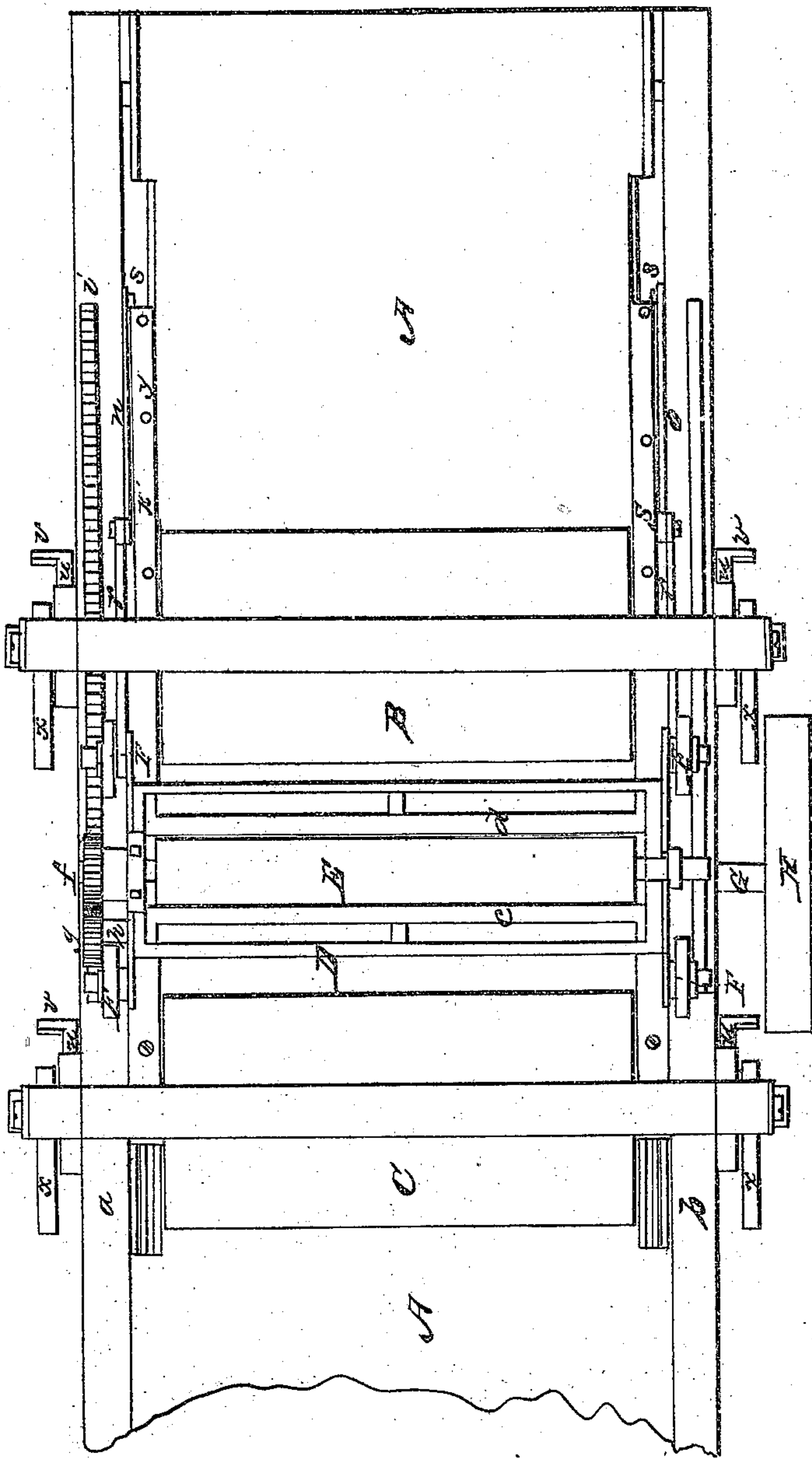


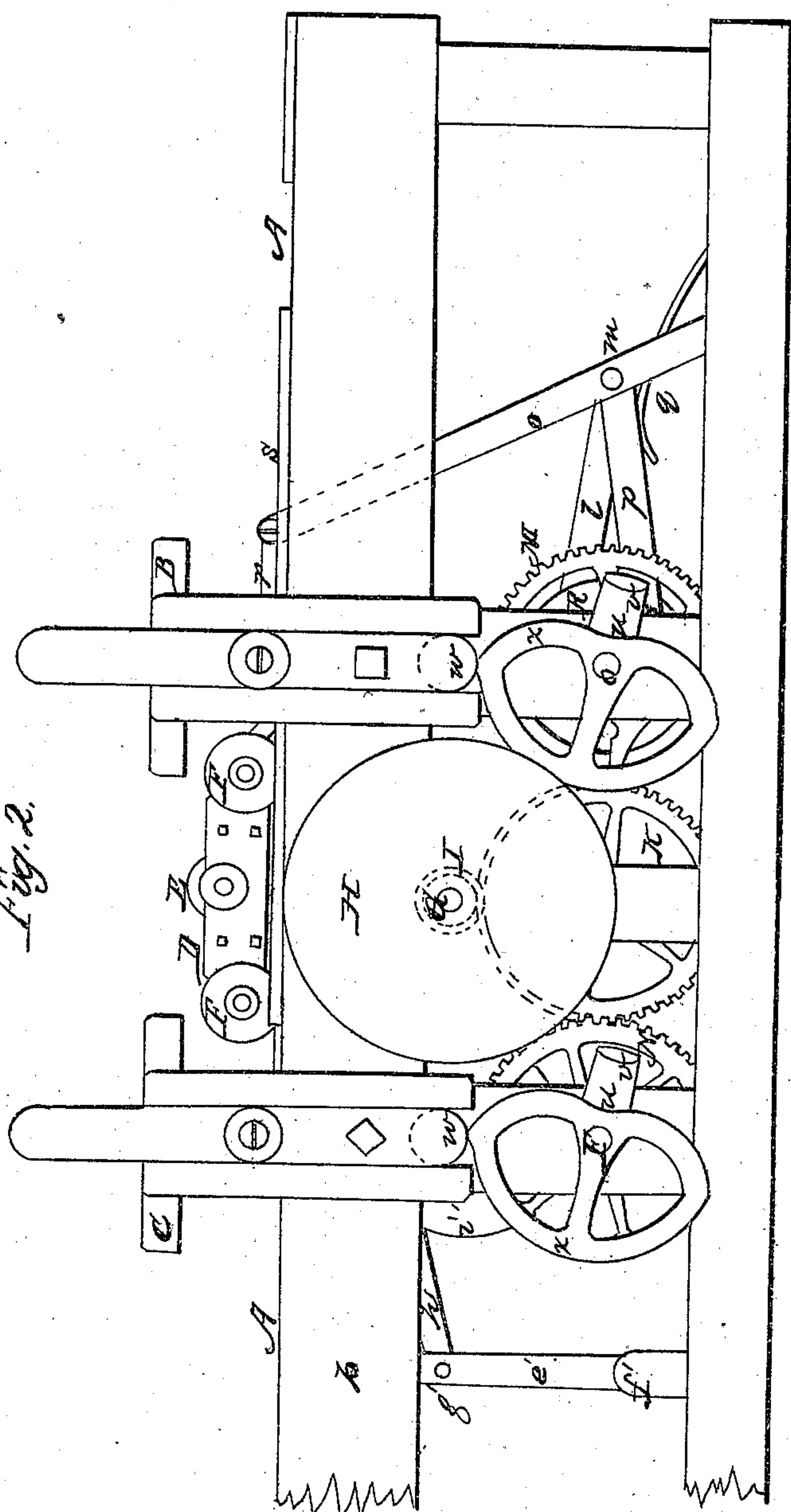
S. Savage. Sheet 1 of 5 Sheets.
Printing Floor Cloths &c.
