

(No Model.)

4 Sheets—Sheet 1.

P. H. FOWLER.

CLOTH FOLDING AND MEASURING MACHINE.

No. 299,371.

Patented May 27, 1884.

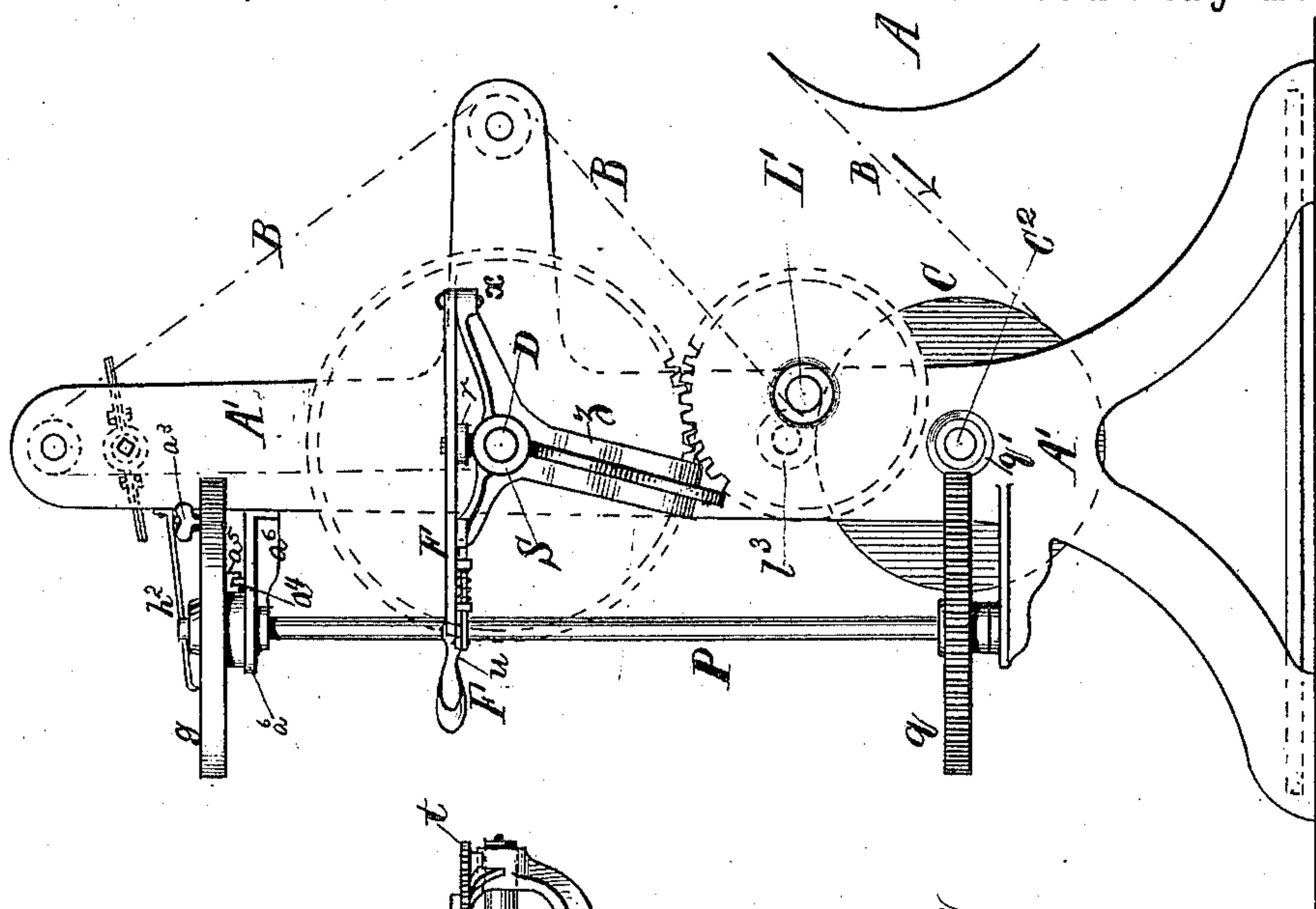


Fig. 2

