

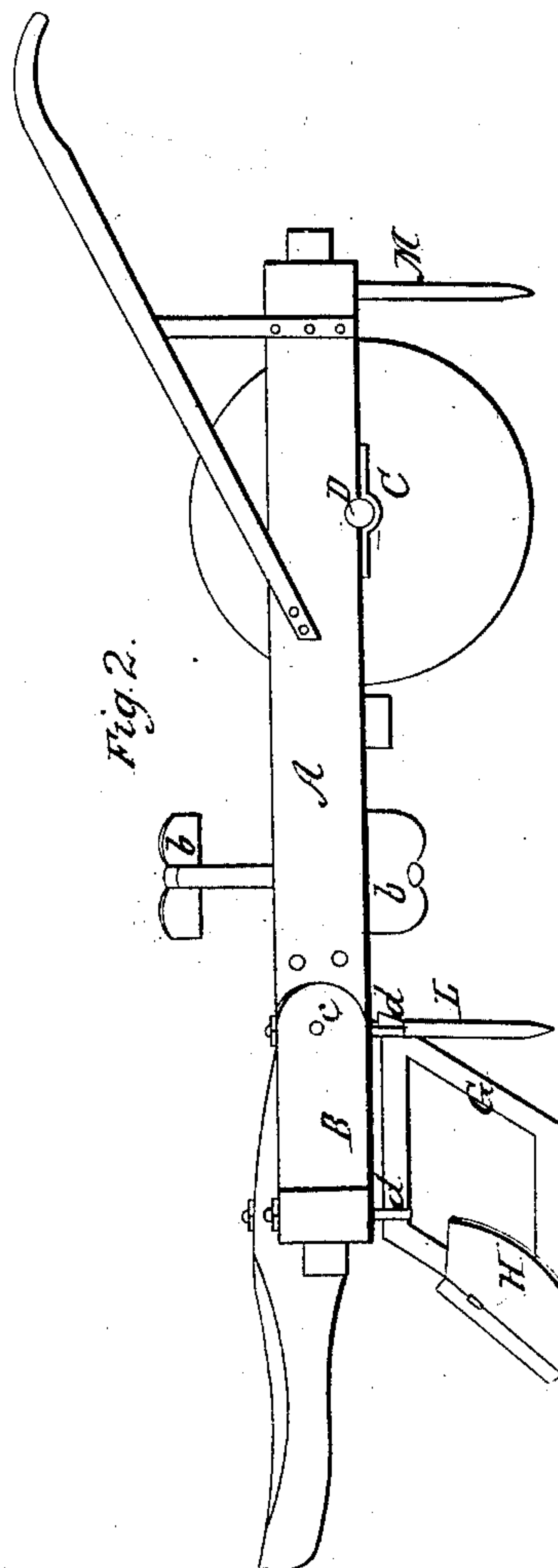
