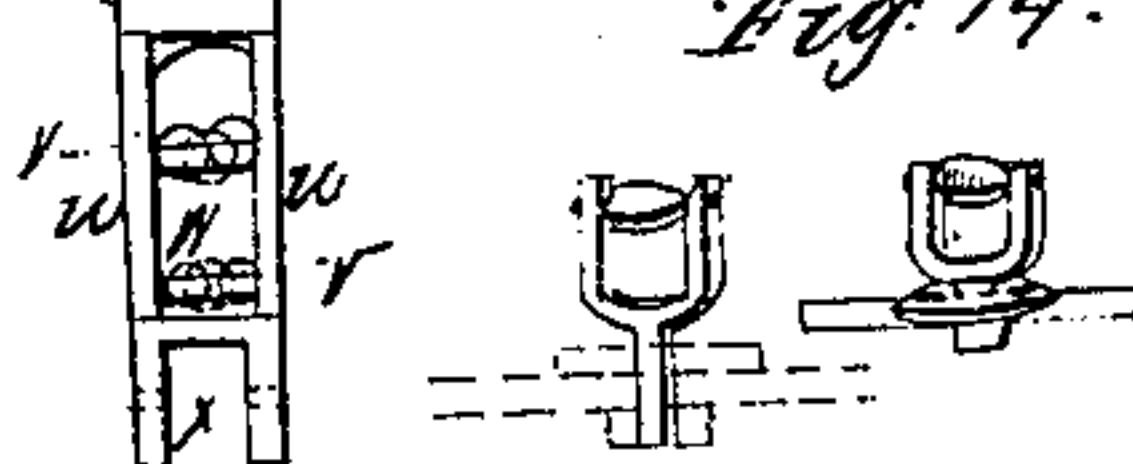
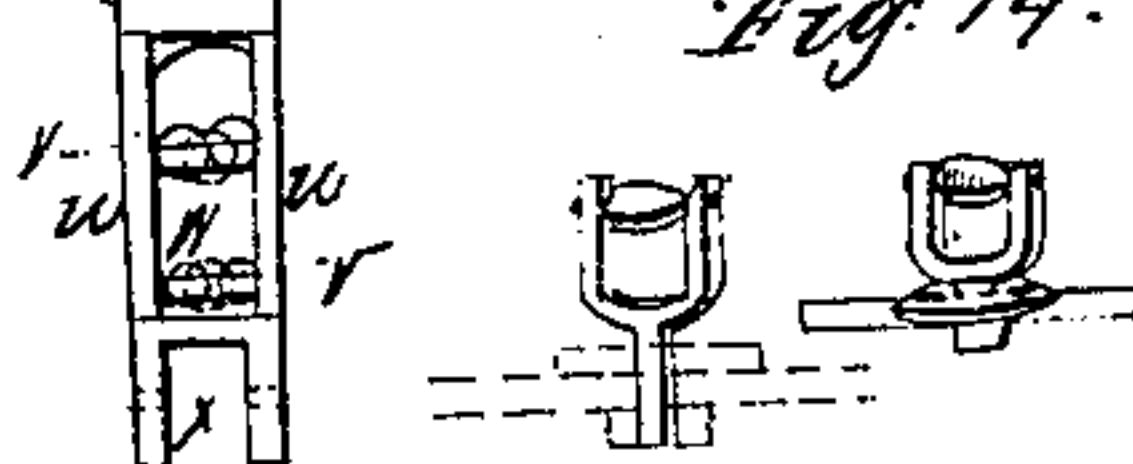
