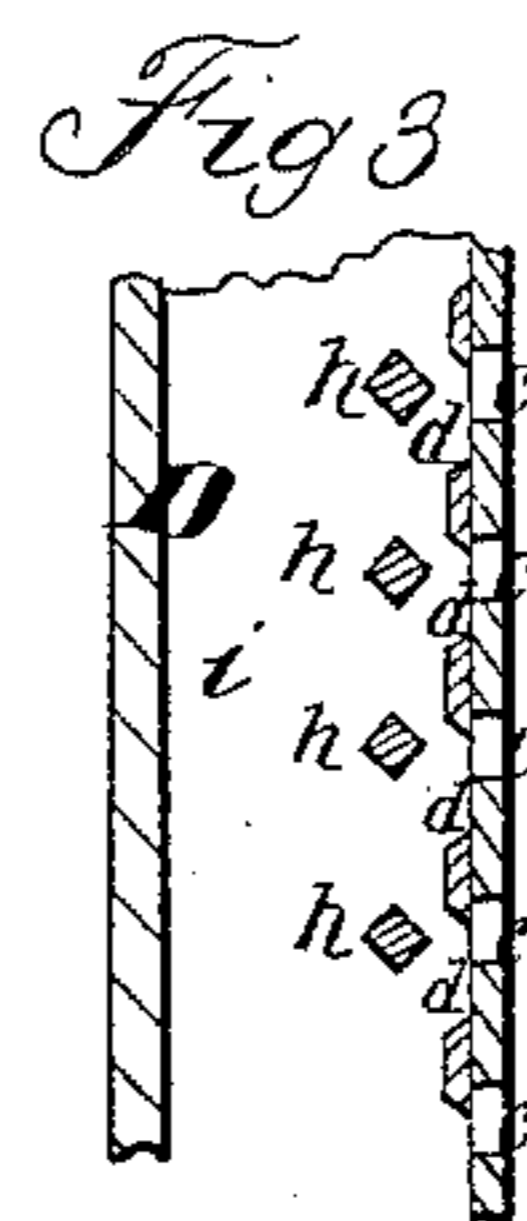