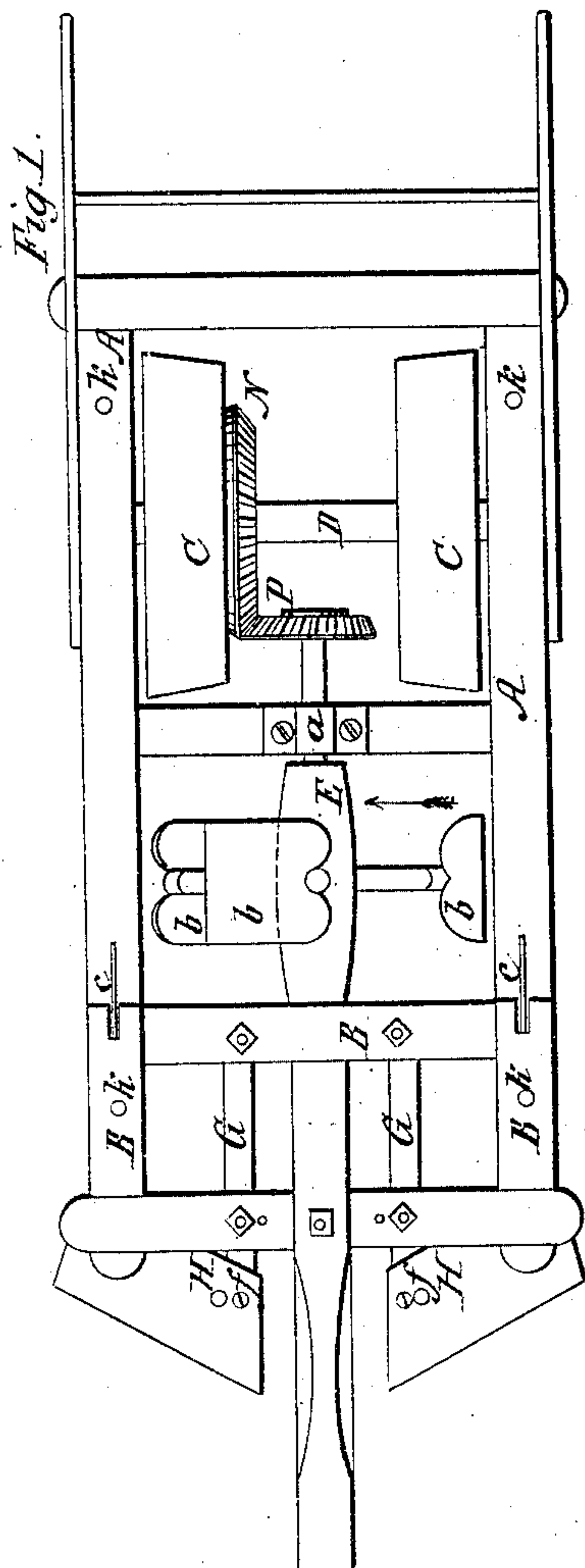
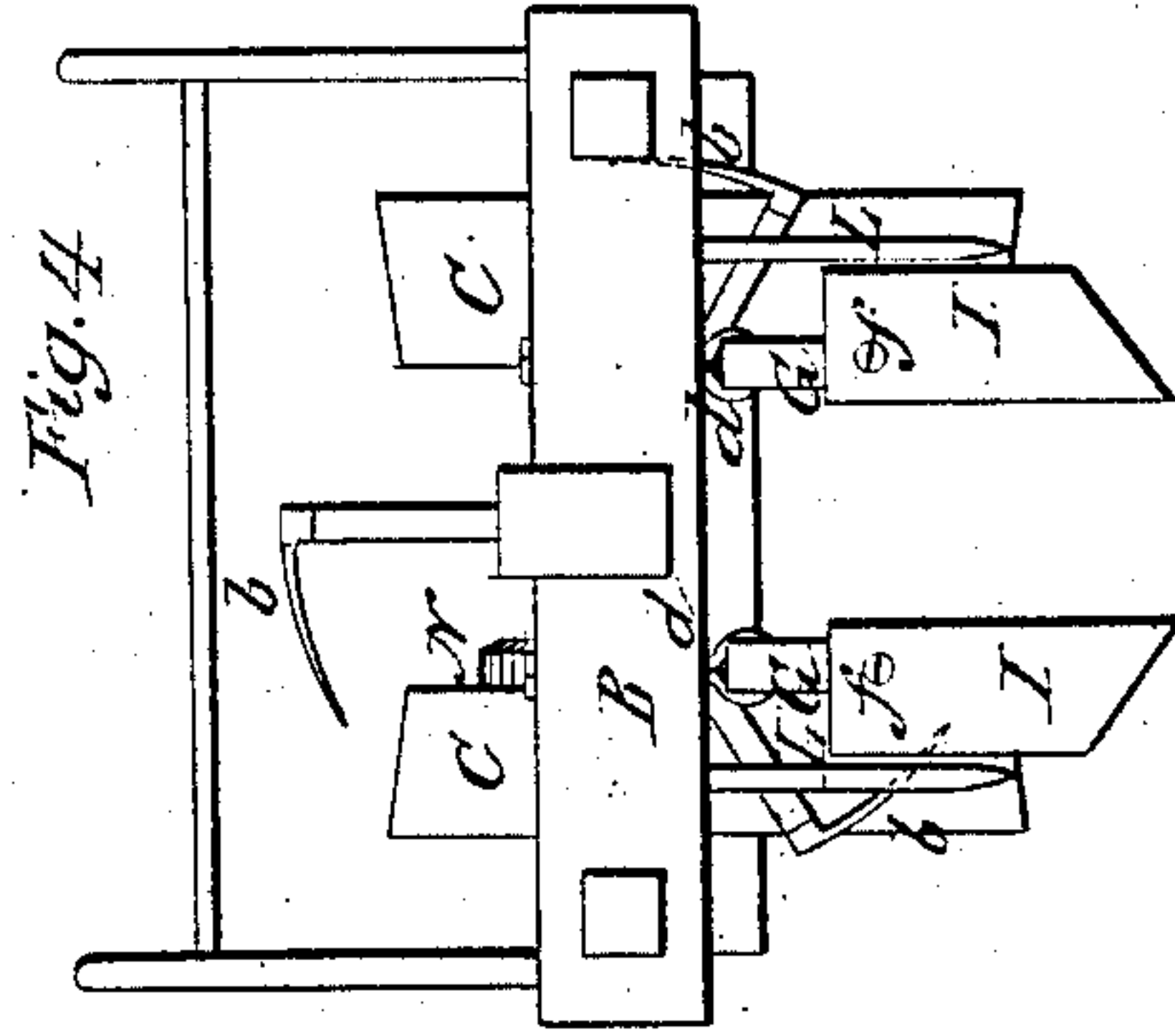
