

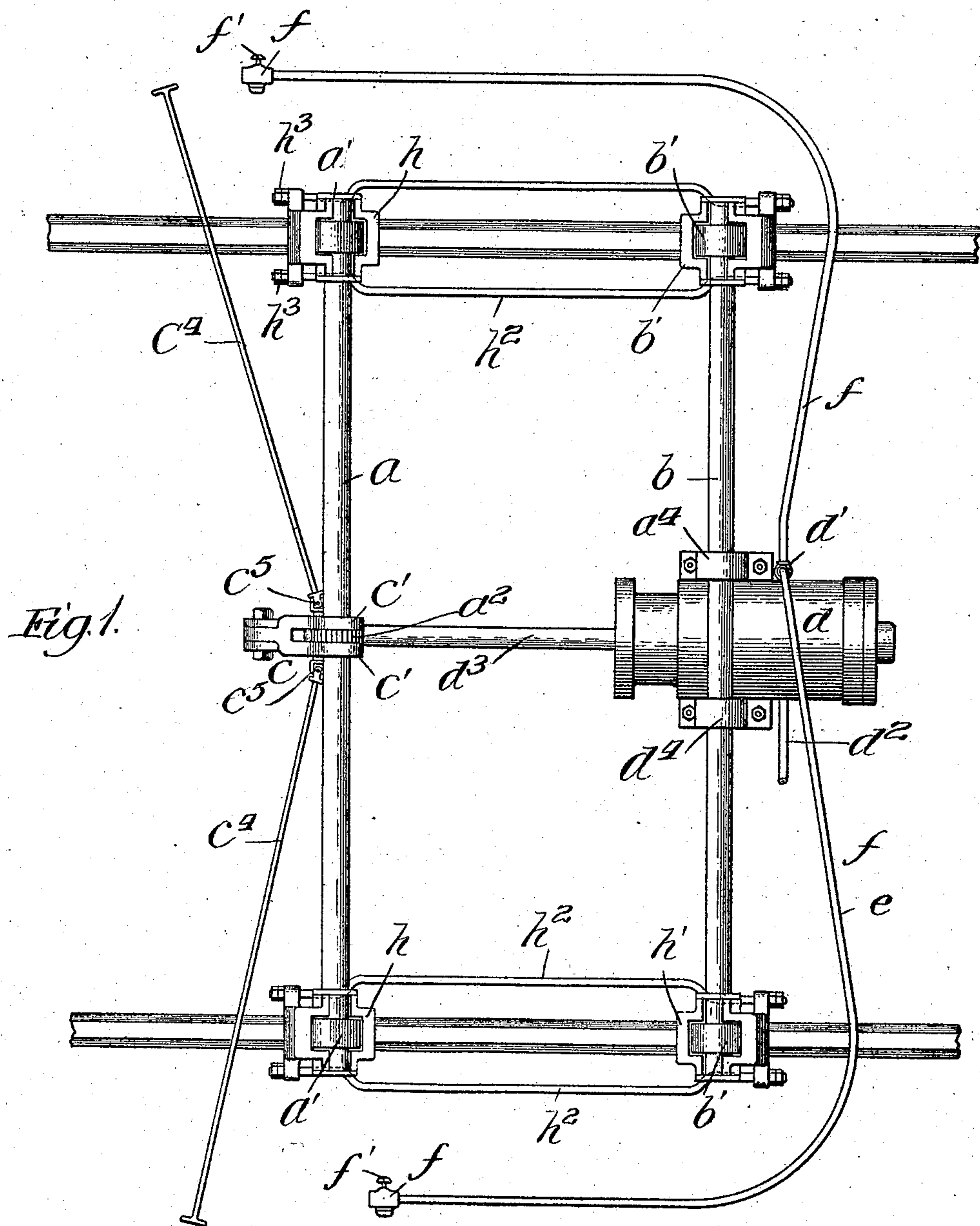
No. 848,011.

PATENTED MAR. 26, 1907.

J. J. CONOLLY & J. HERRON.
MACHINE FOR SETTING LOCOMOTIVE VALVES.

APPLICATION FILED AUG. 8, 1906.

2 SHEETS—SHEET 1.



Witnesses:
Ed. Gaylord.
Chas. H. Bull.

Inventors:
John J. Conolly,
John Herron,
By Thomas C. Sheridan,
Attys.

