(No Model.) 2 Sheets—Sheet 1.

G. J. W. GALSTER.

CLOTH CUTTING MACHINE.

No. 385,050. Patented June 26, 1888.

Fig. 1.

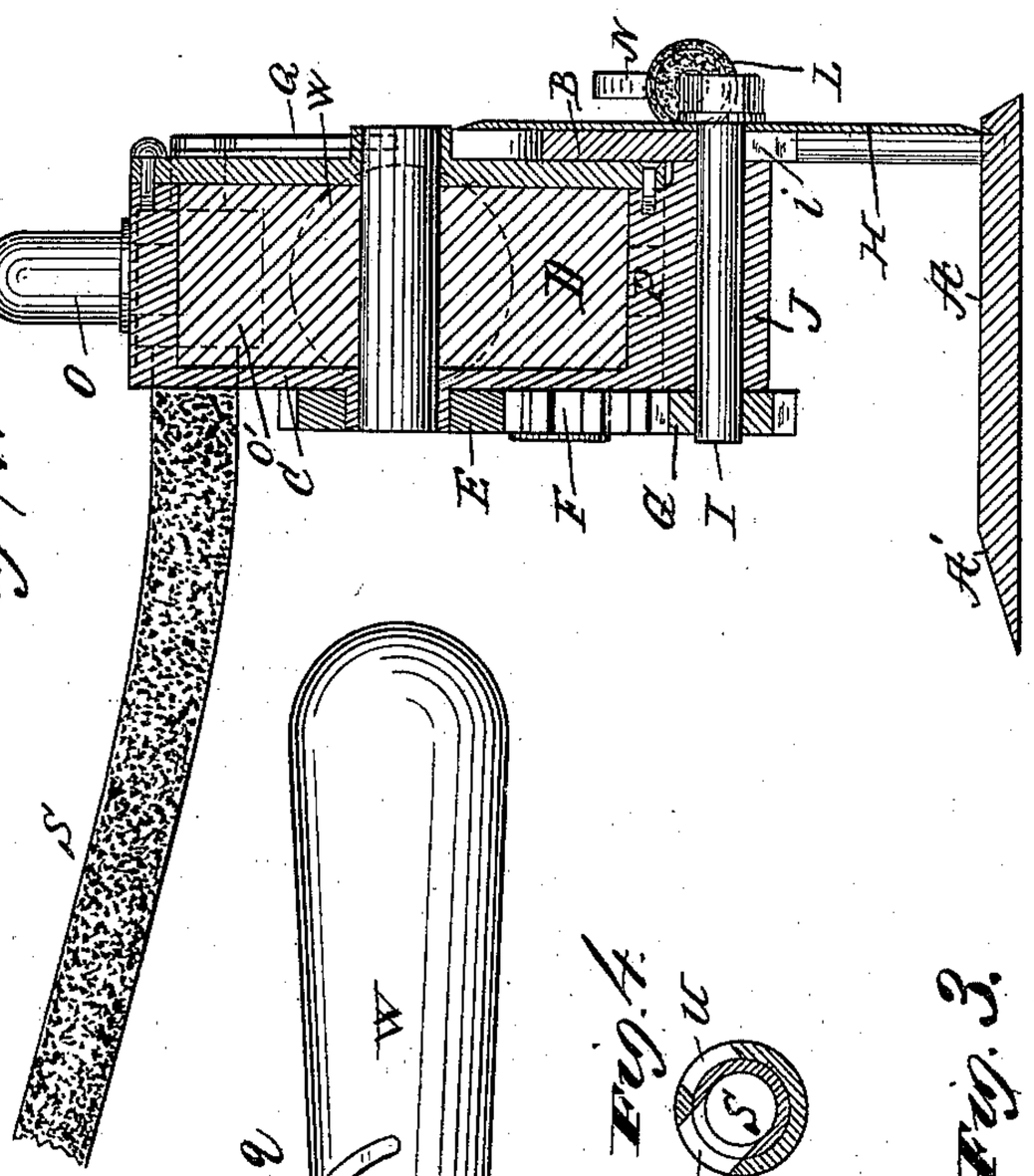

Fig. 2.

