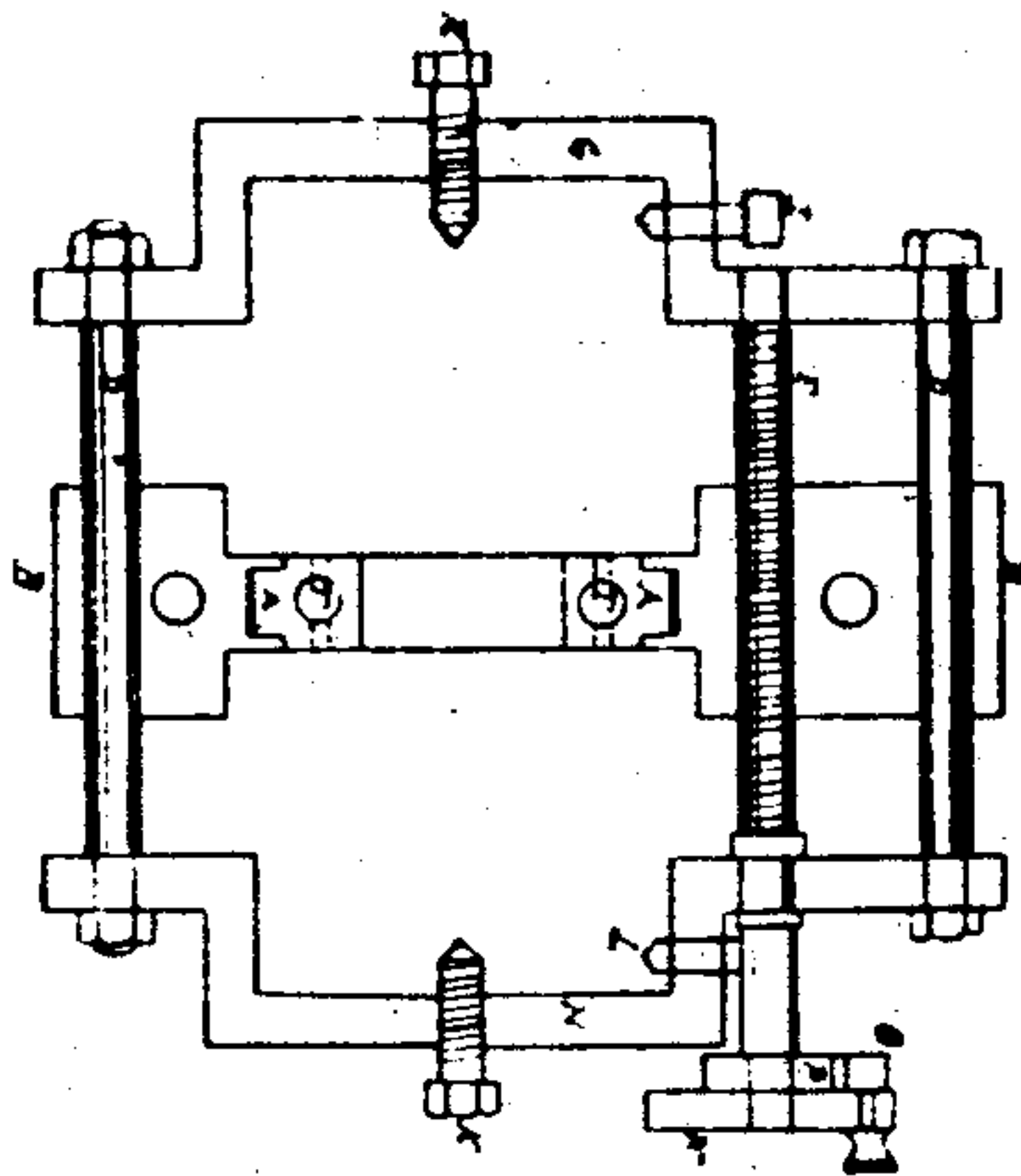


Fig. 3

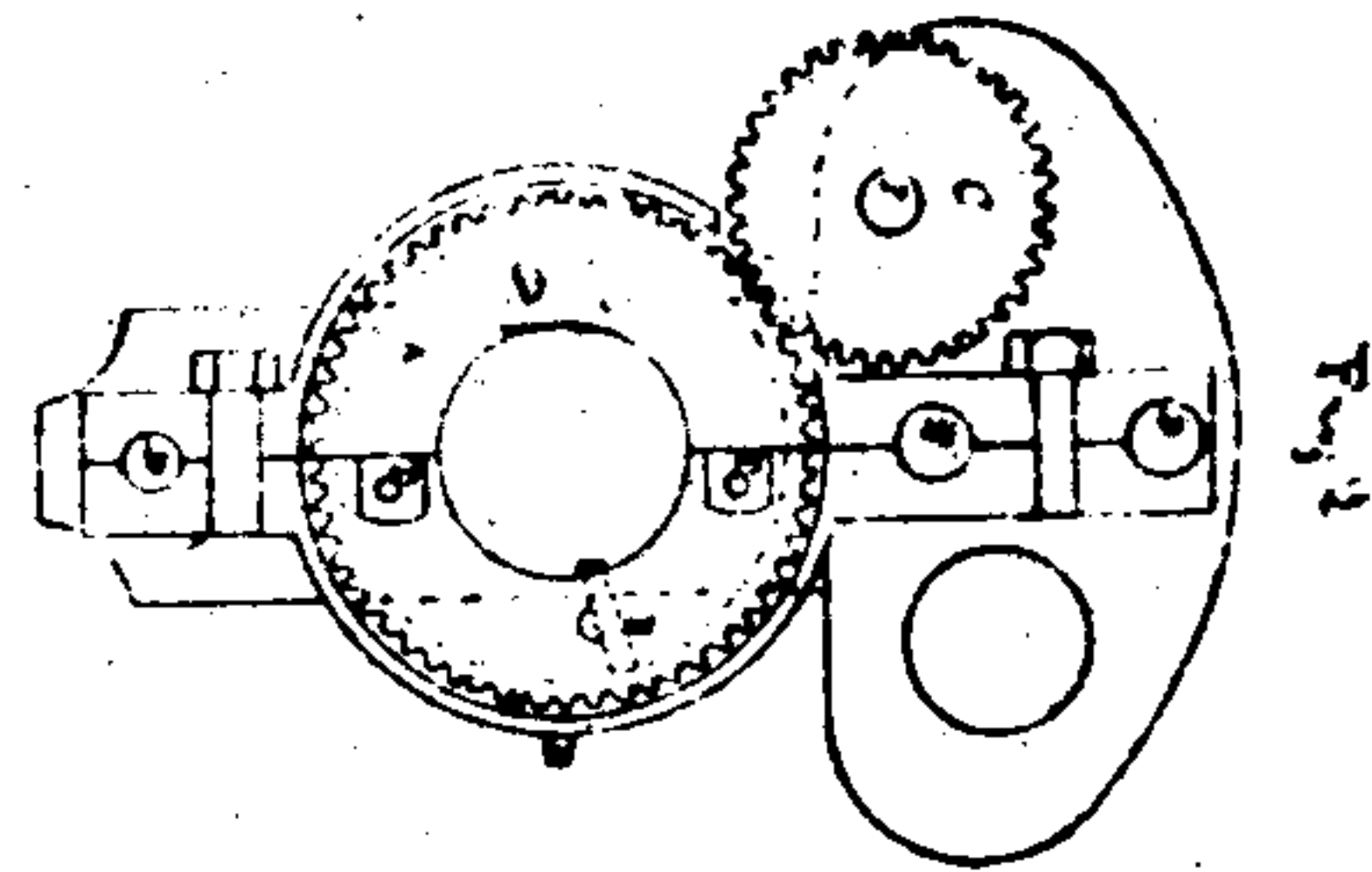