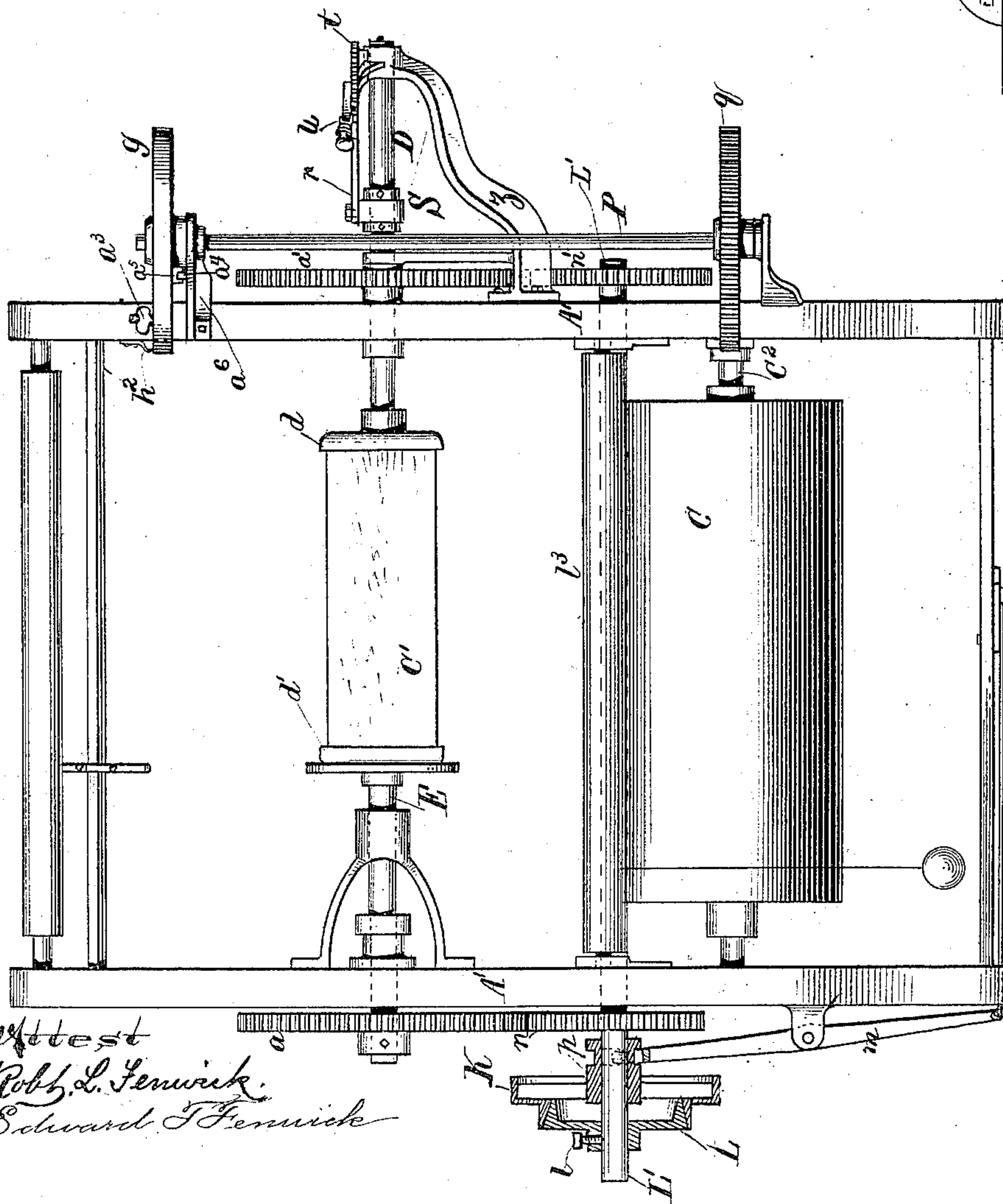


Fig. 1

Attest
Robt. L. Fenwick,
Edward J. Fenwick

Inventor
Philip H. Fowler
by his attys
Fenwick and
Lawrence

(No Model.)