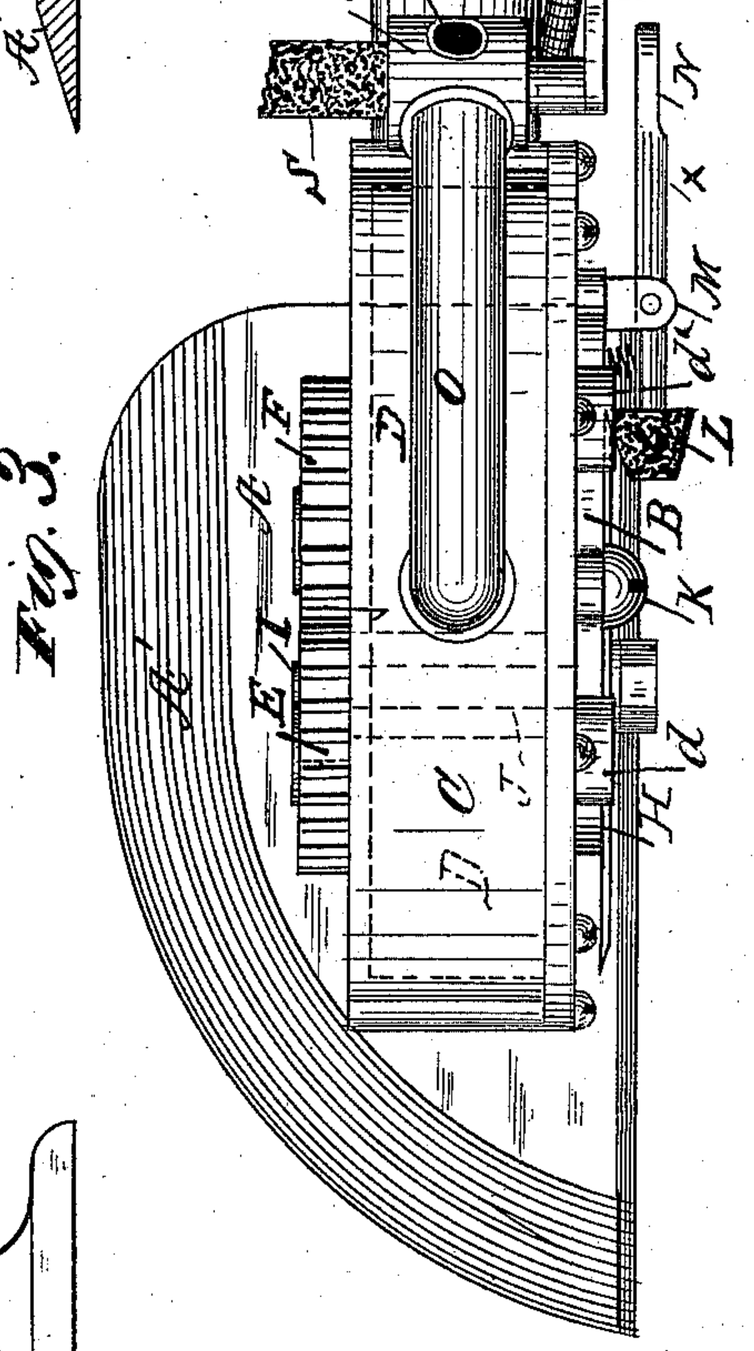

Fig. 3.