No 8778. Patented Mar 2. 1852.

Fig. 1.

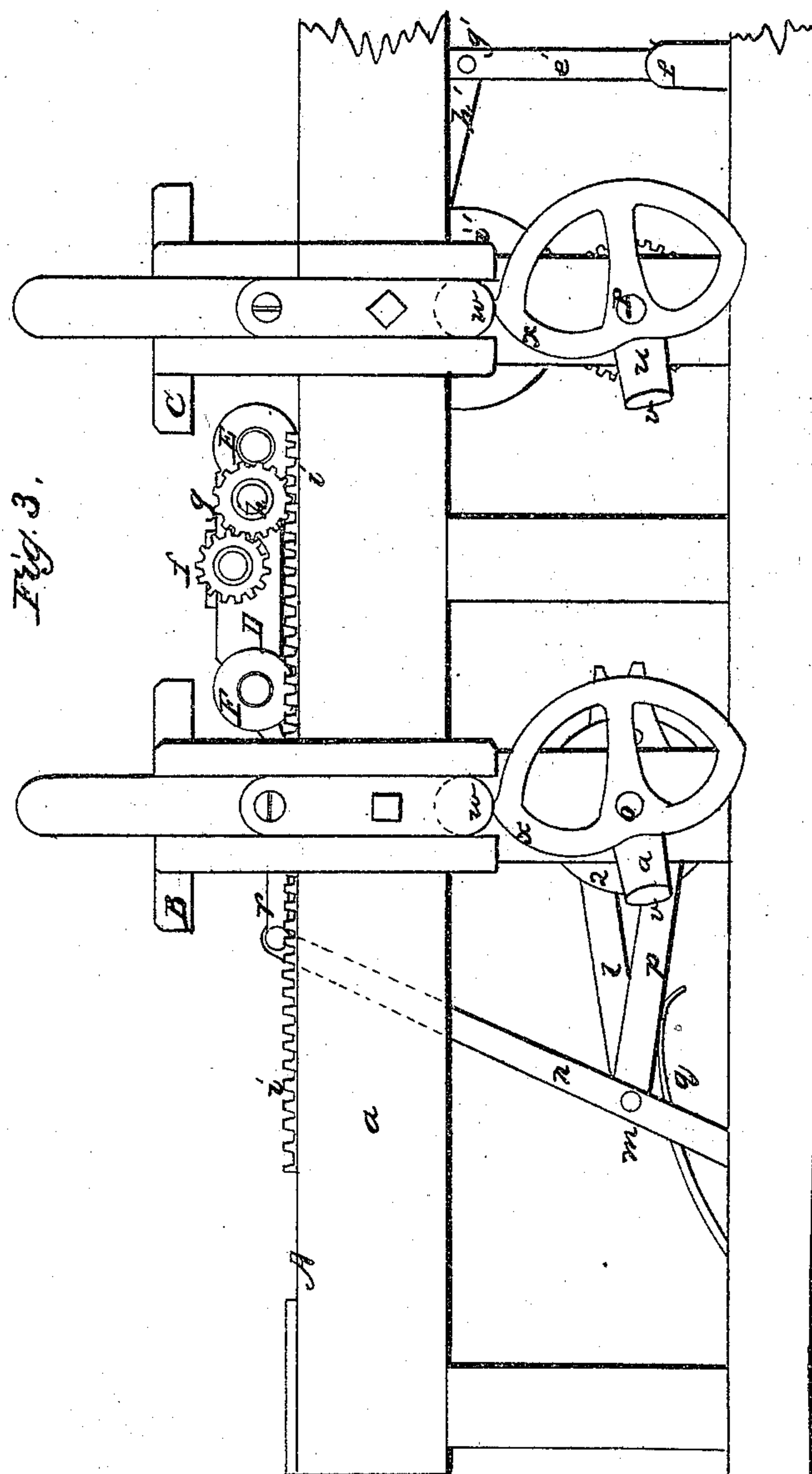


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Fig. 2.



