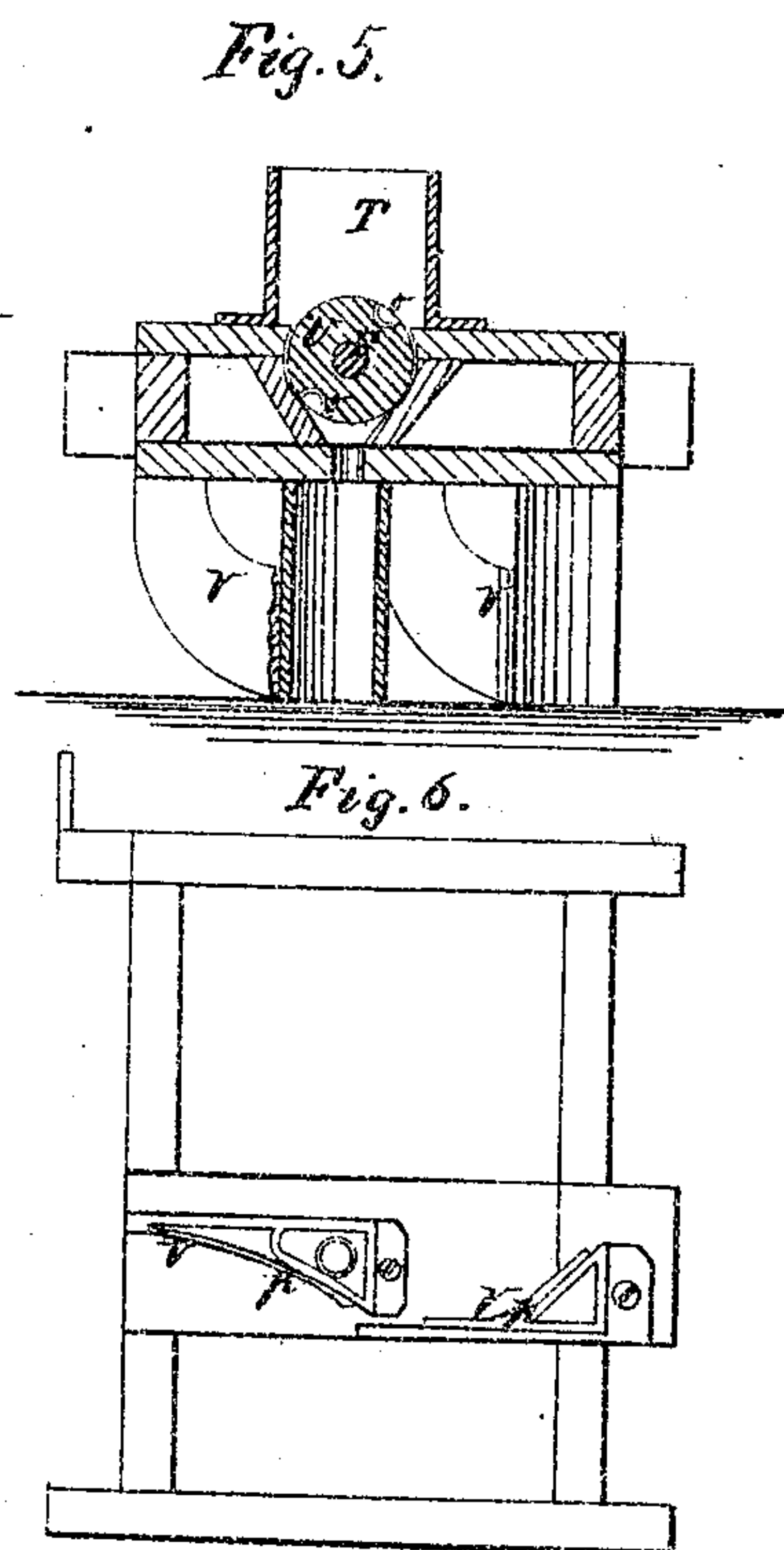
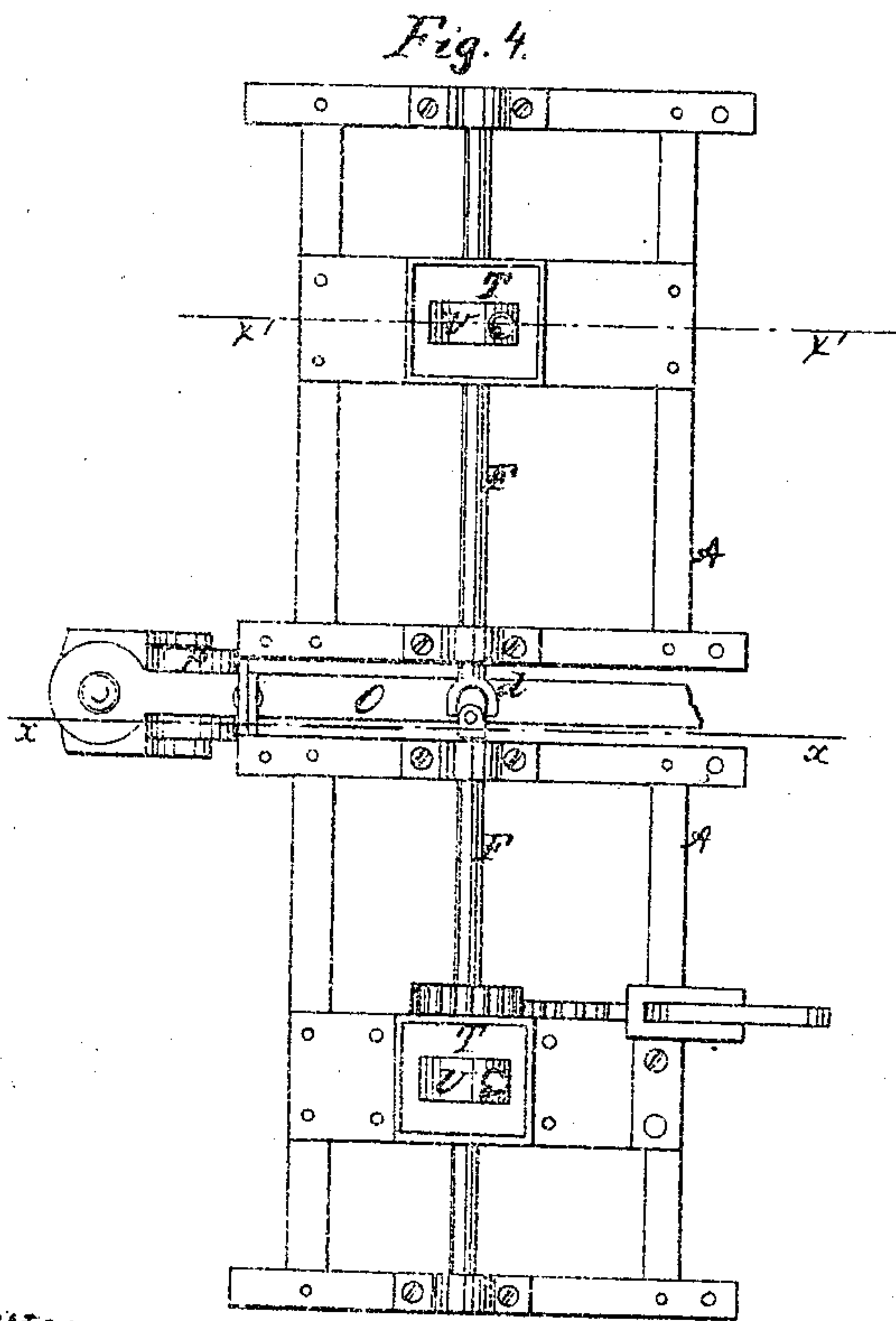
