

W. W. Smith. Sheet 1. 2. Sheets.
Printing Press.

N^o 2439.

Patented Feb. 1842.

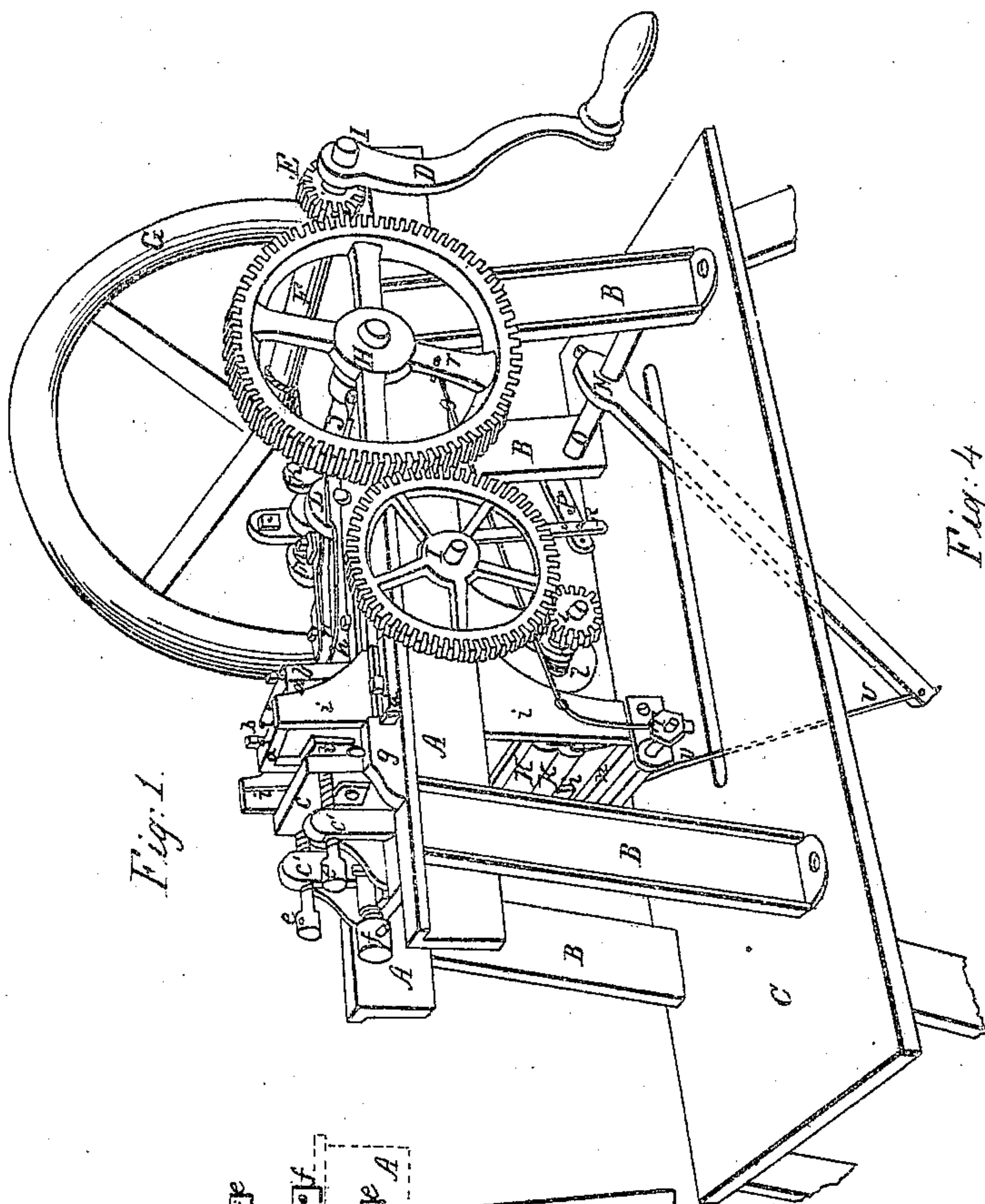


Fig. 1.

