

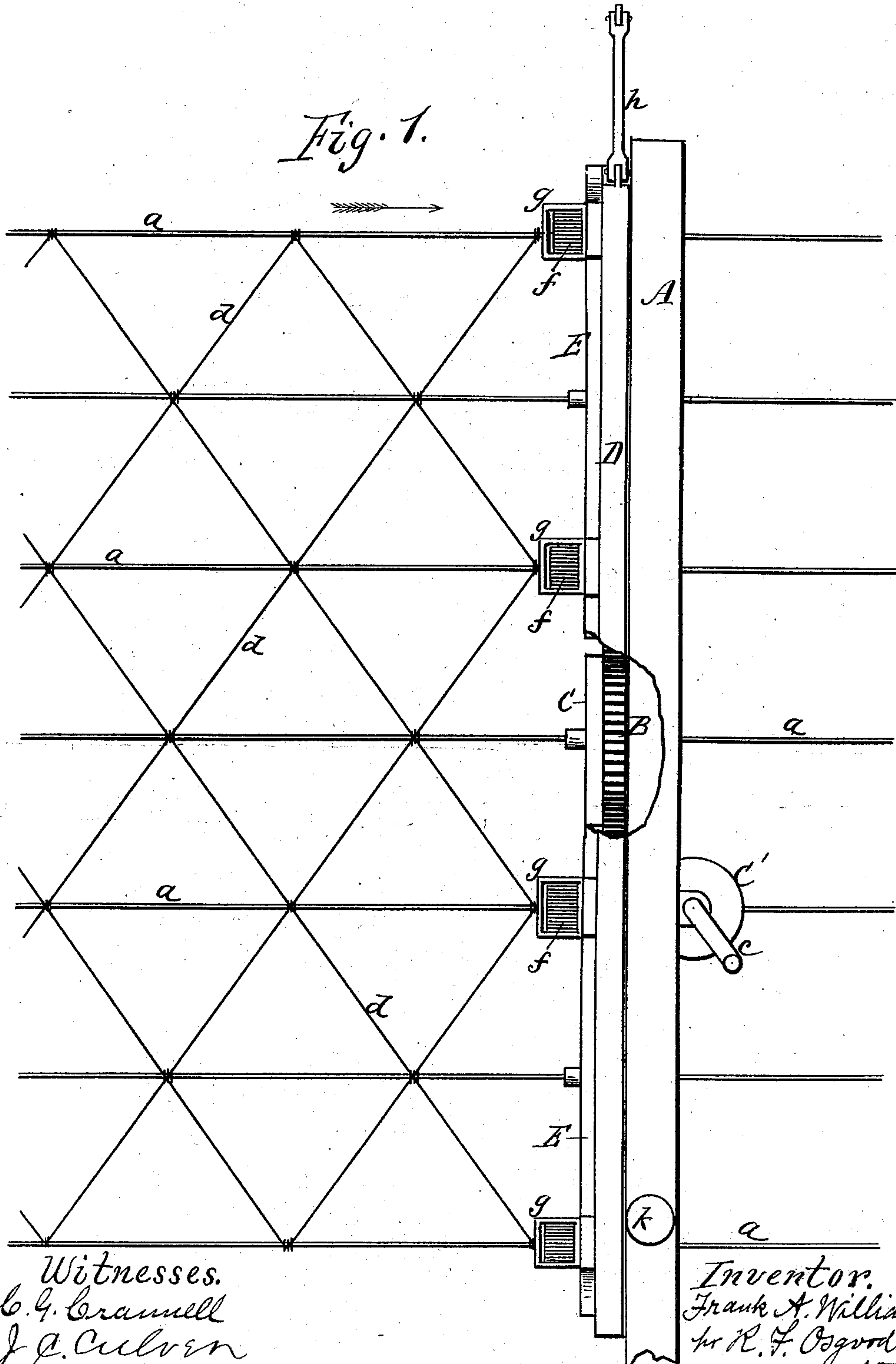
(No Model.)