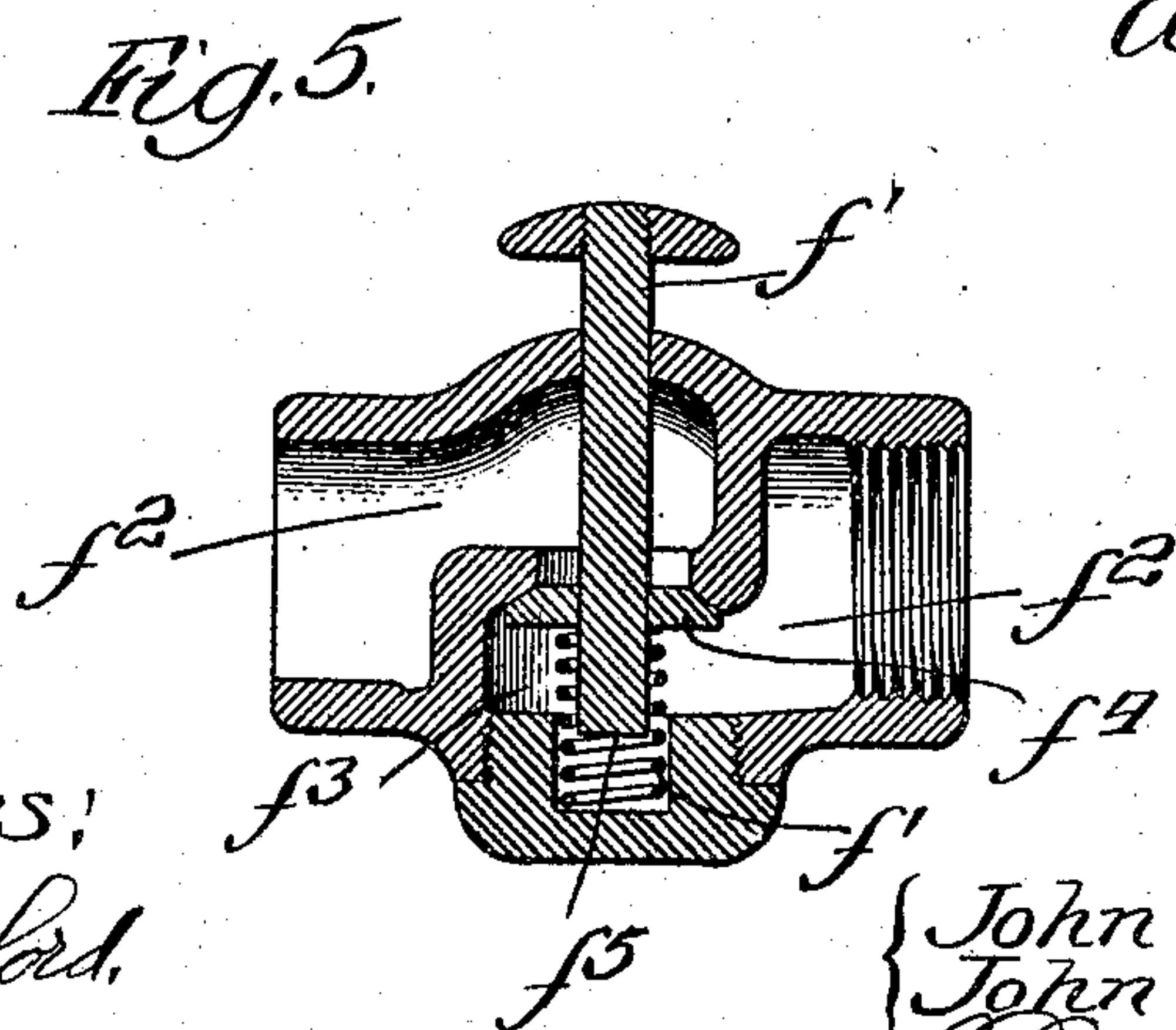