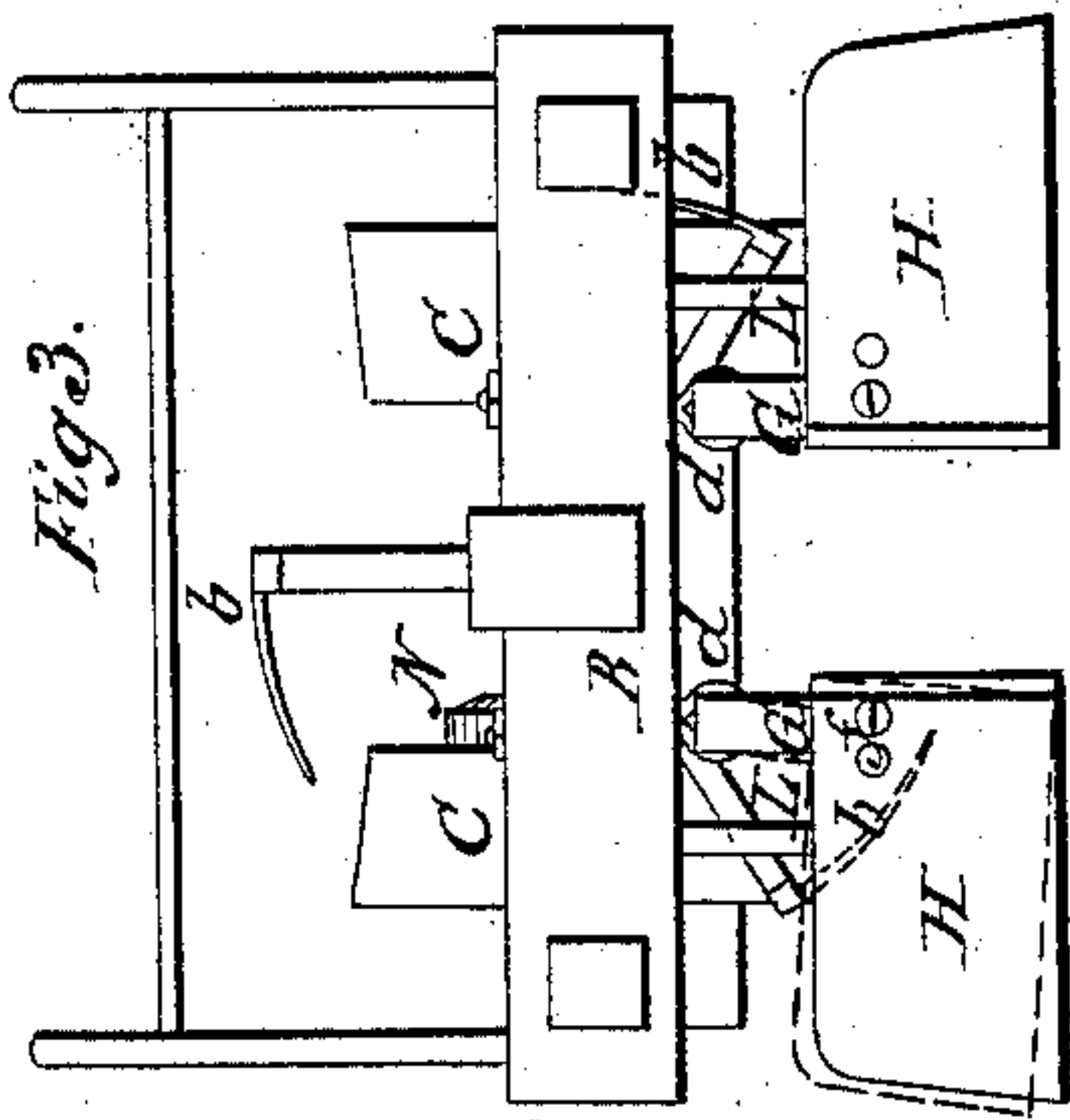
A. Q. WITHERS.

