S. D. Tucker. Sheet 1. 3 Sheets.

Paper Cutting Mach.

No. 70,292. Patented Oct. 29, 1867.

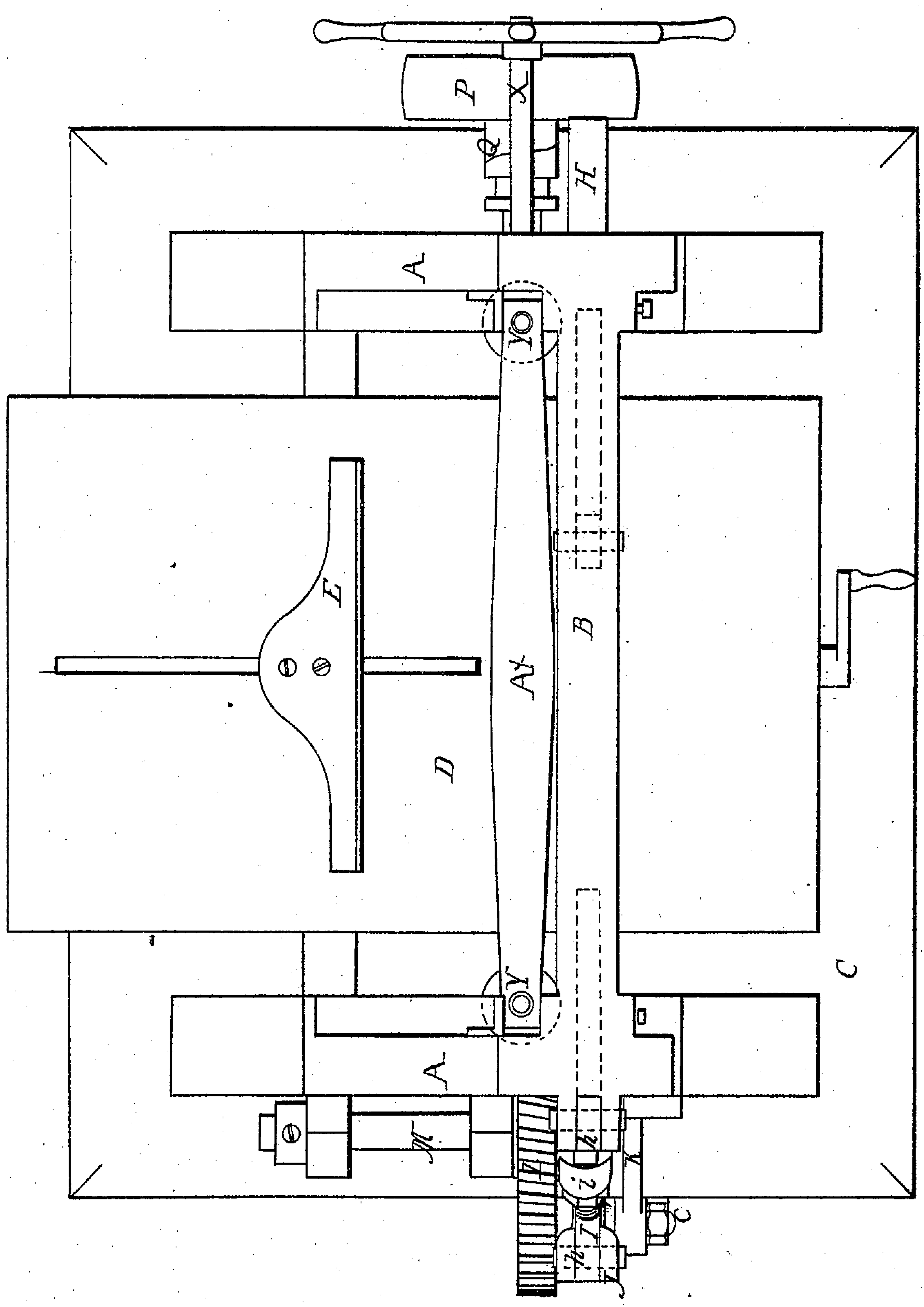

Fig. 1

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S. D. Tucker. Sheet 2. 3 Sheets.

Paper Cutting Mach.