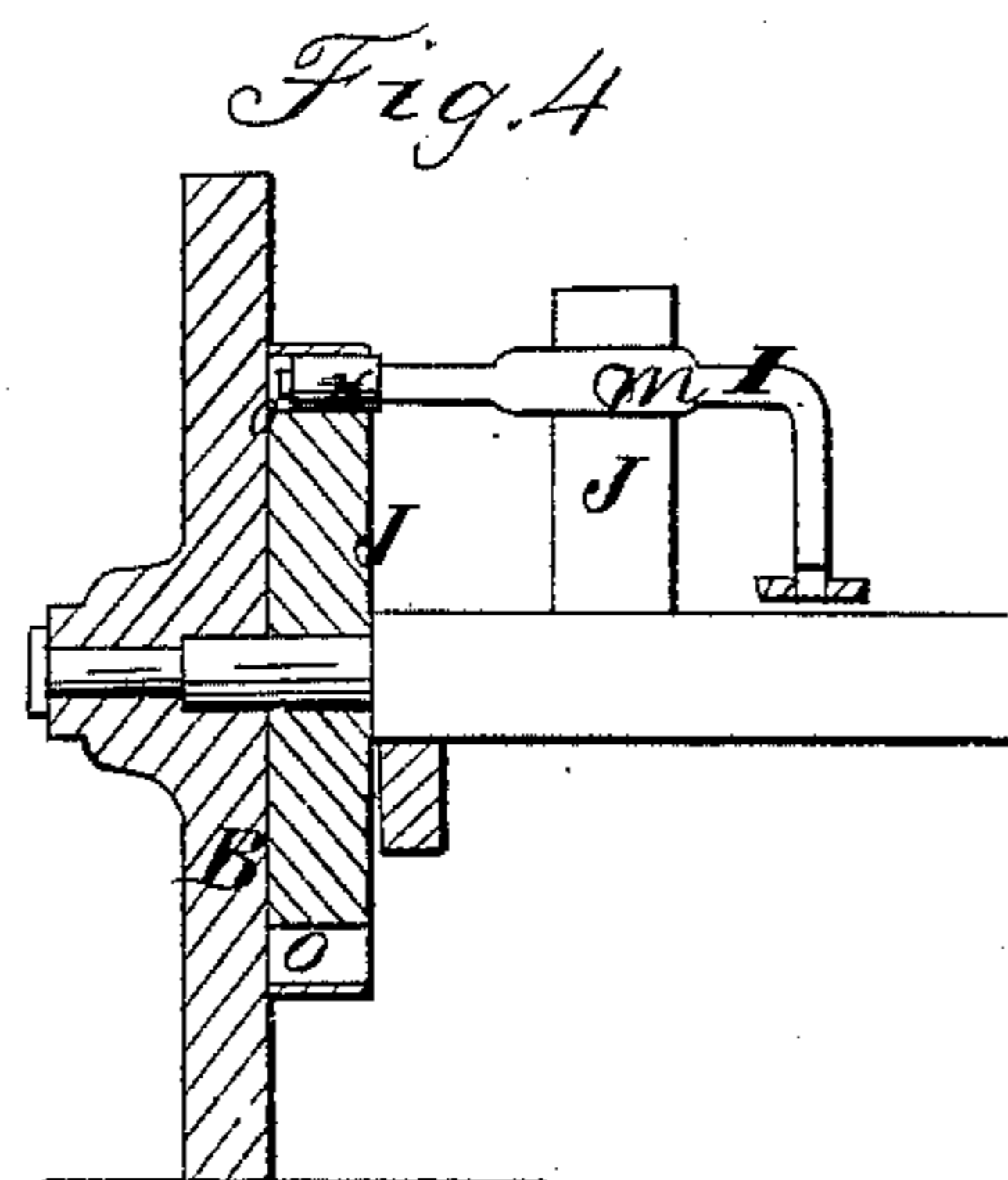
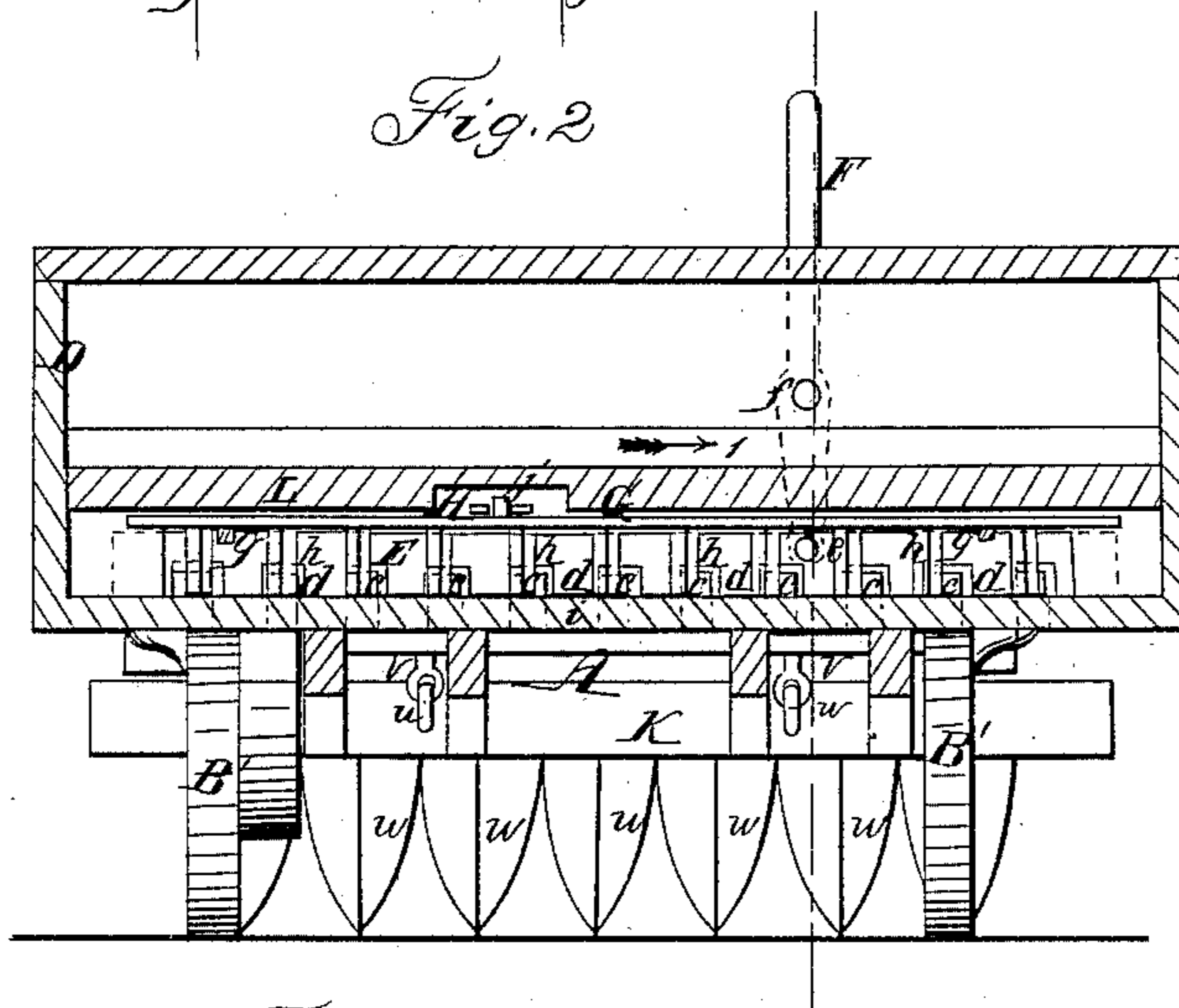