Fig. 2

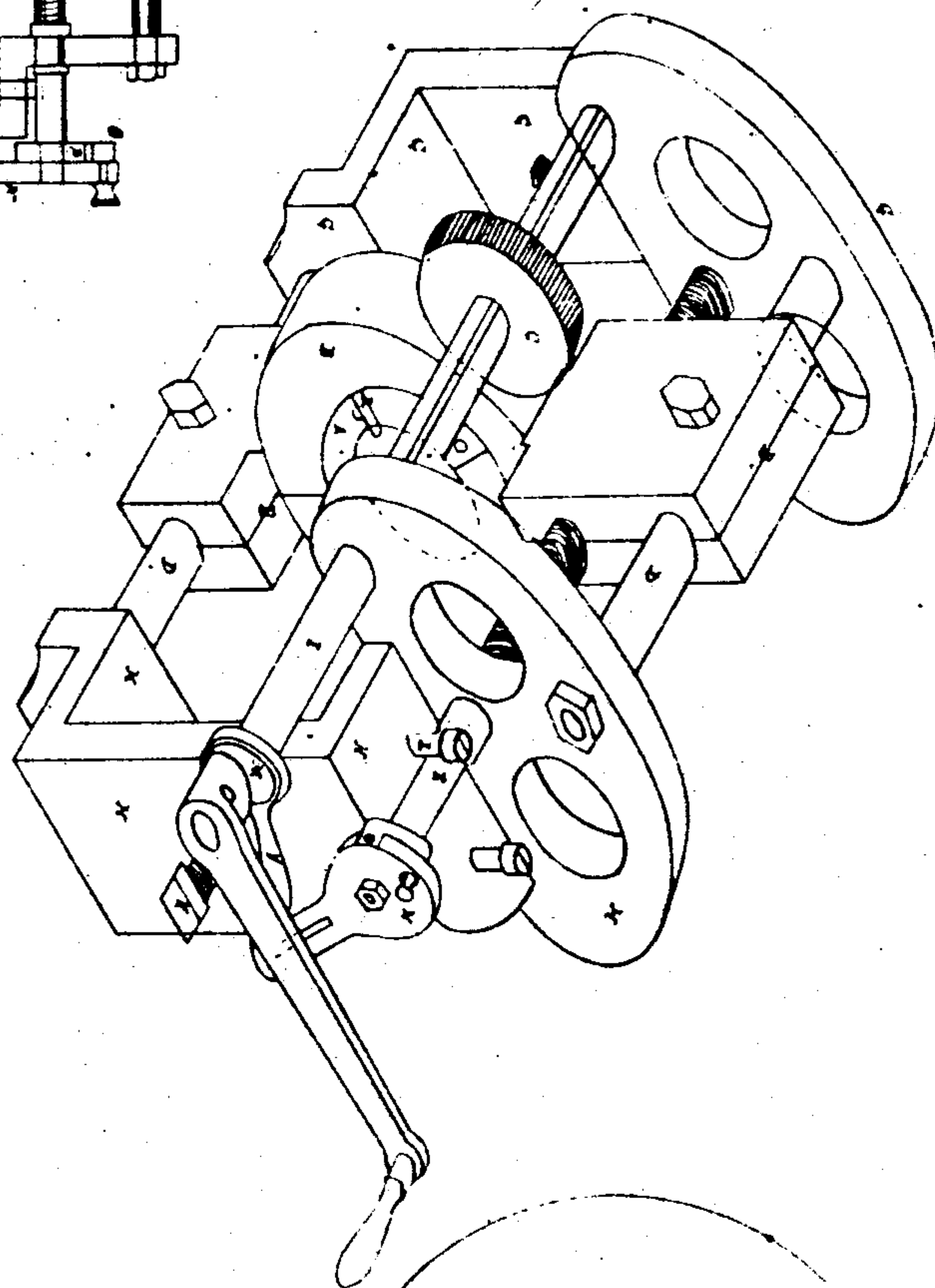


Fig. 1

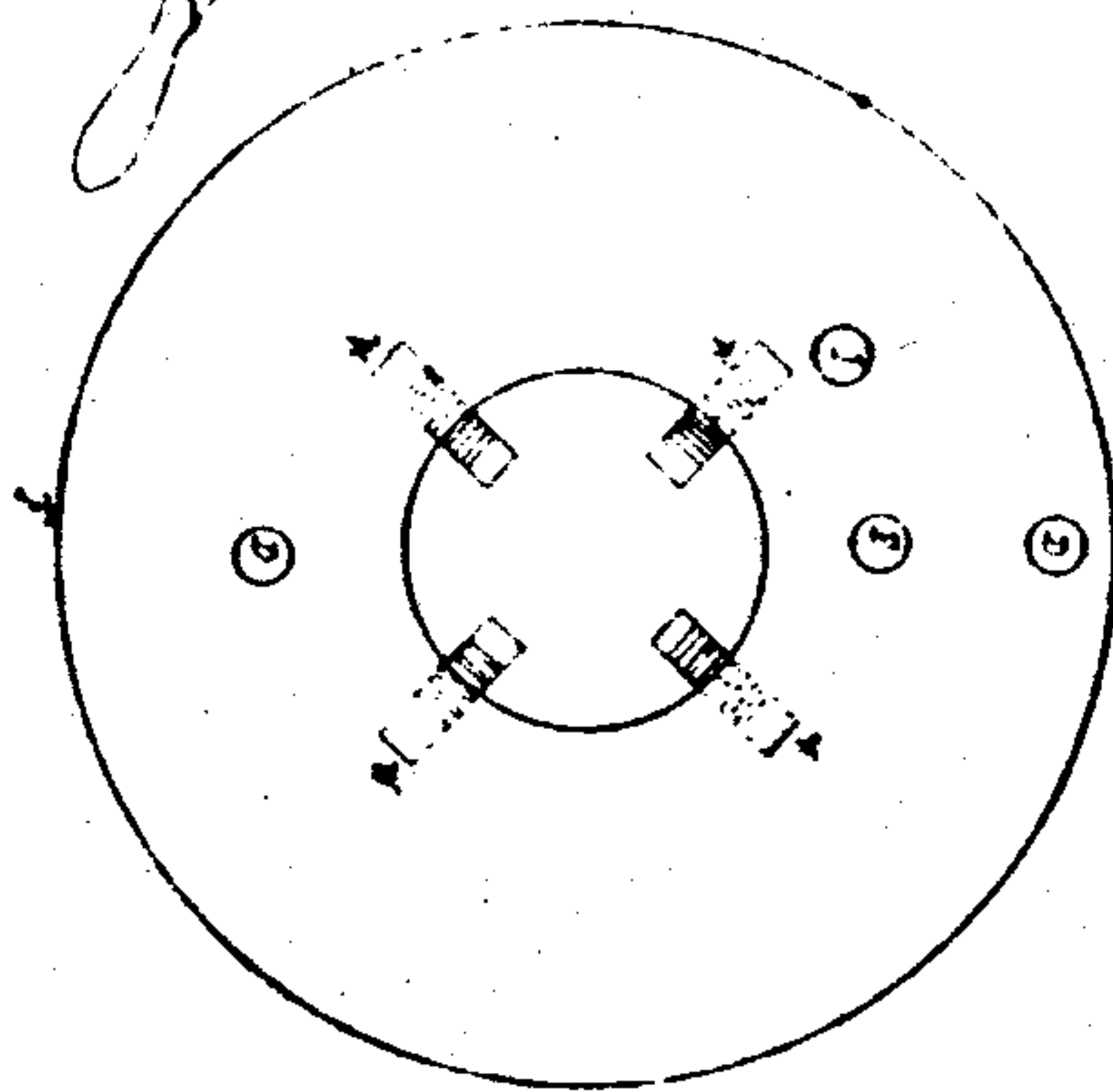
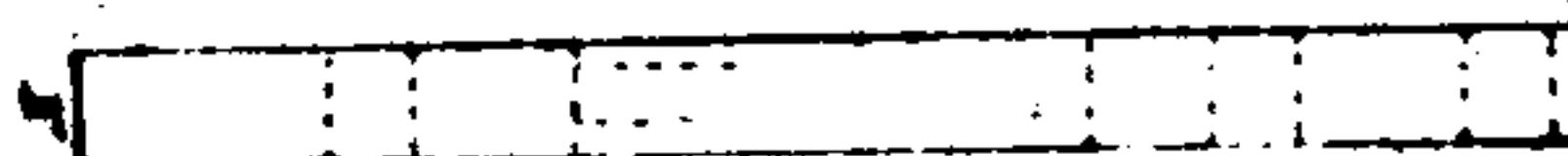


Fig. 4



Witnesses  
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THEODORE A. GOFF, OF SAN FRANCISCO, CALIFORNIA.