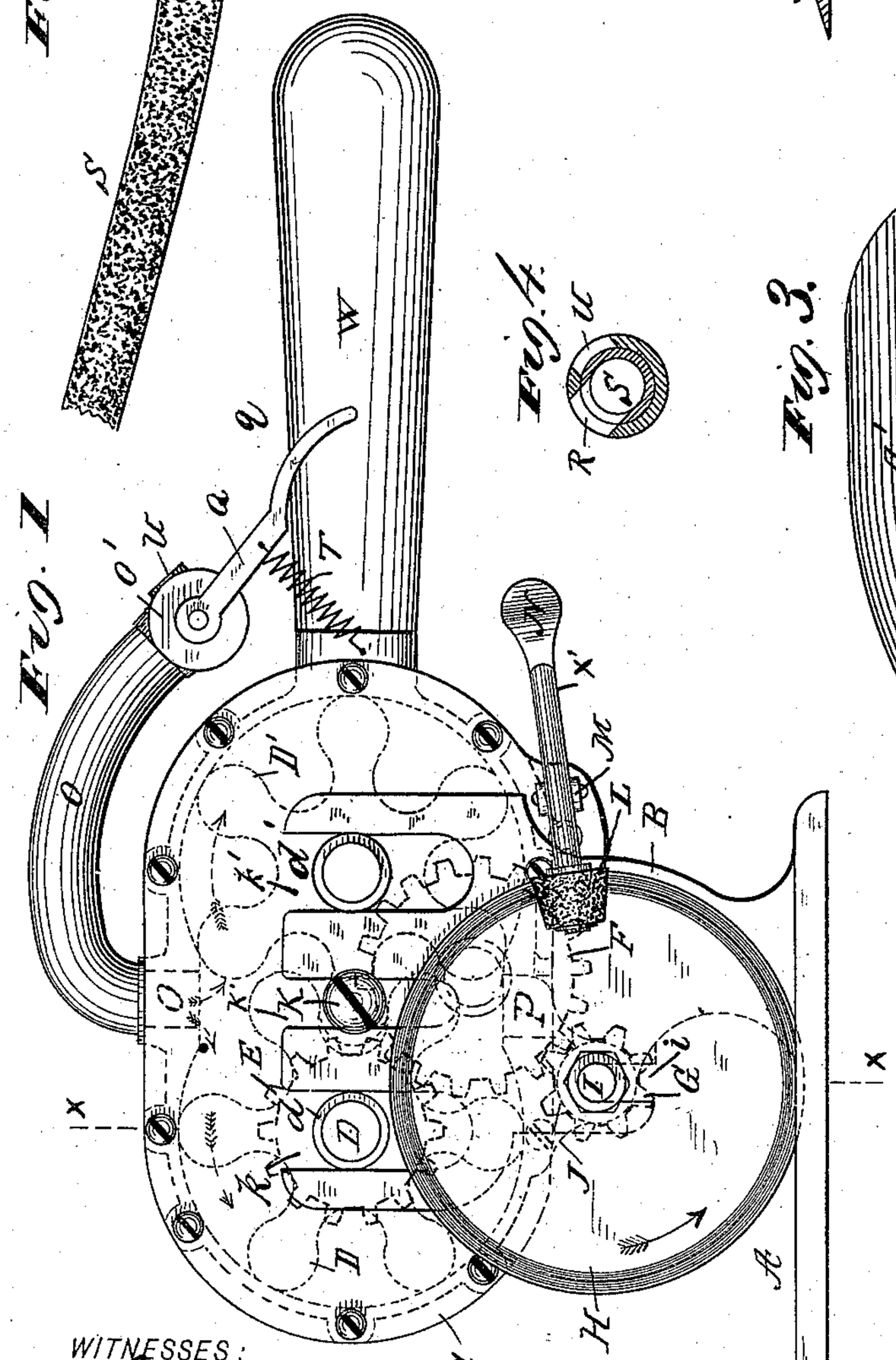

Fig. 4.

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(No Model.) 2 Sheets—Sheet 2.

