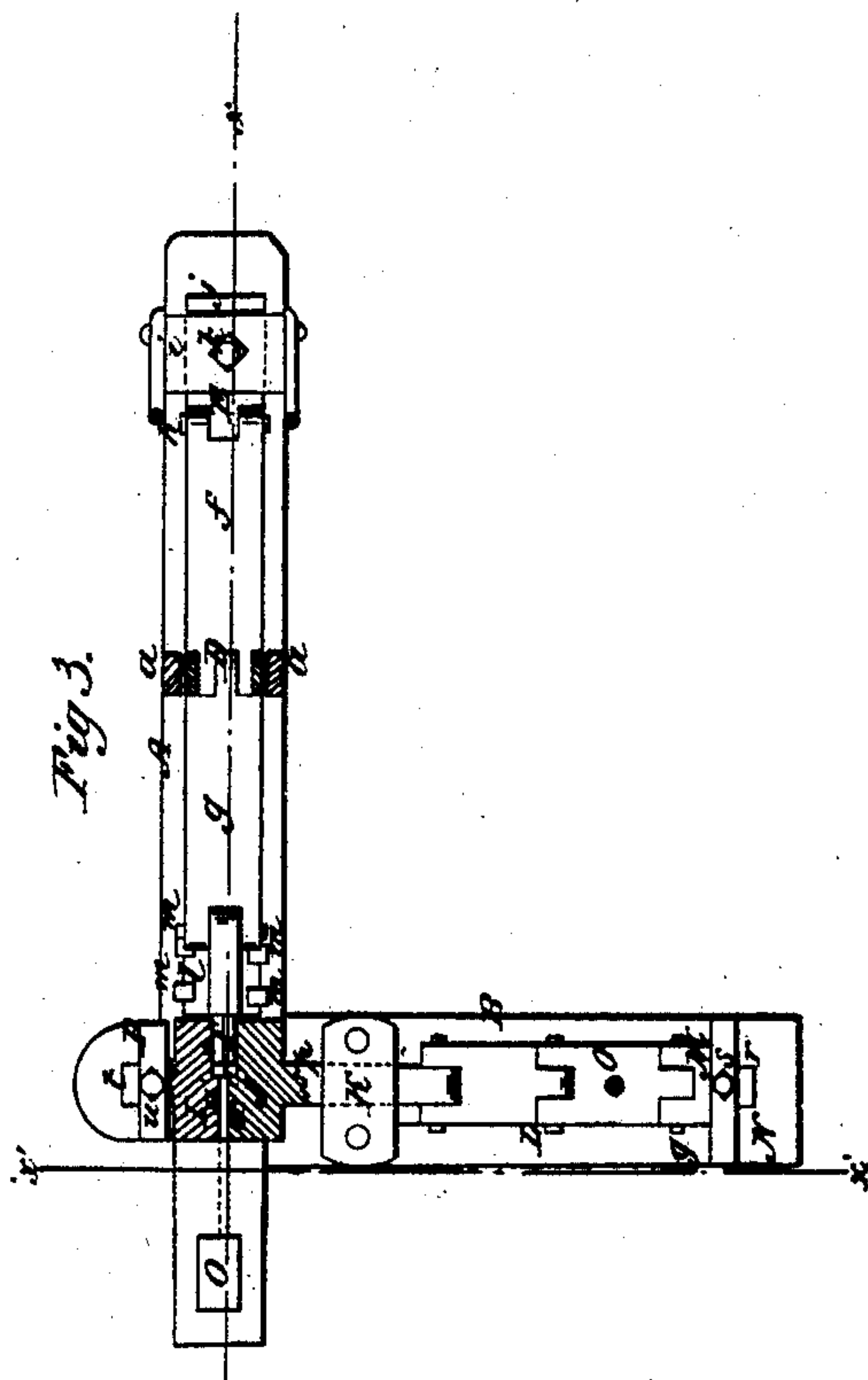