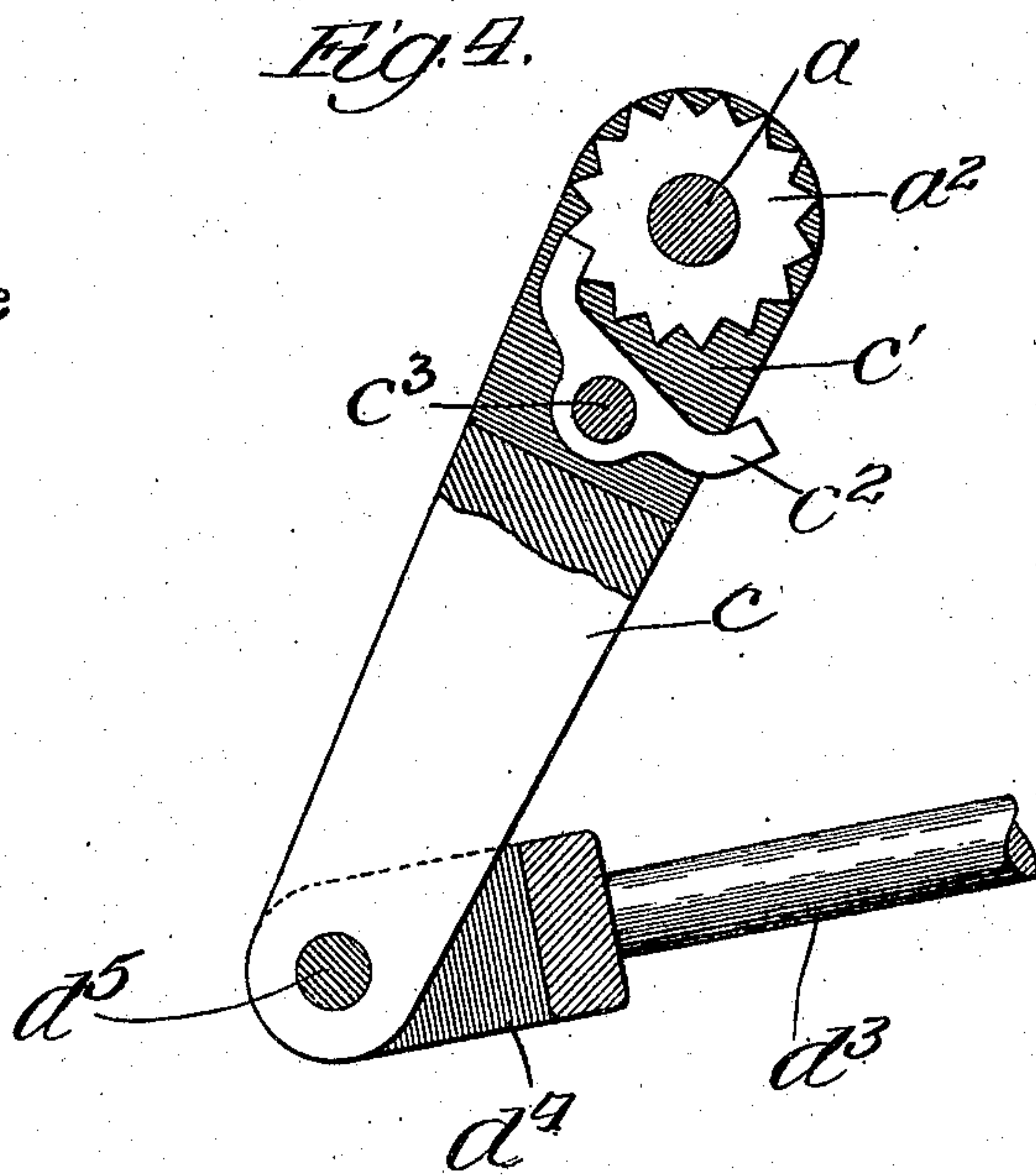
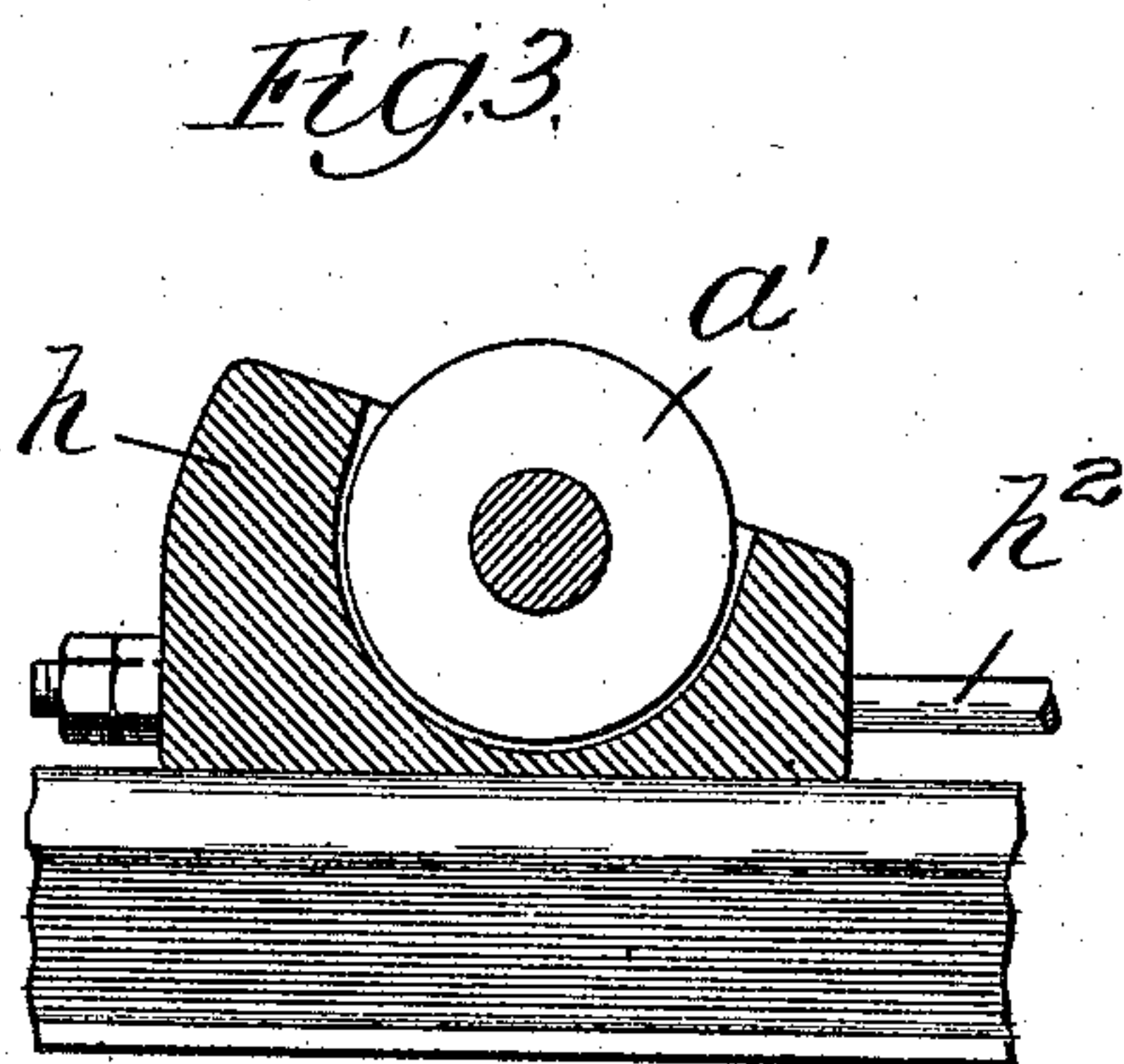