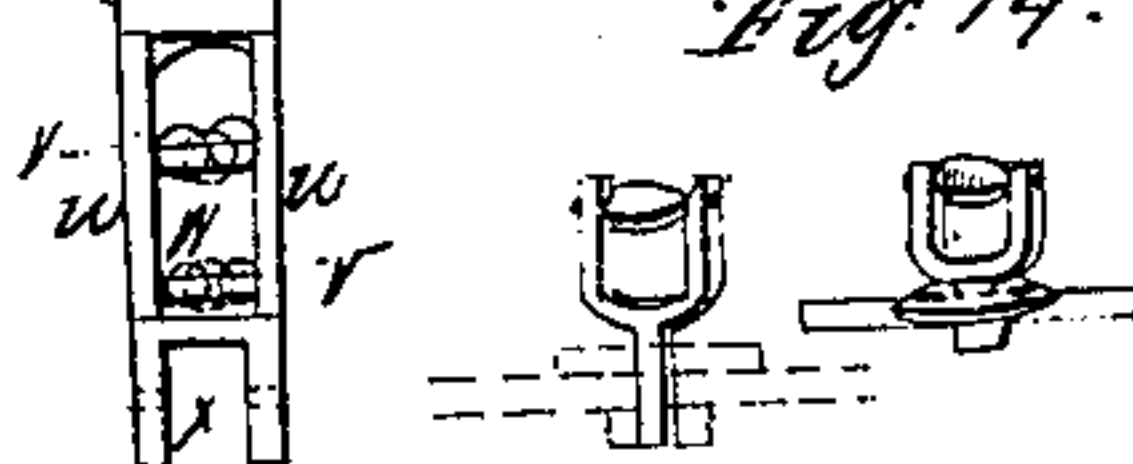
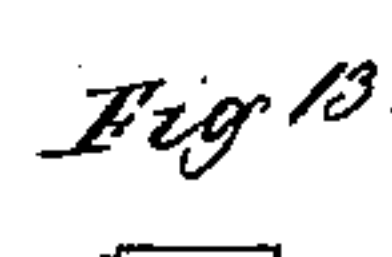