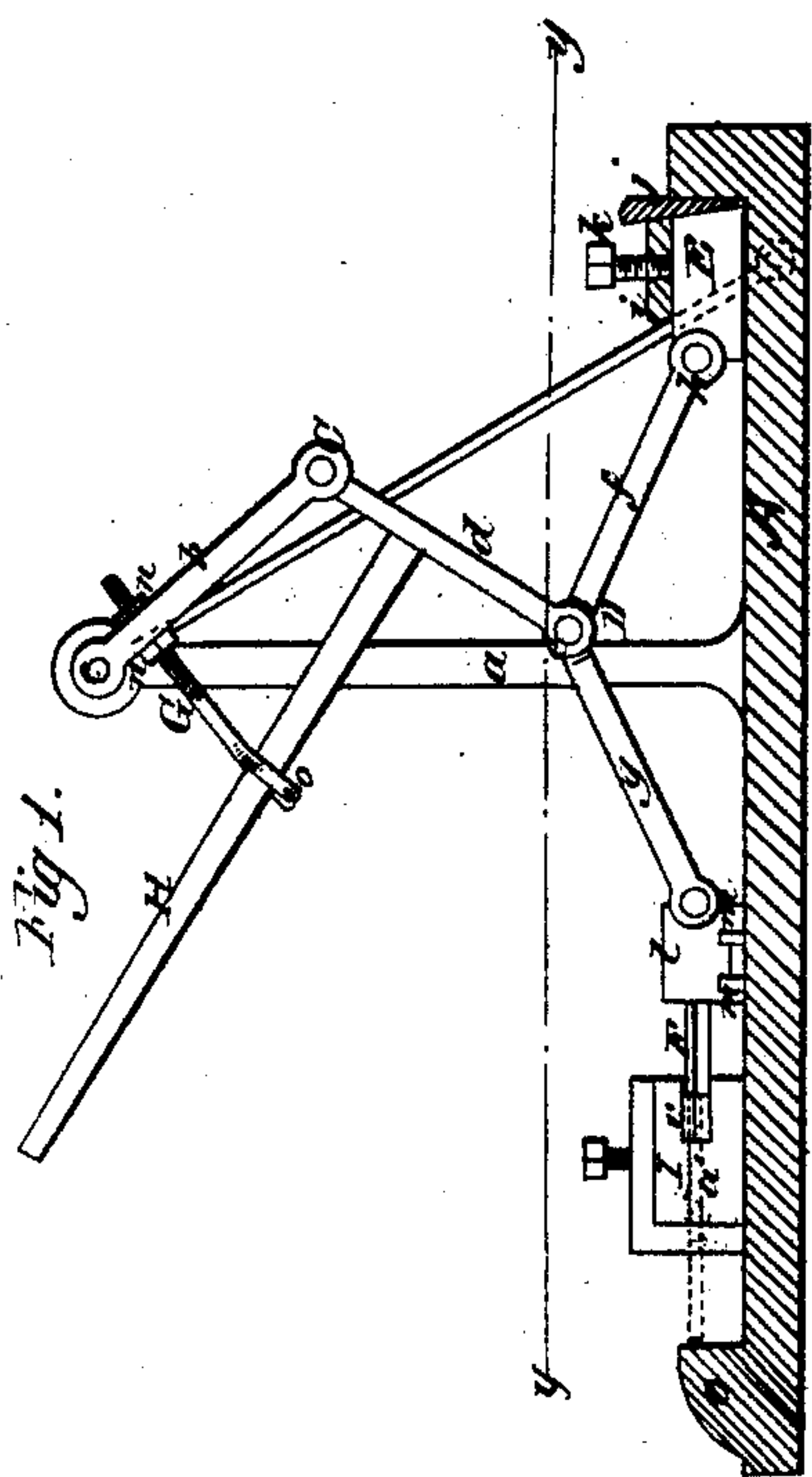