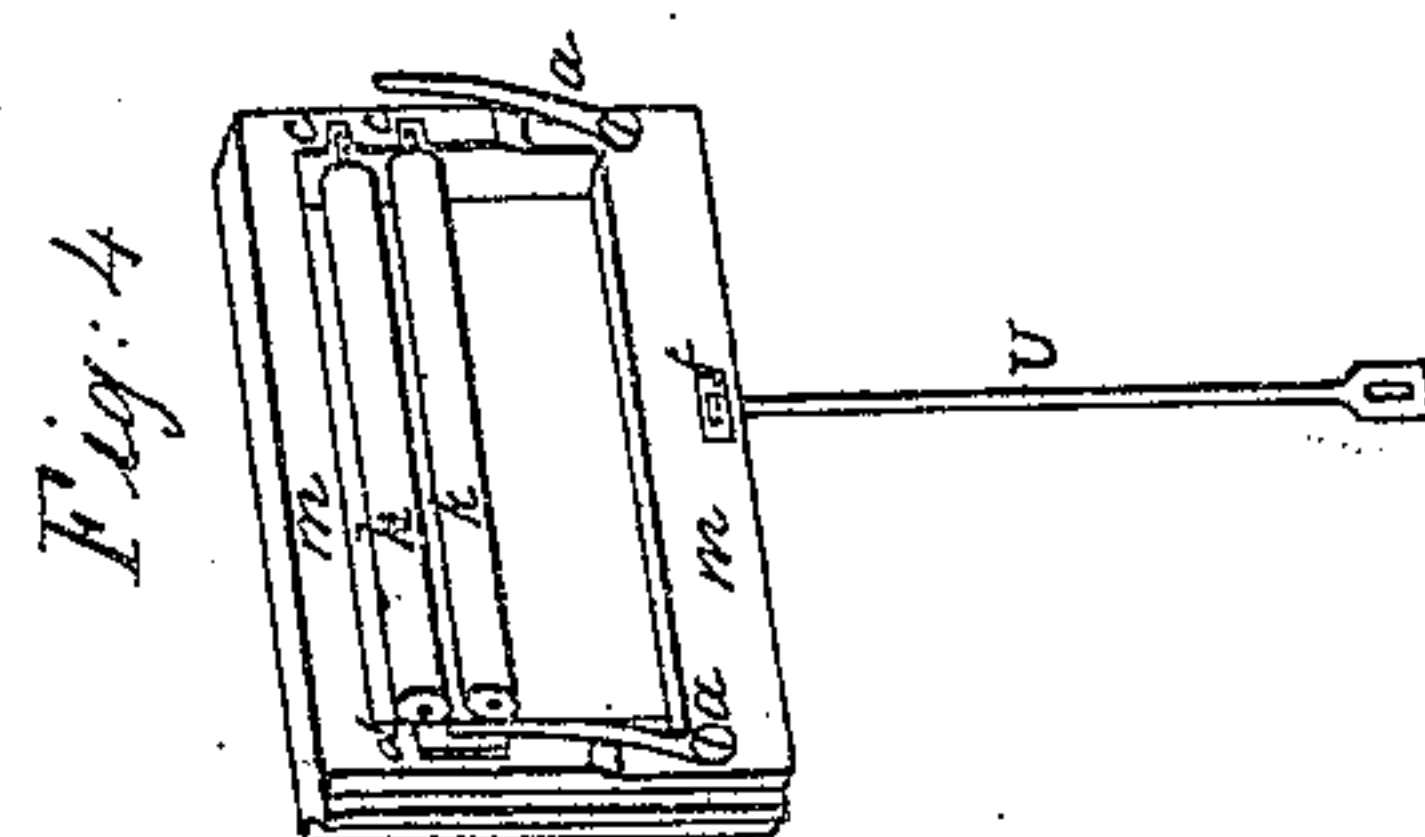


Fig: 4

