

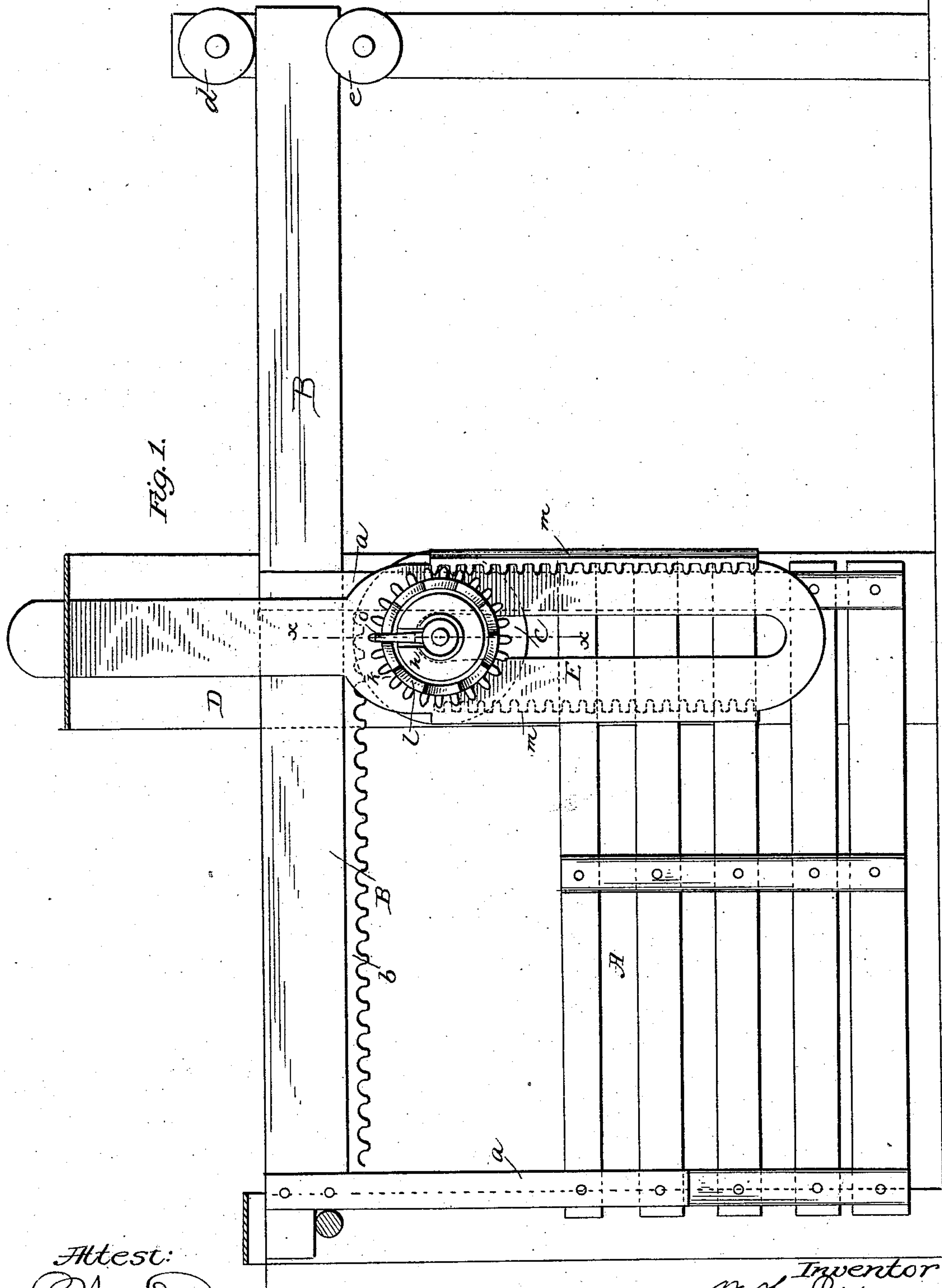
(Model.)

3 Sheets—Sheet 1.

W. H. COX.
GATE.

No. 287,805.

Patented Nov. 6, 1883.