2 Sheets—Sheet 1.

F. A. WILLIAMS.  
WIRE FENCE MACHINE.

No. 560,666.

Patented May 26, 1896.



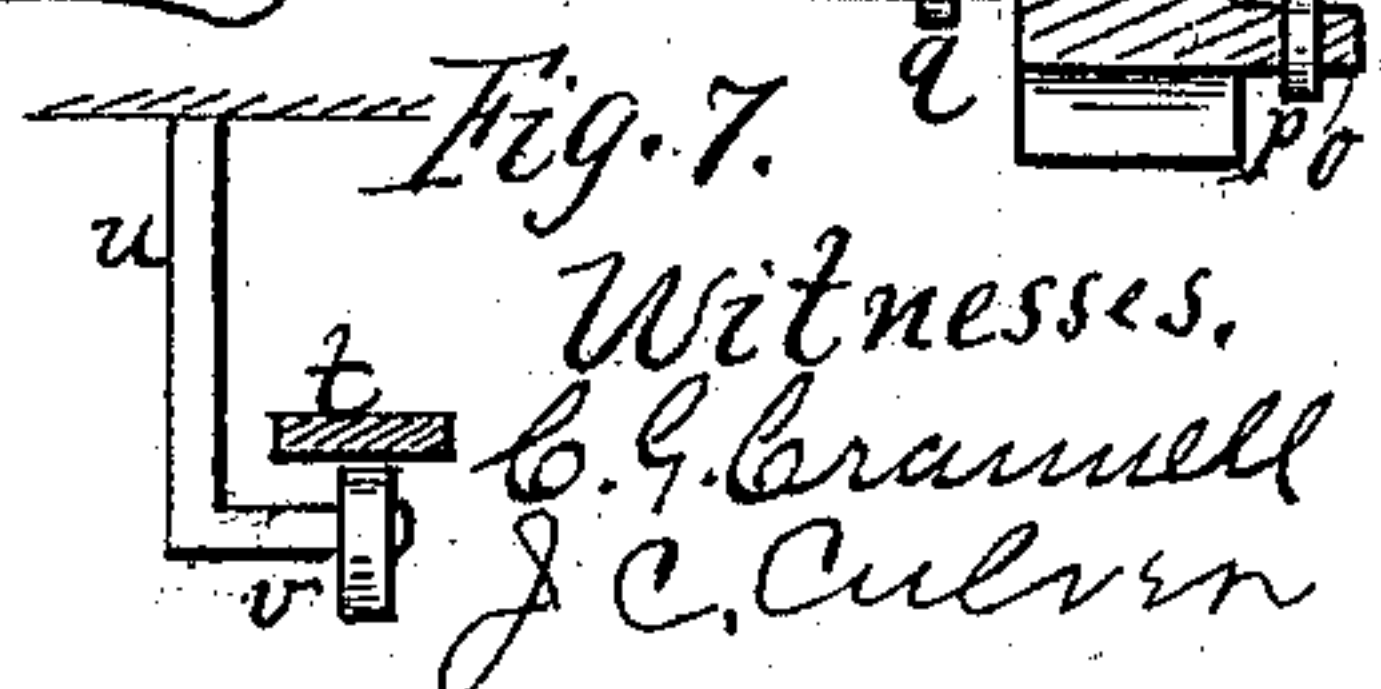
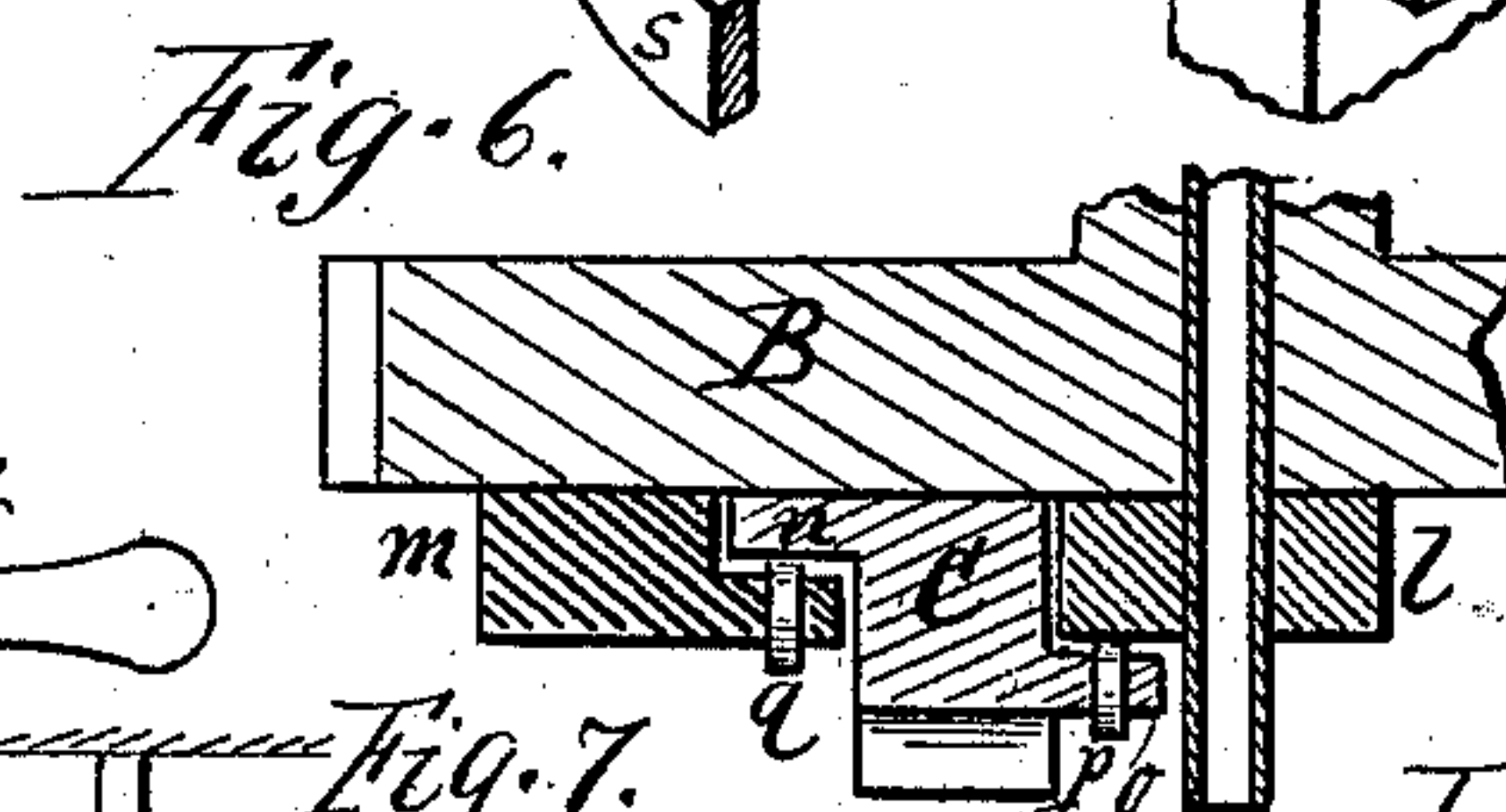