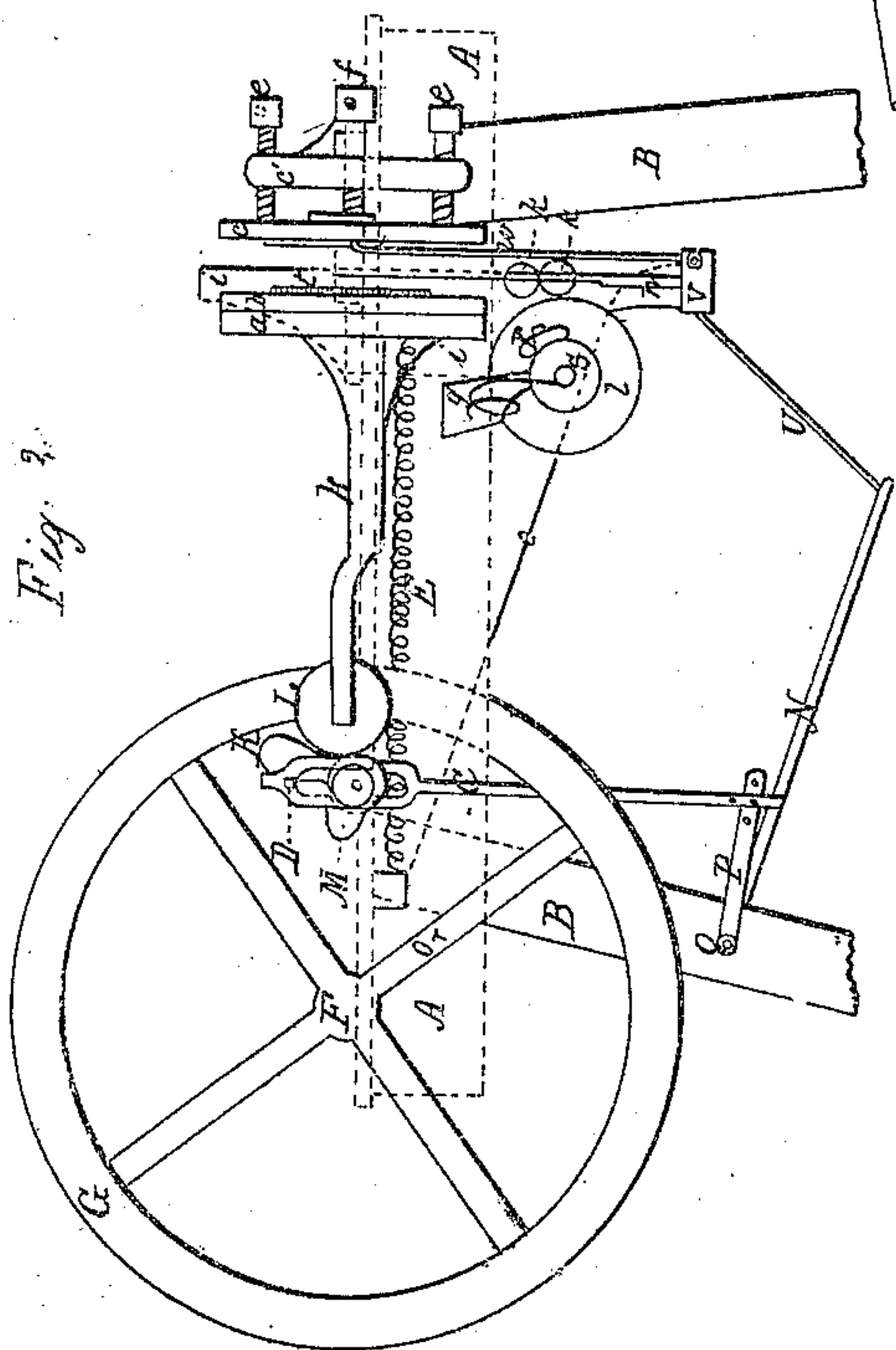


Fig. 2.