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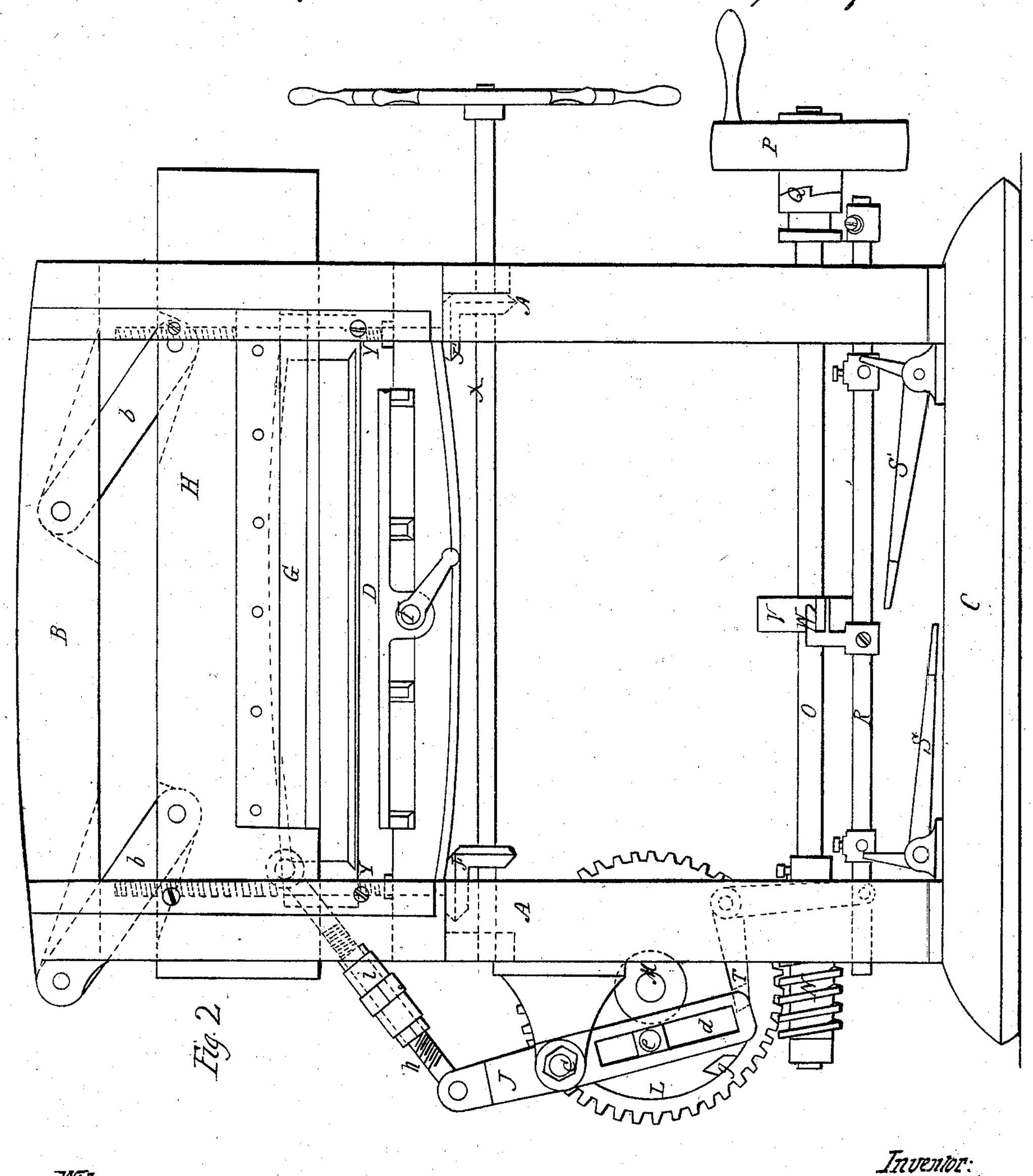

Fig. 2.

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Paper Cutting Mach.