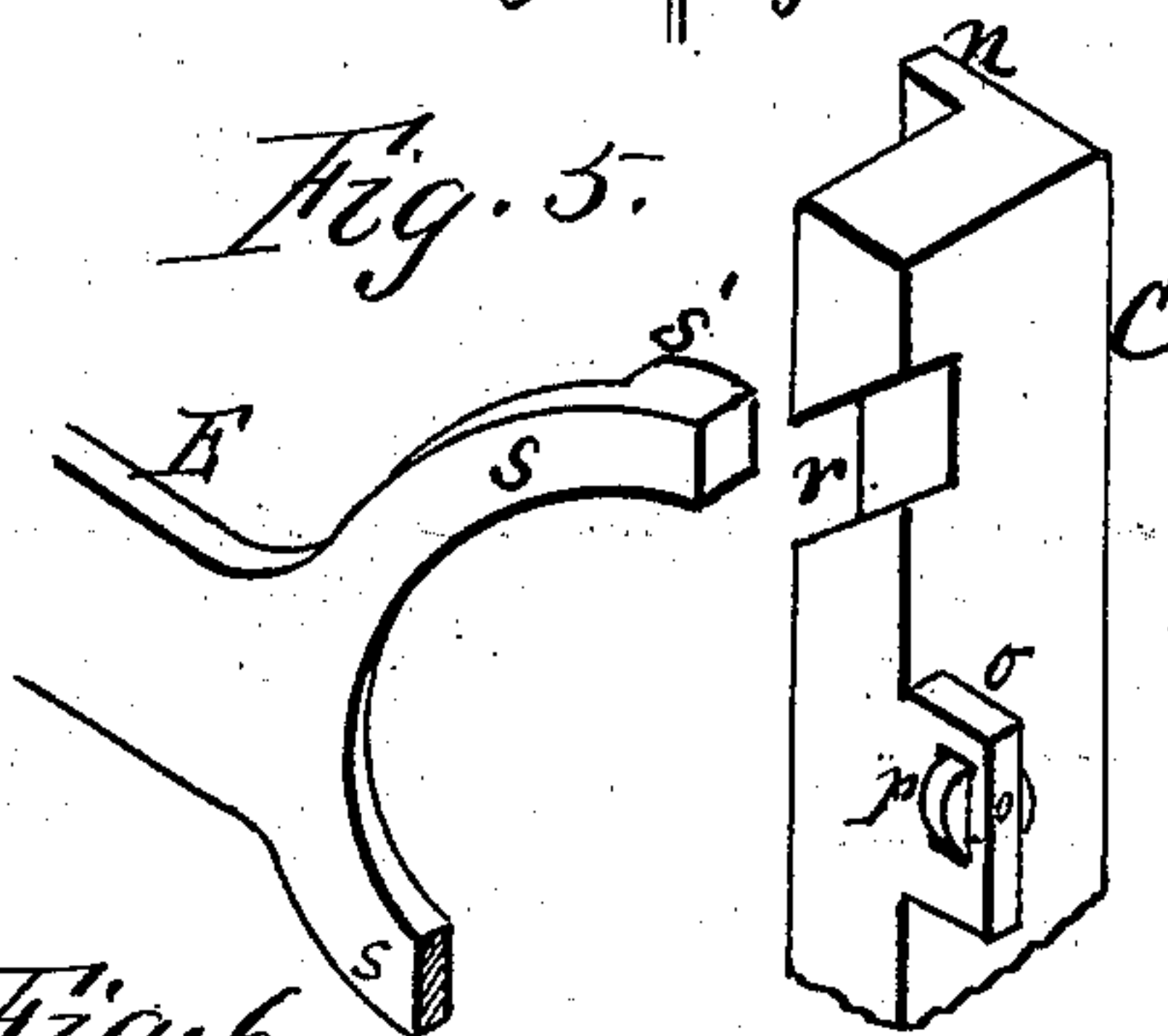
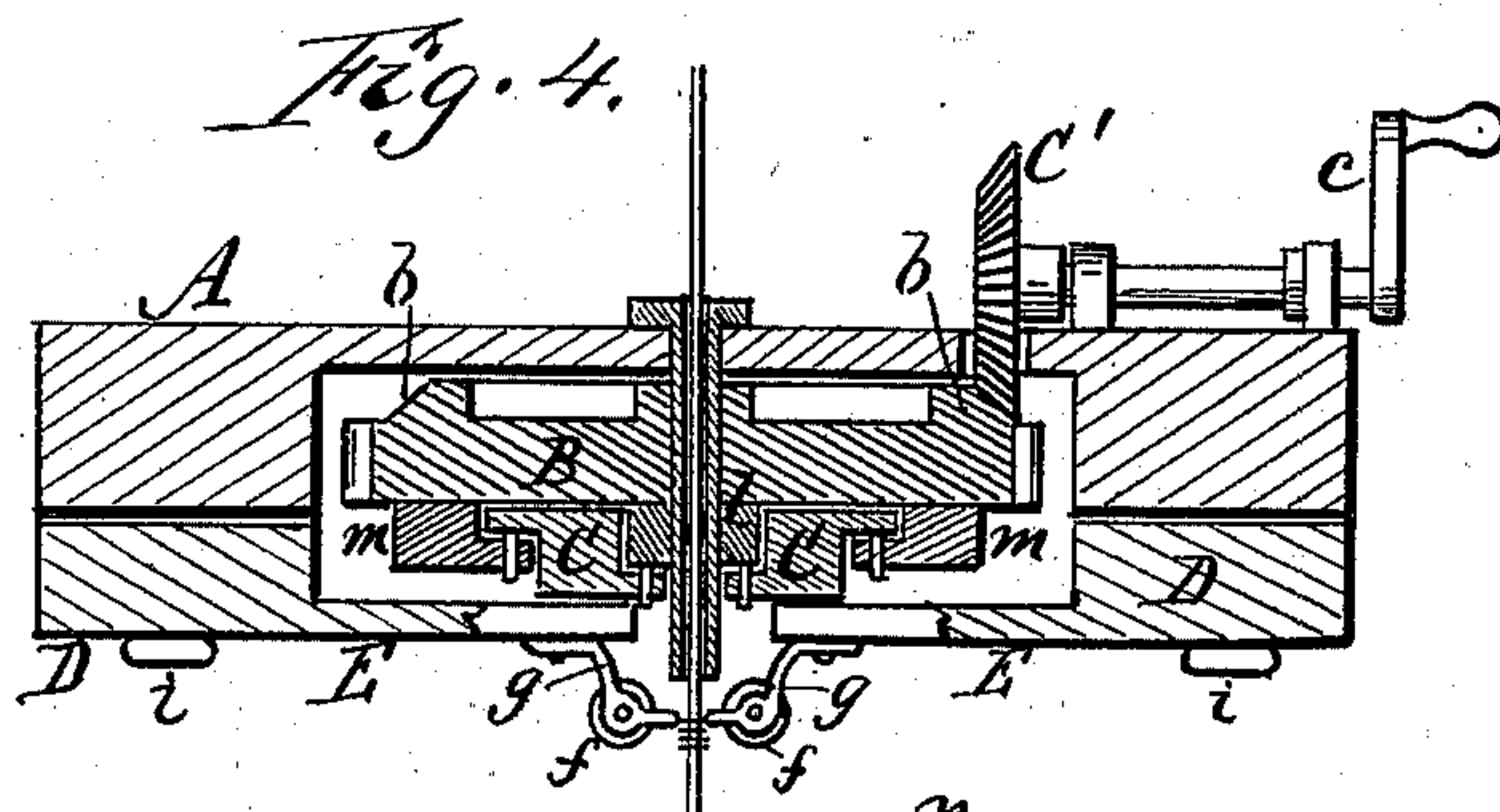
