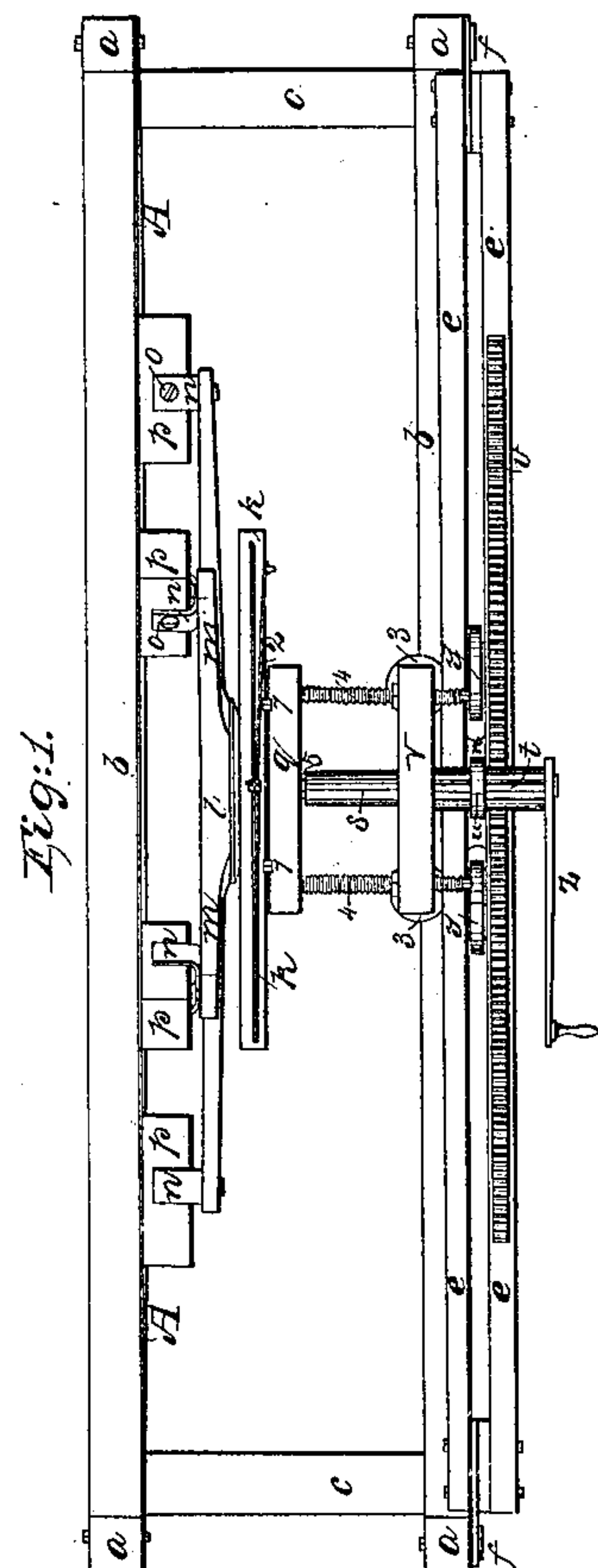