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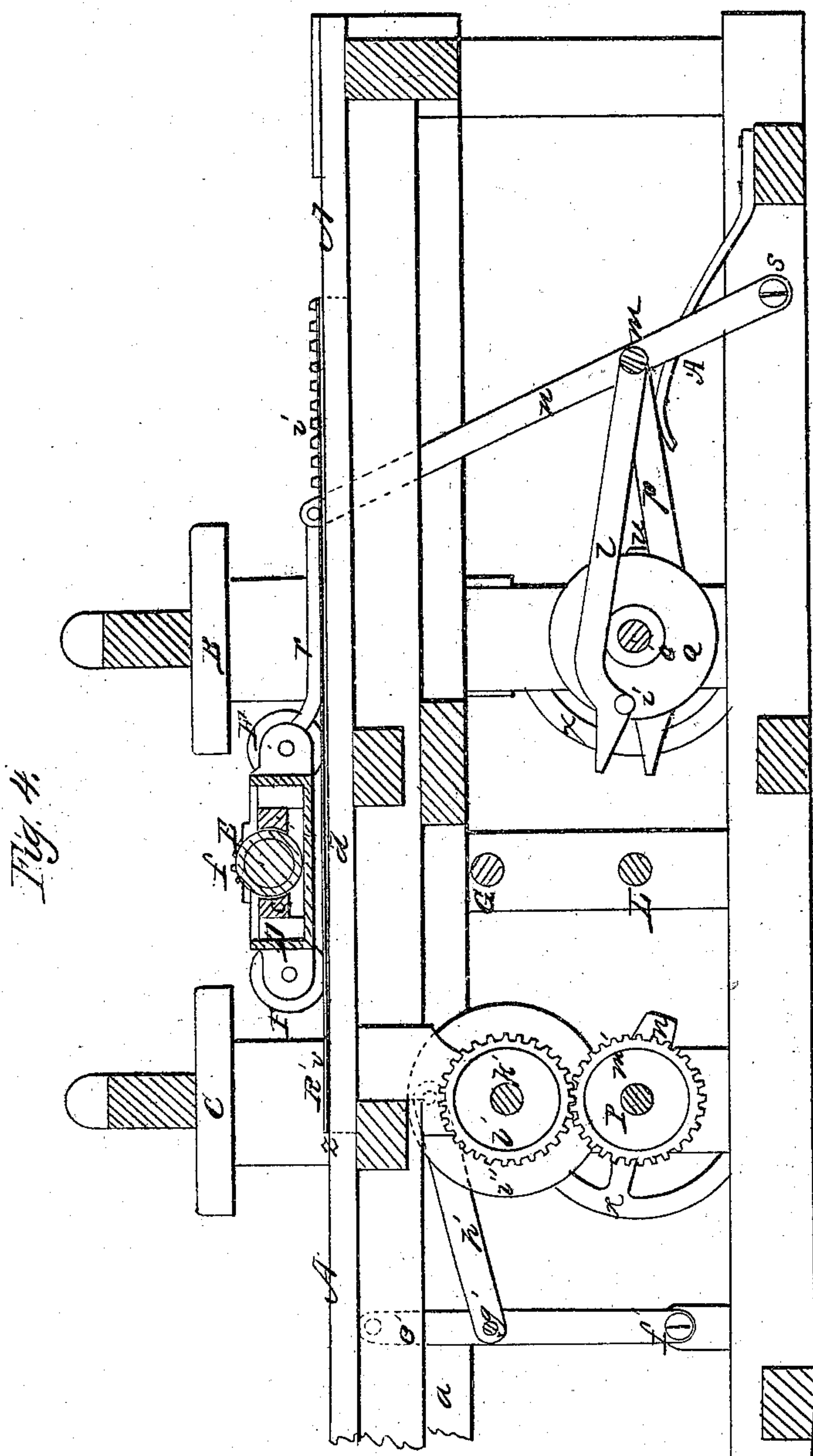