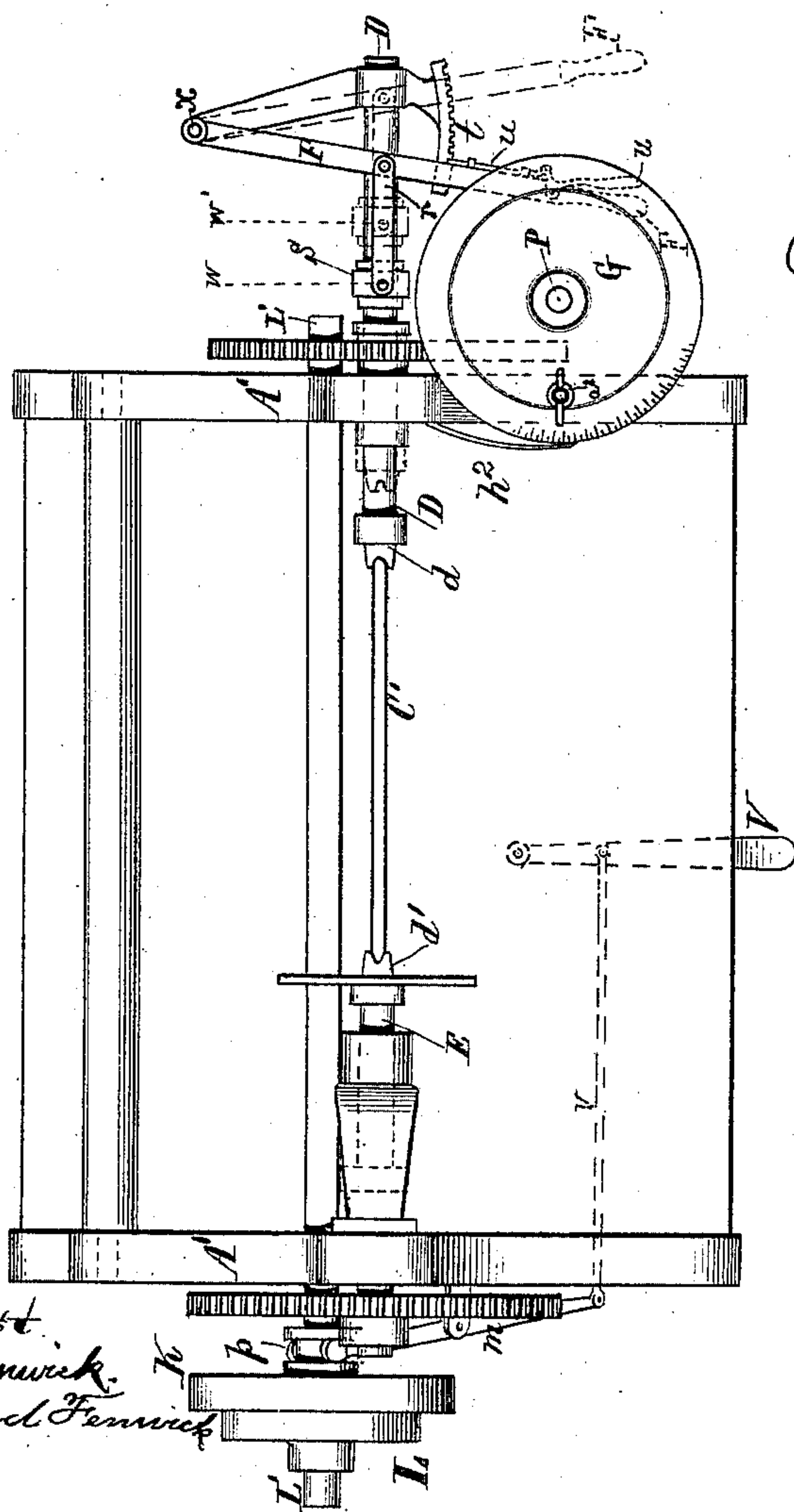
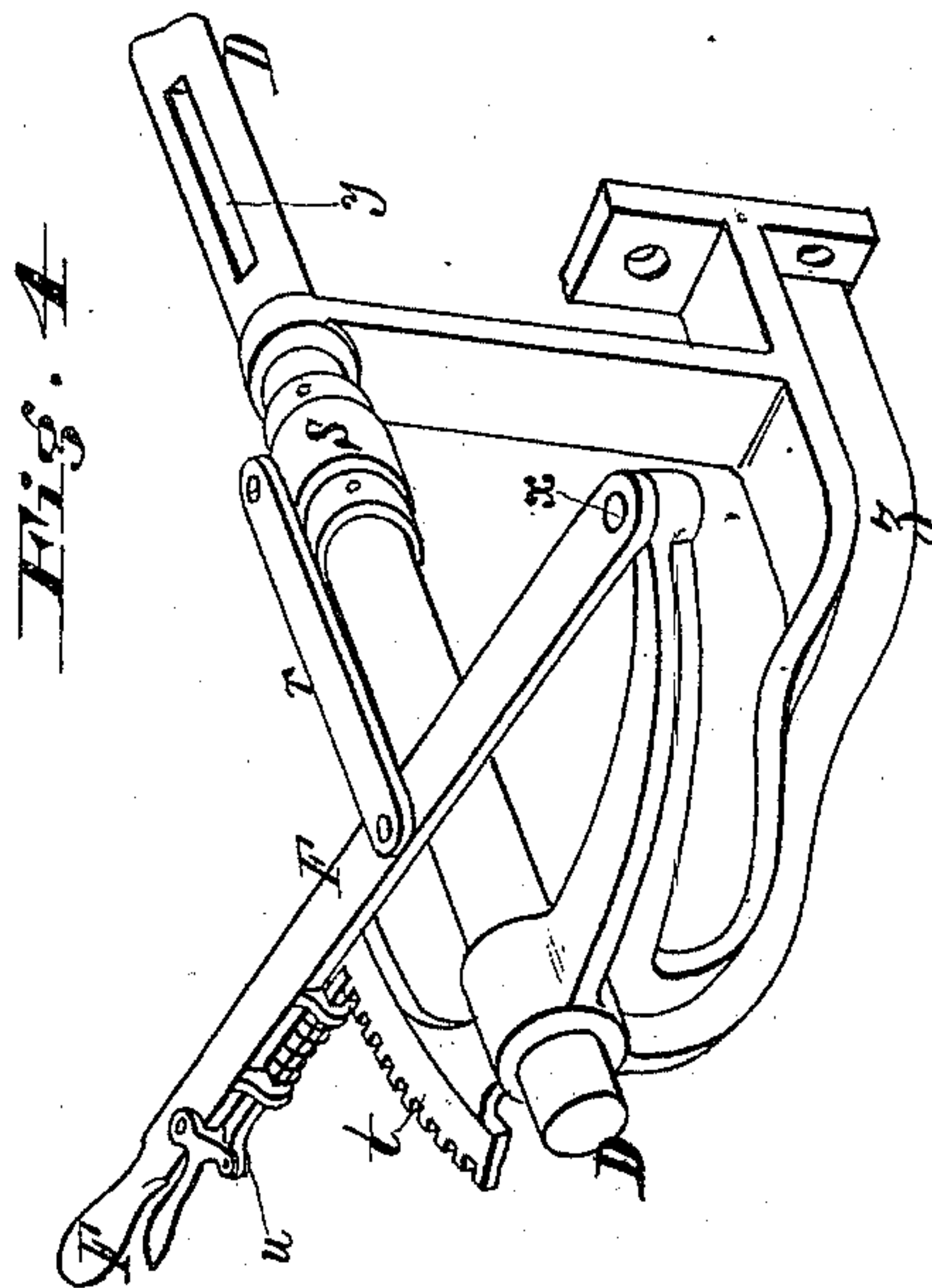