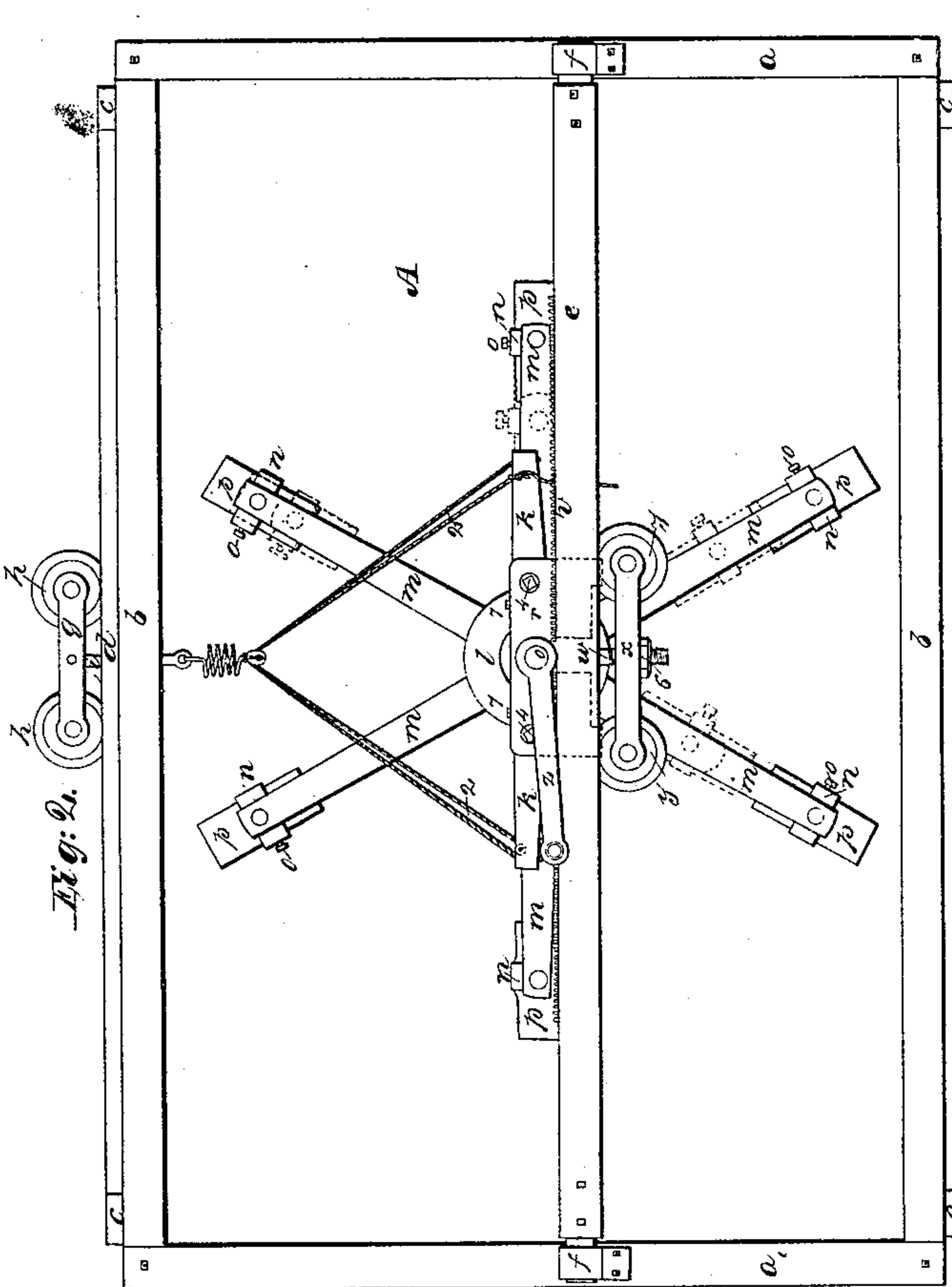