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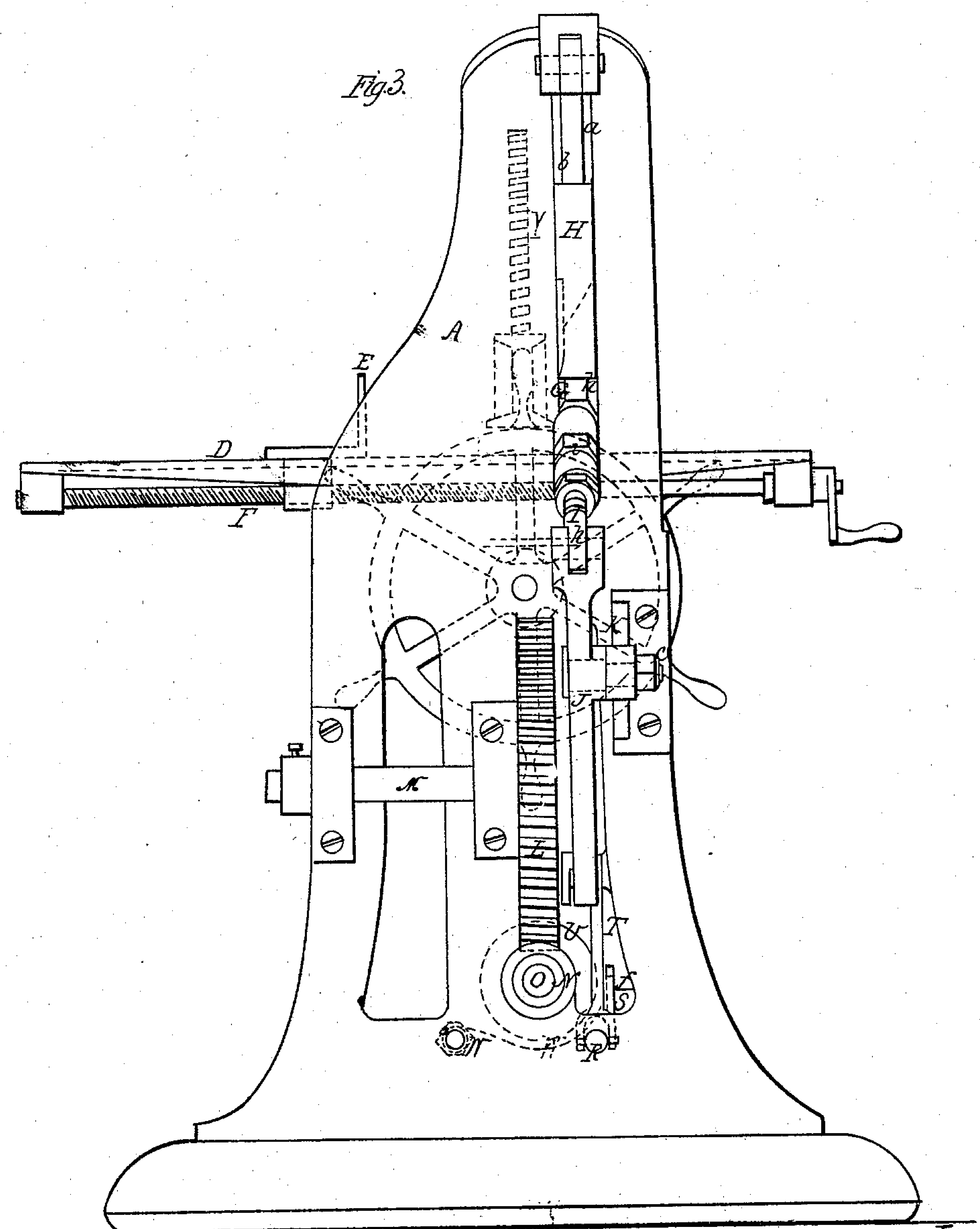
Fig. 3.



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United States Patent Office.

STEPHEN D. TUCKER, OF NEW YORK, N. Y.

Letters Patent No. 70,292, *dated October* 29, 1867.

MACHINE FOR CUTTING PAPER, PASTEBOARD, &c.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, STEPHEN D. TUCKER, of the city, county, and State of New York, have invented a new and improved Machine for Cutting Paper, Pasteboard, and other similar material; and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim, and desire to have secured to me by Letters Patent.

This invention relates to a new and improved machine for cutting paper, pasteboard, or other similar material. The invention, however, is more especially designed for cutting paper for printers' and bookbinders' use, and consists in a novel construction and arrangement of parts, as hereinafter fully shown and described, whereby the paper or other material may be cut very expeditiously, and the working parts of the machine placed under the complete control of the operator. In the accompanying drawings—

Figure 1, Sheet No. 1, represents a plan or top view of my invention.

Figure 2, Sheet No. 2, a front elevation of the same.

Figure 3, Sheet No. 3, a side elevation of the same.

Similar letters of reference indicate like parts.