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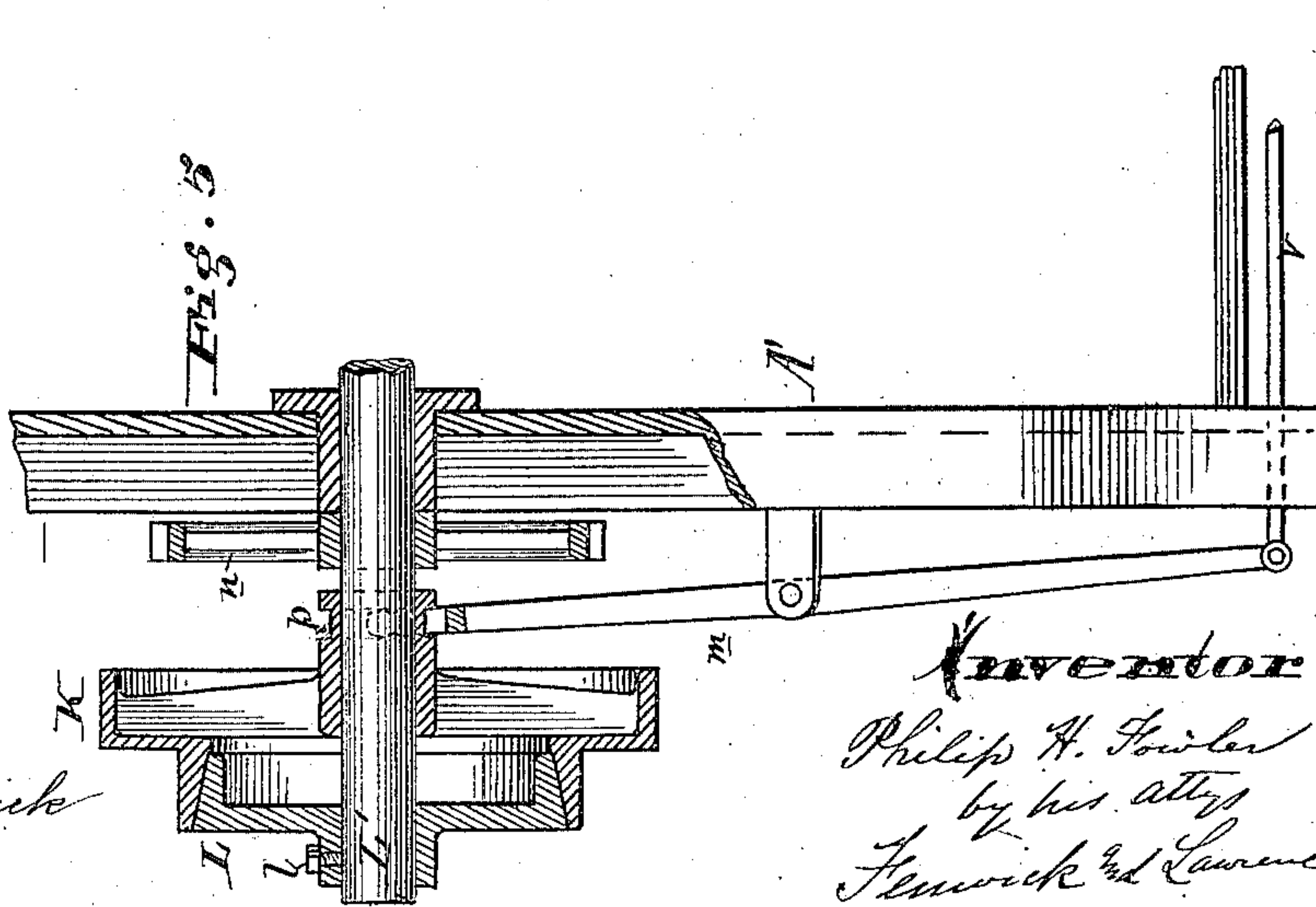
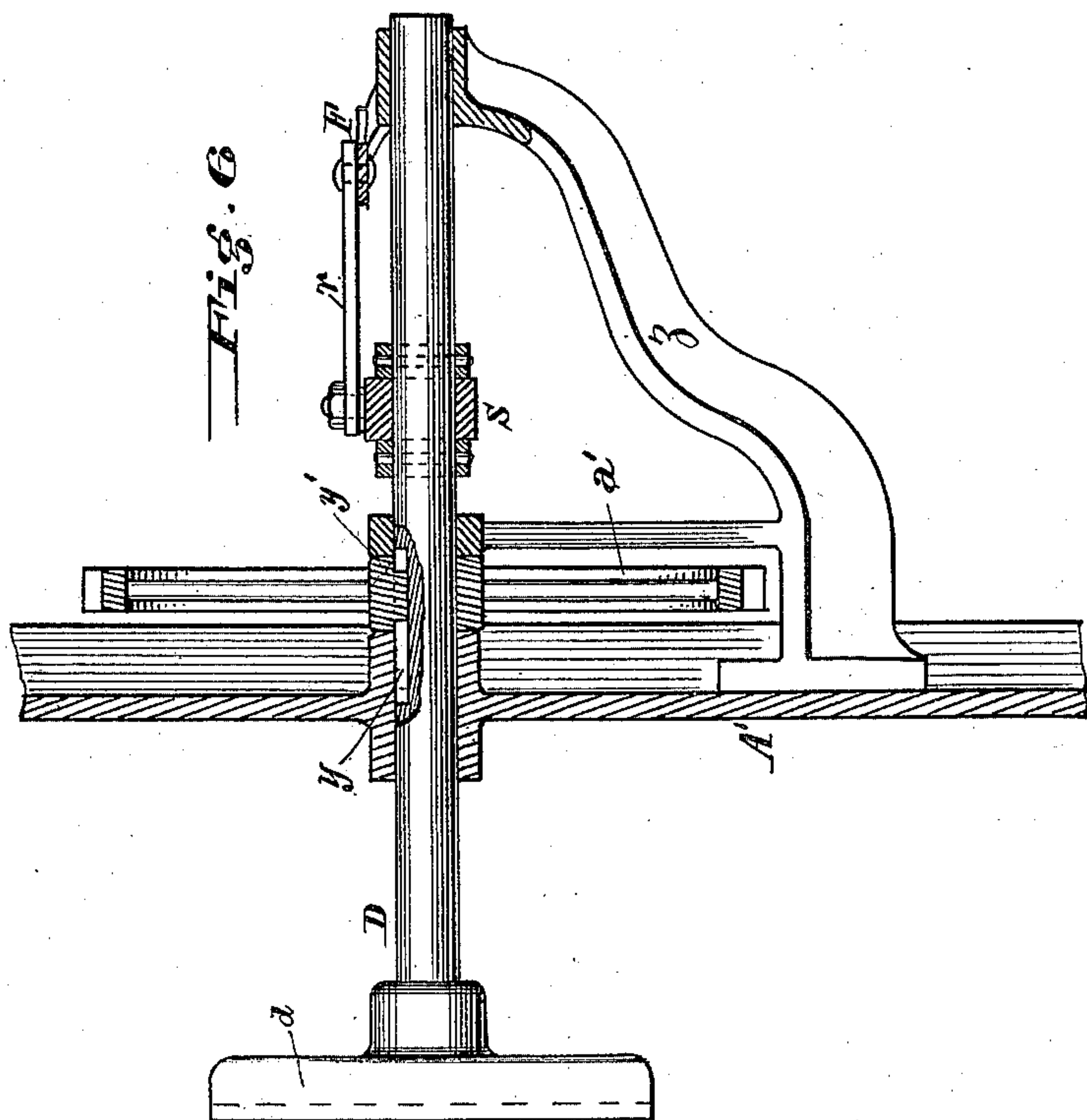