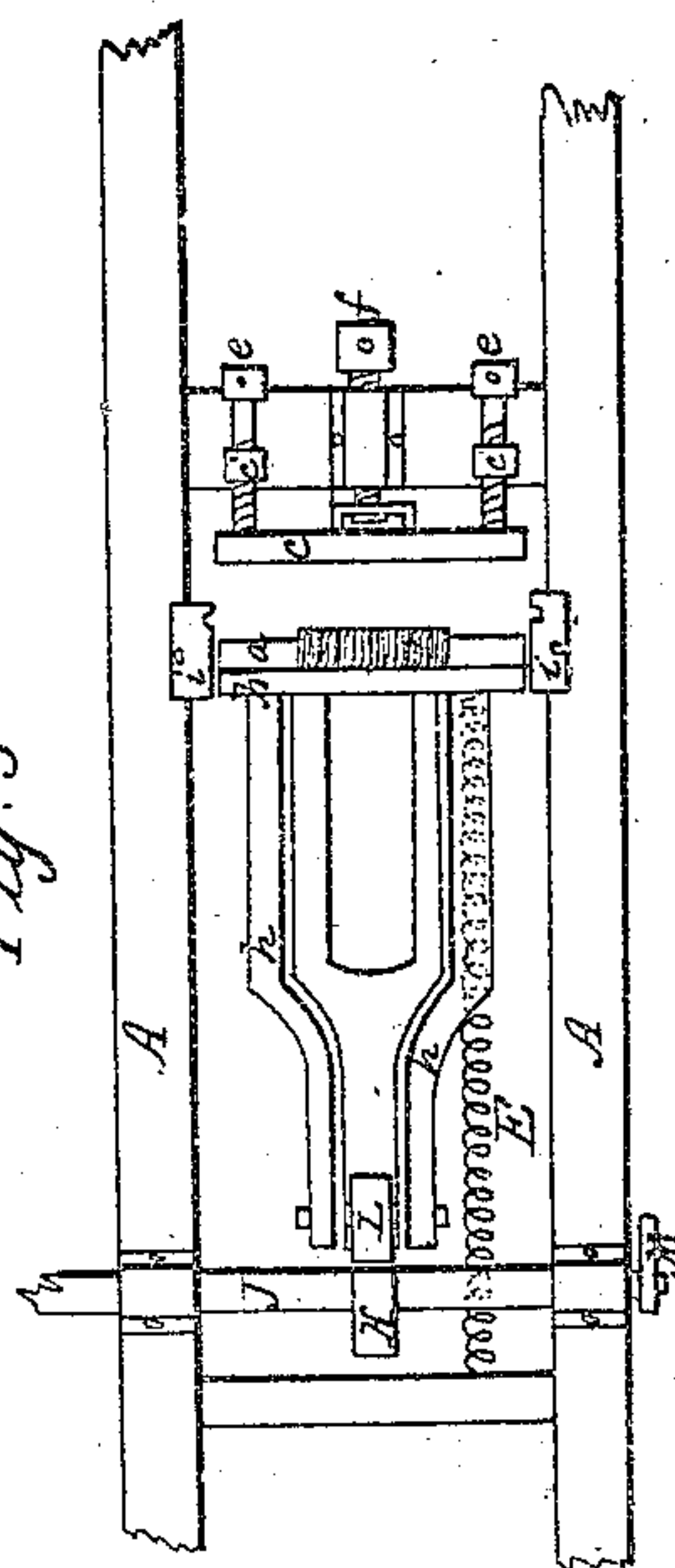


Fig: 3

W. W. Smith. Sheet 2. of 2 Sheets.