G. J. W. GALSTER.

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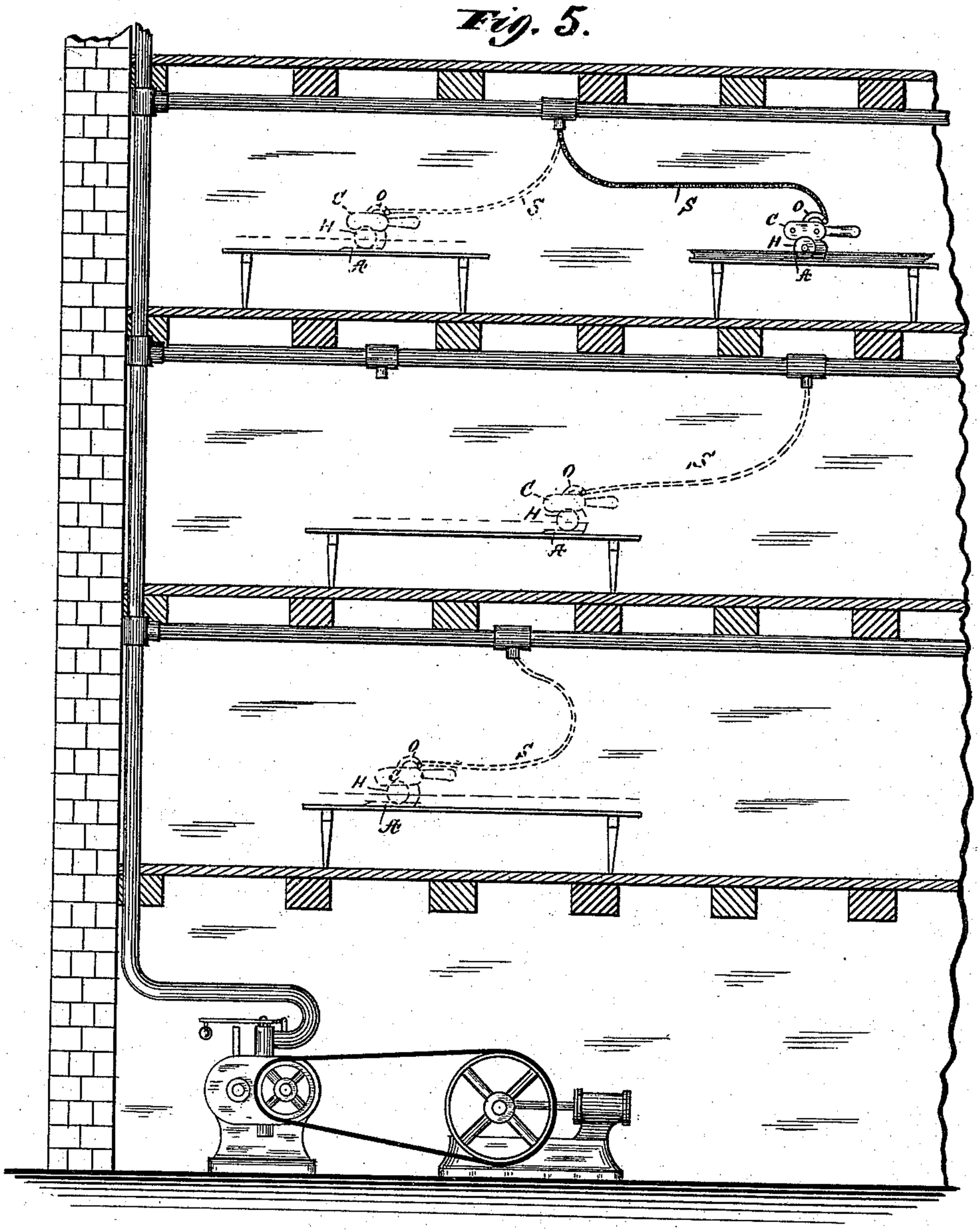
Fig. 5.



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UNITED STATES PATENT OFFICE.

GABRIEL JOHAN WILHELM GALSTER, OF NEW YORK, N. Y.

CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 385,050, dated June 26, 1888.

Application filed October 27, 1887. Serial No. 253,512. (No model.)