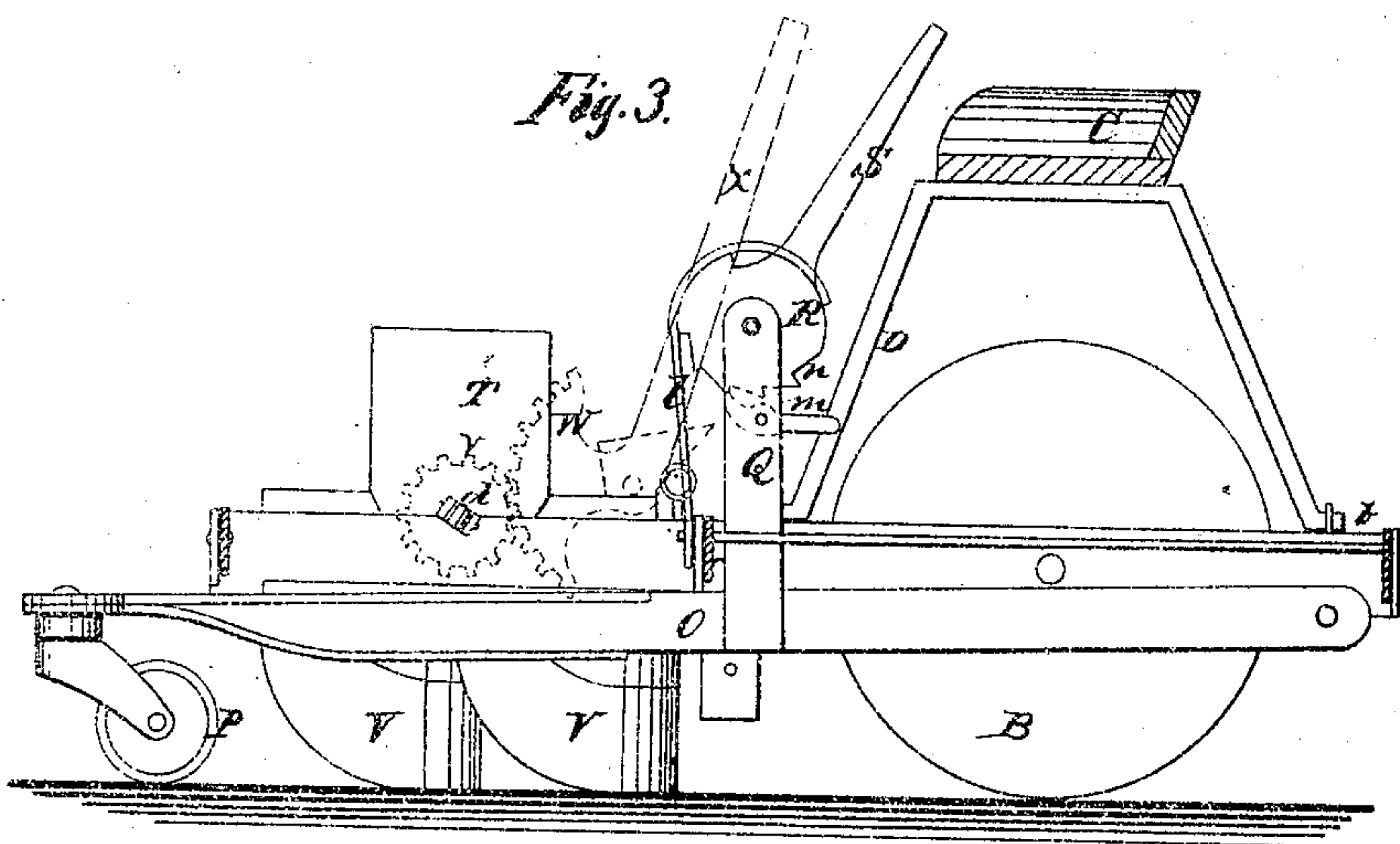


