

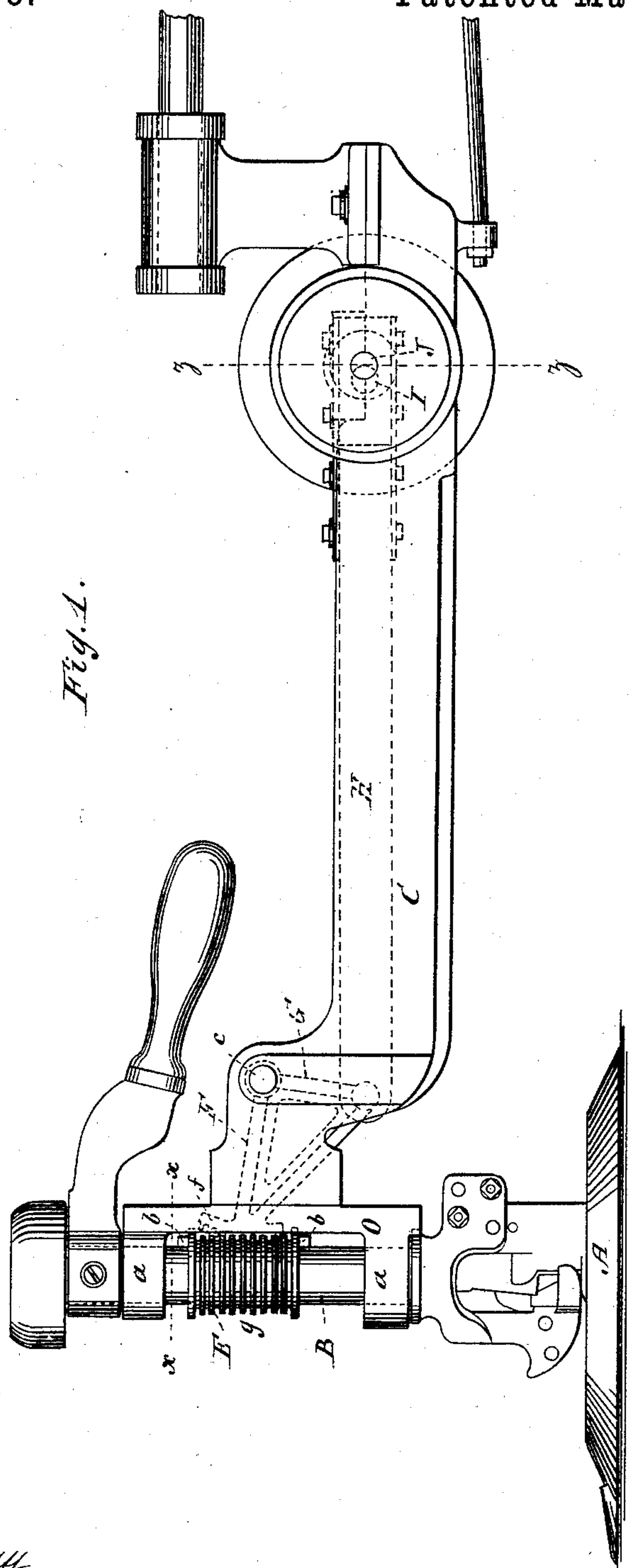
(No Model.)

2 Sheets—Sheet 1.

A. WARTH.
CLOTH CUTTING MACHINE.

No. 363,705.

Patented May 24, 1887.



WITNESSES:

Eduard Wolff.
William Heller

INVENTOR

Albin Warth.