To all whom it may concern:

Be it known that I, GABRIEL JOHAN WILHELM GALSTER, a subject of the King of Denmark, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Cloth-Cutting Machines, of which the following is a specification.

My present invention relates to an improved device for cutting forms or patterns from a layer or series of layers of fibrous or other material adapted to be made up into clothing or other similar articles in which sections of a given form or configuration are essential to the perfection of the garment or article when the sections are united.

The accompanying drawings form a part of this specification and illustrate the best mode of carrying my invention into effect.

In the accompanying drawings, Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a vertical section on the line X X, Fig. 1. Fig. 3 is a plan view. Fig. 4 is a section of the air-valve. Fig. 5 illustrates one of the applications of my invention.

In the drawings, A is a bed-plate having a tapering forward portion, A′, adapted to pass under the layer or layers of material to be cut. To the upper side of this bed-plate is attached a vertical standard, B, adapted to support a rotary cutter, H, and the operative parts of the apparatus by which the cutter is driven.

C is an air-cylinder of any suitable construction, provided with rotary piston-wheels D D′, from which a rotary motion is transmitted to the cutter H through the pinions E and G and the intermediate gear-wheel, F. The rotary pistons D D′ are journaled in the air-cylinder, so that the teeth of the same will fit and form a tight joint with the inner surface of the cylinder, which is described on the periphery of a circle in the ordinary manner.

The pinion E is placed on the axis of the piston-wheel D, which is extended through the casing of the cylinder C for that purpose, as shown in Fig. 2.

The intermediate gear-wheel, F, meshes with the pinion E and with the pinion G, and is journaled on the outside of the air-cylinder C in any suitable manner.

The pinion G and the rotary cutter H are attached to the opposite ends of a shaft, I, as shown, the shaft I being journaled in a projection, J, from the cylinder C. The shaft I is extended through a slot, *i*, in the standard B, as shown, and the cutter H is attached to it on the outside of the standard. The slot *i* is elongated vertically to permit of a vertical adjustment of the cutting devices upon the standard, in a manner which will be presently described.

The piston-wheels D D′ are driven in the ordinary manner by compressed air or gas admitted into the air-cylinder C through the inlet-pipe O and supply-pipe S. The escape-opening is indicated at P. The admission of the air or gas to the cylinder may be controlled by a two-way valve, O′, located at the junction of the inlet-pipe O and the supply-pipe S. The valve itself, as shown in the drawings, is controlled by a lever, Q, one movement of which opens a passage from the supply-pipe S through the valve to the inlet-pipe O, and a movement of which in the opposite direction closes the passage from the supply-pipe S and opens a passage from the inlet-pipe O to the air, so that the air or gas in the machine may escape and the operation of the machine may be arrested.

The lever Q is provided with a convenient hand-hold, *q*, as shown, and the parts are so arranged that when the lever is lifted by the pressure of the finger against the action of the spring T the air passes in through inlet R. The air passes from pipe S through the inlet R in the valve, through pipe O, to the machine. When the finger is taken from the lever, the spring T draws the lever Q back, and air passes out through the outlet U, thereby stopping the machine immediately. The hand-hold *q* is arranged in convenient proximity to the handle W, so that the machine may be guided and controlled by one hand of the operator, leaving the other hand free for other purposes.

The supply-pipe S is made of rubber or other flexible material of suitable character, and is of any desired length, so that the machine may be moved about from table to table, as desired, as shown in Fig. 5.

The cylinder C, with the parts attached, is adjustably secured to the standard B by means of the screw K, passing through a slot, K′, in the upper part of the standard, as shown.

By loosening the screw K the entire ma-

chine may be lifted or lowered, so as to take up the wear of the cutter or to adjust the machine to the requirements of the occasion.