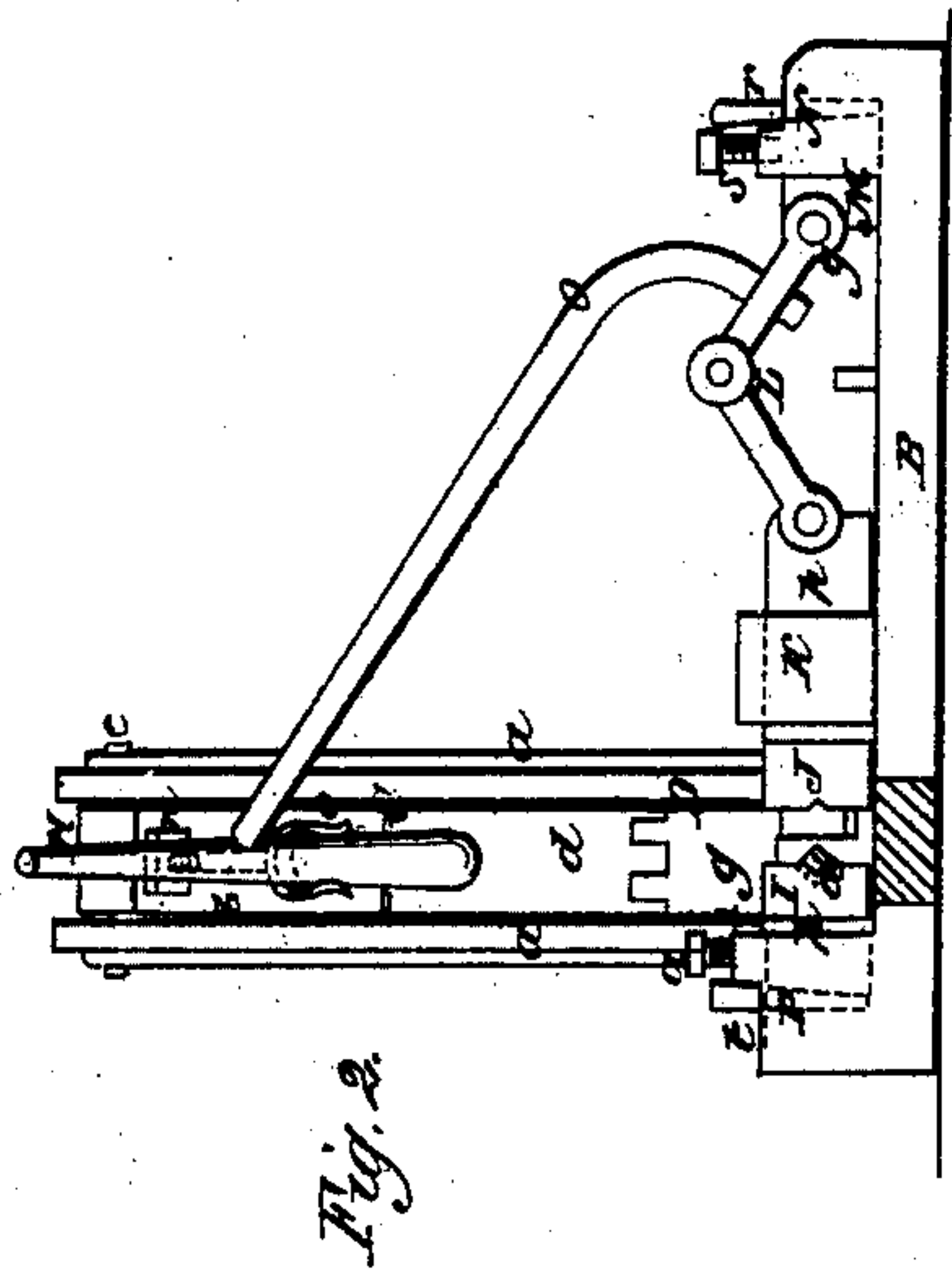