Attest:
Walter Donaldson
J. L. Middleton

W. H. Cox Inventor
by Joyce & Spear
Attys.

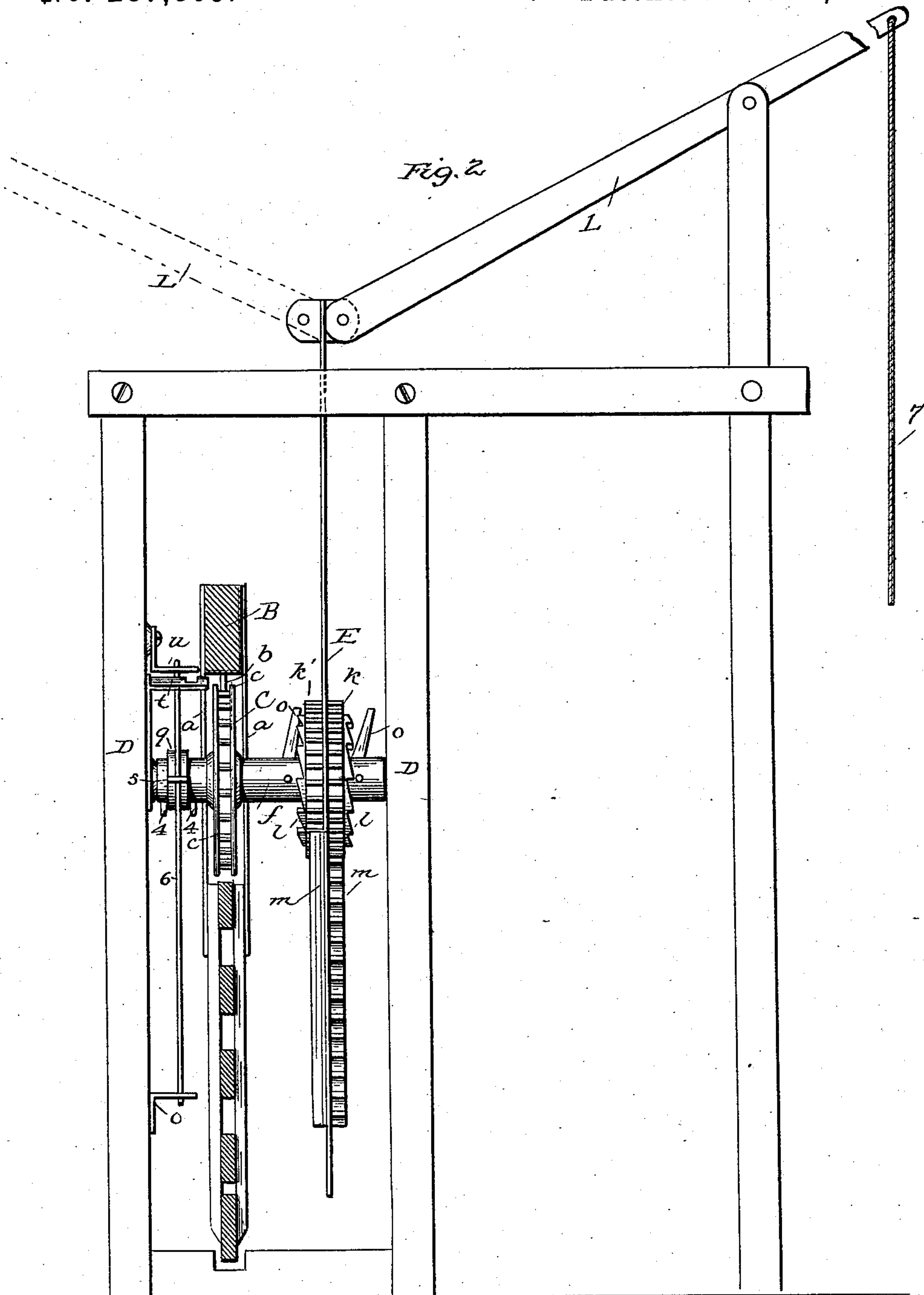