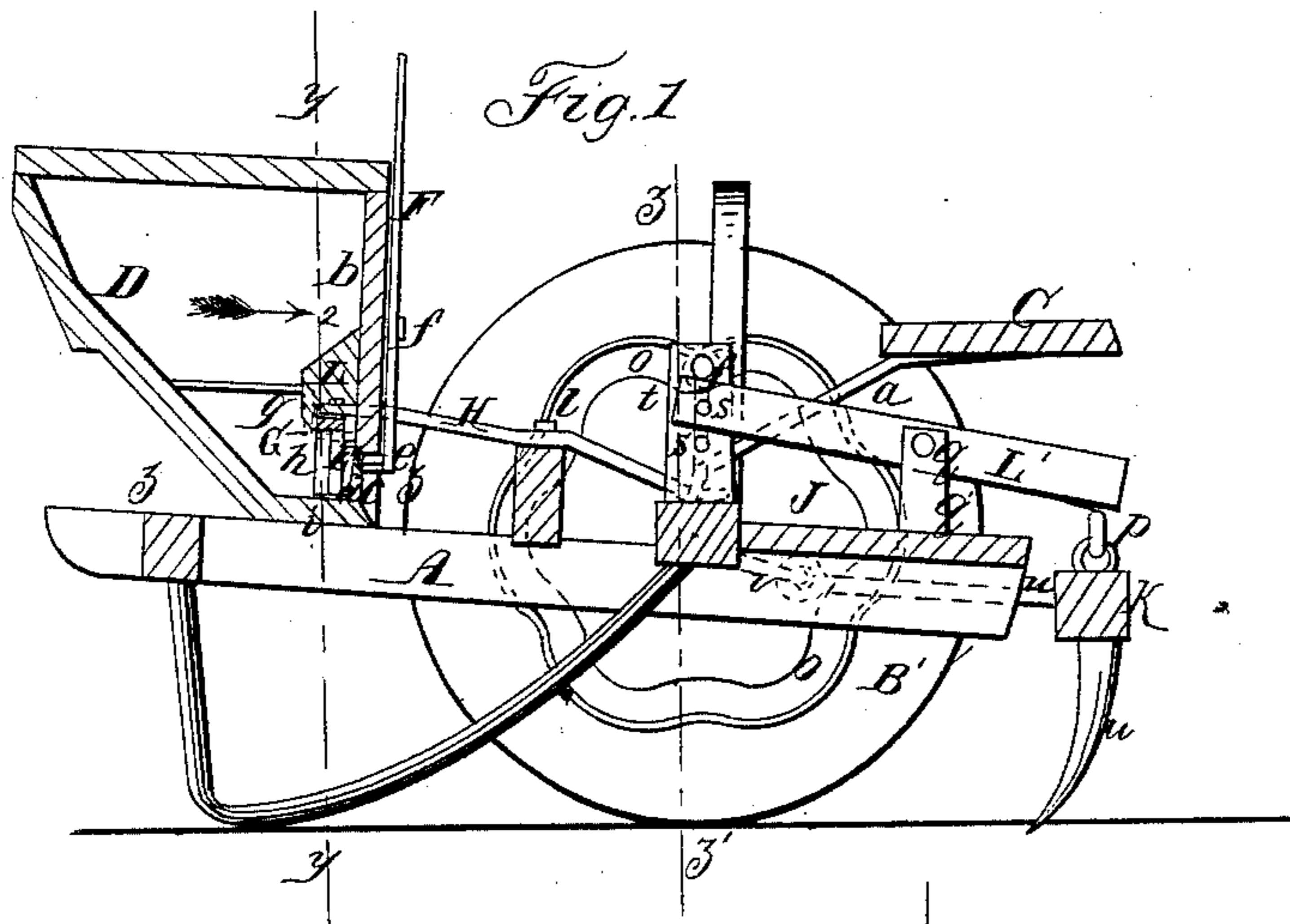