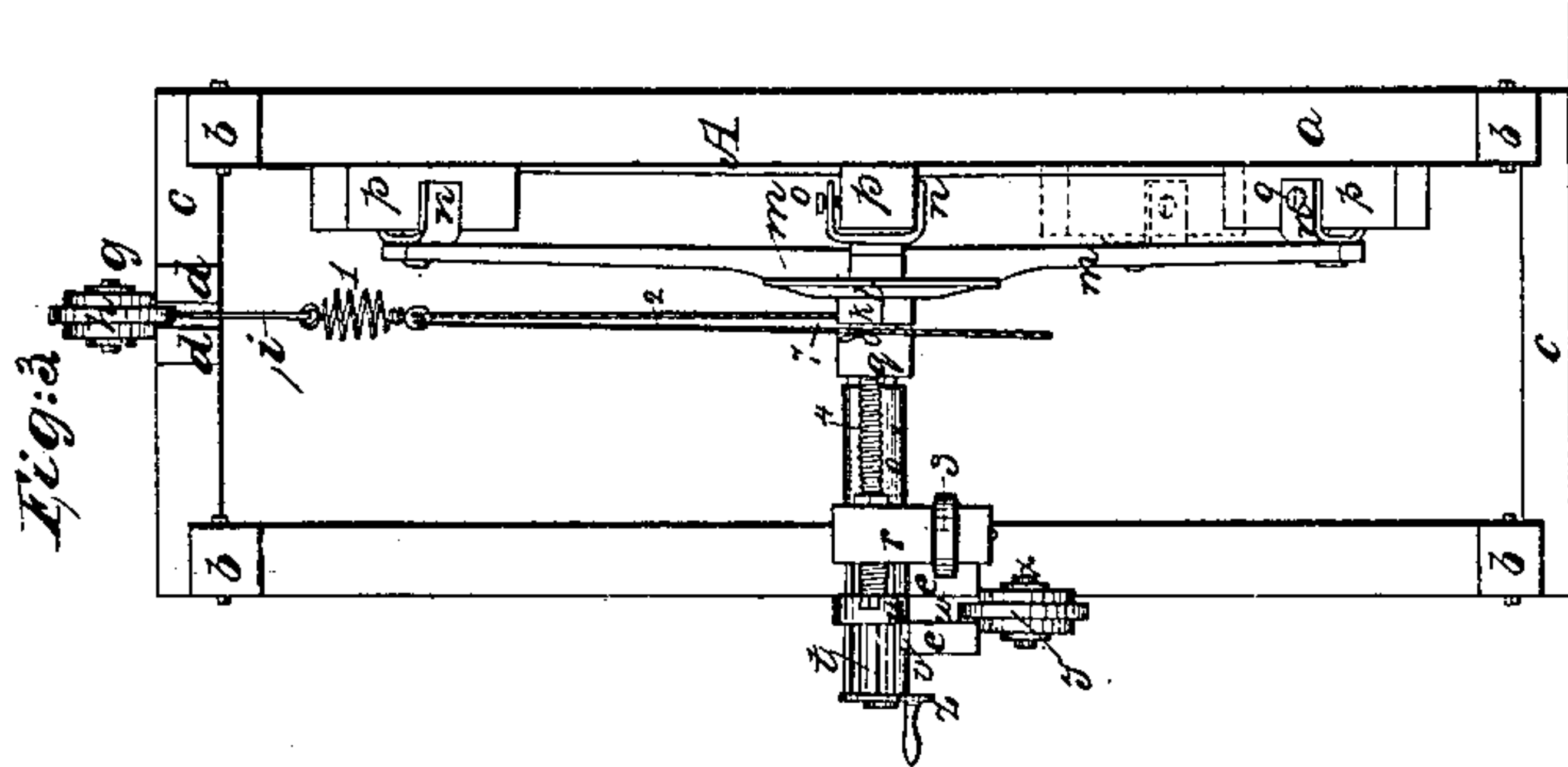