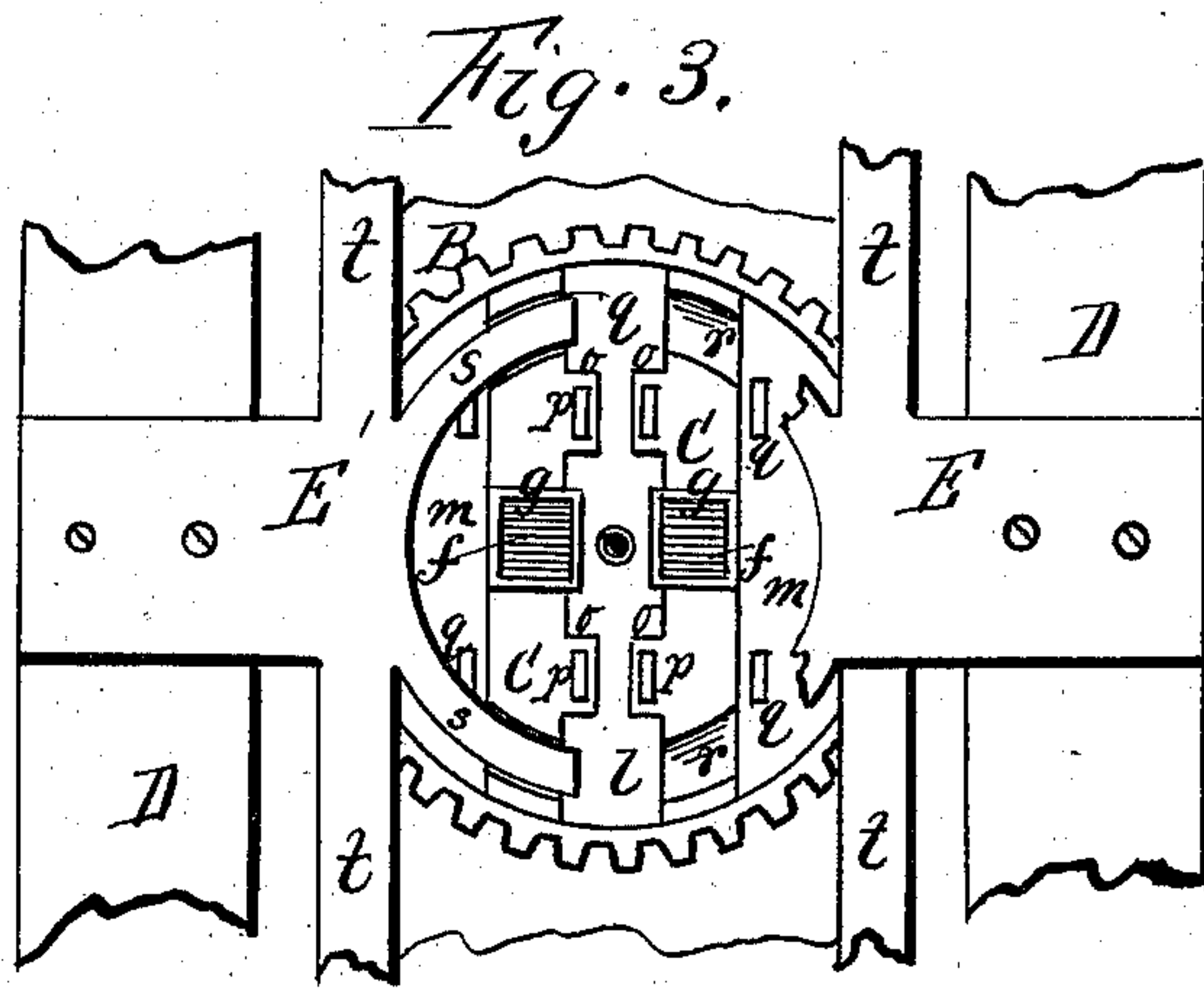
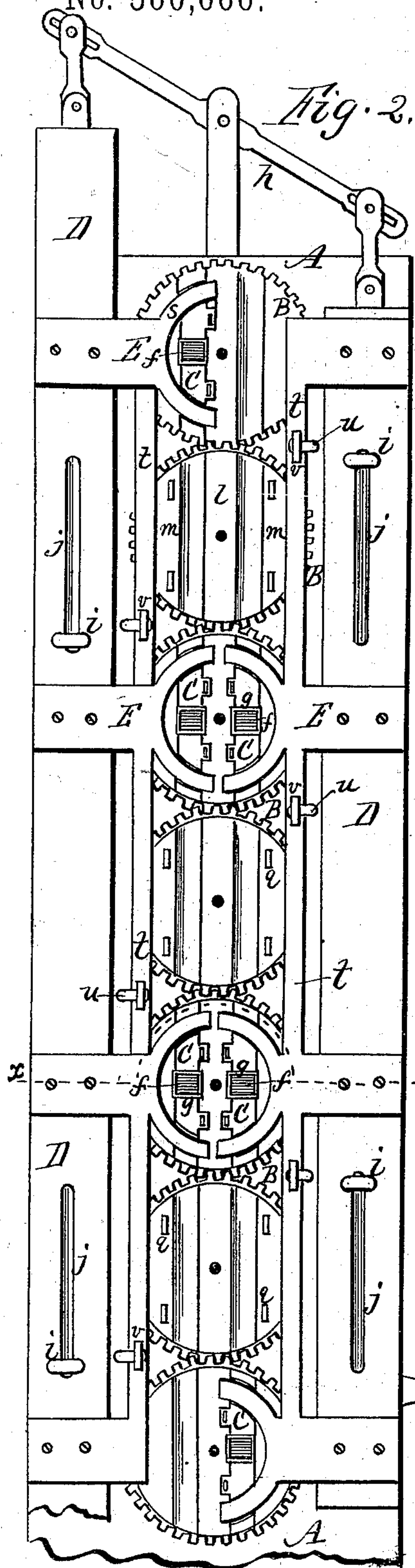
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2 Sheets—Sheet 2.