S. Savage. Sheet 4. 7 Sheets.

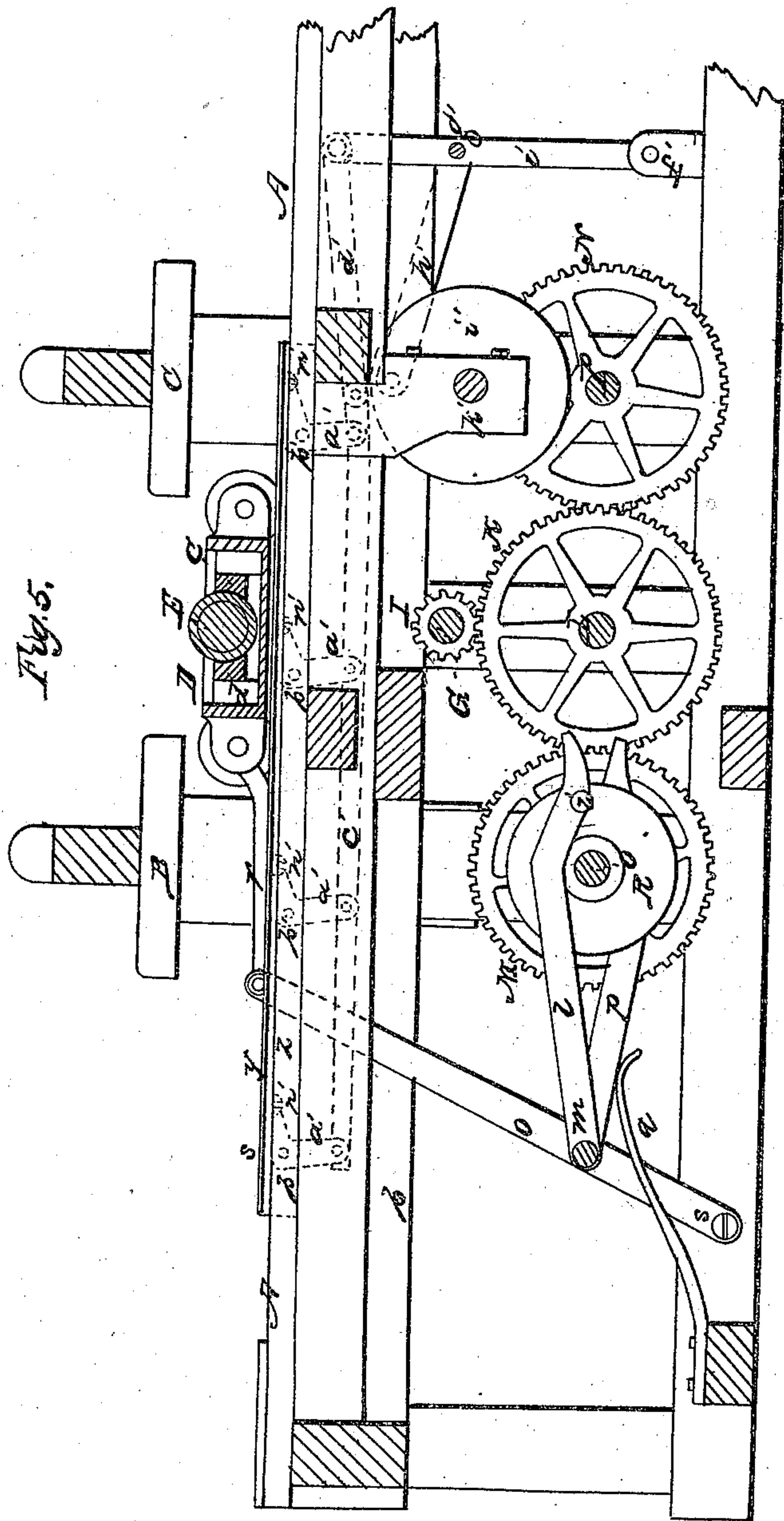
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N^o 8778.

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S. Savage. Sheet 6. of 7 Sheets.
Printing Floor Cloth &c.
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Fig. 10.

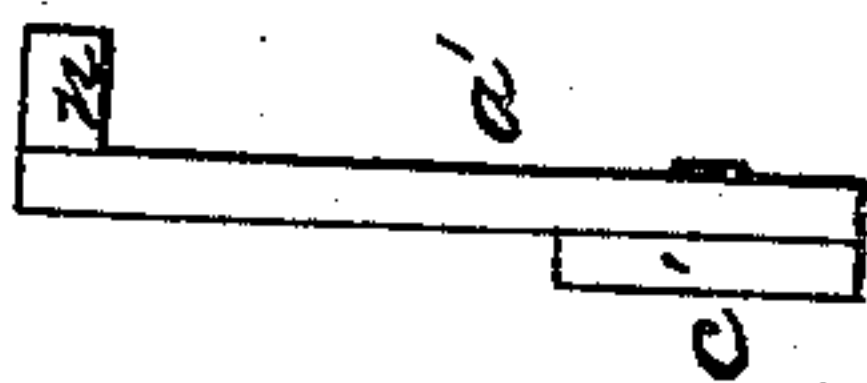


Fig. 9.

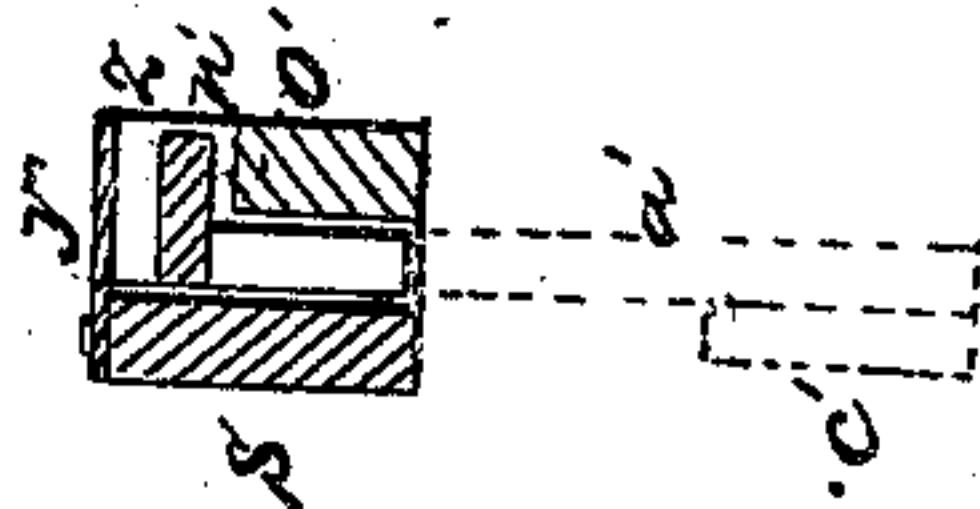


Fig. 8.