J. F. KIERSTEAD.

Grain-Drill.

No. 20,162.

Patented May 4, 1858.



# UNITED STATES PATENT OFFICE.

JAMES F. KIERSTEAD, OF LA PORTE, INDIANA.

## IMPROVEMENT IN SEEDING-MACHINES.

Specification forming part of Letters Patent No. 20,162, dated May 4, 1858.

*To all whom it may concern:*

Be it known that I, JAMES F. KIERSTEAD, of La Porte, in the county of La Porte and State of Indiana, have invented a new and Improved Seeding-Machine; 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 vertical section of my improvement, taken in the line *xx*, Fig. 2, and looking in the direction indicated by the arrow 1. Fig. 2 is also a vertical section of same, taken in the line *yy*, Fig. 1, and looking in the direction indicated by arrow 2. Fig. 3 is a horizontal section of a portion of the seed-box. *zz*, Fig. 1, indicate the plane of section. Fig. 4 is a detached vertical section of the driving device. *z'z'*, Fig. 1, indicate the plane of section.

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

This invention relates to an improved machine for sowing seed broadcast; and it consists in a novel device employed for distributing the seed.

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

A represents a horizontal rectangular frame, which is mounted on two wheels, B B'.

C is the driver's seat, which is placed at the upper end of the inclined bars or rods *aa*.

D is the seed-box, which is of the usual form, and placed on the front part of the frame A, as shown clearly in Fig. 1. The lower part of the back side, *b*, of the hopper has rectangular openings *c* made through it, the lower edges of the openings being beveled downward from their inner to their outer edges, as shown clearly in Fig. 1. The openings *C* are quite near each other, the spaces between being about equal to their width, as shown clearly in Fig. 2. Within the seed-box D a perforated metal bar, E, is placed. This bar is fitted on its edge in a recess in the inner side of the back side, *b*, of the box, and is allowed to work freely therein. The perforations *d* of the bar E have a pin, *e*, attached, said pin passing through a recess in the back *b* of the box, and fitting in a slot in the lower end of a lever, F, which

is pivoted to the outer side of the back *b* of the box, as shown at *f*. Within the box D there is also placed a horizontal metal bar, G, said bar being placed longitudinally in the seed-box, and its ends bearing or resting on rods *g*, placed within the seed-box, one near each end. The bar G is allowed to slide freely on the rods *g*, and to the under side of the bar a series of pendants, *h*, are attached, the lower ends of which just clear the bottom *i* of the seed-box. The pendants *h* are of quadrilateral form, and are each so placed that one edge or corner faces the opening *k* directly opposite it in the back *b*, as shown clearly in Fig. 3, there being a pendant in line with each opening. The bar G has a vertical pin, *j*, attached to its upper surface, and the forked end of a lever, H, which passes through a slot, *k*, in the back side, *b*, of the box A, receives the pin *j*.