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WIRE FENCE MACHINE.

No. 560,666.

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Inventor:  
Frank A. Williams  
Witnesses:  
C. G. Crumell  
J. C. Culver  
per R. F. Osgood  
Atty.



# UNITED STATES PATENT OFFICE.

FRANK A. WILLIAMS, OF HOLLEY, NEW YORK, ASSIGNOR OF ONE-HALF  
TO EDWARD T. LAMB, OF BATAVIA, NEW YORK.

## WIRE-FENCE MACHINE.

SPECIFICATION forming part of Letters Patent No. 560,666, dated May 26, 1896.

Application filed June 29, 1894. Serial No. 516,093. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK A. WILLIAMS, of Holley, in the county of Orleans and State of New York, have invented a certain new and useful Improvement in Wire-Fence Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

My improvement relates to that class of wire-fence machines in which the twist-ers that carry the spools of filling-wires are moved alternately back and forth by reversely-moving slides, so as to connect with the different gear-wheels by which the twist-ers are rotated.

The invention consists in the construction and arrangement of parts hereinafter described, and embraced in the claims.

In the drawings, Figure 1 is a side elevation of the machine and a portion of fence it is in the act of weaving. Fig. 2 is an elevation at right angles to Fig. 1 and looking in the direction of the arrow in the last-named figure. Fig. 3 is an elevation, on an enlarged scale, of one pair of twister-slides, the gear-wheel with which they connect, the operating-slides, and the supporting-framework. Fig. 4 is a horizontal cross-section in line *x x* of Fig. 2. Fig. 5 is a perspective view of a portion of one of the twister-slides and a corresponding portion of the shifter for operating it, the parts being separated. Fig. 6 is an enlarged sectional view of one of the gears and one of the twister-slides connected therewith. Fig. 7 is a detail view showing one of the rollers for retaining the shifting slide in place.

A indicates the frame of the machine, consisting of a standard mounted on trucks which are drawn along on a platform, the latter being of ordinary form and not shown in the drawings. The machine is designed for building wire fence in the field after the longitudinal wires *a a* have been attached to the posts.

B B B are a series of spur-gears mounted in the frame, all engaging together and driven by a bevel-pinion *C'*, which engages with a bevel-rim *b* on one of the gears B. By this means simultaneous and equal action is given

to all of the gears. The bevel-pinion is operated by a crank *c*.

C C are the twister-slides, the same being so arranged as to slide from the face of one gear-wheel to another and there be rotated to produce the twisting of the filling-wires *d d* around the longitudinal wires *a a*. The spools *f f* of filling-wires are held by brackets *g g*, attached to the faces of the twister-slides in the usual way.