BY

Van Santvoord & Hauff

ATTORNEYS

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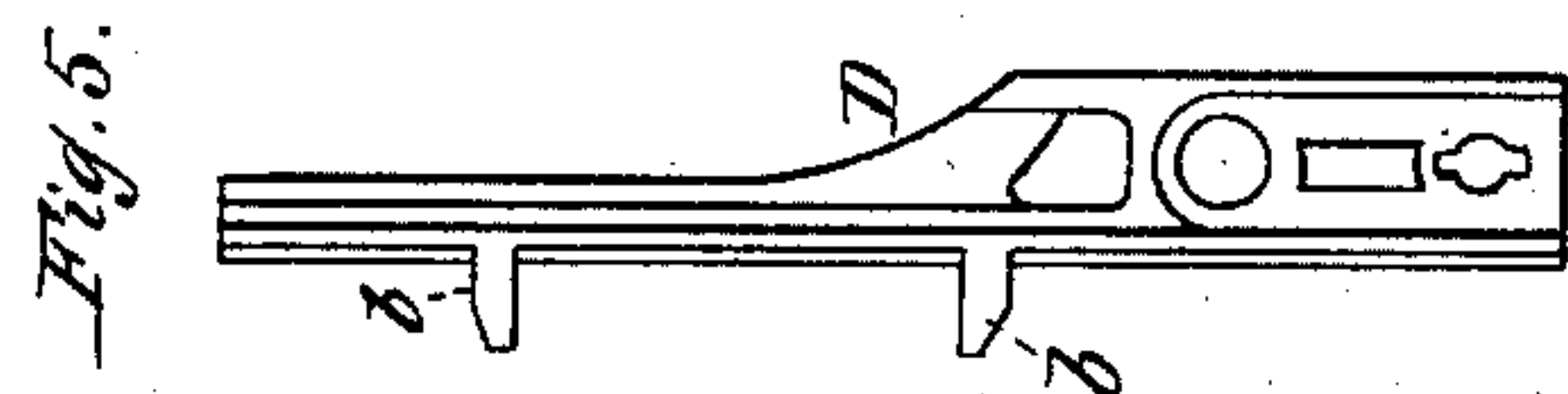