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Fig: 5

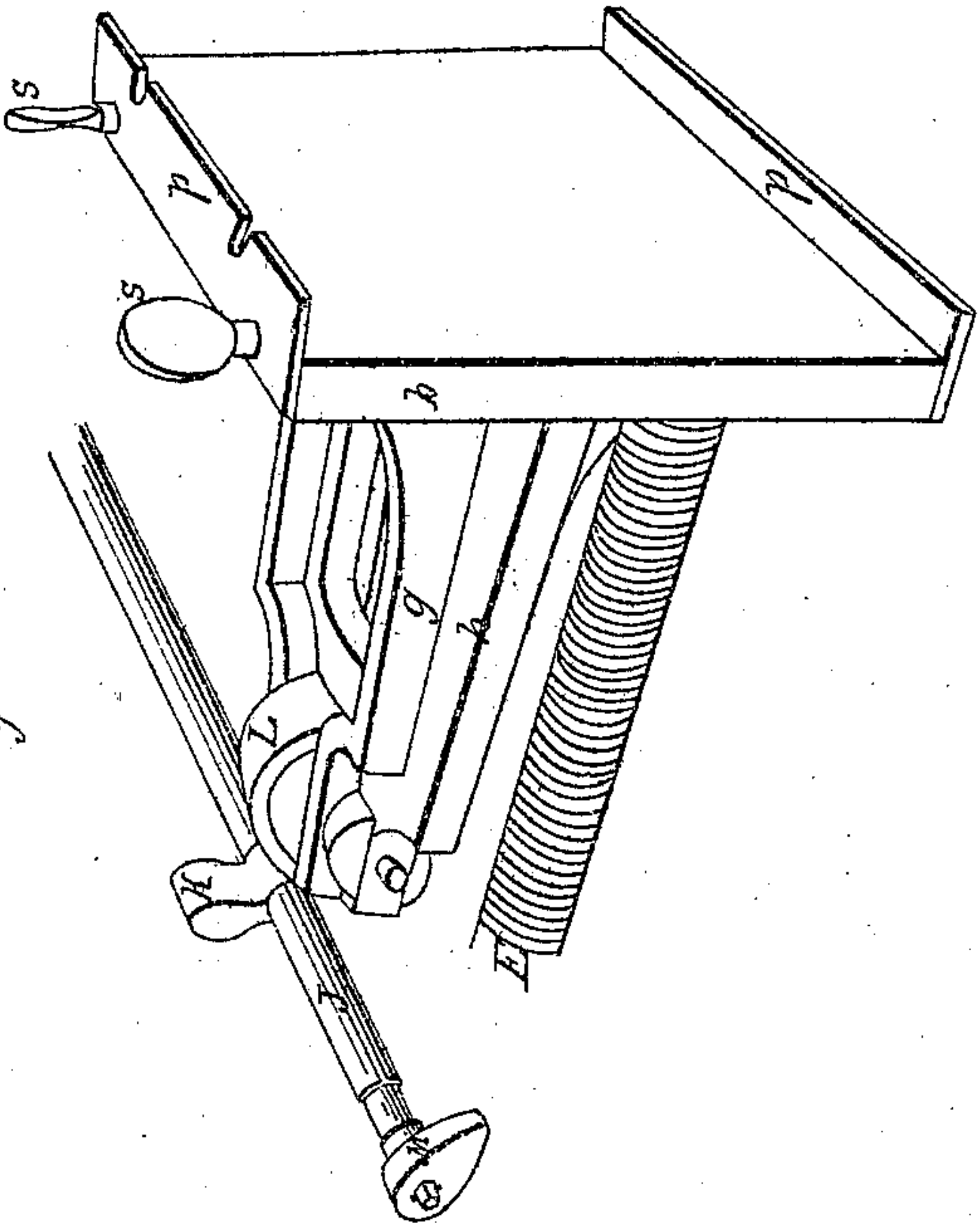


Fig: 6

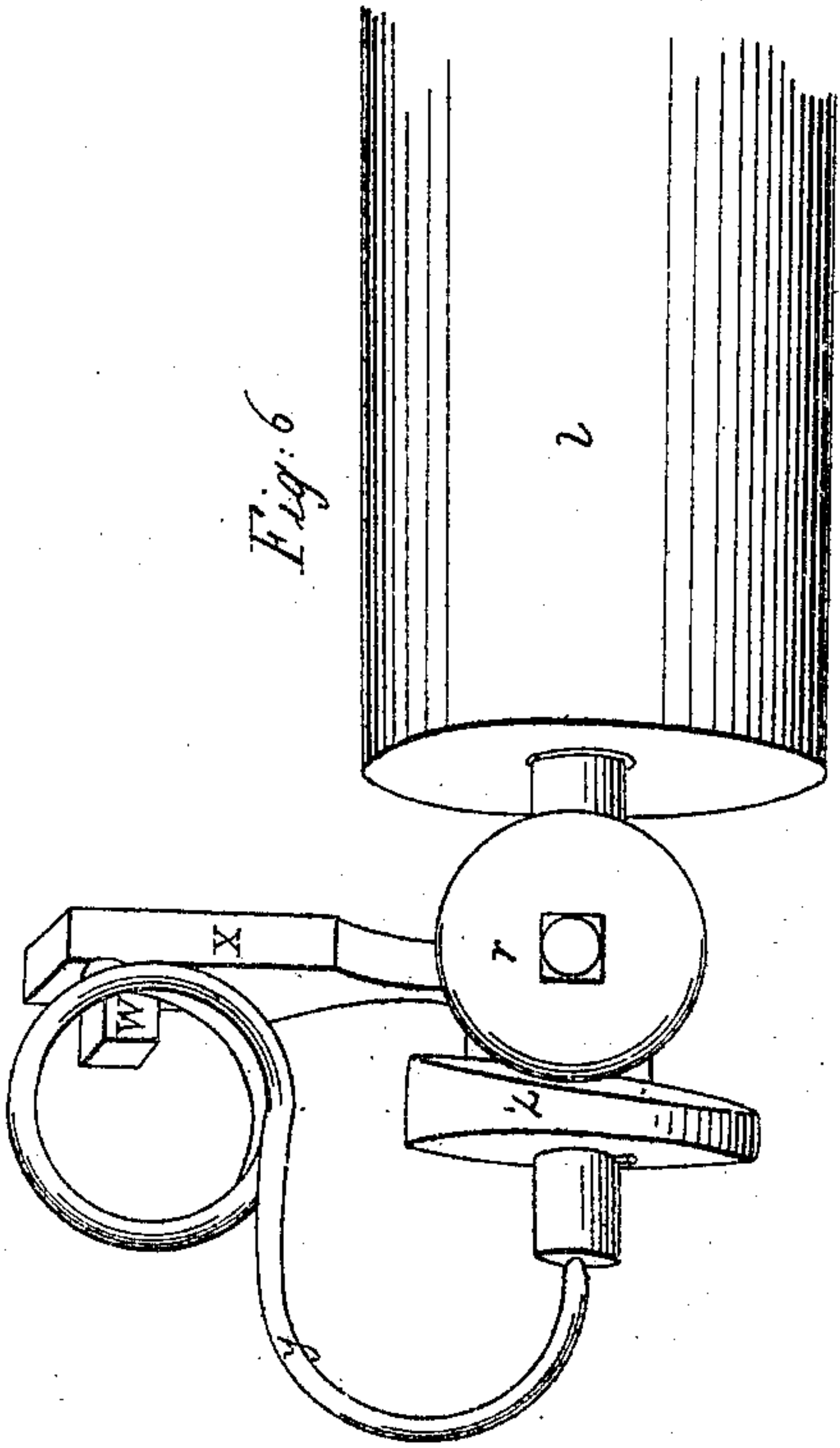