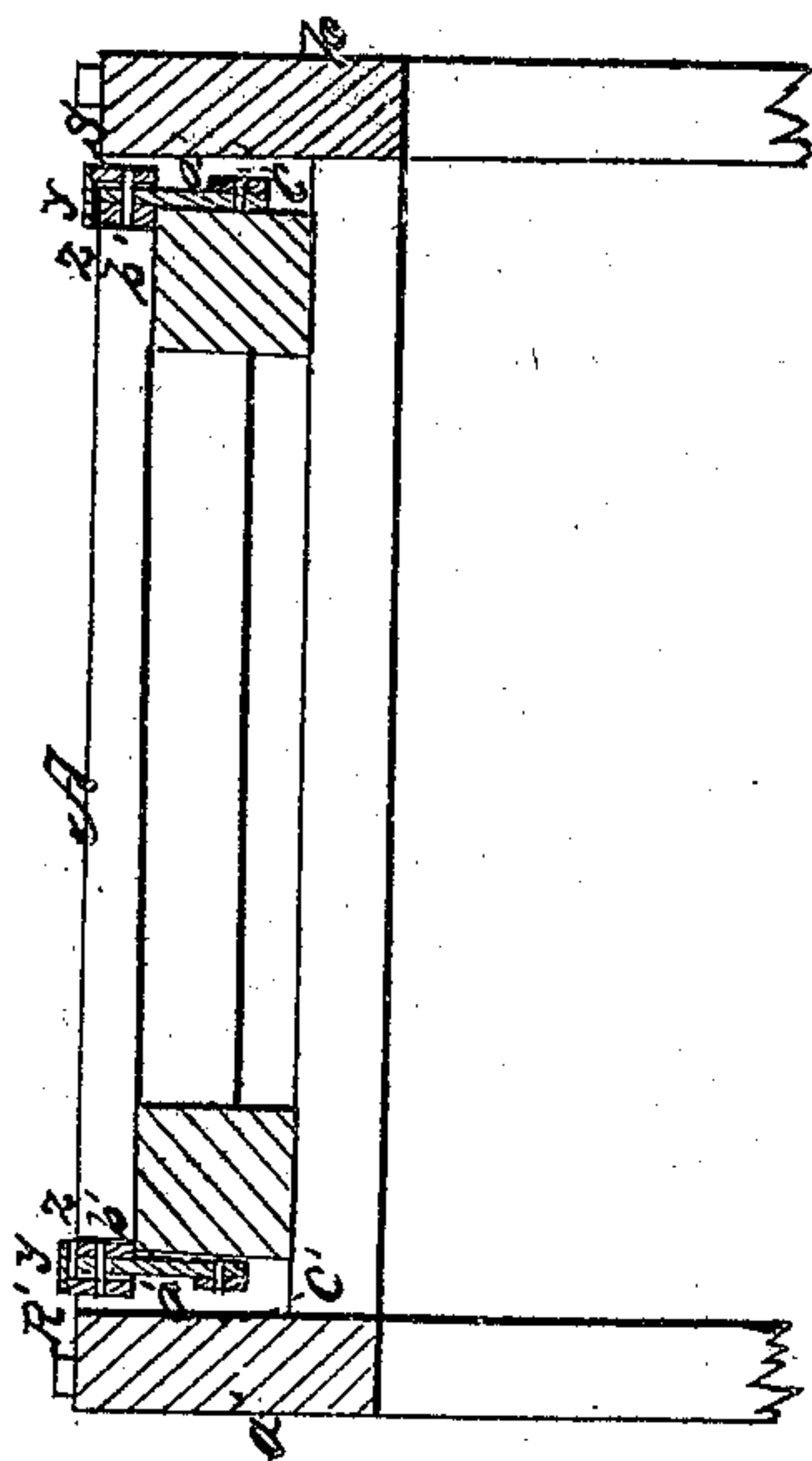
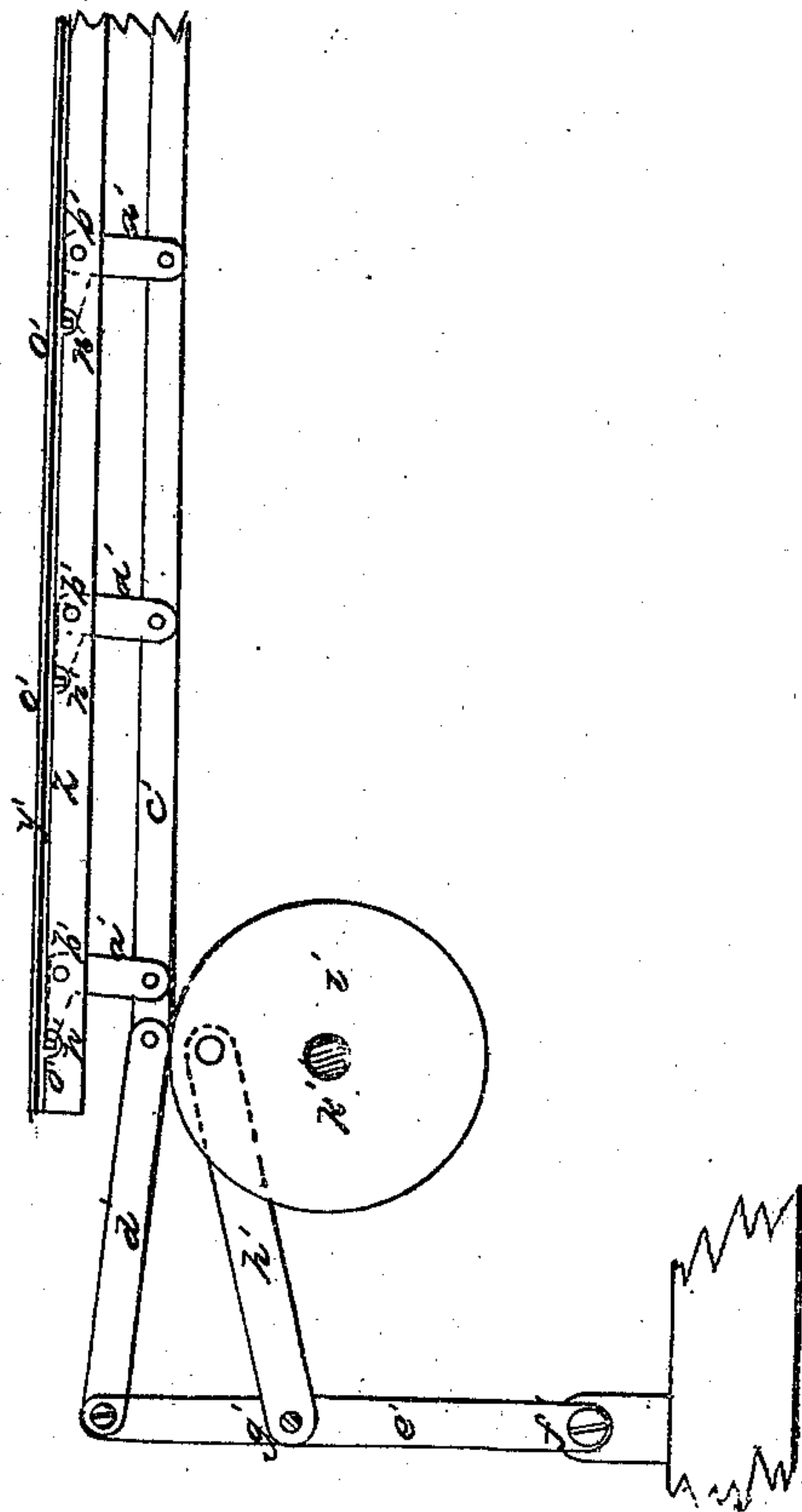