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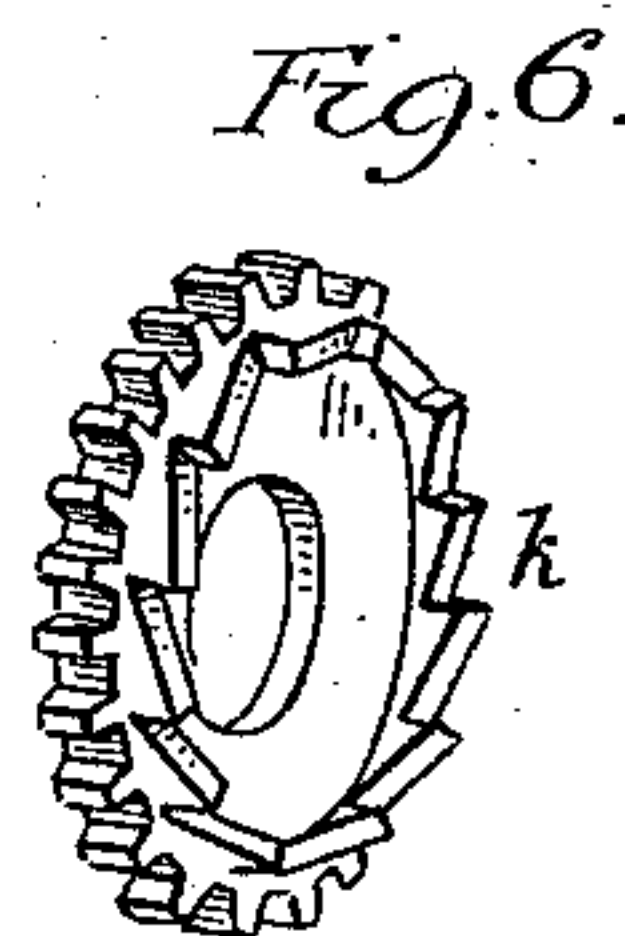
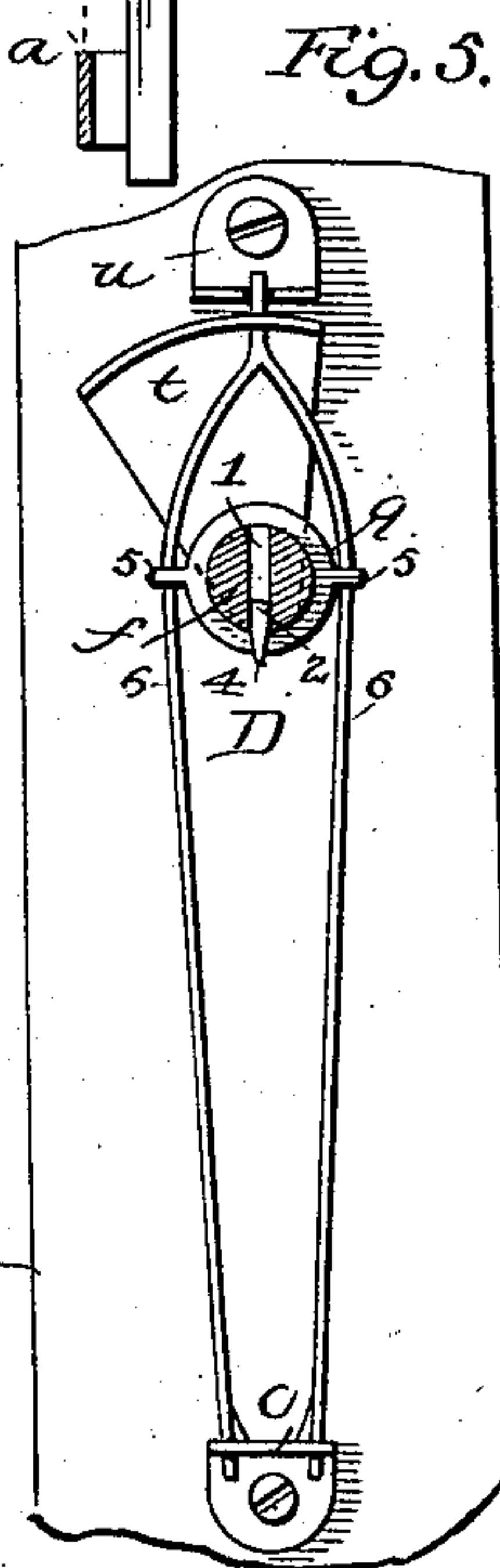
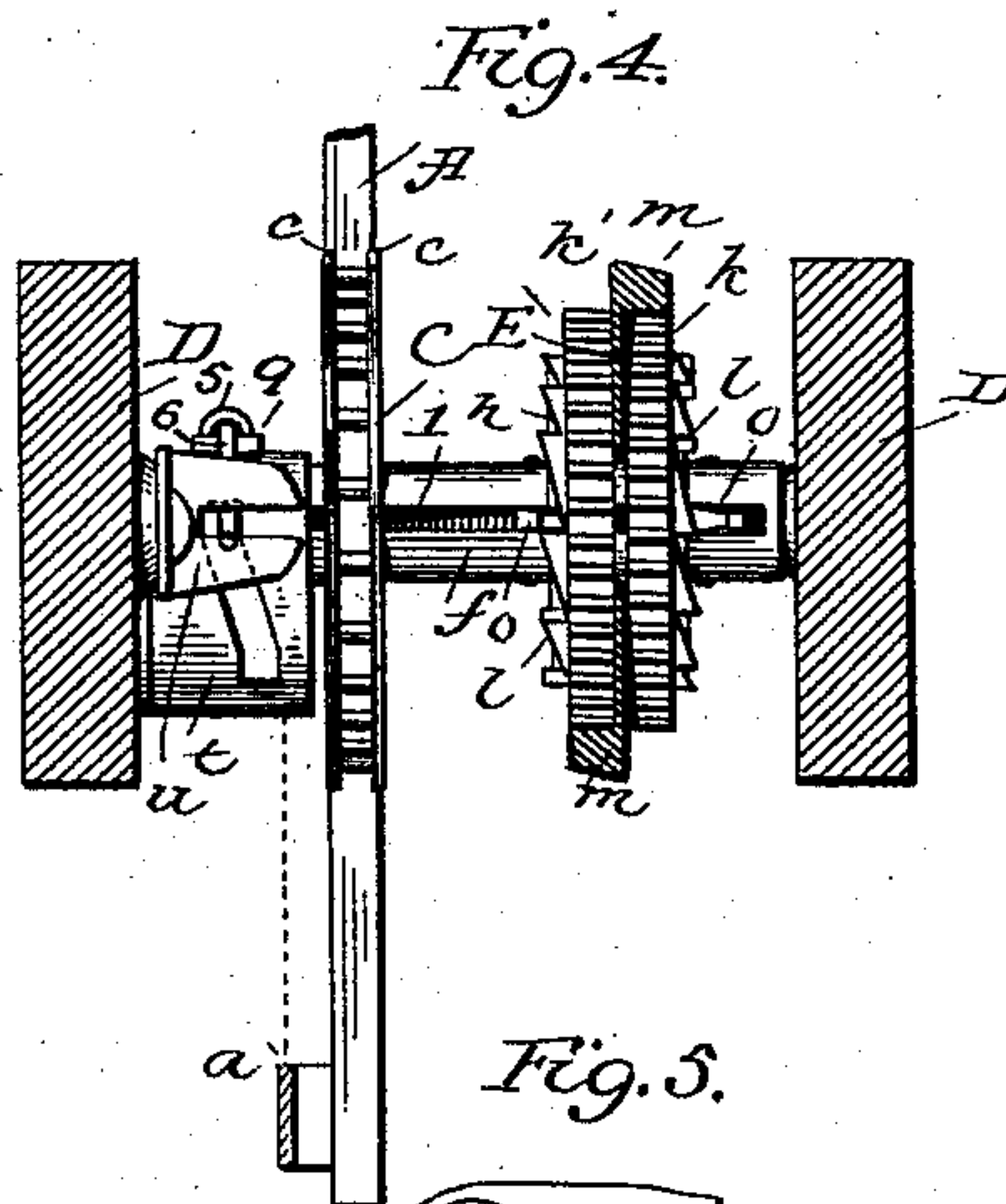