*Letters Patent No. 78,733, dated June 9, 1868.*

## IMPROVED APPARATUS FOR TURNING WRIST-PINS, CRANK-PINS, &c.

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, THEODORE A. GOFF, of the city and county of San Francisco, and State of California, have invented a new and useful Mechanical Device, Designed to be Used in Turning off Cross-Head Wrist-Pins, Crank-Pins, and all similar work, while stationary and in place; and I do hereby declare that the following is a full and exact description of the said invention.

To enable others skilled in the art to which my invention appertains to make and use the same, I will proceed to describe the same with reference to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of a machine having my invention.

Figure 2 is a vertical section view of the same, transverse to the axis of the cutter-ring.

Figure 3 is a vertical section view of the same, in line with the axis of the cutter-ring, and between the two sections of the case.

Figure 4 is an extra left-hand side-plate.

Similar letters of reference indicate like parts in the several figures.

The frame of the machine consists of the two irregular side-pieces G and H, connected rigidly together by the bolts D, called guide-rods.

Within the frame is the cutter-ring A, revolving freely in its grooved case B, the ring being held in place by and sliding within the case, as shown by the drawings.

The periphery of the ring is cogged, and connects, through an opening in its case, with the pinion C upon the crank-shaft I.

The cutter-ring is in two sections, dowelled together and pinned, as shown at T.

The ring carries two cutting-tools, one on each side, adjustable in a groove transverse to the line of motion, and fastened by keys, the ends of which are flush with the sides of the ring.

The case is also in two parts, held together by bolts and nuts, and is supported by and slides back and forth laterally upon the guide-rods D, carried by the feed-screw E, which runs between the flanges of the case, and is worked by the eccentric-pawl and ratchet in the usual manner, as shown by the drawings.

The case, in its movements to and fro, carries with it the spur-wheel C, which is feathered to its shaft, and extends somewhat into the case.

The pivot-screws K run through the side-pieces in the line of the centre of the cutter-ring.

The mode of adjusting the machine for use is as follows:

First, to turn off a wrist-pin of a cross-head in place, remove the crank-shaft I, also the case, and take the cutter-ring apart. Next place between the cross-head and the wrist-pin that section of the case which will cause the crank to be outside. Then slide one part of the cutter-ring into this section of the case around the wrist-pin, after which the other part of the ring is to be applied and fastened to its counterpart. Then take off the left hand side-piece of the frame, (the side-piece next to the crank being called the right-hand, and the other the left-hand one,) and put the frame together across the engine, slide and adjust it by the centring-screws K and set-screws L, which last-named screws are to prevent the machine from rocking on the centring-screws. Then fasten the other section of the case and the driving-gear in place, and the machine is ready for work.

Second, to turn off a crank-pin in place, remove the left-hand side-piece of the frame, and put the side-plate F in its stead. Pass the machine over the crank-pin to be turned, the pin passing through the openings through the side-plate F and cutter-ring, and pivoting upon the centring-screw in the right-hand side-piece. Adjust the left-hand side of the frame by the set-screws W, and the machine is ready for work. If the collar, at the end of the crank-pin, is larger than the opening through the cutter-ring, the ring can be taken apart, as before described.

Third, the foregoing directions will enable any machinist to apply the machine in all other cases where it is applicable. Cases will arise in which the cutter-ring and its case may be used, but in which the particular

frame herein described cannot be used, as, for example, in turning off a space midway of a long stationary shaft. In all such cases, however, the proper frame will suggest itself at once to any machinist.

The operation of the machine is as follows:

Place the cutter-ring at one end of the pin to be turned, then adjust the cutter nearest to the other end of the pin for a chip, and the ratchet for feeding in the proper direction. Now turn the crank till the ring crosses the face of pin, then adjust the other cutter for a chip, change the feed, and turn the crank as before, and so on, back and forth, until the pin is turned to the size desired.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The arrangement of the several parts of the machine as herein recited, whereby it may be used to turn off a wrist-pin or a crank-pin in place, as set forth.

THEODORE A. GOFF.

Witnesses:

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ALFRED RIX.