Fig: 8

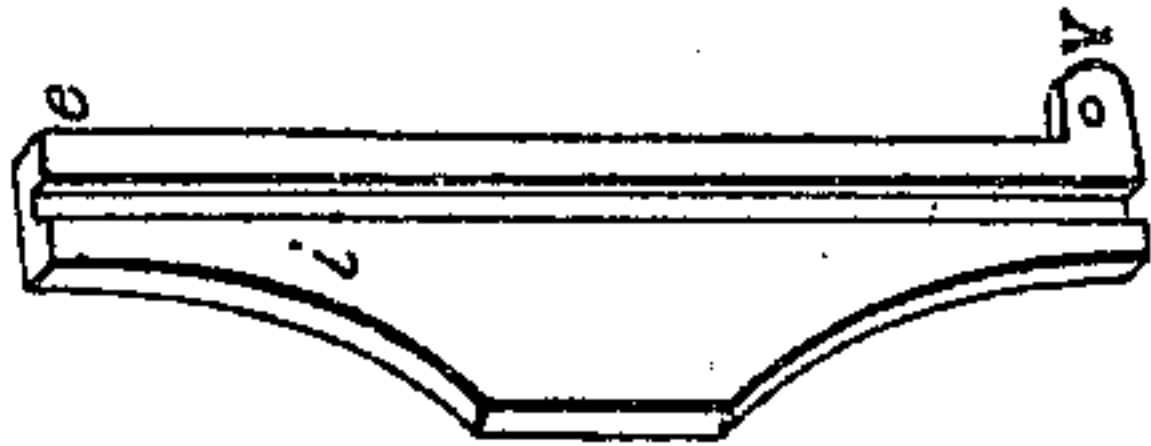
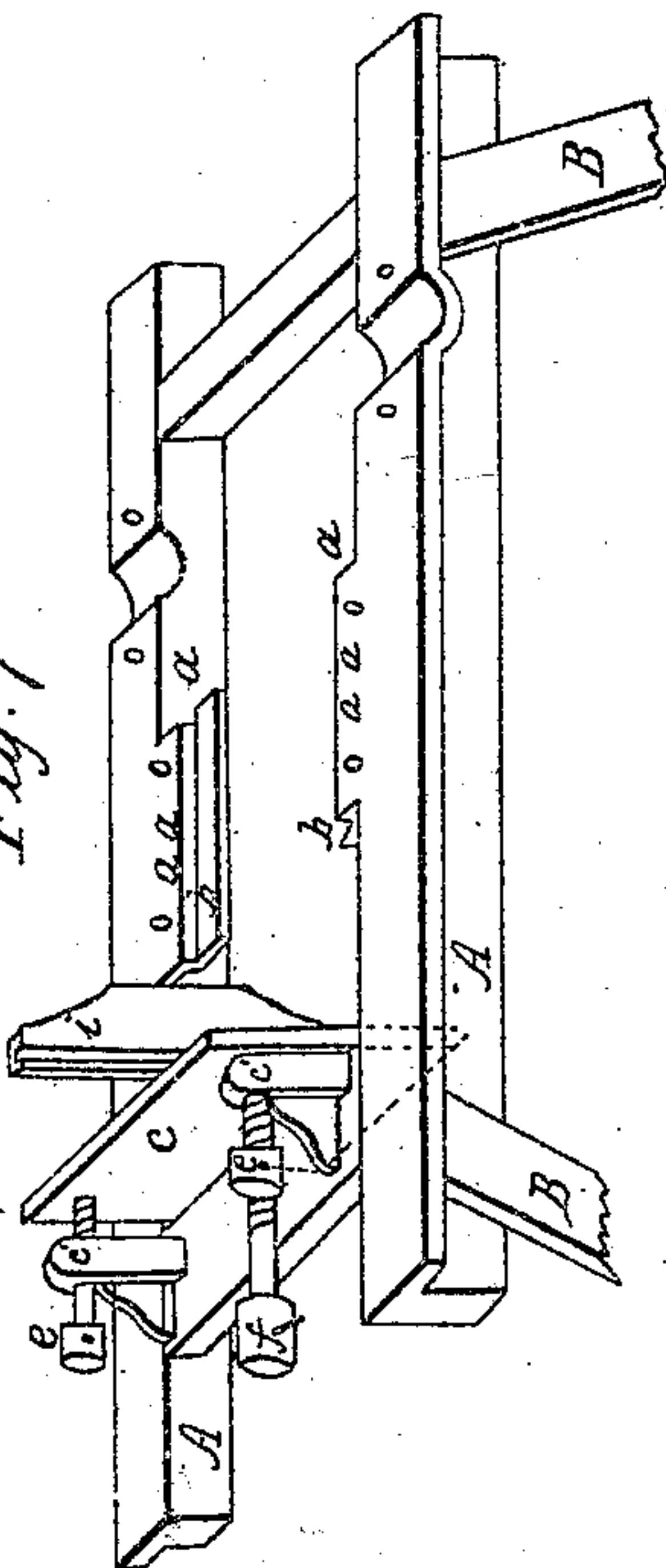