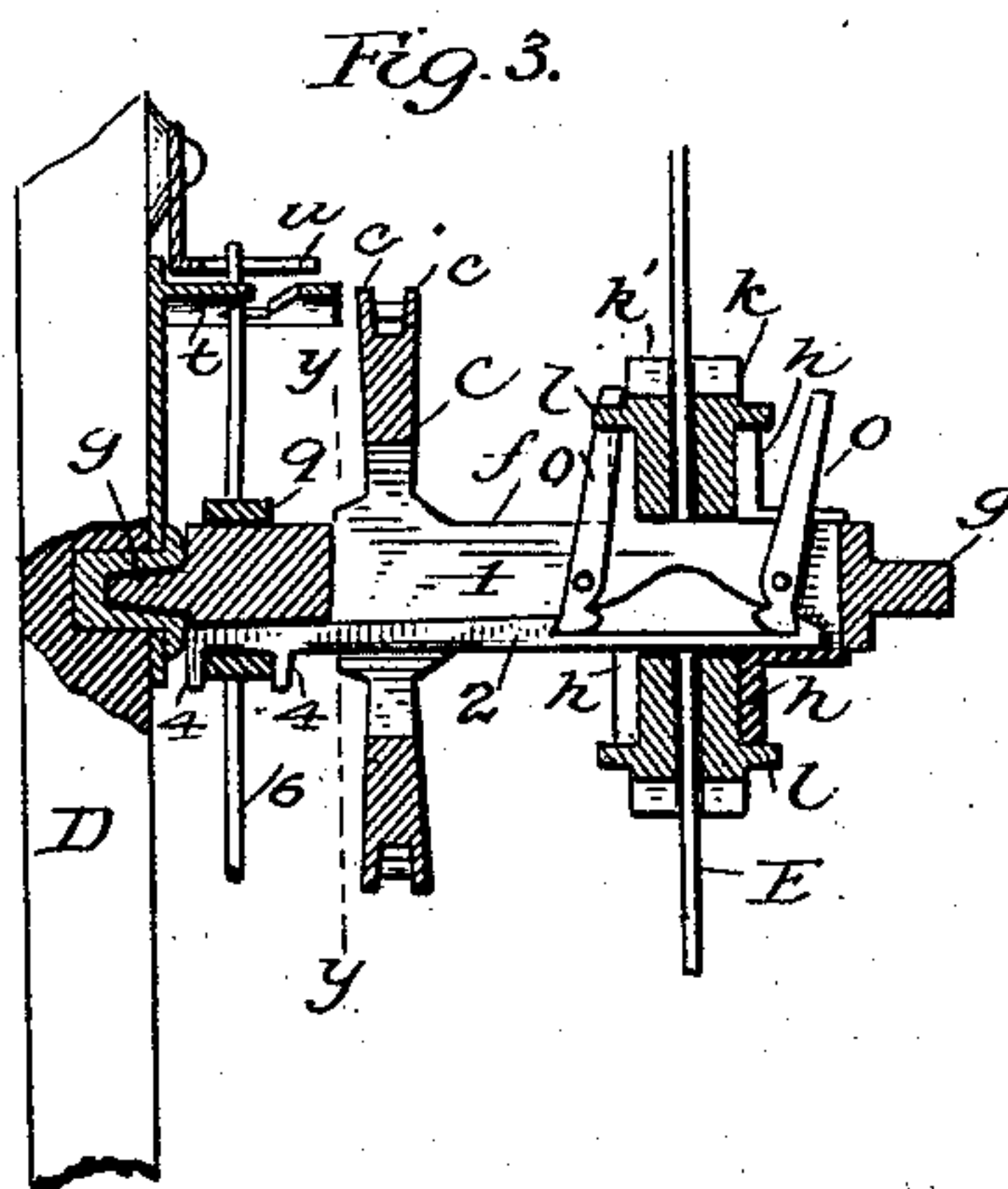
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UNITED STATES PATENT OFFICE.