Steam Plow.

2 Sheets—Sheet 1.

No. 18,785.

Patented Dec. 1, 1857.



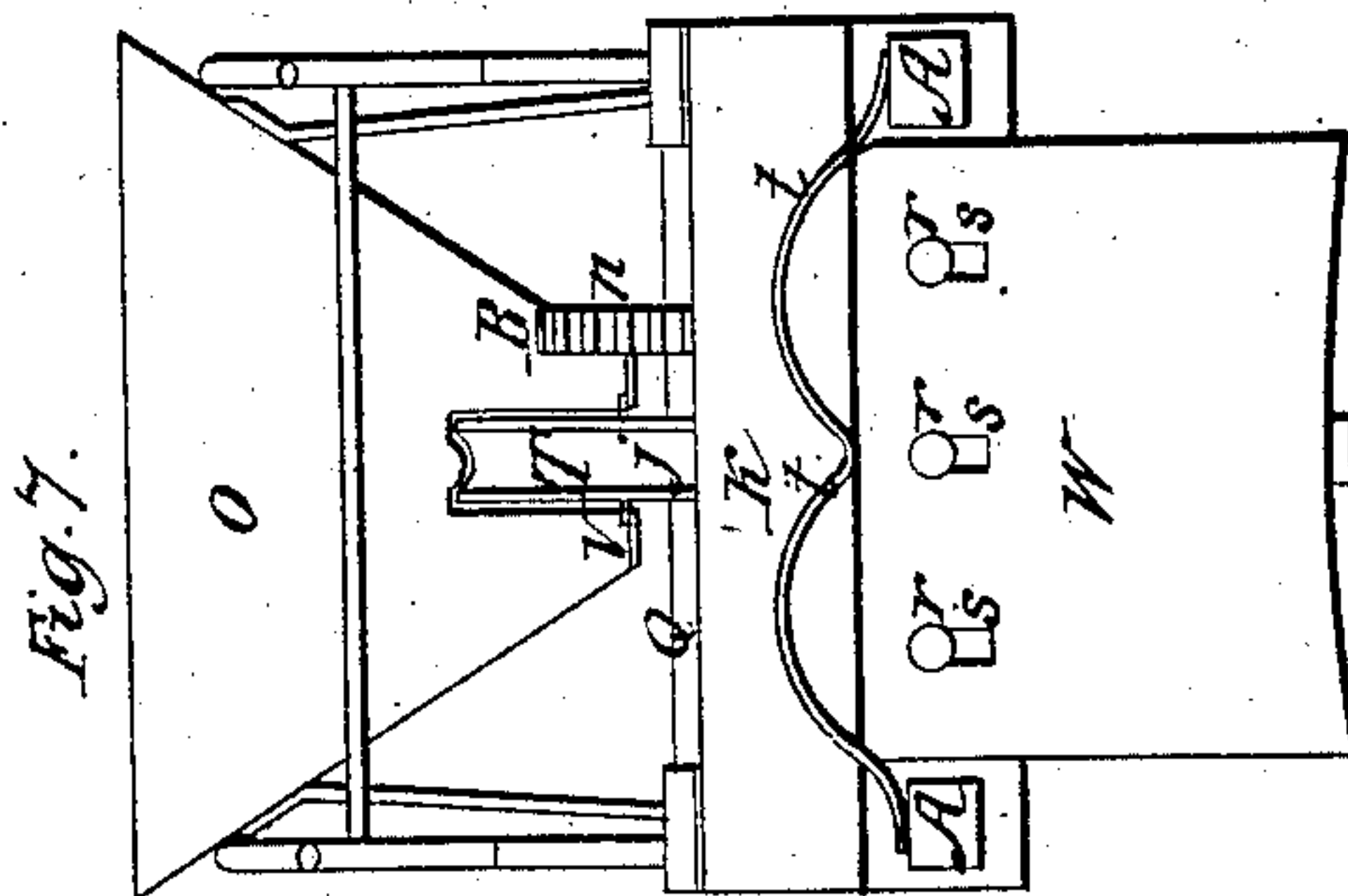