W. BERRY.

MEANS OF SURFACING FLOOR OIL CLOTHS.

No. 6,816.

Patented Oct. 23, 1849.



Witnesses:  
*Samuel W. Lovell*

Inventor:  
*William Berry*



# UNITED STATES PATENT OFFICE.

WILLIAM BERRY, OF BEDFORD, NEW YORK, ASSIGNOR TO J. D. SPARKMAN AND M. KELSEY.

## SURFACING FLOOR OIL-CLOTH.

Specification of Letters Patent No. 6,816, dated October 23, 1849.

*To all whom it may concern:*

Be it known that I, WILLIAM BERRY, of Bedford, Kings county, Long Island, in the State of New York, artist, have invented  
5 and made and applied to use certain new and useful improvements in the means of preparing floor oil-cloths for receiving the colors that form the figure or pattern thereon.  
10 The means now used, are to place and stretch the sheets of canvas, on large vertical frames, and paint them, with the color intended to form the ground, on which the figure, or pattern, is to be printed; and when  
15 this paint is dried, and sufficiently hardened, by exposure to air and light, the paint is what is technically termed, "surfaced," that is, the inequalities of the face, caused by the paint spreading in some parts, and ag-  
20 gregating on other parts, or from accidental inequalities, in the fabric of the canvas, are rubbed down smooth, with blocks of pumice stone, or other similar and proper sub-  
25 stances, applied by the hands of the workmen or laborers; and from the position of the canvas, it rarely happens, that even a skillful workman can use more than one hand, and that, over a very limited portion of the surface, while remaining in one spot;  
30 the operation, therefore, is on requiring severe and costly labor, as now practised, and my improvements lessen both the labor and cost, and do this portion of the work, much better, by applying an arrangement of  
35 mechanical means, through which, one man can use, continuously, a plurality of pumice stone blocks, or other similar and proper substances, placed on the points of radial arms, of equal or varied radius, but all pro-  
40 jecting from a common center, which center at the end next the arms, is suspended from rollers, traveling in a slotted railway frame above, the other end of the center overlying a changeable railway frame, having the  
45 upper face fitted with a toothed rack, interlocking with teeth on the center, so that by a crank on the center, one man can turn the apparatus, which then progresses, on the railway, in a right line, and the arms re-  
50 volving, pass the pumice stone, or other surfacing blocks, over the painted surface of the canvas, in lines of intersecting ellipses,

and the rubbing material is kept to the face of the work, by adjustable press screws, which cause the surfacing material to press  
55 nearly equally against the spring of the canvas, while operated on.

The arrangement of mechanical means, thus employed by me, and for which I seek Letters Patent of the United States, to be  
60 issued to James D. Sparkman, and Melville Kelsey, as my assignees, is fully detailed, and substantially set forth, in the following description, and shown in the drawing, annexed to, and making part of this specifi-  
65 cation, wherein—

Figure 1, is a plan, Fig. 2, a full front elevation, and Fig. 3, an end sectional ele-  
70 vation of the whole apparatus, in place for use, as invented and employed by me.

The figures represent the operation, as going on, in the top story of a set of ground-  
ing frames; but, as hereafter shown, the same operation is affected, in all the lower  
75 stories, by the changeable position of the parts employed; the same letters, and other marks of reference, applying alike, to the same parts, in each figure.

In these figures *a, a*, are vertical posts, *b, b*, longitudinal ties, and *c, c*, cross ties; 80 these collectively represent one stage, or story, of the timber work known as the grounding frames, on which the canvas *A, A*, is stretched, and secured for painting on the ground color, and then surfacing it; 85 *d*, is a fixed longitudinal pair of timbers, on the top of the frames, with a long slot between them; *e*, is a similarly formed timber, having, at the ends, tennons to lie into bracket cheeks *f*, fitted one on each of the  
90 intermediate or end posts, at the middle height of each story of the grounding frames; these two slotted timbers carry the working apparatus, as next described; *g*, is a carriage on the timber *d*., having tongued  
95 rollers *h, h*., these run on and between the timbers *d*, and the carriage has an arm *i*, descending between the timbers, to the lower end of which, a helical spring is attached, so as to receive a pulley, or block, with a hal-  
100 liard rope, attached to a two part sling 2, taking the ends of a yoke piece *k*, through the center of this on axle 5, either square as in the drawing or round with a pin through



it, sustains a hub or nave *l*, this is fitted with arm *m*, *m*, shown in the drawing, as six in number, but may be of any convenient greater or less number, and of equal lengths, as shown by the full colored parts of the drawing, but may be also advantageously used, made of shortened or varying radii, or lengths, as shown by dotted lines, in Figs. 2, and 3, so that the lines of travel may be more varied, but the longer arms of such a length, that the circle, described by their rotation, shall be a little more than equal to the height, between the top and bottom of each story of the framing; each arm *m*, is set sufficiently dished, for the hub *l*, to travel without touching the canvas, and each is laterally tapered, toward the point, to allow of considerable direct spring, to move with the play of the canvas.