WILLIAM H. COX, OF VIRDEN, ILLINOIS.

GATE.

SPECIFICATION forming part of Letters Patent No. 287,805, dated November 6, 1883.

Application filed June 30, 1883. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM H. COX, of Virden, in the county of Macoupin and State of Illinois, have invented a new and useful Improvement in Gates; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to gates of that class adapted to be operated from the carriage.

The object of the invention is to provide means more simple and efficient than any which have heretofore been used for this purpose.

The leading feature of my invention is a self-reversing device whereby the same motion of a lever is made to either open or close the gate; but my invention also includes details of construction whereby this leading principle is carried practically into effect.

In the accompanying drawings, Figure 1 represents a side elevation of the gate, one post being broken away to show the mechanism. Fig. 2 is an end view with the gate in section. Fig. 3 represents a section on line *x* of Fig. 1. Fig. 4 represents a top view of the operating mechanism of the gate; Fig. 5, a vertical section on line *y y*, Fig. 3. Fig. 6 is a perspective detail view of the gear.

The gate A is of ordinary construction. It is suspended from a bar, B, by means of suitable strips, *a a*, or in any convenient manner.

The bar B is provided on its lower edge with a rack-bar, *b*, which rests upon a pinion, C, having flanges *c c*, which embrace the rack-bar and hold it in place upon the teeth. The rear end of the bar B extends between pulleys *d e*, one of which is preferably flanged to guide the bar, which is thus supported and moves on the pulleys.