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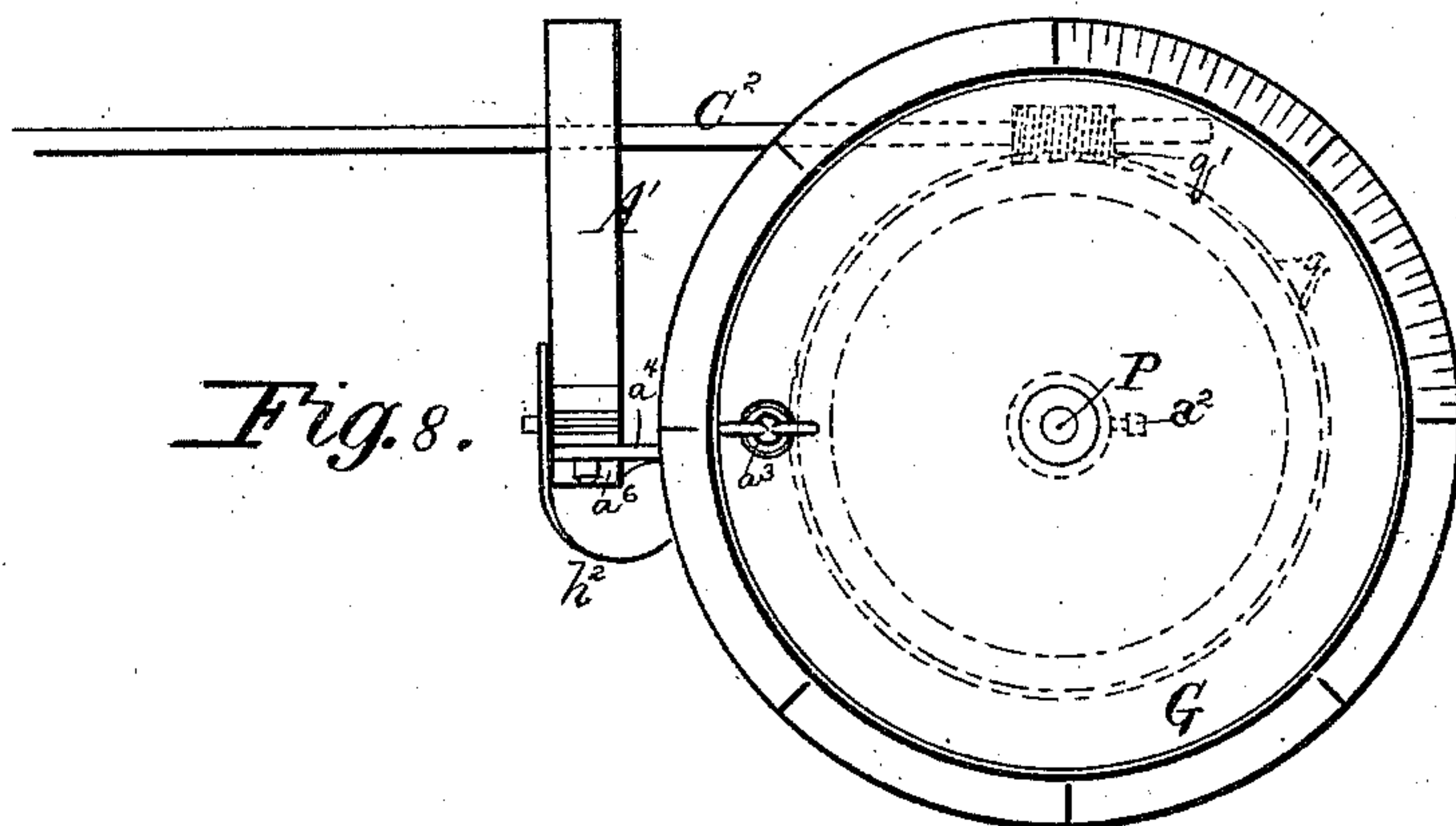