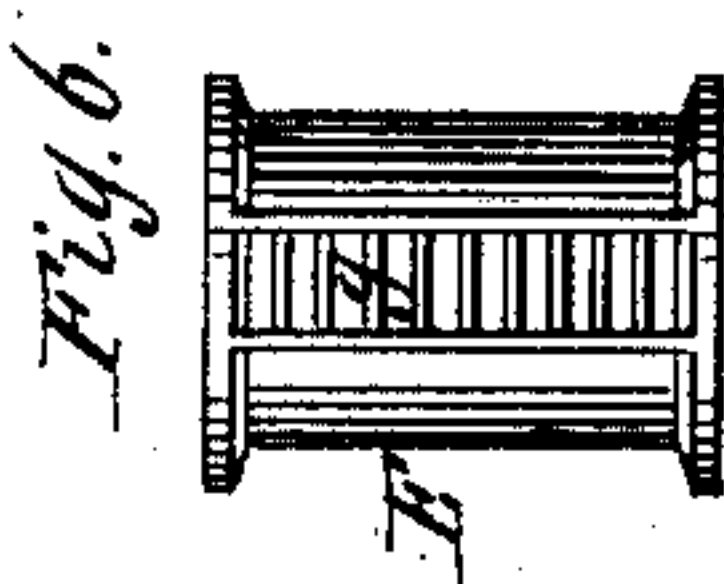
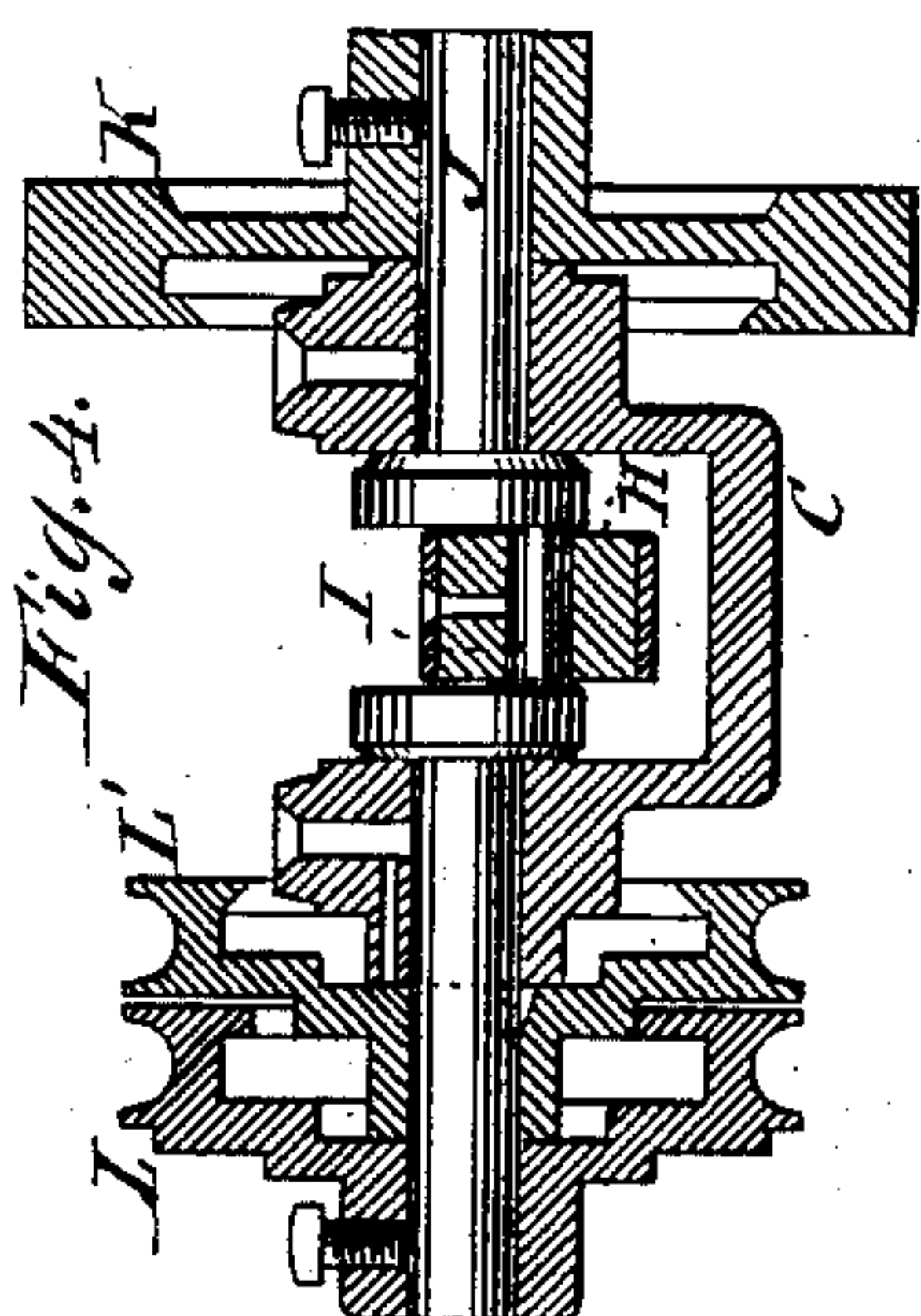
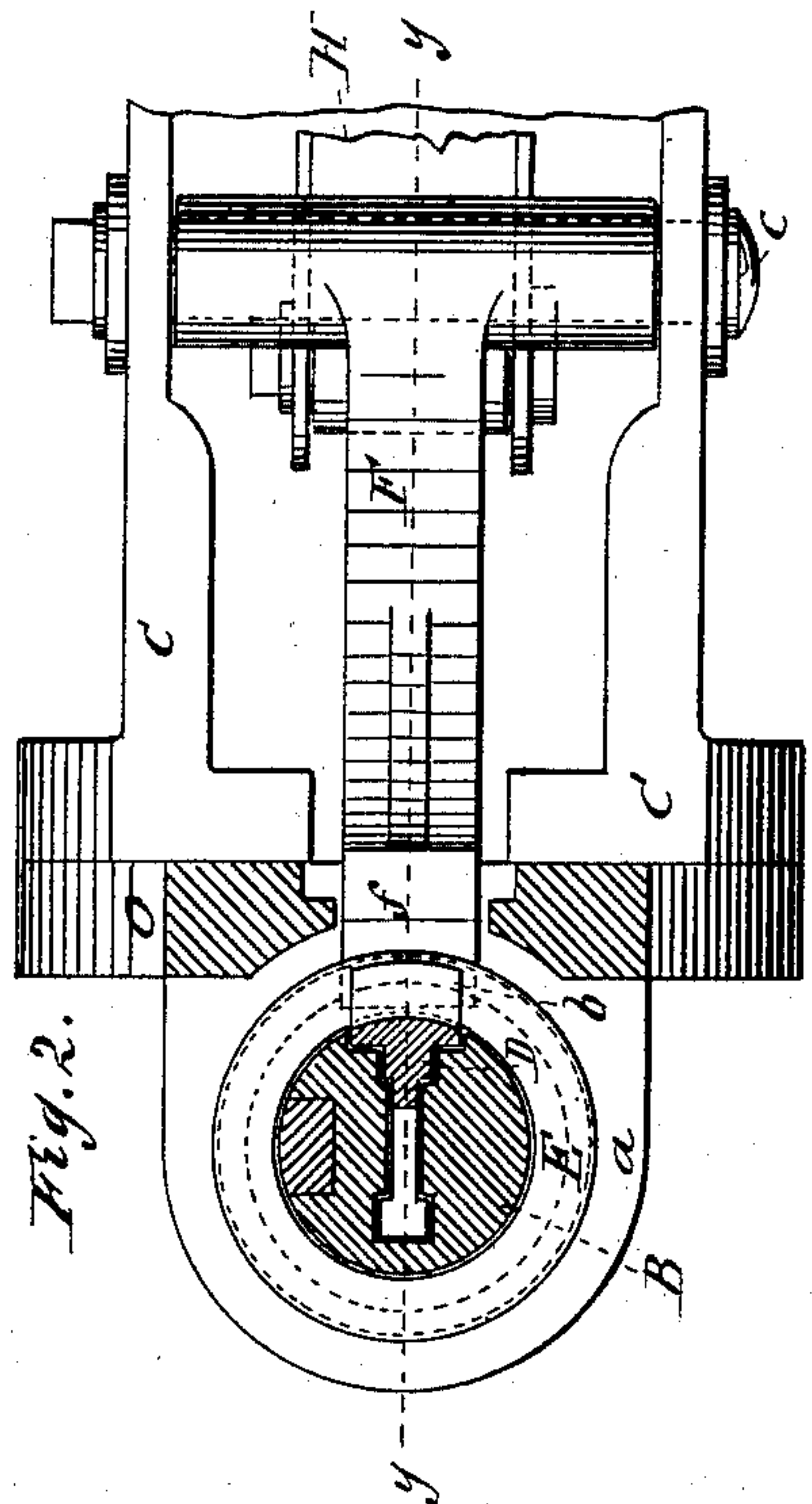