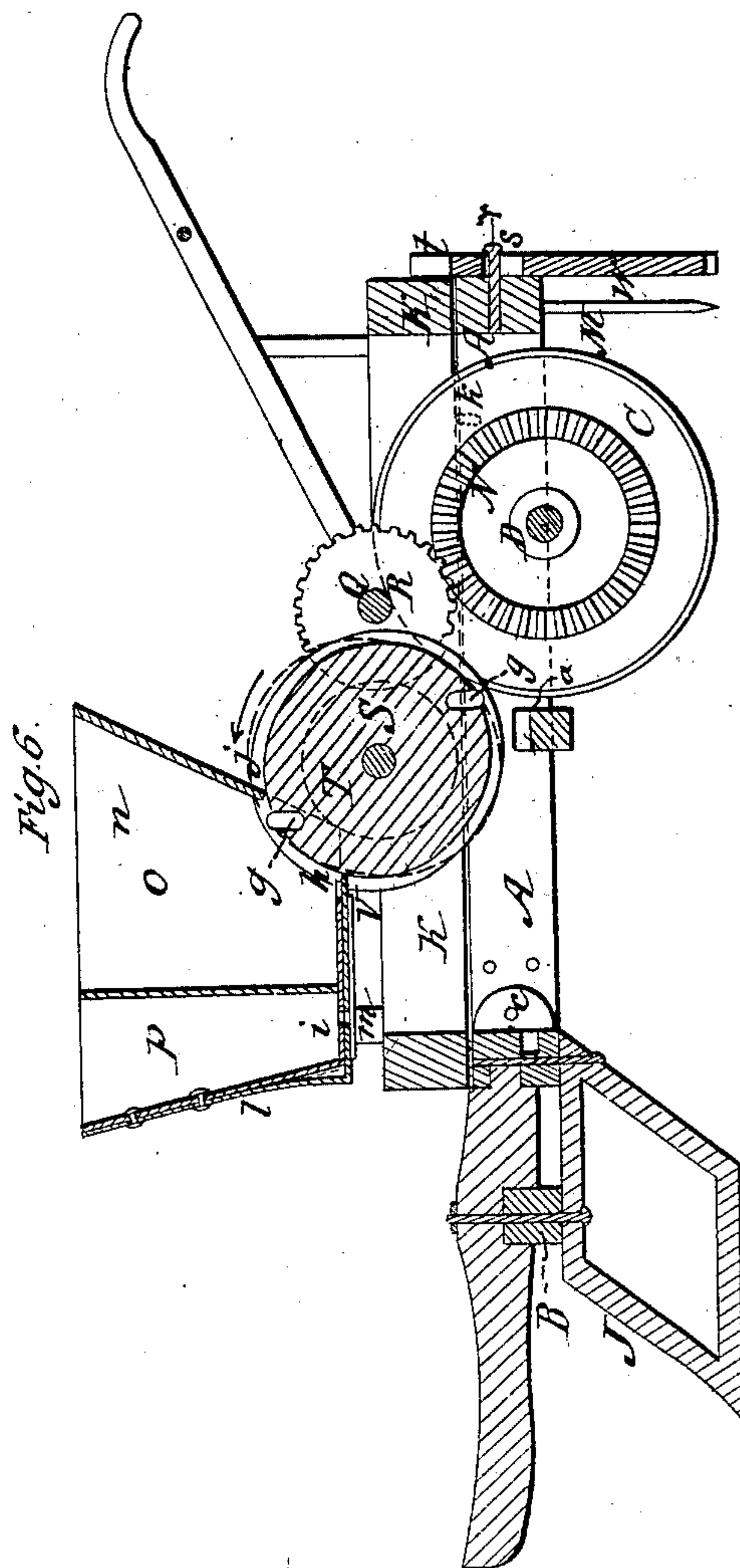
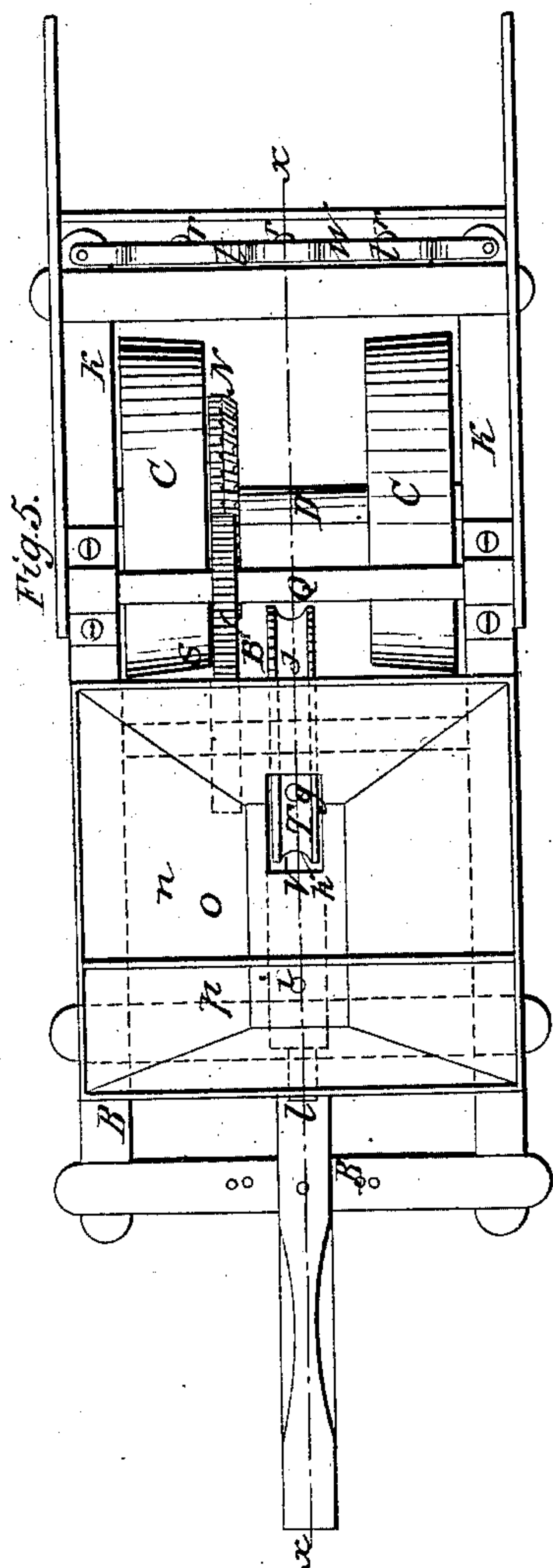
A. Q. WITHERS.