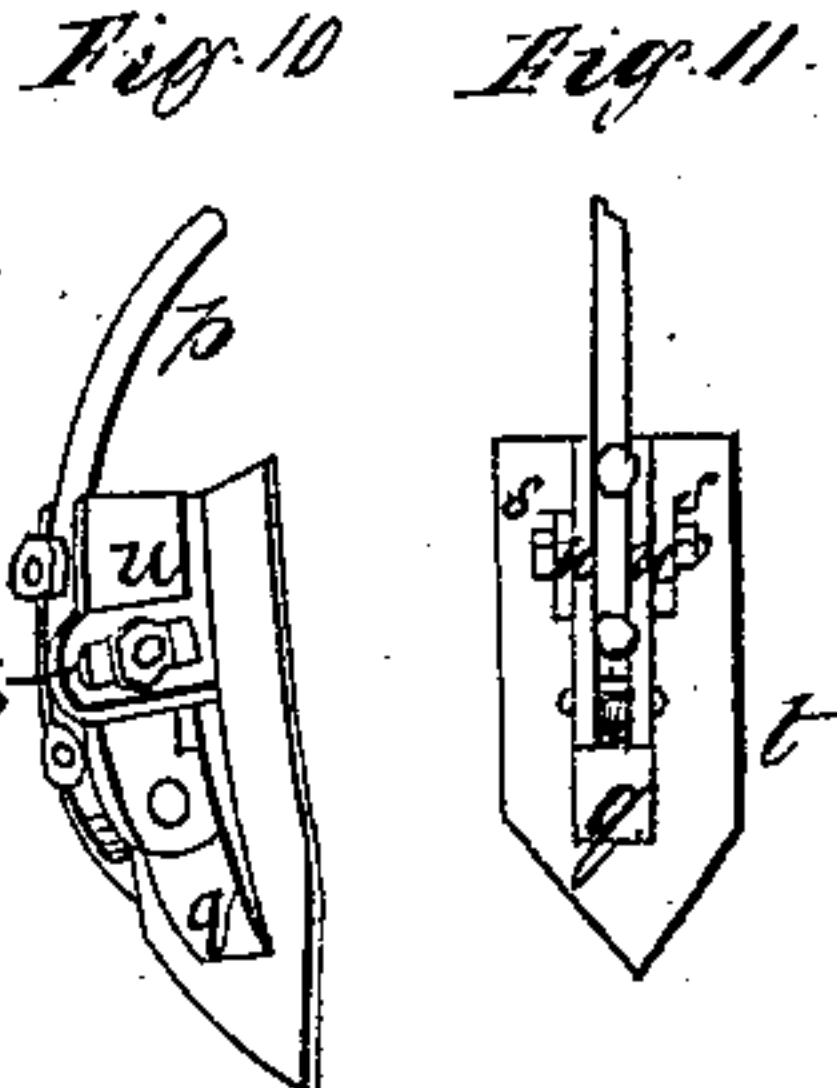
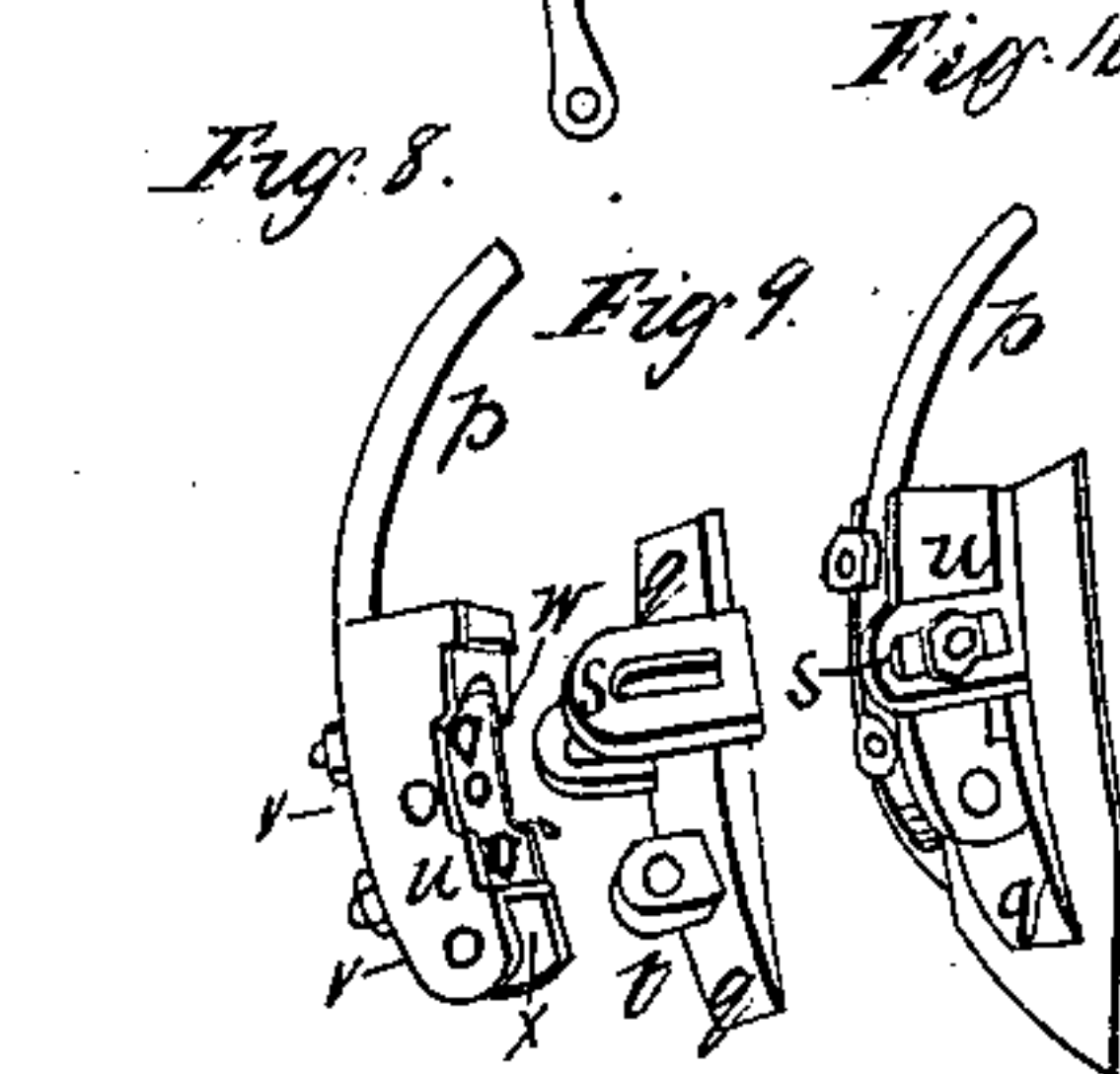