Fig. 3.

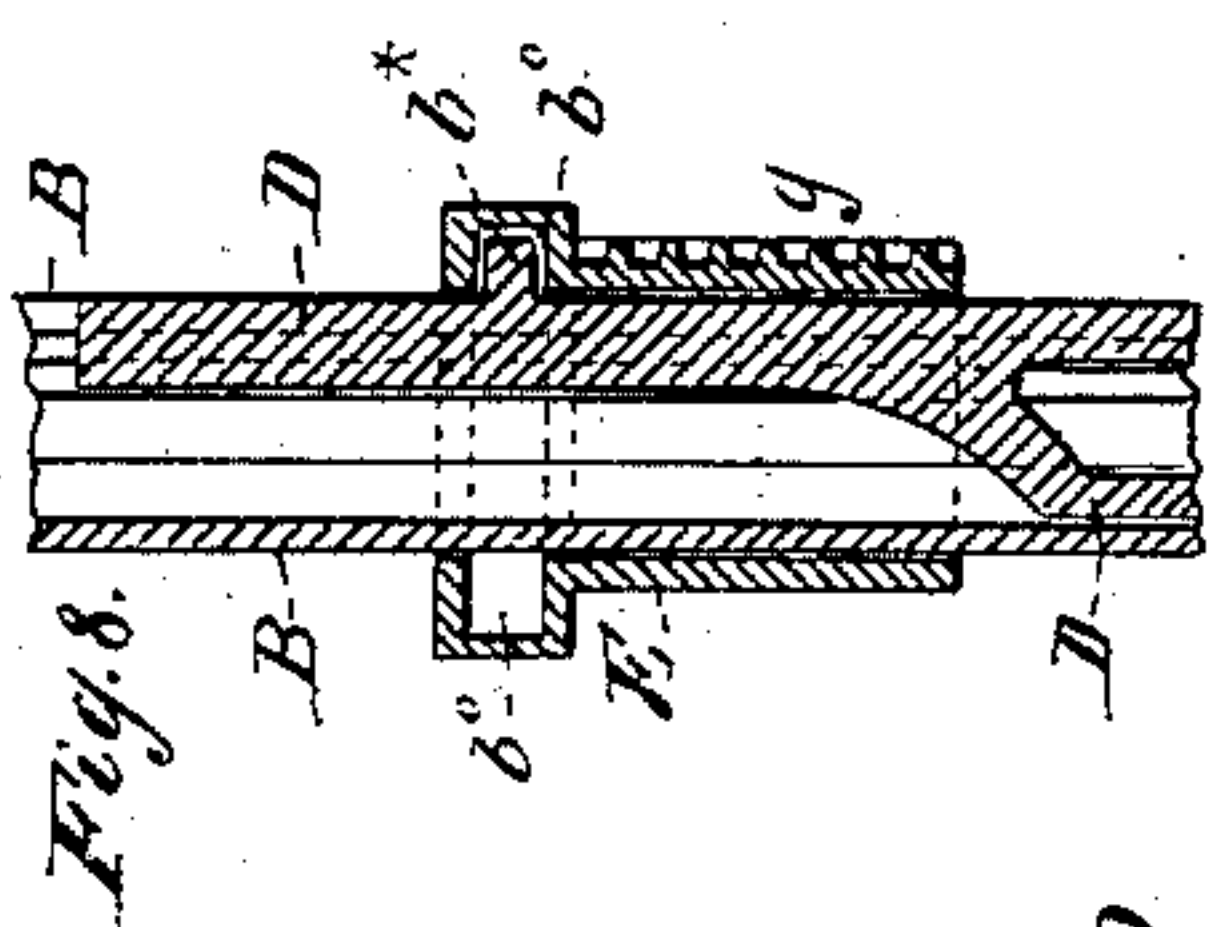