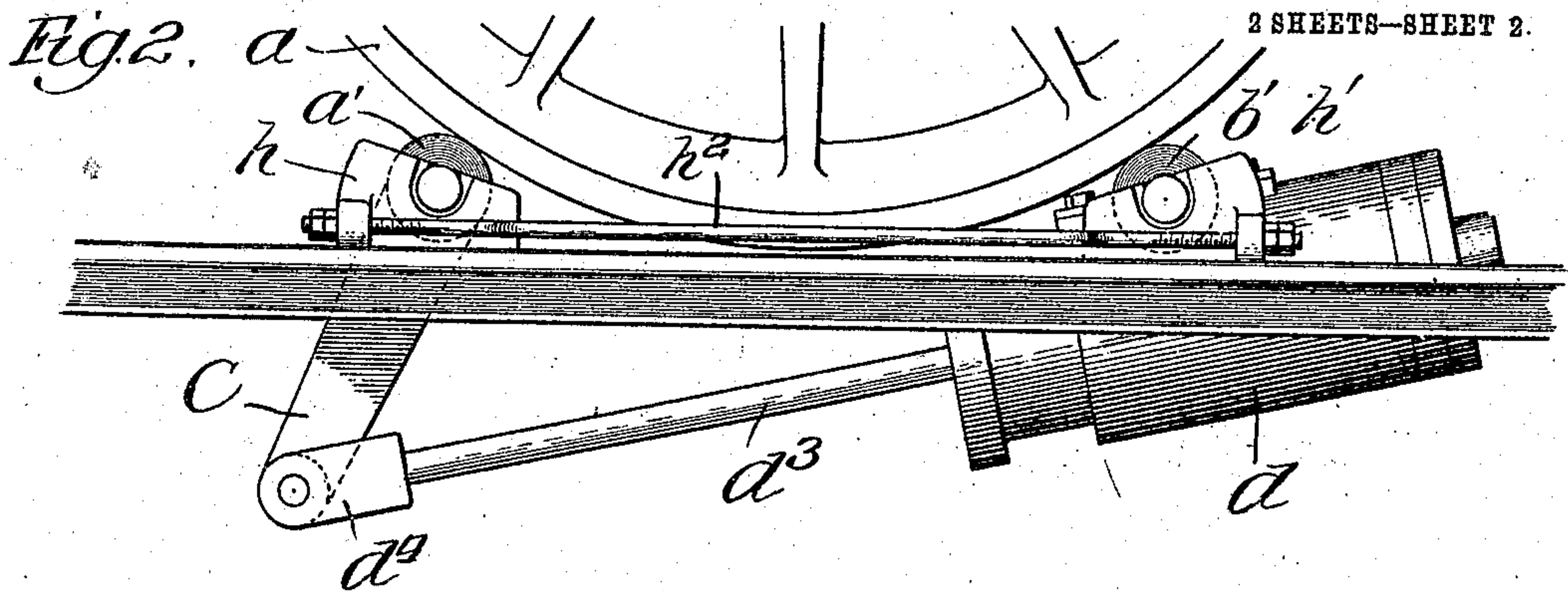
No. 848,011.