Fig. 6.

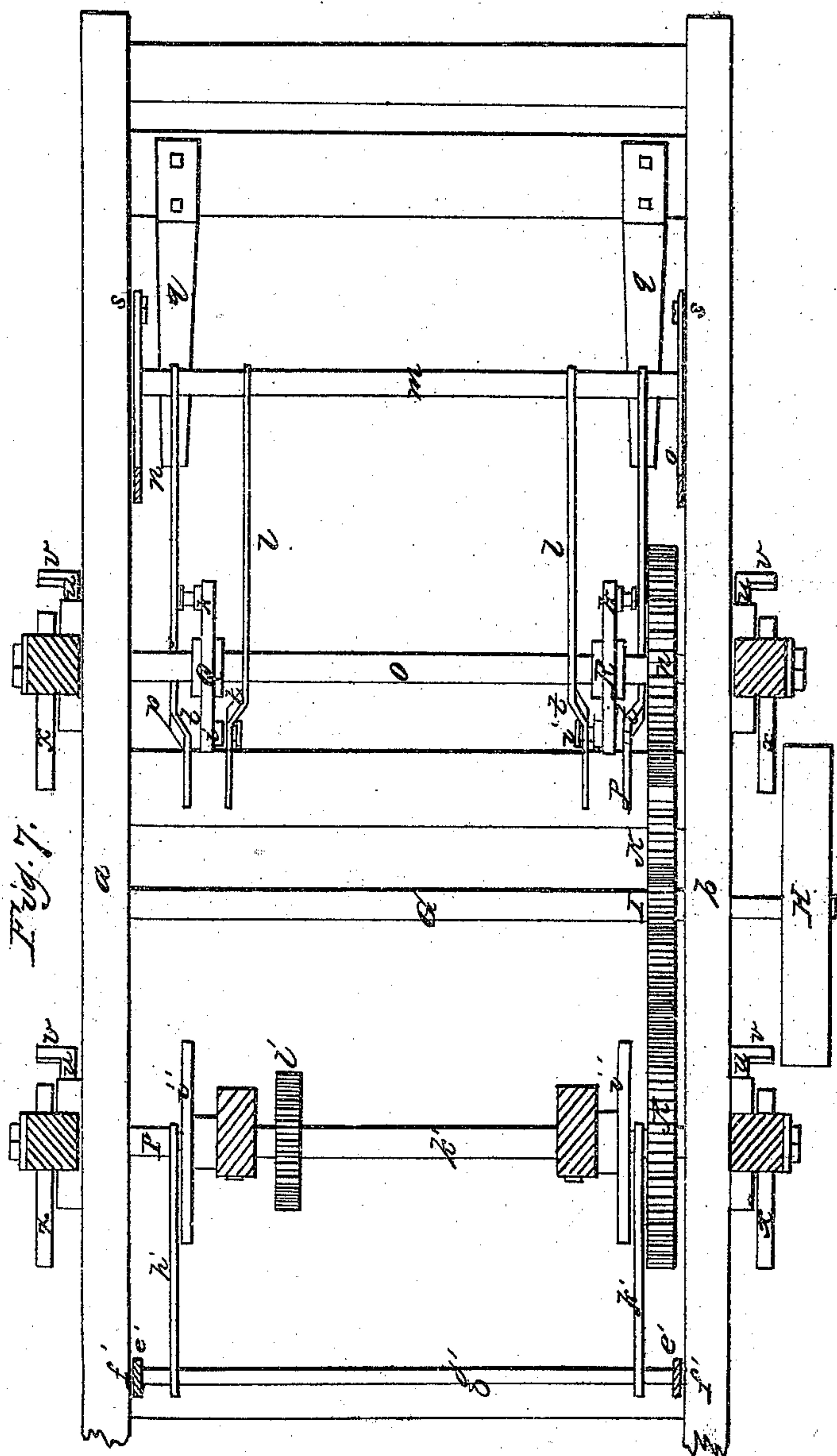


S. Savage. Sheet 7 of 7 Sheets.

Printing Floor Cloths &c.