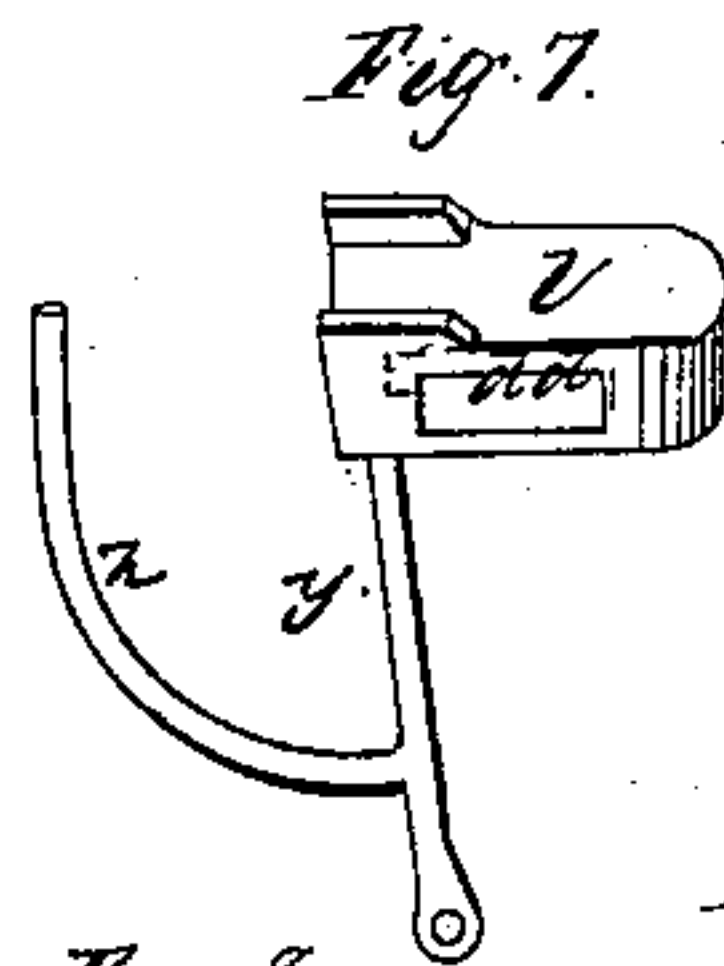
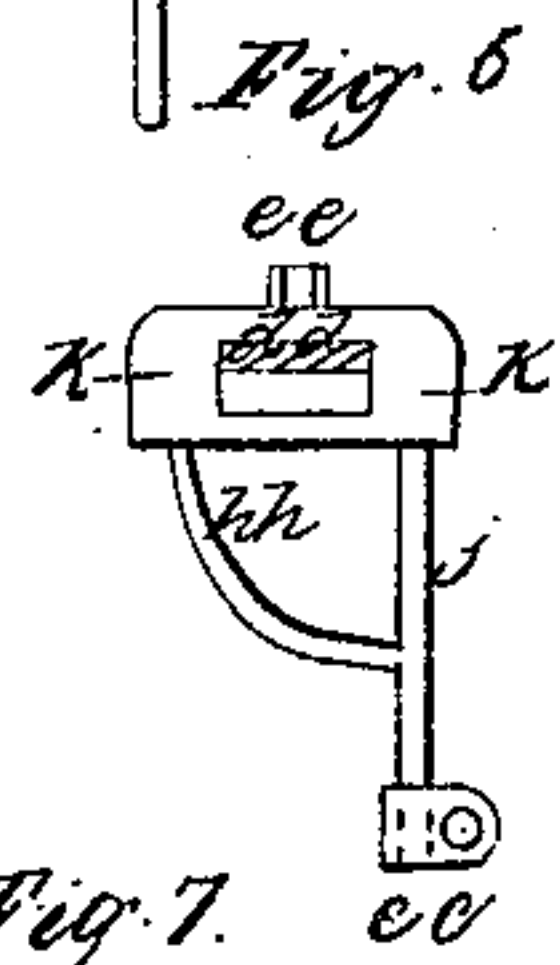