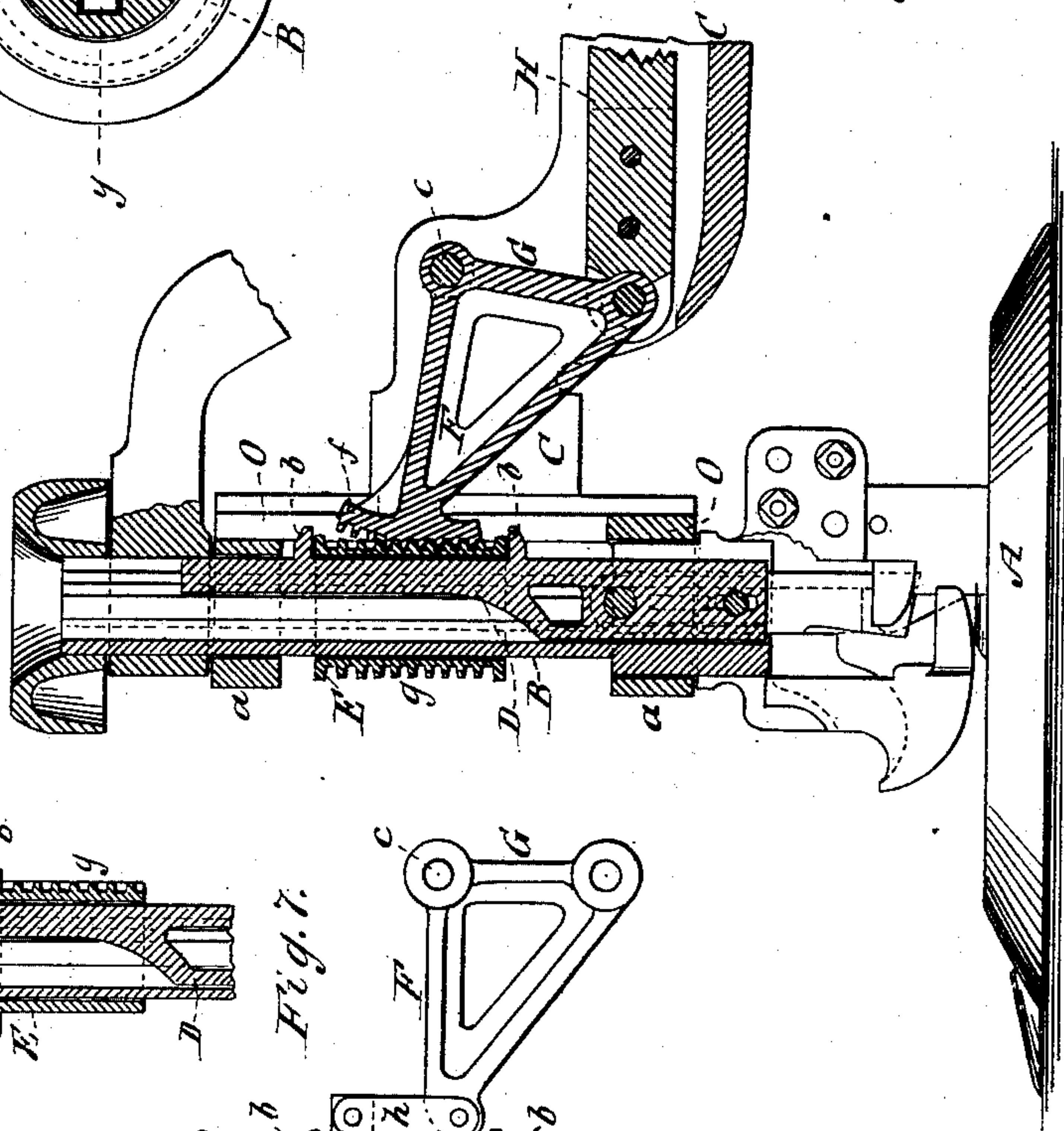