PATENTED MAR. 26, 1907.

J. J. CONOLLY & J. HERRON.
MACHINE FOR SETTING LOCOMOTIVE VALVES.

APPLICATION FILED AUG. 8, 1906.

2 SHEETS—SHEET 2.



Witnesses:
E. C. Gaylord,
Chas. H. Buell.

Inventors:
John J. Conolly, & J.
John Herron,
By Thomas C. Sheridan,
Att'y.

UNITED STATES PATENT OFFICE.

JOHN J. CONOLLY AND JOHN HERRON, OF MARQUETTE, MICHIGAN.

MACHINE FOR SETTING LOCOMOTIVE-VALVES.

No. 848,011.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed August 8, 1906. Serial No. 329,749.

To all whom it may concern:

Be it known that we, JOHN J. CONOLLY and JOHN HERRON, citizens of the United States, residing in the city and county of Marquette, State of Michigan, have invented certain new and useful Improvements in Machines for Setting Locomotive-Valves, of which the following is a specification.

Our invention relates to valve-setting machines, and has for its object to provide an improved mechanism of this type which may be easily and quickly operated with less expenditure of time and labor than is now required.

To this end our invention consists in the combinations and details hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of our improved valve-setting machine. Fig. 2 is a side elevation of the machine in operative position. Fig. 3 is a longitudinal section through one of the roller-boxes. Figs. 4 and 5 are sectional detail views.

In the operation of setting locomotive-valves it is customary to support the driving-wheels of the locomotive upon what are known as "Farrington rollers," the Farrington rollers consisting of pairs of rollers mounted upon shafts and bolted together, so as to be placed under the driving-wheels of a locomotive on opposite sides thereof, so that the wheels may be raised from the rail by the pressure of the rollers. These rollers are operated by hand so as to turn the rollers, and consequently the driving-wheels of the locomotive, enabling the operator to set the valves so as to time the operation thereof properly.

As ordinarily employed, the Farrington rollers require from two to four men to operate them in addition to the setter. It is desirable to provide some means whereby the Farrington rollers may be operated with less labor, thus dispensing with the services of so many employees. To this end we provide the mechanism shown in the accompanying drawings, in which the letters *a* and *b* indicate parallel shafts having mounted upon opposite ends thereof rollers *a'* *b'*, respectively. These rollers are mounted in boxes *h* *h'*, adapted to rest upon the rails, bringing the rollers beneath the driving-wheel of the locomotive on opposite sides thereof, as clearly shown in Fig. 2. The boxes are con-

nected together by parallel rods *h*², screw-threaded at their opposite ends and provided with nuts *h*³, securing the rods and boxes together. By the pressure of the rollers *a'* *b'* the driving-wheels are raised slightly from the track, so that by rotating the rollers *a'* *b'* the driving-wheels may be correspondingly rotated.