Fig: 7



UNITED STATES PATENT OFFICE.

WILLIAM W. SMITH, OF NEW YORK, N. Y.

IMPROVEMENT IN CONSTRUCTION OF PRINTING-PRESSES.

Specification forming part of Letters Patent No. 2,439, dated February 1, 1842.

To all whom it may concern:

Be it known that I, WILLIAM W. SMITH, of the city, county, and State of New York, have invented a new and Improved Printing-Press for Cards, Labels, and other Printing for which it may be found useful; and I do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a perspective view, and the other figures such detached views of the several parts as are considered necessary and sufficient to give a clear and full understanding of the whole.

The press is set upon an oblong frame A A, Figs. 1 and 7, near one end of which is the main shaft lying across F, on the front end of which is the crank and handle D, by which the machine is operated. On the back end of the main shaft is a fly-wheel G to equalize the resistance given to the operating power, and on the front end of the same shaft, back of the crank but outside of the frame, is a pinion E, Fig. 1, which operates on the main cog-wheel H, Fig. 1. On the center of the shaft on which is said main cog-wheel, is the cam K, Figs. 1 and 5.

On the inside of the frame, near the top, are two projections *a a*, Fig. 7, each of which has a groove on the inside *b b*, running lengthwise of the frame. A frame of cast-iron *g*, Fig. 5, has flanges or ribs on its sides, one of which is shown *h*, the other being on the opposite side, which flanges or ribs slide in said grooves, which frame I denominate the "bed-frame."

On the forward end of the bed-frame is a square plate *b*, Figs. 1 and 5, firmly attached and standing vertically or at right angles therewith and extending as far above the bed-frame as below it. This I term the "bed-plate." On the top and bottom of the bed-plate are plates or flanges *p p*, projecting from the bed-plate sufficiently to retain and support the chase with the form of types with screws *s s* to confine the same in its place.

On the back end of the bed-frame is a friction-roller L, Figs. 1 and 5, against which the before-mentioned cam, operating as the shaft revolves, forces the frame with the bed-plate and types against the platen to make the impression, or, as technically called "to effect

the pull," which frame, &c., is brought back as the cam passes by by a spiral spring E underneath, as in Fig. 5.

Immediately forward of the grooved projections on the inside of the frame are two grooved upright pieces, one on each inside of the frame, which pieces are marked *i i* in Fig. 1 and in Fig. 7. One only is shown, (also marked *i*,) the other being omitted in order to show more distinctly the situation and the grooves on the inside. These pieces are fastened to the frame by screws.

Fig. 8 shows a perspective view of one of those detached pieces, (also marked *i*.) In the groove of these the frame containing the ink-rollers slides up and down, which frame is shown edgewise, exhibiting the ends of the rollers, (marked *m* in Fig. 2,) and a sectional view of the same, (also marked *m* in Fig. 4, which shows the rollers *k k*.)