B. C. VANDUZEN.
MACHINE FOR HEADING BOLTS, RIVETS, &c.

No. 23,328.

Patented Mar. 22, 1859.



UNITED STATES PATENT OFFICE.

B. C. VANDUZEN, OF CINCINNATI, OHIO.

MACHINE FOR HEADING BOLTS.

Specification of Letters Patent No. 23,328, dated March 22, 1859.

To all whom it may concern:

Be it known that I, B. C. VANDUZEN, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and Improved Machine for Heading Bolts, Rivets, Spikes, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a side sectional elevation of my improvement taken in the line x, x , Fig. 3. Fig. 2, is a front sectional view of same, x', x' , Fig. 3 showing the plane of section. Fig. 3, is a horizontal section of same taken in the line y, y , Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, B, represent two bars placed at right angles with each other as plainly shown in Fig. 3, and forming the bed of the machine. To the part A, of the bed and near its center two uprights a, a , are attached, and between these uprights a toggle C, is placed, the upper lever b , being suspended on a fulcrum pin c , at the upper ends of the uprights, and the lower lever d , connected with the fulcrum pin e , of a toggle D, formed of two levers f, g . The back lever f , of the toggle D, is jointed as shown at h , to a block E, which is fitted in a box i , at the back end of the bar A, and which may be adjusted therein by means of a wedge j , and set screw k . The front end of the front lever g , of the toggle D, is jointed, to a sliding bar l , which is fitted between guides m, m , on the bar A. To the front end of the sliding bar l , a heading die F, is attached, and to the front side of the upper lever b , of the toggle C, a rod G, is attached, said rod being screwed into or through the lever b , and secured by jam nuts n, n . A fork o , is formed at the outer end of the rod G, which fork receives a lever H, when said lever is raised and determines the length of its upward movement, see Fig. 1, and the length of this movement may be varied as desired by adjusting the fork o , nearer to or farther from the lever b , which is done by loosening the jam nuts n, n , and turning the rod G.

I, J, represent two clamps or dies which are placed on the bar A, at its junction with the bar B. These clamps or dies are provided each with a shank p . The shank p , of the die J, is fitted within a guide K, on bar B, and is connected with a toggle L, the outer end of which is connected by a joint q , to a block M, which is fitted in a box N, at the end of bar B, and may be adjusted therein by a wedge r , and set screws s . To the toggle L, a lever O, is attached. The shank p , of the clamp or die I, is fitted within a box P, at the end of the bar B, opposite to that where the box N, is secured. The shank of the die I, is adjusted within box N, by means of a wedge t , and set screw u . The face sides of the dies I, J, are each grooved longitudinally a certain distance as shown at a' , so as to receive the blank and allow the dies to grasp it, an enlarged recess v , being formed at the inner end of each groove a' , so that when the dies are closed or brought in contact with each other a chamber will be formed to receive the heading die F, the head being formed within said chamber.

O, is a block or gage attached to the upper surface of the bar A, and in line with the heading tool F.

The operation is as follows: The bars or rods of which the bolts, rivets or spikes are formed are of the proper size, corresponding of course to the desired diameter of the bolts, rivets or spikes, and the bars or rods are cut in proper lengths or blanks corresponding to the distance between the block or gage O, and the end of the heading die F, when the latter is moved back its entire distance, which is done by shoving upward the lever H, until it enters the fork o . When the lever H, is thus shoved upward, the lever O, is also raised, the latter movement causing the die J, to be drawn back from the die I. A blank b' , being properly heated is then placed between the dies, the inner end of the blank bearing against the heading die F, and the outer end against the gage O. The die J, is then shoved up against the die I, by depressing the lever O, the blank b' , being thereby firmly clamped between the dies. The lever H, is then drawn down and the heading die F, being thereby forced into the recess v , with a progressive power owing to the toggles and the inner end of the blank within the recess or chamber v , is com-

pressed into a head, see Fig. 3. It will be seen that by adjusting the fork *o*, the length of the movement of the heading die *F*, may be regulated as desired and more or less space allowed in the chamber *v*, so that the chamber may receive a sufficient portion of the blank to form a head of the required thickness, and it will also be seen, that by adjusting the block *E*, in the box *i*, the heading die *F*, may be made to pass a greater or less distance into the chamber *v*, according to the thickness of head required. The clamps or dies *I*, *J*, also by adjusting the wedges *r*, *t*, may be regulated as to insure their perfect contact with a requisite degree of pressure at all times.

I am aware that toggles have been used for operating punches, dies, &c., and arranged in various ways, and I therefore do not claim broadly the use of toggles for op-

erating the heading die *F*, and die *J*, but having thus described my invention

What I claim as new and desire to secure by Letters Patent, is,

1. The arrangement and combination of the adjustable spring fork rod *G*, lever *H*, upper lever (*b*) and heading die *F*, substantially as herein shown and described, for the purpose of regulating the movements of the lever *H*, and die *F*, and controlling the size given to the head of the bolt.

2. I also claim in combination with the above parts the clamps or dies *I*, *J*, arranged as shown, so that by means of the wedges *r*, *t*, and set screws *s*, *u*, the dies may be adjusted as and for the purpose specified.

BENJAMIN C. VANDUZEN.

Witnesses:

JACOB ANSHUTZ,
GEORGE FRENCH.