D D are the reversely-operating slides at the sides of the machine. They are connected at the top by a lever *h*, by which when one is thrown up the other is thrown down. They are held to the main frame by headed bolts *i i*, which pass through slots *j j* of the slides, or by any other suitable arrangement. One of the slides is operated by a handle *k*. These slides are connected with the twister-slides C C by means of shifting-arms E E, so that as the operating-slides are thrown up and down the twister-slides are thrown with them.

The connection between the shifters and the twister-slides is of peculiar construction, as follows: The face of each gear-wheel B is provided with a central guide *l*, consisting of a rib with square edges, which projects outward, and through which and the wheel is made a central passage for the longitudinal fence-wire. On each side of the center guide *l* is also a side guide *m* with a space between the two sufficient to receive the twister-slide. The twister-slide C is provided with a square inner edge to run against the square edge of the center guide *l*. The opposite or outer edge has on its back side a thin flange *n*, that runs in a corresponding groove of the outer guide *m*. The inner edge of the twister-slide also has lugs *o o*, which project over and ride outside the edge of the center guide *l*, or instead of these lugs it may have a continuous flange which overlaps the edge of the center guide. In these lugs or in this continuous flange are attached friction-rollers *p p*, which move with the twister-slide in passing from one gear to another and roll on the face of the guide. In the inner flange of the outer guides *m* are attached corresponding friction-rollers *q q*, which remain stationary with the gears, and against which the outer flange *n*



of the twister-slide runs. This construction is shown most clearly in Fig. 6. The object of these two sets of friction-rollers is to relieve the friction of the twister-slide in moving from one gear-wheel to another, produced by the great inward strain. The inward strain is caused by the tense action of the filling-wires in being coiled around the longitudinal wires and is very great, and the tendency is to cramp the twister-slides in their sockets. The rollers on opposite sides counteract this cramping action. The outer face of each twister-slide C is provided with two open notches or seats *r r*, cut concentrically with the gear-wheel, and in these open curved notches fit segmental arms *s s*, forming part of the shifter E, said arms being also concentric with the gear-wheel. This furnishes a connection between the shifter and twister-slide by which the latter is moved up and down from one wheel to another by the shifter, and it also allows the twister-slide to rotate with the gear-wheel. Each of the shifter-arms *s* is provided on its inner side with an offset concentric rib *s'*, which forms the connection entering the groove *r* of the twister-slide, the arm itself resting outside the slide and allowing the slide to rotate past the arm.

To retain the two operating-slides D D in square position and to prevent them from being displaced by any strain, thereby tending to separate the arms *s s* from the notches *r r*, the several shifters on each side are connected by straight bars *t t*, and at intervals, in line with the junction of the gear-wheels, are standards *u u*, attached to the main frame, extending outward and bent over and provided with friction-rollers *v v*, bearing on top

of said bars *t t*. These rollers hold the slides down to place and lessen the friction.

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

1. In a wire-fence machine, the combination of reversely-acting operating-slides D D, the shifters E E attached thereto and provided with segmental arms *s s*, the sliding twister-slides C C provided with open curved notches *r r* in which the segmental arms rest, and the gear-wheels B B provided with suitable guides to hold the twister-slides, as shown and described and for the purpose specified.

2. In a wire-fence machine, the combination of the gears B B provided with the guides *l m m* on their faces, the twister-slides C C resting between the guides and provided with the flanges *n* and lugs *o o*, the two sets of friction-rollers *q q* and *p p* for holding the twister-slides in place against lateral strain, and means for operating the twister-slides, as shown and described and for the purpose specified.

3. In a wire-fence machine, the combination of the reversely-acting operating-slides D D, the shifters E E attached thereto, the bars *t t* connecting the shifters, and the rollers *v v* attached to standards *u u* and bearing on the bars, as shown and described and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FRANK A. WILLIAMS.

Witnesses:

JAMES POTTER,  
G. N. BOWMAN.