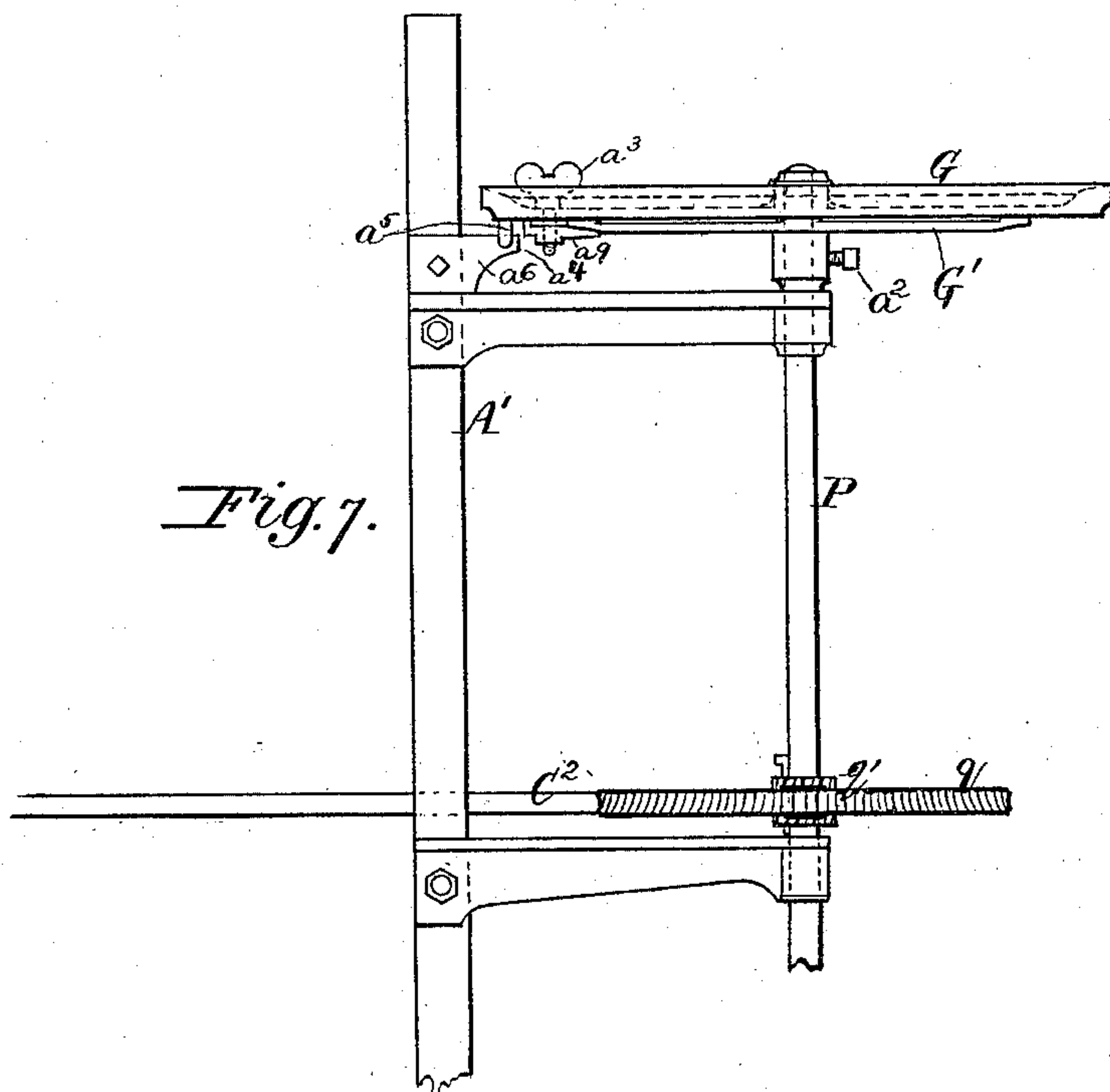
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Witnesses:

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UNITED STATES PATENT OFFICE.

PHILIP H. FOWLER, OF GLOUCESTER CITY, NEW JERSEY.

CLOTH FOLDING AND MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 299,371, dated May 27, 1884.

Application filed August 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, PHILIP H. FOWLER, a citizen of the United States, residing at Gloucester City, in the county of Camden and State of New Jersey, have invented a new and useful Improvement in Cloth Folding and Measuring Machines, of which the following is a specification.

My invention consists in certain novel combinations of parts, as will be hereinafter described and specifically claimed; and the objects of the same are, first, to save the time and labor usually lost in operating the clamping-head of the folding-board by means of a screw on the shaft carrying said head; and, second, to insure a sudden and certain stoppage of the machine when the end of a piece of cloth arrives at a certain point in the machine.

In the accompanying drawings, Figure 1 is a front elevation and partial section of the principal parts of a cloth-folding machine as improved by me, the clutch and pulley being shown in section and the other parts in elevation. Fig. 2 is a side elevation of Fig. 1, illustrating by dotted lines the travel of the cloth from a roll through the machine, and the greater portion of two gear-wheels by similar lines, only a few of their teeth being shown in full lines. Fig. 3 is a plan or top view of the machine, showing the lever which moves the shaft carrying the grooved head in its normal and shifted positions. Fig. 4 is a perspective view, in detail and on an enlarged scale, of the improved mechanism used in combination with the cloth folding or folding and measuring mechanism for releasing the folding-board and fastening it in place. Fig. 5 is an enlarged detail sectional view of the stopping and starting mechanism, showing, also, a portion of the frame and pulley-shaft. Fig. 6 is an enlarged detail sectional view of a portion of the mechanism for moving the sliding shaft with grooved head, and of the frame of the folding-machine. Fig. 7 is a detail front elevation of that portion of the mechanism used for indicating or registering the cloth measured, and Fig. 8 is a top view of the parts shown in Fig. 7.

In the drawings the ordinary parts of a cloth folding and measuring machine are shown with my improvements combined there-

with, and while I do not specifically claim the said parts, the same will be designated by letters of reference and generally described, in order to make plainer the relation of said improvements to such parts of the machine.

A' is the main frame; G, the indicator or measuring dial, indicating yards and fractions thereof; h^2 , the indicator-hand, attached to the frame A', with its finger resting near the periphery of the dial G. The dial is loose upon its spindle P, but can be clamped upon a head-plate, G', on it by a clamp-nut, a^9 , and a thumb-screw, a^3 , so as to cause it to revolve with said shaft P, and with a screw-wheel, q , which wheel is actuated by a worm, q' , on the end of the shaft C' of the measuring-cylinder C, as shown. The spindle P, carrying the dial and the screw-wheel, makes only a part of a revolution, because the measuring range of the dial is greater than the length of any one piece of cloth given off from the roll A for measurement. Therefore when a piece is measured the machine requires to be stopped suddenly by a clutch mechanism, as will be hereinafter described. When the machine is stopped, the dial G is unclamped from the head-plate G' and turned back by the operator until a stop piece or pin, a^3 , fastened to the under side of the dial comes in contact with another stop, a^4 , formed on the supporting-bracket a^6 , when all will be ready for a new measurement. The gears a and a' on the shafts D E, respectively, match the gears n n' on the shaft L', and when the pulley portion K of the clutch-pulley engages with the clutching portion L thereof motion is imparted to the shafts L', D, and E, and also to the folding-board C', and by the draft of the cloth B upon the measuring-roller C said roller is caused to revolve and impart motion through the worm q' and wheel q to the spindle P and dial G, all in a manner well known. During the passage of the cloth around the roller C it is kept at a proper tension by the ordinary tension-roller, t^b , in the usual manner. This roller is not claimed by me, and its functions and means for controlling it being well known, need not be further described here.

A in the drawings, Fig. 2, represents the roll of cloth as it comes from the finishing-room. This roll contains several "pieces" of cloth to be folded and measured, joined end to

end, and B represents the cloth passing round the measuring-cylinder C, said cloth being pulled through the machine by the folding-board C', which is revolved by means of the shafts D and E, gears $a\ n$, $a'\ n'$, shaft L', and the belt and clutching pulley K L. The portion K of the pulley is controlled by the friction clutching portion L, which is held fast to the shaft L' by a set-screw, l , while the pulley portion K is fitted to run loosely upon said shaft, and both members or portions are constructed with a beveled surface, b' , and caused to become engaged by the frictional bind of the beveled surface of portion K upon the corresponding surface of portion L, and to become disengaged by sliding portion K out of contact with portion L. A grooved collar, p , and a forked lever, m , are provided for operating the portion K, and these parts are actuated by a foot-piece, V, through a connecting-rod, v , as shown. The folding-board C' is held firmly in place by grooved heads $d\ d'$ on shafts D and E, the shaft D being pressed against one end of the board, and thereby causing the board to enter the grooves of both heads $d\ d'$ and be held by the binding or clamping action of the two heads upon its ends until the shaft D is slid from the position indicated by w in Fig. 3 to the position indicated by w' in same figure, when the board will be released and can be removed with the folded and measured cloth upon it. The shaft E does not slide; but the shaft D is permitted to be slidden right and left by means of a slot-and-feather connection, $y\ y'$, between the shaft D and gear a' , as shown. To this sliding shaft a collar, S, is affixed, and this collar is connected to a lever or handle, F, by means of a pitman or rod, r . The lever or handle is pivoted at x to a bracket, z , of the main frame A'. At the outer or free end of the lever a pivoted spring-acted thumb-piece, u , is applied, and to this piece a sliding stop or locking pin is connected, as shown. In proper relation to the lever and its locking-pin a toothed arc or sector, t , is applied upon an arm of the bracket z , as shown.