Back or rather to the right of the ink-rollers and below the bed-plate and chase is the distributing-roller, the end of which is marked *l* in Fig. 2, so situated as just to come in contact with the ink-rollers in their passage up and down before and after they have inked the types, which roller, having a pinion on the front end of its axis S, Figs. 1 and 2, is operated by an intermediate wheel I from the main cog-wheel H, while at the same time it is moved back and forth endwise by the same cam Z, Fig. 6. The shaft of the distributing-roller being made so as to admit of a lateral motion, operating in conjunction with the coiled spring Y, Fig. 6, it is carried back and forth a sufficient distance to equalize the distribution of the ink, which is taken up from a suitable fountain below, which it is not necessary to show, as it embraces no novelty. To prevent friction, the side cam Z operates against a friction-wheel *r*, Fig. 6. Immediately forward of the grooves containing the ink-rollers is the tympan-plate *c*, Figs. 1, 2, 3, and 7, which is sustained as follows: Attached to the cross-girt of the main frame are two puppets, (marked thus, *c c*, in Fig. 1; seen also in the vertical view, Fig. 3.) These are cast with the frame and make part of the same. They rise above said girt, as seen in Fig. 1, and also descend below it. Through these puppets pass four screws against the four corners of said plate, two of which, *e e*, are seen in Figs. 1, 2, 3, and 7. The other

two, being below, are hid. On the back of said plate are proper projections which rest upon the edge of the girt, while a screw in the center *f*, Figs. 1, 2, 3, and 7, serves to bind it in its place and regulate it in its situation to adjust the pull. The ink-rollers are at the proper time thus raised and lowered.

On the back end of the main or cam shaft *H* is the cam *M*. (Seen in Fig. 1, but more at large in Fig. 5.) An upright connecting-rod or shackle-bar *C*, Fig. 2, has a slot in the upper end through which the end of the said main shaft passes, and the said cam as it revolves, operating against a pin *D* in said connecting-rod immediately above the slot, raises it at a proper time. The lower end of this rod is connected to the end of a short lever *P*, Figs. 1 and 2. The other end of said lever is firmly attached to a rod which passes through the legs of the frame, serving as a fulcrum. Attached also firmly to said rod in the center between the legs of the frame is another lever *N*, Figs. 1 and 2, which communicates the motion received from said cam by another connecting-rod *U*, Figs. 1, 2, and 4, to the said roller-frame, to the bottom of which said rod *U*, Fig. 4, is connected. Immediately after the raising and falling of the inking-rollers, as above described, the bed-plate, with the types, is pressed forward by the main cam *L*, as already stated, thereby making the impression.

At or near the bottom of the grooved pieces in which the ink-rollers slide up and down on the outside of each is fastened, by screws or otherwise, the pieces, one of which is seen, (marked *V*, Fig. 1,) the other being hid. Through these pieces passes the shaft *n*, Fig. 1, on the front end of which is the nut *T*. To this nut is attached the bent rod *O*, Figs. 1 and 2, which pass between the main cog-wheel and the frame *A*, being supported by a small spiral spring of wire. A pin on the back side of one of the arms of said cog-wheel at each revolution depresses the end of said wire or rod *O*, and a small stud or finger *W*, Fig. 2,

which rises from the middle of said shaft *n*, on the top of which the card rests while printing, is of course moved by the depression of said rod *O*, and the card is dropped.

The vertical edges of the card when dropped in are guided and prevented from lateral motion by two slides, which are not described, as they may be of any form to suit convenience.

Having thus fully described the nature and operation of my press for printing cards, labels, and other similar articles, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The manner in which I have combined the apparatus for working the inking-rollers with that for giving the impression, the two co-operating by the particular arrangement of the respective parts—that is to say, by placing the cam *M*, by which the inking-rollers are operated, on the end of the shaft *J*, on which the eccentric *K* is placed, by which the bed-plate is forced forward, so as to make pull, the whole being constructed and operating substantially as herein set forth.

I do not claim the operating of the inking-rollers by means of a cam and levers, but limit my claim, as above specified, to the particular arrangement by which the combined operation of the inking apparatus and that for taking the impression are effected, as set forth.

2. The particular manner of giving a longitudinal vibration to the distributing-rollers by the combined operation of the spring *Y*, the cam or wheel *Z*, with its inclined face, and the friction-roller *r*, as described.

I am aware that there is not anything new in the giving an end-play or lateral motion to the distributing-roller, this having been before effected in various ways, and I therefore limit my claim to the special combination by which I effect this object.

WM. W. SMITH.

Witnesses:

F. W. MANN,
C. S. HEARTT.