The lever H is pivoted to the frame A, as shown at *l*, and in the outer end of said lever the lower end of a bent lever, I, is fitted. The lower end of the lever I, is rounded, and is fitted loosely in a hole in lever H, and the lever I is pivoted to an upright, J, on the frame, as shown at *m*. The outer end of lever I has a friction-roller, *n*, placed on it, and this roller is fitted and works in a scalloped or serpentine groove, *o*, made in a circular projection, J, at the inner side of the wheel B'.

K is a horizontal bar, which is connected by a link, *p*, with the outer end of a bar, L, which has its fulcrum at *q* on the frame A. The fulcrum-pin *q* passes through an upright, *q'*, on the frame, and through an oblong slot in the bar K, and the front end of the bar rests against a pin, *r*, which is fitted in either of a series of holes, *s*, in an upright, *t*, attached to the frame A. The bar K is connected by two rods, *uu*, to the frame A, the rods *u* being connected to eyes *v v*, attached to the frame, (see dotted lines, Fig. 1,) so that bar K may rise and fall, the eyes *v* being at the center of the movement, the oblong slot in the bar K permitting such movement of the bar K. To the bar K metal teeth *w* are attached. These teeth may be of shovel or other proper form, pivoted at their lower ends. (See Fig. 2.)

Within the seed-box D, and directly over the bar G, a stationary wooden bar, L, is placed,

and secured in any proper way. The under side of the bar *L* is recessed or rabbeted, so that it may receive the bar *G*, and the upper surface of said bar is beveled downward toward the front side of the seed-box, as shown clearly in Fig. 1.

The operation is as follows: The grain to be sown is placed within the box *D*, and as the machine is drawn along a reciprocating motion is given the bar *G* through the medium of the levers *H I*, and carried forward by the serpentine groove *o* in the circular projection *J* on the wheel *B'*. The pendants *h*, as they move in front of their respective openings *c*, cause the grain or seed to pass through said openings, and the capacity of the openings may be decreased, if desired, to diminish the quantity of seed to be sown on a given area by adjusting the bar *E*, so that its projections *d* will be more or less out of register with the openings *c*. The teeth *w* on the bar *K* harrow or rake the seed into the ground, and the teeth *w* may be elevated more or less in order to penetrate the ground the desired distance by adjusting the pin *r* in the proper hole *s* in the upright *t*, and the teeth *w* may at any time be elevated entirely free from the ground, in order that they may avoid obstruction, by merely placing the foot on the inner end of the bar *L'* and depressing it.

By this improvement it will be seen that the discharge-openings *c* are all in view of the

driver, and if any of them should become choked or clogged—a contingency not likely to occur—the apertures may be cleared or freed from all obstructions at once.

The apertures are prevented in a great measure from choking in consequence of the bar *L*, which, while it covers the reciprocating bar *G* and protects it from the weight of the superincumbent seed, causes the grain to be pressed laterally in a direct manner through the discharge-openings *c*, the pendants *h*, in consequence of their oblique sides relatively with the plane of their movement, insuring the discharge of the seed.

I do not claim separately the adjustable perforated bar *E*, nor the reciprocating bar *G*, with its pendants *h* attached, for such devices or their equivalents have been previously used; but,

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

The reciprocating bar *G*, provided with the pendants *h*, and the adjustable perforated bar *E*, in combination with the bar *L*, the parts being arranged relatively with each other and the discharge-openings *c*, so as to operate as and for the purpose set forth.

JAMES F. KIERSTEAD.

Witnesses:

G. HATHAWAY,  
GEO. S. SEYMOUR.