The relation of the cylinder C to the standard B is maintained by means of the engagement of the shaft I with the sides of the slot *i* in the standard, and it is further maintained by means of the projections or bosses *d d'* on the ends of the cylinder, which extend into slots *k k'* in the standard B. These projections fit the slots *k k'* and prevent the cylinder from tipping when it receives a vertical adjustment on the standard B. The projections are hollowed out, as shown, to form extended bearings for the shafts of the piston-wheels D D'.

L represents an emery-wheel or other suitable sharpening device adjustably secured to the standard B in convenient proximity to the cutter H, so that it may be brought into and out of operative relation to the cutter. It is mounted upon one end of a lever, X', pivoted at M, the other end of which is provided with a suitable hand-hold, N. Through lever X' the wheel L may be brought to bear upon the cutting-edge of the wheel H, so that the cutter may be ground down and sharpened by the motion communicated to it by its driving mechanism. The hand-hold N is arranged in convenient proximity to the handle W, as described in connection with the hand-hold *q*.

W represents a handle by which the machine can be presented to the work and be manipulated, as described.

The operation of the machine is as follows: The cutter is presented to the work and the compressed air or gas is admitted to the cylinder C by raising the lever Q against the action of the spring T. The piston-wheels D D' are then driven in the direction of the arrows, as shown, the motion of the piston-wheel D giving rise to a corresponding motion of the pinion E, which motion is transmitted through the intermediate gear-wheel, F, to the pinion G, thereby giving the desired rotary motion to the circular knife H. When it is desired to lessen the speed or stop the machine, either temporarily or permanently, the pressure on the lever Q is wholly or partially relieved, thus wholly or partially shutting off the supply. It will be obvious that the construction now described results in a small-sized compact machine, complete in itself, and which may be readily moved from table to table, as desired. In this way I am enabled to dispense with the devices ordinarily employed for communicating motion from a stationary source of power to a movable cutter.

I do not in this application claim, broadly, a rotary cutter or an air or gas motor, as I am aware that these devices are well known; but

What I do claim is—

1. In a cloth-cutting machine, the combination, with a bed-plate and a vertical standard rigidly connected together, of a rotary air or gas motor secured to the latter, a flexible supply-pipe, and a rotary knife driven by said motor and supported by said standard, as and for the purpose described.

2. In a cloth-cutting machine, the combination, with a bed-plate and a vertical standard rigidly connected together, of a rotary air or gas motor secured to the latter and provided with a handle, a flexible supply-pipe, a rotary knife driven by said motor and supported on said standard, and a supply-cock having a hand-hold in convenient proximity to said handle, as and for the purpose described.

3. In a cloth-cutting machine, the combination, with a bed-plate and a vertical standard, of a rotary air or gas motor secured to the latter, a flexible supply-pipe, a rotary knife driven by said motor, and a sharpening device attached to said motor, said sharpening device having a hand-hold in convenient proximity to the handle of the machine, as and for the purpose described.

4. In a cloth-cutting machine, the combination of a bed-plate, a vertical standard, an air-cylinder adjustably secured to said standard and provided with piston-wheels, a rotary cutter secured to a shaft journaled in said cylinder, and intermediate gearing supported by said cylinder, as and for the purpose described.

5. In a cloth-cutting machine, the combination, with a bed-plate and a vertical standard, of a rotary motor adjustably secured to the latter, a flexible supply-pipe, and a rotary knife driven by said motor, as and for the purpose described.

6. In a cloth-cutting machine, the combination, with a bed-plate and a vertical standard, of a rotary motor secured to the latter, a flexible supply-pipe, and a rotary knife driven by said motor and adjustably secured to said standard, as and for the purpose described.

7. In a cloth-cutting machine, the combination, with a bed-plate and a vertical standard, of a rotary motor adjustably secured to the standard, and a rotary knife driven by said motor and adjustably secured to said standard, as and for the purpose described.

Signed at New York, in the county of New York and State of New York, this 20th day of October, A. D. 1887.

GABRIEL JOHAN WILHELM GALSTER.

Witnesses:

WM. H. CAPEL,

H. C. TOWNSEND.