In order to provide an efficient means for operating the rollers, we mount upon the shaft *b* a fluid-pressure cylinder *d*, this fluid-pressure cylinder being suspended from two boxes *d*⁴, hung upon the shaft, thus allowing the shaft to revolve and the cylinder to oscillate to conform to different angles when the machine is working. This cylinder is provided with a feed *d*² and exhaust *d'*. The piston-rod *d*³ of the cylinder is connected at its opposite end to a lever *c*, having forked end portions *c'* loosely mounted upon the shaft *a*. Rigidly secured to the shaft *a* between the forked portions of the lever is a ratchet *a*², and between the forked portions of the lever we mount a double pawl *c*² upon a cross-pin *c*³. The lower end of the lever is pivotally secured upon a cross-pin *d*⁵ between forked end portions *d*⁶ of the piston-rod. It will be readily understood that when one end of the pawl *c*² is in engagement with the ratchet and the piston-rod *d*³ is reciprocated it will cause the rotation of the shaft *a*, and consequently of the rollers *a'* carried thereby. This will in turn cause the rotation of the driving-wheel of the locomotive and the roller *b'*, thus enabling the valve-setter to adjust the valves, as will be readily understood. The fluid-pressure cylinder is controlled by throttling the exhaust, and in order to provide means for doing this within easy reach of the operator we connect to the exhaust of the cylinder a flexible hose or pipe *g*, a section of this hose leading from the exhaust to each side of the locomotive. At the ends of the hose-pipes we provide a valve *f*, which controls the exhaust. The construction of this valve is indicated in Fig. 5. The valve-chamber *f* contains a partition *f*³, provided with a passage-way controlled by a valve *f*⁴, mounted upon a valve-stem *f'*, supported by a spring *f*⁵, the partition *f*³ forming passage-ways *f*² through the valve-chamber.

In operating our device the valve-setter holds the valve in one hand. When he wishes to revolve the drivers, he presses the valve *f*⁴ from its seat, allowing the motive

fluid to escape from the exhaust of the cylinder. This in turn allows the piston to move and revolves the drivers through the medium of the lever, ratchet, and rollers. When he wishes to stop the machine, he closes the exhaust-valve, and this allows the fluid-pressure to equalize on both sides of the piston and stops the machine instantly. In order to reverse the motion of the machine, the position of the pawl c^2 is reversed through the medium of rods c^4 , connected by a universal joint c^5 to the pin c^3 , one of these rods extending to each side of the machine, so that the machine may be operated from either side of the locomotive.

It will be understood that we may use any suitable form of fluid-pressure cylinder provided with suitable valves. We have found the steam end of a Westinghouse pump to be efficient for this purpose. We preferably use compressed air as the motive fluid, though of course it will be understood that we do not intend to limit ourselves to this specific fluid.

With the aid of this machine we have found that one man can set the valves of a locomotive in less time than could be done formerly with the aid of at least four helpers.

We claim—

1. In a machine for setting valves, the combination of a plurality of load-sustaining rollers, a fluid-pressure cylinder connected with the rollers to operate the rollers, and means for controlling the exhaust from the cylinder to control the operation of the machine.
2. In a machine for setting valves, the combination of a plurality of load-sustaining rollers, fluid-pressure cylinder mechanism for operating the rollers, an exhaust-pipe connected to the cylinder, and means in the pipe to connect the exhaust and thereby the operation of the machine.

3. In a machine for setting valves, the combination of parallel shafts, load-sustaining rollers mounted thereon, fluid-pressure operating mechanism comprising a cylinder having a piston and piston-rod mounted upon one shaft, and a connection between the end of the piston-rod and the other shaft whereby the rollers are operated by the operation of the fluid-pressure means.

4. In a machine for setting valves, the combination of shafts, rollers thereon, fluid-pressure operating means, a lever loosely mounted on one shaft connected to the fluid-pressure operating means, a pawl pivotally mounted on the lever, and a ratchet rigidly secured to the shaft and engaged by the pawl.

5. In a machine for setting valves, the combination of a plurality of load-sustaining rollers, means for operating the rollers, means for controlling the operating means, and means for reversing the direction of rotation of the rollers.

6. In a machine for setting valves, the combination of shafts, load-sustaining rollers mounted thereon, a fluid-pressure operating mechanism, and a ratchet-and-pawl mechanism connecting the operating mechanism with one shaft and reversing mechanism.

7. In a machine for setting valves, the combination of shafts, rollers supported thereon, an operating device, a ratchet secured to one shaft, a lever loosely mounted on the shaft, a double pawl pivoted on the lever, and means for throwing either one of the pawls in engagement with the ratchet.

JOHN J. CONOLLY.
JOHN HERRON.

Witnesses:

E. MACPHERSON,
M. E. TEHUEEN.