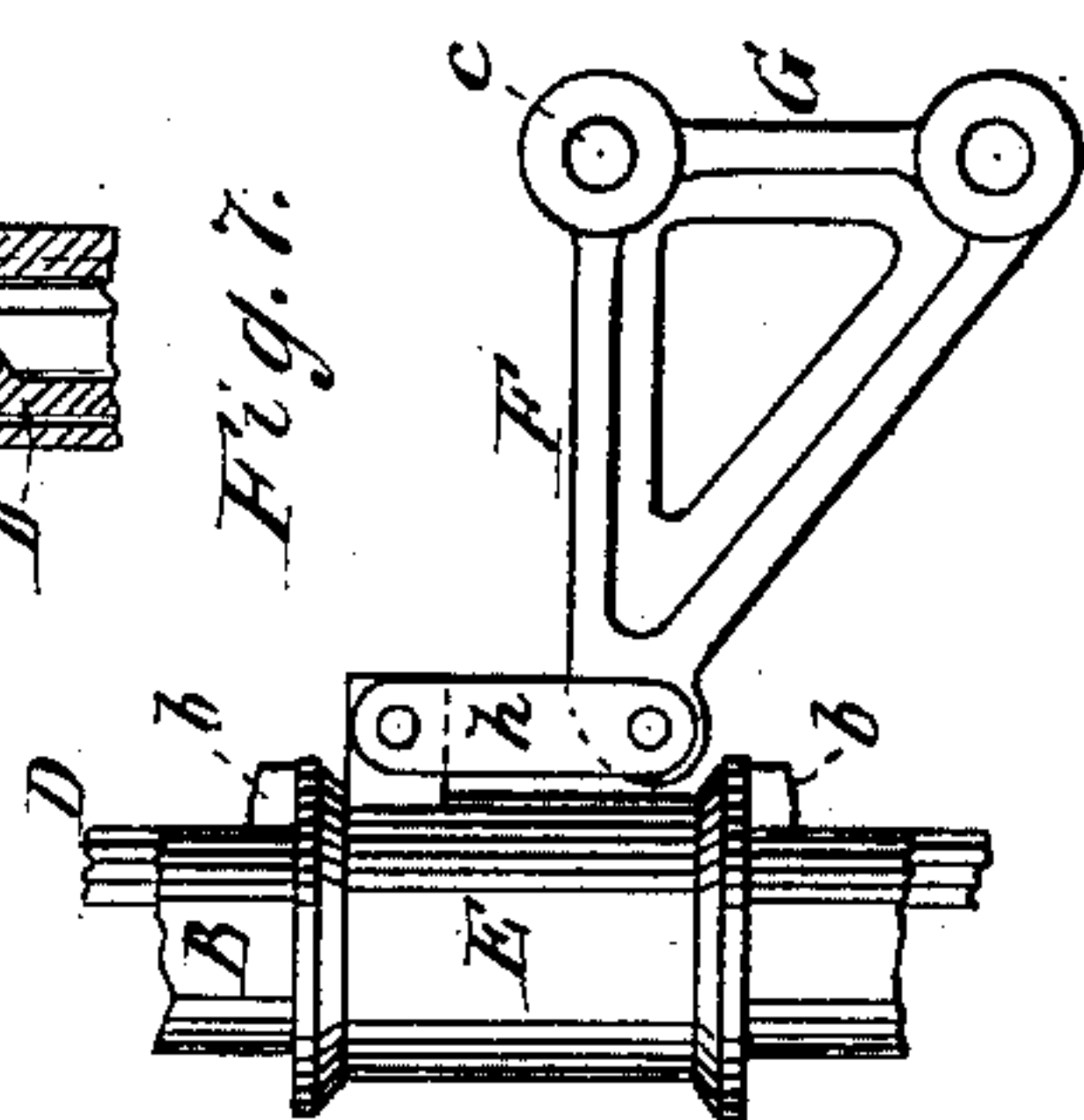