N^o 8778.

Patented Mar. 2. 1852.



UNITED STATES PATENT OFFICE.

SIMEON SAVAGE, OF LOWELL, MASSACHUSETTS.

MACHINE FOR PRINTING FLOOR-CLOTH.

Specification of Letters Patent No. 8,778, dated March 2, 1852.

To all whom it may concern:

Be it known that I, SIMEON SAVAGE, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful or Improved Machine for Stamping and Printing Painted Floor-Cloth or Carpets or other Goods of Like Description; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1 denotes a top view of my said machine; Fig. 2 an elevation of one side of it. Fig. 3 is an elevation of the other side of it. Fig. 4 is a central, vertical, and longitudinal section of it, and exhibits the mechanism on one side of such section. Fig. 5 is another and similar section and exhibits the machinery on the opposite side of the plane of section. Fig. 6 is an inner side view of one of the gripper carriages and the gripping mechanism thereof.

In the said drawings A represents a frame bench or table on which the piece of cloth to be printed in paint or oil color is to be laid, and on which it is to be moved in order to be printed and stamped.

B, and C, are two platens; arranged directly over the top surface of the bed A. One of the platens, viz., the first one, is to have the printing figures, types, block, or blocks affixed to its under surface, and so that the printing surfaces shall be downward. The other or last of the platens may have a plain surface, or it may have an impression or stamping block affixed to its under surface, the object of the said platen being to stamp down the figure produced on the cloth by the types or figure block, or printing surface of the other platen.

To all or most of those acquainted with the process of making painted carpets, it is well known that the oil paint or color is laid or printed on the cloth in small drops or squares which stand on it separate from one another, and with spaces between them. After my machine has effected the imprinting process it also operates to stamp down these spots or squares of color, or so compress them as to extend each of them laterally and horizontally in all directions so as to make them run into one another or join together, and thereby cover the spaces between them and give to the figure made by

a collection of such dots or squares a uniform color without breaks. My machine is therefore calculated not only to print in one or more colors, according to the number of platens and coloring apparatuses; but to stamp down and spread out the color or colors after the application of the same to the cloth or material to be printed.

Having thus premised I would remark that besides the above mentioned printing and stamping down elements, my machine not only has a contrivance for holding and applying the color to the printing surfaces, but it possesses a mechanism for holding the sheet of cloth to be printed, for carrying it forward at suitable times, and for retaining it under the printing and compressing platens, long enough for and so as to enable them to perform their respective offices.

In the drawings D, exhibits the coloring trough or carriage which contains an elastic roller E, and is mounted on four wheels F, F, F, F, which rest and run on ways on the top surfaces of the timbers or bars *a, b,* of the frame or table A. Within the fountain or color trough are one or more gage bars *c, d,* which are so set near the curved surface of the cylindric roller as to regulate the thickness of the sheet of color or paint on its surface. The lower part or under surface of the color box should be always elevated far enough above the upper surface of the table A to never interfere with the cloth which passes under it. On one end of the arbor of the coloring roller a gear wheel *f* is fixed. It engages with another gear *g* which rotates freely on a stationary arbor *h,* and engages with a stationary toothed rack *i,* which is fixed on the top of the frame A, as seen in the drawings. By means of such gears and rack a rotation is imparted to the coloring roller during either of the back or forth movements of the color carriage. Such rotation should be so regulated that the coloring surface of the roller should rotate with the same degree of velocity that the carriage is moved. The object of this is to properly apply the oil color or paint to the printing blocks, without the rotation of the roller being caused by its forward or back motion and contact of the roller with the printing surfaces.

The machinery by which motion is imparted to the platens and coloring apparatus may be thus described. The main driving shaft is seen at G, as extending across the

frame. It has a band pulley H, and a gear or pinion I fixed on it, the driving belt being run around the pulley H. The pinion I takes into a spur gear K, that is fixed on a horizontal shaft L, and engages with two other spur gears M, N, affixed respectively on two other shafts O, P. The shaft O has two circular plates or disks, Q, R, fixed on it as seen in Figs. 3, 4, 5 and 7, the latter of which figures represents a horizontal section of the machine, such section being taken just below the top of its frame. Each of these disks has two projections *i*, *k*, extended respectively from its opposite sides, the axis of one being at one hundred eighty degrees of a circle distance from the axis of the other pin. The two inside pins *i*, *i*, operate in connection with two hook bars *l*, *l*, which are formed as seen in the drawings, and made to turn vertically on a cross bar or shaft *m*, that connects the vibrating bars *n*, *o*. The other two projections *k*, *k*, act in connection with the hook bars *p*, *p*, similar to the bars *l*, *l*, and similarly connected with the shaft *m*, the said hook bars *p*, *p*, being formed and arranged as seen in the drawings, and made respectively to rest on and be pressed upward by two springs *q*, *q*. The coloring carriage is connected with the upper ends of the vibrating bars *n*, *o*, by connecting bars *r*, *r*, which are jointed both to the carriage and vibrating bars in such manner as to allow the vibrating bars and carriage to simultaneously move backward and forward, the vibrating bars or levers turning on fulcra *s*, *s*.