By having the shaft D constructed and arranged as described, and operating it by the lever F and its adjuncts, the clamping and unclamping of the folding-board C' can be very speedily accomplished, as follows: Suppose the locking-pin of the thumb-piece u is resting in one of the notches of the toothed arc t and the folding-board is clamped between the two shafts D and E, now, if it is desired to unclamp the folding-board, the operator with his thumb or finger presses upon the piece u , and thereby withdraws the locking-pin from the notch of the arc t , and thereupon he moves the lever F, and the shaft D along with it, to the position w' in Fig. 3, and then withdraws his thumb or finger from the piece u and allows the locking-pin to drop into or enter one of the notches of the arc t . The folded folding-board having been removed and an empty one adjusted in position between the clamping-heads of the shafts D and E, the operator

again presses his finger upon the piece u , so as to withdraw the locking-pin from its notch, and then moves the lever F and the shaft D from the position w' to the position w , and thereby causes the shaft to clamp the board C' firmly in position. This done, the thumb-piece u is released and the locking-pin allowed to take into one of the notches of the arc t and lock the shaft against sliding toward the position indicated by w' . With this construction there is no chance of the shaft accidentally sliding either inward or outward after it has been locked, and great convenience is afforded as well as benefit secured.

Where the shaft D is provided with a feeding-screw working in a nut and revolved by a crank-handle, or with analogous known means, the operation of clamping and unclamping the folding-board is a slow and tedious one, while with the construction I have shown and described, the operation of clamping and unclamping said folding-board is rapid, and the machine is enabled to do much more work in a given time than heretofore; while the labor of the operator is not so great.

While it is important to provide for rapid in and outward adjustment of the shaft D, it is also equally as important to make provision for suddenly stopping at the right moment the mechanism which gives motion to the parts; and for accomplishing this result I have adopted the belt and clutching pulley K L, applied on the shaft L', and provided the forked lever m , connecting-rod v , and foot-piece V, as herein shown and described; and by these means the operator, with his foot applied against lever V, can instantly stop the mechanism when the end of the piece of cloth arrives at the point on the machine where the revolution of the indicating or registering dial should cease.

The beveled-surfaced clutching member L, with the beveled-surfaced belt-pulley member K of the clutching-pulley shown and described, is well adapted in the cloth folding and measuring machine for effecting an instantaneous stopping and starting of the machine, and the combination of the same with the registering-dial mechanism and the folding-board mechanism, greatly improves the operation of the machine, and avoids mistakes as to the amount of cloth measured.

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

1. The cloth folding and measuring machine comprising frame A' with bracket z , shafts D and E with grooved heads $d\ d'$, adapted for supporting a folding-board, C', when the machine is in operation, the key-seat y in shaft D, the gears $a\ n$, $a'\ n'$, the key y' on gear a' , means for sliding the shaft D in and outward and locking it in position, the shaft L', and clutch-pulley, composed of beveled flanged portions K and L, substantially as and for the purpose described.

2. The cloth folding and measuring machine comprising frame A' with bracket z , the re-

5 revolving clamping-shaft E, having a grooved head, d' , gearing $a n$ for operating said shaft, sliding and revolving clamping-shaft D, having a grooved head, d , and a longitudinal groove or key-seat, y , wheel a' , for operating shaft D, having a key, y' , the lever F, with its connecting-collar S, rod r , fastening u , and arc t , and the shaft L', gear n' , and pulley K L, substantially as and for the purpose described.
 10 3. In combination with two shafts, D and E, adapted to support a removable board, C', during the operation of the machine, the measuring-roller C, the registering-dial G and its indicator-hand and its operating mechanism, the shaft L', gearing for operating the shafts D and E, and the clutch-pulley contrivance and its adjuncts, comprising the portion K with beveled flange, and the portion L with a beveled flange, and means for engaging and
 15 20 disengaging the portions L and K, substantially as described.

4. In combination with the frame A' and bracket z of a cloth-folding machine, the re-

25 volving and sliding clamping-shaft D, having a grooved head, the lever F, connected to the shaft D, the mechanism by which the lever is locked in a desired position, the revolving clamping-shaft E, having a grooved head, the gearing for operating the shafts D and E, and the shaft L', substantially as and for the purpose described. 30

5. The combination of the friction clutch-pulley K L, having beveled surfaces, with shaft L', sliding revolving clamping-shaft D, revolving clamping-shaft E, and gears $a n$, $a' n'$, substantially as and for the purpose described. 35

6. The combination of the friction clutch-pulley K L, having beveled surfaces, lever m , rod v , and lever V, with shaft L', revolving and sliding clamping-shaft D, revolving clamping-shaft E, and gearing $a n$, $a' n'$, substantially as and for the purpose described. 40

PHILIP H. FOWLER.

Witnesses:

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