Fig. 7.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALBIN WARTH, OF STAPLETON, NEW YORK.

CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 363,705, dated May 24, 1887.

Application filed February 24, 1887. Fetal No. 22²,728. (No model.)

To all whom it may concern:

Be it known that I, ALBIN WARTH, a citizen of the United States, residing at Stapleton, in the county of Richmond and State of New York, have invented new and useful Improvements in Machines for Cutting Textile and other Materials, of which the following is a specification.

This invention relates to certain improvements in that class of machines which I have described in Letters Patent No. 151,456, granted to me May 26, 1874, and also in Letters Patent No. 165,636, granted to me July 13, 1875; and it consists in certain novel combinations of parts, hereinafter fully described, and pointed out in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation. Fig. 2 is a horizontal section in the plane $x x$, Fig. 1, on a larger scale than the previous figure. Fig. 3 is a vertical section in the plane $y y$, Fig. 2. Fig. 4 is a vertical section in the plane $z z$, Fig. 1. Fig. 5 is a detached elevation of the knife-bar. Figs. 6, 7, and 8 are modifications which will be referred to as the description progresses.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the foot-plate, from which rises a pillar or standard, B, the upper portion of which is round and made to extend through eyes $a a$, formed on a bracket, O, which is secured to the outer end of an arm, C. Into the interior of the pillar B is fitted the knife-bar D, and in the example shown in Figs. 3 and 5 said knife-bar is provided with two lugs, $b b$, which extend through openings beyond the surface of the pillar, and between these lugs is placed the sleeve E, which fits the pillar, so that said pillar, together with the knife-bar, can be easily turned round in the sleeve, while the sleeve can be freely moved up and down on the pillar. This means of arranging the parts permits the pillar with the knife-bar to be turned in the sleeve independent of any turning movement of the latter. By moving the sleeve up and down a reciprocating motion is imparted to the knife-bar D, and the knife is caused to cut through the material situated upon the foot-plate A.