Motion is imparted to the bar and gate through the pinion C. This pinion is fixed on a shaft, *f*, which turns on bearing-pins *g g*, fixed in the posts D D. On the same shaft are set two gears, *k k'*, in the form of rings, with ordinary cog-teeth on their periphery and pawl-teeth *l* upon their sides near the periphery, the pawl-teeth on the two rings facing in opposite directions. Two flanges, *h h*, separated by a suitable space, are fixed to the shaft, and serve to hold the gears *k k'* in position. A slotted plate, E, straddles the shaft

between the two gears *k k'*, and each side of said plate carries a rack-bar, *m m*, one set to mesh with one of the ring-pinions and one with the other. These bars are constantly in gear when in motion, and each is adapted to turn the shaft and move the gate, one in closing and the other in opening direction. Connection is formed between these rings and the shaft by means of pawls *o o*, which are pivoted in a slot, 1, in the shaft *f*. The ends of these pawls project past the pawl-teeth of the ring-gear, and are adapted to engage with them. The other and shorter ends of these pawls or levers are connected to a bar, 2, by pins, and the bar extends in the slot toward and near the other end of the slotted shaft. Pins 4 4 in the bar embrace a collar, *q*, loose on the shaft. This collar has ears 5 5, through which pass rods 6 6, the lower ends of which are held in a bracket, *o*. The upper ends are brought together and project into an inclined slot in a bracket, *t*, the vertical arm of which is pivoted on the post. Directly over this bracket is another bracket, *u*, having a straight slot parallel with the shaft, and the ends of the rods project through this slot also. Thus the rocking motion of the bracket which has the inclosed slot carries the rods back and forth in line parallel with the shaft. This motion through the collar, pins, and bar, heretofore described, moves the pawl-levers alternately in and out of gear. The rocking bracket *t* is pushed, when the gate is near the end of its movement, by the suspending straps (any suitable projection may be used instead) striking the edge of the bracket. As soon as the bracket has thus been shifted to bring the rod into the other end of the slot, the pawl in engagement is thrown out and the opposite pawl thrown into gear. Thus at the end of the movement of the gate in opening, for example, the pawl which engages with the opening-gear *k'* is thrown out and the pawl of the closing-gear ring *k* is thrown in, so that any further movement of the rack-bar begins at once the closing movement.

The inclosed slot has direct resting-places at each end. The plate which carries the rack-bars extend through a guide, and is connected to levers L L, which are provided with cords 7, whereby the levers may be operated by a

person sitting in a carriage on either side of the gate. The rack-bars descend by gravity, and if one movement of the lever is not sufficient to open or close the gate it may be repeated, as the rods will spring enough to let the pawls slip over the teeth.

Other means may be used to operate the rack-bars than those shown, and I do not limit myself to the levers shown. Any known equivalent also may be substituted for the rack-bar and pinions which connect the gate to the shaft, and the details may be modified in other respects.

I claim as my invention—

1. In combination with a suspended gate, a shaft, and connection between said gate and shaft, whereby the revolution of the shaft moves the gate, gears loose on said shaft, pawls pivoted to the shaft and adapted to engage alternately with the pawl-teeth on the gears, said pawls being connected to a shifting mechanism adapted to be moved by the opening and closing of the gate, and means for revolving the loose gears, all substantially as described.

2. In combination with a suspended gate, a shaft, and connections between said gate and shaft, whereby revolution of the shaft moves the gate, gears loose on said shaft, pawls pivoted to the shaft and adapted to engage alternately with pawl-teeth on the gears, a con-

nection to a loose collar on the shaft, rods connected to said collar and engaging with the slots of pivoted and fixed brackets, and means for revolving the said gears, substantially as described.

3. The combination, with a gate, of the pinion and rack-bar, the shaft provided with shifting-pawls, and loose gears having pawl-teeth held on collars on the shaft, a bar connected to the shifting devices, operated by the gate to throw the pawls alternately into and out of connection, and rack-bars adapted to be operated by a lever to move the gears, substantially as described.

4. In combination with the shaft connected, as described, to the gate, the loose gears and their rack-bars, the pawls adapted to engage alternately with pawl-teeth on the gears, the loose collar connected to the pawls, the rods connecting said collar to a shifting-bracket having inclined slot, and devices on the gate for striking said shifting-bracket, all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. COX.

Witnesses:

H. C. SIMONS,
BALFOUR COWEN.