Each of the hook bars *l*, *l*, *p*, *p*, has a bend in it, or is formed as seen at *t*, the object of such bend being to enable the projection of any one hook bar to pass by such bar while it is in rotation and the projection of the bar on the opposite side of its disk is acting on the hook or notch of its own hook bar. During one half a rotation of the shaft O, the color carriage will be run in or under and beyond the printing platen (imparting color to the blocks in the meantime), where or in which position it will remain stationary during the next half a rotation in which latter time or second half rotation the two platens are simultaneously made to descend, perform their respective offices and rise upward. During the succeeding or third half rotation of the shaft O, the coloring carriage will be moved back in an opposite direction so as to pass under and beyond the printing platen and impart color to the printing blocks or surfaces. It will remain in this position during the succeeding or fourth half revolution of the shaft O, in which time the platens again descend, perform their offices and ascend again. In this manner the operations of coloring the printing blocks are effected.

The platens are depressed and elevated by

mechanism which may be thus explained. Near each end of each shaft O, P, one of four arms *u*, *u*, *u*, *u*, is attached to and made to project from the shaft as seen in the drawings. Each of these arms has a projection *v*, extended outward at right angles from it and formed as seen in Figs. 2 and 3. Each of these projections operates in connection with a roller *w*, which is attached to the platen frame and rests on the periphery of one of four cams *x*, *x*, *x*, *x*, affixed to the shafts O, P, and formed as seen in the drawings. By means of each cam and the projection of the adjacent arm, the platen is elevated and depressed during the entire rotation of the shafts O, P.

The next portion of the mechanism to be described is that for holding and moving the sheet of cloth to be printed. Such mechanism may be thus explained. R', and S are two bars or carriages which are placed as seen in the drawings and properly supported so as to be capable of being moved longitudinally with a reciprocating, intermittent motion. They are seen in Fig. 8 which is a transverse section of the upper part of the machine. A metallic lip *y* is fastened to the top surface of each of the bars, the bar being cut away under said lip so as to form a long groove *z*, for the selvage edge of the cloth to lie in. A series of bent levers *a'*, *a'*, *a'*, is arranged within each bar R', S, and respectively turn on fulcra *b'*, *b'*, *b'*, as seen in Figs. 5 and 8, also in Fig. 9 which denotes a cross section of the bar and the horizontal arm of one of these levers. When the horizontal arm of one of these levers is elevated its outer end is brought up against the under surface of the cloth and in connection with the lip plate *y* grips it fast. The lower ends of the several vertical arms of each set of the bent levers *a'*, *a'*, *a'*, are jointed to one of two long horizontal bars *c'*, *c'*, which by a connecting rod *d'* is connected to one of two vibrating levers *e'*, *e'*, which are arranged and turn on fulcra *f'*, *f'* as seen in the drawings. These levers are connected together by a cross shaft *g'*, to which two connecting pitman rods or bars *h'*, *h'*, are jointed, the said bars being also jointed to two crank disks or plates *i'*, *i'*. These crank plates are fixed on a horizontal and transverse shaft *k'*, that is put in motion by two spur gears *l'*, *m'*, the former of which is fixed on the shaft *k'*, while the latter is fixed on the shaft P.

There is a small stud *n'*, extending inward from the outer end of the horizontal arm of each of the gripper levers *a'*, *a'*, *a'*, &c., as seen in Fig. 5 and also in Fig. 10, which denotes an edge view of one of these levers. When the arm is down so as not to grip the cloth this stud rests on the bottom of a recess *o'*, formed in the slide bar R', or S, as seen in the drawings.

From the above it will be seen that when the bars R', S, are drawn forward, the gripping levers are caused to so confine to the bars, the cloth to be printed that it will be moved or carried forward with and by them. The impulsion of the bars in an opposite direction will instantly release the cloth from the grippers, or will depress the horizontal arms of the gripper levers so as to effect such release. The cloth will therefore rest still while the grippers are moved back. Each forward movement of the cloth takes it far enough to carry under the platen C, the last imprint made, while it also takes a fresh portion of the cloth under the printing blocks or surfaces to be printed by them.

There may be any number of printing platens to one or more compressing or stamping ones, the mechanism being made to print the colors on the cloth and afterward stamp them down and spread them so as to cover the intervals or spaces left between them as herein before described.

What I claim as my invention is as follows; that is to say, I claim—

1. The arrangement of the printing mechanism, the stamping down mechanism, and the mechanism for advancing the piece or

strip of cloth or of material to be printed and pressed or stamped, such arrangement being as exhibited in the drawings, and as above described.

2. And I also claim the combination of the lip bar or plate *y*, the series of bent levers *a'*, *a'*, &c., the slide bar R', or S, and the bar *c'*, as made and operated substantially in manner and for the purpose of seizing the selvage edge of the cloth and moving the piece as described.

3. And I also claim the combination of mechanism for operating the coloring carriage, or imparting to it its back and forth movements and necessary intervals of rest, the said combination consisting of the rotating shaft O, with its circular disks Q, R, and their projections *i*, *k*, the four hook bars *l*, *l*, *p*, *p*, together with the vibrating bars *n*, *o*, as applied together and operated substantially as specified.

In testimony whereof I have hereto set my signature, this seventh day of October A. D. 1851.

SIMEON SAVAGE.

Witnesses:

R. D. RICE,
S. K. GILMAN.