When it is taken in consideration that the

movement of the knife-bar is very rapid, (from fifteen hundred to two thousand strokes per minute,) it will be readily understood that my machines during their operation are liable to jump and to tremble, and one of the objects of my present invention is to reduce this jumping and trembling motion as much as possible. With this object in view the mechanism for imparting to the sleeve E and knife-bar D the required reciprocating motion is constructed as follows: In the arm C is mounted a bell-crank lever, F G, which swings on the pivot c , and one arm, F, of which engages with the sleeve E, while its other arm, G, is attached to the outer end of the connecting-rod H, the inner end of which embraces an eccentric wrist-pin, I, secured to the transverse arbor J. (Best seen in Fig. 4.)

By referring to Figs. 2, 3, and 4, it will be seen that the arm C is concave, and the connecting-rod H is situated in the concavity of said arm, while the arbor J has its bearings in the side walls of the concavity, as shown in Fig. 4, and on one end of said arbor is mounted a fly-wheel, K, while on its other end are mounted a fast pulley, L, and a loose pulley, L'. The connecting-rod H is by preference made of wood, so as to reduce the weight thereof.

In the example shown in Figs. 1, 2, and 3 of the drawings, the bell-crank lever F G engages with the sleeve E by means of a toothed segment, f , formed on its end, and by corresponding teeth, g , formed on the sleeve. In the example shown in Fig. 1 the teeth g extend all round the sleeve, so that said sleeve can be turned round without disturbing its connection with the bell-crank lever; but the teeth g on the sleeve may be arranged as shown in Fig. 6, in which case the sleeve cannot be turned round on the pillar B. The bell-crank lever F G may, however, be made to engage with the sleeve E by other means besides the segment f and teeth g —such, for instance, as the link h , Fig. 7, which is pivoted at one end to a lug projecting from the sleeve E and at its opposite end to the bell-crank lever F G.

When the machine is set in motion, a rapid reciprocating motion is imparted to the sleeve E and the knife-bar carried by the same, and whenever the direction of the motion is changed the momentum of said sleeve and knife-bar is

taken up by the connecting-rod H, and consequently the shocks that would be liable to produce a jumping motion of the cutting mechanism are taken up by the horizontal arm C, so that the movements of the cutting mechanism are as steady as I have been able to make them up to this time. It will also be noticed that in the machine above described the pillar B, which carries the cutting mechanism, can be turned round in the sleeve E, which is due to the fact that the lugs *b b* of the knife-bar D project over the upper and lower edges of the sleeve, whereas heretofore I made the lug or lugs of the knife-bar to engage with slots in the body of the sleeve, so that when the pillar B is turned round the sleeve has to follow. It must be remarked, however, that instead of providing the knife-bar with two lugs, *b b*, as shown in Figs. 3 and 5, I can use a single lug, *b**, Fig. 8, which engages with a circular groove, *b°*, in the interior of the sleeve.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the foot-plate A, the pillar B, the knife-bar D, fitted into the pillar, and the sleeve E, fitting on the pillar and engaging the knife-bar, of the bell-crank lever engaging the sleeve, and mechanism, substantially as described, for imparting motion to the bell-crank lever.

2. The combination, with the foot-plate A,

the pillar B, the knife-bar D, fitted into said pillar, and the arm which embraces the pillar, of the sleeve E, which fits the pillar and engages the knife-bar D, the bell-crank lever F G, which engages the sleeve and swings on a pivot secured in the arm C, the connecting-rod H, and the arbor J, mounted in the arm C and provided with an eccentric, I, substantially as described.

3. The combination, with the foot-plate A, of the sleeve E, the pillar B in the sleeve, and the knife-bar D in the pillar, said pillar and knife-bar having means for turning them in the sleeve independent of any turning movement of the latter, substantially as described.

4. The combination, with the foot-plate A, the pillar B, and the arm which embraces the pillar, of the sleeve E, fitted on the pillar and adapted to turn independently, the knife-bar D, fitted into the interior of the pillar, the lugs *b b*, projecting from the knife-bar over the edges of the sleeve, and mechanism, substantially as described, for imparting to the sleeve a reciprocating motion.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

ALBIN WARTH. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.