A A represent two uprights or side pieces, the upper ends of which are connected by a cross-bar, B, the lower ends of the side pieces being attached to a suitable base-plate, C. D is a table, firmly secured between the uprights A A, and upon which the material to be cut is placed, said table having a gauge, E, upon it which is adjusted by a screw, F. The table and adjustable gauge, however, are not new, having been previously used in similar machines. G is a knife, which is secured in a horizontal bar, H, the ends of which pass through vertical slots *a a* in the upper parts of the uprights A A. This knife-bar is suspended by parallel bars *b b* from the cross-bar B at the upper ends of the uprights A A, as shown clearly in fig. 2. To one end of the bar H a pitman, I, is attached, the lower end of the latter being connected to the upper end of a lever, J, the fulcrum-pin *c* of which passes through a bracket, K, attached to one of the uprights. The lower part of this lever below the fulcrum-pin is slotted longitudinally, as shown at *d*, in fig. 2, and in this slot *d* a wrist-pin, *e*, on a worm-wheel, L, works, the worm-wheel being on one end of a shaft, M, the bearings of which are secured by one of the uprights A. N is a screw, which gears into the worm-wheel L, and gives motion to the same, the worm-wheel being on one end of a horizontal driving-shaft, O, in the lower parts of the uprights A A, the driving-pulley P being placed loosely on the opposite end of the driving-shaft, and connected with the latter so as to rotate the same by means of a clutch, Q, which is operated by a sliding-rod, R, the latter being actuated by the operator at any time, when desired, by means of treadles S S′, which operate against pins *f f* projecting from the rod or actuated automatically from the worm-wheel L, which has a projection, *g*, on one side to come in contact with a knee or bent lever, T, the lower end of which is connected with rod R. On the driving-shaft O, at about its centre, there is keyed a wheel, U, against which a spring, V, bears, said spring being attached to a shaft or rod, W′, at the rear of the driving-shaft O. This spring V, when allowed to press against the wheel U, serves as a brake, and its action against the wheel U is governed by the sliding-rod R, which has a hook-shaped arm, W, upon it to act upon the free or disengaged end of the spring or brake V, the arm W, when the pulley P is connected with the driving-shaft O so as to operate the same, being over the free or disengaged end of the spring or brake V, and keeping the latter down from the wheel U, and when the pulley P is disconnected from the shaft O, the arm W is free or off from the free or disengaged end of the spring or brake, and the latter is in contact with the wheel U.

From the above description it will be seen that when the pulley P is connected with the shaft O, a rising and falling oblique movement will be given the knife G through the medium of the screw N, worm-wheel L, lever J, and pitman I, and that the knife will be drawn down to its work with a comparatively slow motion, in consequence of the wrist-pin *e* working in the outer part of the slot in the lever J, when accomplishing this part of its work, and that the knife will be thrown upward with a comparatively rapid movement in consequence of the wrist-pin *e* working in the inner part of the slot in lever J when performing that work. By this means power is obtained when the knife is at work, and power required, and power sacrificed and speed obtained when

the knife is thrown up, and power not required. The projection *g* on the worm-wheel L is placed at such a point that it will come in contact with the knee-lever T, and actuate the rod R so as to disconnect the pulley P from the shaft O at the moment the knife G reaches its culminating point, so that the machine will be stopped when the knife is fully elevated, and admit of the operator adjusting the paper on the table D, the operator starting the machine after the paper is adjusted by pressing down the treadle S. Each time the pulley P is disconnected from the shaft O, the arm W passes off from the spring or brake V, and prevents the shaft O from turning under its momentum. The pitman I is composed of two parts *h h*, connected by a right-and-left nut or screw-collar, *i*, which admits of the pitman being lengthened or shortened, as desired, in order to have the knife descend to the required point. The machine may be stopped at any point in the movement of the knife G by pressing down the treadle S′. I would remark that a clamp, A×, is employed for holding the paper down upon the table, and is adjusted higher or lower by means of bevel-gears *j*, which form a connection between a horizontal shaft, X, and upright screws, Y Y, which work in internal screws in the clamp. This clamp is not new, however, it having been used in similar machines.

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

1. Operating the knife G through the medium of the screw N, worm-wheel L, lever J, provided with a slot, *d*, to receive the wrist-pin *e* of wheel L and the pitman I, all arranged to bring the knife slowly down while at work and throw it up with a comparatively quick movement, substantially as shown and described.

2. Operating the clutch Q to connect the driving-pulley P with shaft O, and disconnect it therefrom by means of the rod R actuated automatically from the worm-wheel L, substantially as set forth.

3. The treadles S S′, arranged in connection with the slide-rod R to admit of the pulley P being connected with the shaft O at the will of the operator, substantially as described.

4. The spring or brake V, operated automatically from the rod R, substantially as set forth.

STEPHEN D. TUCKER.

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