T. S. Mills.

Drill, Roller & Cultivator.

N^o 73365

Patented Jan. 14, 1868.



Witnesses.
J. A. Service.
J. Alvin Fraser.

Inventor.
T. S. Mills
Per Munn & Co.
Attorneys.

United States Patent Office.

T. S. MILLS, OF KENDALLSVILLE, INDIANA.

Letters Patent No. 73,365, dated January 14, 1868.

IMPROVEMENT IN COMBINED DRILL, ROLLER, AND CULTIVATOR.

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, T. S. MILLS, of Kendallville, in the county of Noble and State of Indiana, have invented a new and improved Combined Grain-Drill, Roller, and Planter; 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 combined grain-drill, roller, and planter, and consists in a novel construction and arrangement of the parts, as hereinafter fully shown and described, whereby several advantages are obtained over other similar combined implements now in use. In the accompanying sheet of drawings—

Figure 1, Sheet No. 1, is a side view of my invention.

Figure 2, a plan or top view of the same.

Figure 3, Sheet No. 2, a side sectional view of the same, shown adapted for use as a corn-planter, taken in the line *x x*, fig. 4.

Figure 4, a plan or top view of the corn-dropping mechanism.

Figure 5, a section of fig. 4, taken in the line *x' x'*.

Figure 6, an inverted plan of a portion of fig. 4, showing the two ploughs which open the furrow to receive the corn and cover the same.

Similar letters of reference indicate like parts.