In the outer ends of each arm, is a metal clamp *n*, with a side screw *o*, that secures, in each clamp, a block *p*, of pumice stone, or other fit surfacing material, to operate on the canvas. A block *q*, sets against the yoke *k*, with a hole to pass the axle of the hub *l*, and the cylinder *s*, and a similar block *r*, sets against the timber *e*, with rollers 3, 3, and a pair of set screws 4, 4, going through the block *r*, into the block *q*, gives the attending workman the means, of regulating the pressure of the surfacing blocks, on the canvas, by a set nut on each screw, acting against the block *r*. To enable the attending workman to pass the apparatus to either side of the vertical posts *a*, *a*, and continue the work, beyond them, the hollow cylinder *s*, and crank *z*, is drawn off the main axle 5, and from the block *r*, the block *q*, is attached by hinges 7, to the yoke *k*, these blocks *q*, and *r*, are open below the cylinder *s*, so that the hinges 7, allow the blocks *q*, and *r*, to turn up, and pass between the parts *a*, *a*, to another bay of the framing, the slotted frames *d*, being supported from above, in any convenient manner, when the entire length of each frame is such, as to render other support needful, than that at the two ends, as shown in the drawing. The previously separated parts are then to be re-attached, and the work progressed with, as before, in the next, and all the successive bays of the grounding frames. A square center 5, in the hub *l*, going through the block *q*, receives there the end of the hollow cylinder *s*. The cylinder *s*, passing outward through the block *r*, is formed there as a long pinion *t*, the teeth of which gear into a toothed rack *v*, on the outside one of the changeable slotted timbers *e*. A collar *m*, surrounds the pinion *t*, and has an arm *w*, descending through the slot in the timbers *e*, which arm suspends a carriage *x*, by a screw and nut 6, with two tongue rollers, the tongues of which travel upward, in the slot of the timbers *e*, and a crank handle *z*, on

the outer end of the cylinder *s*, and pinion *t*, enables one man to give a rotary motion to the whole apparatus. The carriage *g* travels in the same direction, sustaining the hub, and arms, by the yoke *k*; and the collar *u* and carriage *x*, keep the pinion *s*, in gear with the toothed rack *v*, and a rope, not shown in the drawings, at each end of the slotted timbers *e*, conjointly with the halyard rope and slings 2, gives the means of successively hoisting, or lowering, the apparatus to, or from, the middle height of each story, or stage, of the grounding frames, on which the canvas is secured for painting and surfacing the ground, preparatory to receiving the figure, or pattern thereon; and when so placed and adjusted, the operations will be as follows. Immediately on the workman turning the crank handle *z*, in either direction the surfacing blocks begin to operate on the painted face of the canvas, and the motion of the pinion *t*, on the rack *v*, moves the apparatus in a straight and continuous line, a given distance, during each revolution, so that no one of the surfacing blocks *p*, passes over the same part of the painted surface, during any part of any two successive revolutions, except just where the lines of travel cross each other, near the upper and lower portion of the parts then operated on; as the lines of travel, of each block, will form a series of alternately long and short intersecting elliptical lines; and one man, thus operating a plurality of surfacing blocks at the same time, will and does do the work of several men, in the same time, and in a much better manner, thereby saving labor, and cost, in an expensive part of the manufacture of floor oil cloths.

Most of the parts employed by me, in these arrangements and operations, are not new in themselves, having been before employed separately, for many purposes; therefore I do not claim any of such parts herein so employed by me, irrespective of the manner in which I use them; but

I do claim as new, and of my own invention, and desire to secure by Letters Patent of the United States, to be issued to James D. Sparkman, and Melville Kelsey, as my assignees, as follows:

The application of the fixed suspending timbers, or slotted railways *d*, and carriage *g* with the changeable slotted timber or railway *e*, to carry and adjust the working parts at different heights, and positions, on the grounding frames, conjointly with the arrangements described and shown, by which the arms *m*, *m*, and a plurality of surfacing blocks *p*, *p*, are applied to smooth the face of the canvas *A*, *A*, by the power of a man, or men, operating through the crank *z*, and cylinder *s*, and pinion *t*, in alternating right lines on the rack *v*, and kept in place by the collar *n*, carriage *x*, and rollers *y*, *y*, and the



employment conjointly with the foregoing parts, of the blocks  $q$ , and  $r$ , and screws 4, 4, to adjust the pressure of the blocks  $p$ ,  $p$ , on the face of the canvas operated on, the whole  
5 constructed, arranged, and operating, substantially in the manner, and for the purposes herein described and shown.

In witness whereof, I have hereunto sub-

scribed my name, this fifth day of April, in the year one thousand eight hundred and forty eight.

WILLIAM BERRY.

Witnesses:

W. SERRELL,  
LEMUEL W. SERRELL.