2 Sheets—Sheet 2.

Steam Plow.

No. 18,785.

Patented Dec. 1, 1857.



UNITED STATES PATENT OFFICE.

A. QUARLES WITHERS, OF RED BANKS, MISSISSIPPI.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **18,785**, dated December 1, 1857.

To all whom it may concern:

Be it known that I, A. QUARLES WITHERS, of Red Banks, in the county of Marshall and State of Mississippi, have invented a new and Improved Cultivator; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a plan of the cultivator; Fig. 2, a side elevation thereof; Fig. 3, a front elevation of the same; Fig. 4, also a front elevation of the cultivator slightly modified; Fig. 5, a plan of the machine when provided with the hopper, &c., for planting; Fig. 6, a longitudinal vertical section in the plane indicated by the line *x x*, Fig. 5; Fig. 7, a rear elevation of the same.

Like letters designate corresponding parts in all the figures.

The forward portion, B, of the frame is jointed to the main frame A, as seen at *c*, the joint being so constructed that the said forward portion or frame will bend upward, but not downward, from the line of the main frame, as indicated in Figs. 2 and 6. The ball of the joint is eccentric from its socket, the eccentricity being sufficient only to allow the desired extent of the joint's movement. The object of this construction of the frame is to enable the cultivator to adapt itself readily to any unevenness of the ground's surface, so that the scrapers may not be liable to be forced too deeply therein.