The main frame of the machine is composed of two longitudinal equal parts A A, connected together by joints *a*, which admit of said parts rising and falling to conform to the inequalities of surface over which they may pass. In the rear of each part, A, there is fitted a roller, B, and C is a driver's seat, which is secured to supports D D, one being attached to each part A, the lower ends of the supports being bent in a horizontal position, as shown at *b*, and having staples *c* driven over them into the framing of the parts A, to form joint-connections, and admit of the free working of the parts A A. On each part A A, near the front ends thereof, there are secured seed-hoppers E E, and underneath these hoppers there are shafts F F, one underneath each hopper. The inner ends of these shafts are connected by a universal joint, *d*, which admits of the free working of the parts A A, to conform to the inequalities of the surface of the ground, and on each shaft F there is secured a series of toothed wheels, G, which pass through slots in the bottoms *e* of the hoppers E E. The outer end of one of these shafts F has a crank-pulley, H, upon it, which is connected by a pitman, I, to a crank-pin, J, the latter having its axis projecting from a bar, K, the front end of which is fitted loosely on the shaft F, on which the crank-pulley H is secured. The rear end of the bar K is attached to a vertical slide, L, the guides *f* of which are attached to an upright bar, L^x, secured to one of the parts A of the frame of the device, and this slide L is notched at one edge, as shown at *g*, and has a spring, *h*, bearing against its opposite edge. These notches and the spring, in connection with the upper guide *f*, admit of the slide L being held at any desired height within the scope of its movement. On the outer end of the shaft of one of the rollers B, there is keyed a toothed wheel, M, into which the pinion J gears when the device is at work, and it will be seen, from the above description, that as the machine is drawn along, the shafts F, and consequently the wheels G thereon, will be rotated, and the seed discharged from the hoppers E E in drills, the wheels G being sufficiently near together for that purpose. The seed passes down through tubes *i*, the lower ends of which are fitted between the inner forked ends of furrow-openers N, which are curved upward in front, as shown clearly in fig. 1. By this means the seed will be planted in a uniform or even manner, and in greater or less quantities over a given area, by using crank-pinions J of greater or less diameter, which is allowed on account of having the axis of the latter attached to the adjustable bar K. The pitman L is attached to a slide, *j*, which works in a horizontal slot, *k*, in the bar K. O is a bar, the rear end of which is fitted loosely on a pin projecting from the rear of one of the parts A of the frame. The front end of this bar extends a trifle forward of the two parts A A of the frame, and is supported by a caster-wheel, P, and said bar, at about its centre, has an upright plate, Q, attached, with a wheel, R, secured to its upper part, said wheel having a handle or arm, S, projecting from it towards the

driver's seat C, and also having a strap, *l*, attached, the lower end of which is secured to one of the joints *a* which connect the two parts A A of the frame. By depressing the outer end of the handle or arm S, the front part of the machine will be raised, and the furrow openers elevated above the surface of the ground if desired, the machine being retained at an elevated point by a pawl, *m*, which is attached to plate Q, engaging with teeth *n*, at the periphery of wheel R, as will be fully understood by referring to fig. 1.

It will be seen the machine is fully under the control of the driver, and that it will conform to any inequalities of surface over which it may pass, and roll the ground in a thorough manner, smoothing the same, and compacting the earth upon the seed.

In planting corn, the seed-hoppers E E are detached, and others, T, adjusted in their place, the latter being much smaller than the former, and having each a wheel, U, with a smooth periphery working through the bottom. These wheels are keyed on the shafts F, and have each two seed-cells *o o*, made radially in their peripheries at opposite sides, (see fig. 5.) These wheels are turned first in one direction and then in the other, so that the contents of the cells *o* may be alternately discharged from the hoppers T, first from one side and then from the other, the corn being dropped into spouts which are secured in the rear forked ends of ploughs V V, which are placed one in advance of the other, and have shares or mould-boards *p*, one in a reverse position to the other, so that the front plough will open a furrow, and the rear one throw the earth back therein, and cover the corn after the same has been dropped. The shafts F F are turned by hand through the medium of a toothed segment, W, at the lower end of a bent lever, X, said segment gearing into a pinion, Y, on one of the shafts F. The lever X is worked by an operator from the driver's seat C.

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

1. Constructing the frame of the machine of two parts A A, connected by joints *a*, and each part provided with a roller, B, when said parts, thus constructed and arranged, are used in combination with a seed-dropping apparatus for planting seed either in hills or drills.
2. The operating of the toothed wheels G from one of the rollers B, through the medium of the gearing J M, pitman I, connected with the bar K, and with the crank-pulley H, on one of the shafts F of the wheels G, all arranged substantially as and for the purpose set forth.
3. The bar O attached centrally and longitudinally to the frame at its rear end, and provided at its front end with a caster-wheel, P, in connection with the wheel R and strap *l*, or their equivalents, for raising and lowering the front part of the machine, as set forth.
4. Operating the seed-distributing wheels U through the medium of the toothed segment W, at the lower end of the bent lever X, and the pinion Y, on one of the shafts F, substantially as and for the purpose specified.

T. S. MILLS.

Witnesses:

Z. BROWN,
X. BROWN.