The scrapers H H, whereby the surface of the earth is cultivated, are respectively secured to the front edges of two stock-bars, G G, one of which is situated at each side of and near the central longitudinal line of the implement. The said stock-bars are hinged at *d d* to the under side of the forward frame, B, so that they may have a vibratory play sidewise, and thereby allow the scrapers to yield transversely and adapt themselves to the surface of the ground, each independent of the other. Thus, if one scraper should be passing over a level surface and the other over a surface somewhat ascending, the latter would assume a position indicated by red lines in Fig. 3, while the other scraper would remain in its ordinary position. This arrangement enables the scrapers to run very lightly and easily, and at the same time to work the surface of the ground thoroughly

and evenly. When it is desired to cultivate the earth a second time more deeply near the rows, the scrapers H H are removed by withdrawing the attaching-screws *f f*, and scrapers I I, Fig. 4, of a somewhat different form, being narrower and deeper than the former, are substituted therefor.

Simple pointed cultivating-teeth L L may be secured beneath the forward frame, B, behind the scrapers, in the manner represented. Similar teeth, M M, may be secured beneath the rear end of the frame A, as shown.

For the purpose of cultivating across the rows and thinning out the young plants, especially in the cultivation of cotton, a set of protecting-hoes, *b b b*, is secured to an axle, E, mounted longitudinally in the middle of the frame A, substantially as represented, and the required motion is imparted thereto by means of two wheels, C C, which support the rear end of the implement and transmit their revolving motion through the wheel and pinion N P to said hoes. The driving-wheels C C are somewhat conical or tapering inward, as seen in the drawings, so that they will thereby naturally stride the ridged rows and keep in a central position over them. Hence they not only serve to support the implement and drive the parts requiring active movements, but to guide it properly.

To adapt the machine to the purpose of planting, the hoes *b b b* are removed by detaching the cap *a* of one of its bearings, and in place thereof a hopper-frame, K, Figs. 5, 6, and 7, is placed upon the frame A, and kept in position by studs projecting from the lower side of the upper frame and entering corresponding holes, *k k*, in the lower frame. An intermediate pinion, R, mounted on a shaft, Q, connects the cog-wheel N on the driving-shaft D with a pinion, S, which is situated on the shaft of the seed-dropping wheel T. Said wheel has a grooved periphery, *j*, and a number of depressions, *g g*, therein, each depression being of the proper size to contain as many grains as it is desired to drop at one time, and the distance between the depressions being such in relation to the velocity of the wheel as to drop the grains as often as desired. Their direction is not radial, but such that as the wheel turns, in the direction indicated by the arrow in Fig. 6, downward through the hopper O the grain in the hopper will descend

by their own weight into said depressions. A sliding plate, V, in the bottom of the hopper is provided with a spring, *l*, which keeps it constantly pressed against the periphery of the seed-dropping wheel, so that no seeds can drop from the hopper except what are contained in the depressions *g g*. The hopper O has a separate compartment, *p*, in which any fertilizer may be sown with the grain. For distributing the same there is an aperture, *i*, in the bottom of the hopper, and a corresponding aperture, *m*, in the sliding plate V.

The seed-dropping wheel T is eccentric oblong, as shown in Fig. 6, or is provided with cams on its periphery, so as to impart the desired reciprocating motion, in connection with the spring *l*, to the sliding plate V, for the purpose of distributing the fertilizing substance when used.

The scrapers of the cultivator are also replaced by a tooth or opener, J, secured beneath the center of the forward frame, B, for the purpose of opening the ground to receive the seed.

The seed is covered and the ground properly pulverized and smoothed by means of the pointed teeth M M and of an elastic scraper, W, hung with vertical slots *s s s* upon pins *r r*, projecting from the rear end of the frame A, and pressed downward by a spring or springs, *t*, as most distinctly shown in Fig. 7. The lower edge of this scraper has the proper form to give the desired shape to the ground beneath, as represented.

What I claim as my invention, and desire to secure by Letters Patent, is—

Hanging the stock-bars G G to the frame by hinge-joints, so as to give them a vibratory play sidewise, substantially in the manner and for the purpose specified.

The above specification of my improved combined seed-planter and cultivator signed by me this 14th day of May, 1857.

A. QUARLES WITHERS.

Witnesses:

J. S. BROWN,
R. F. OSGOOD.