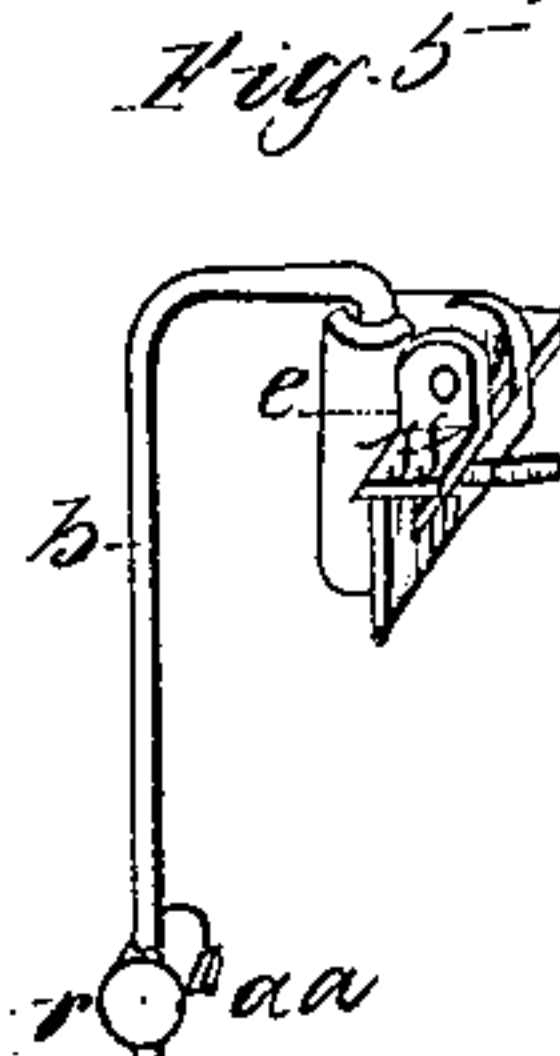
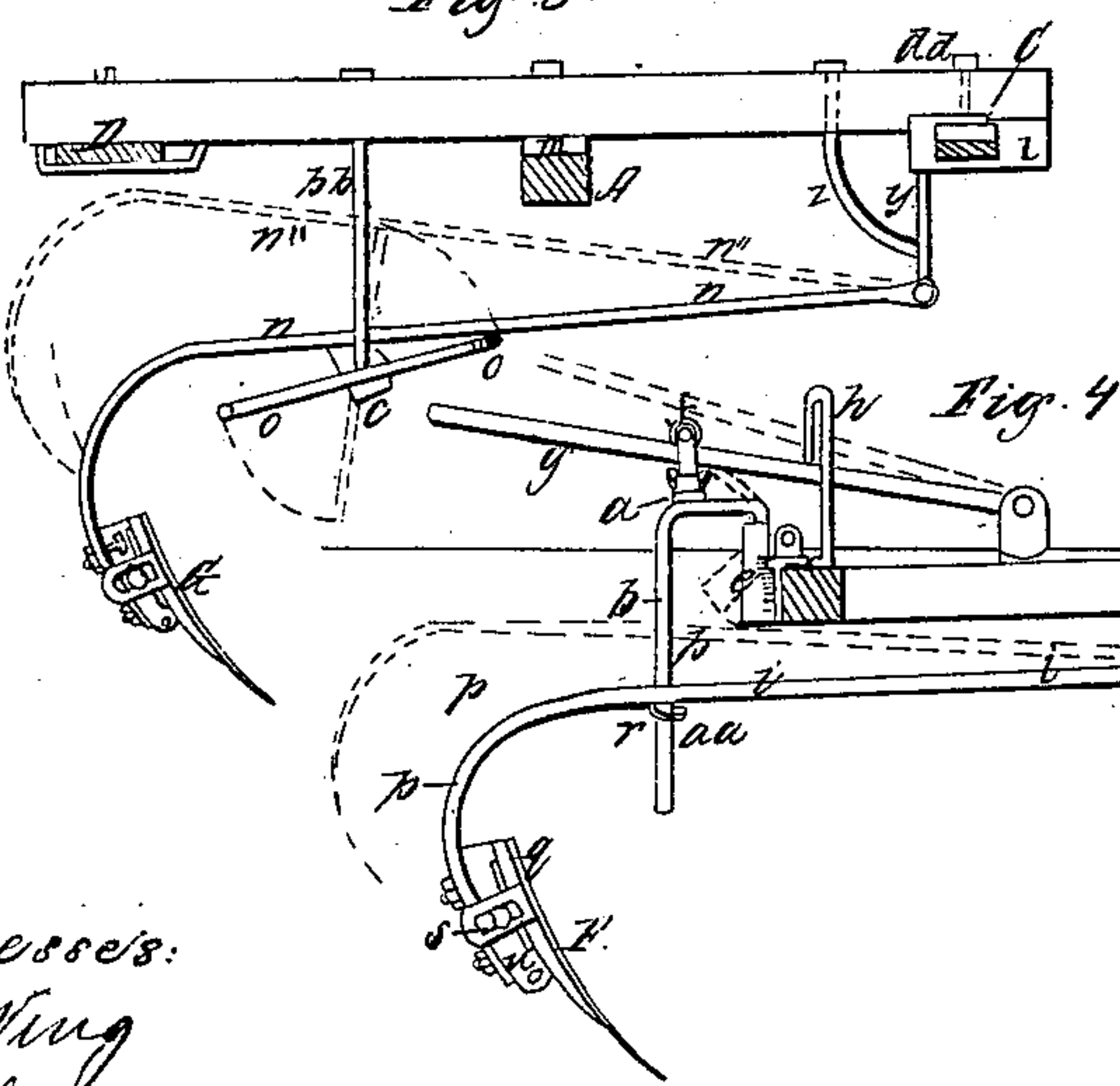
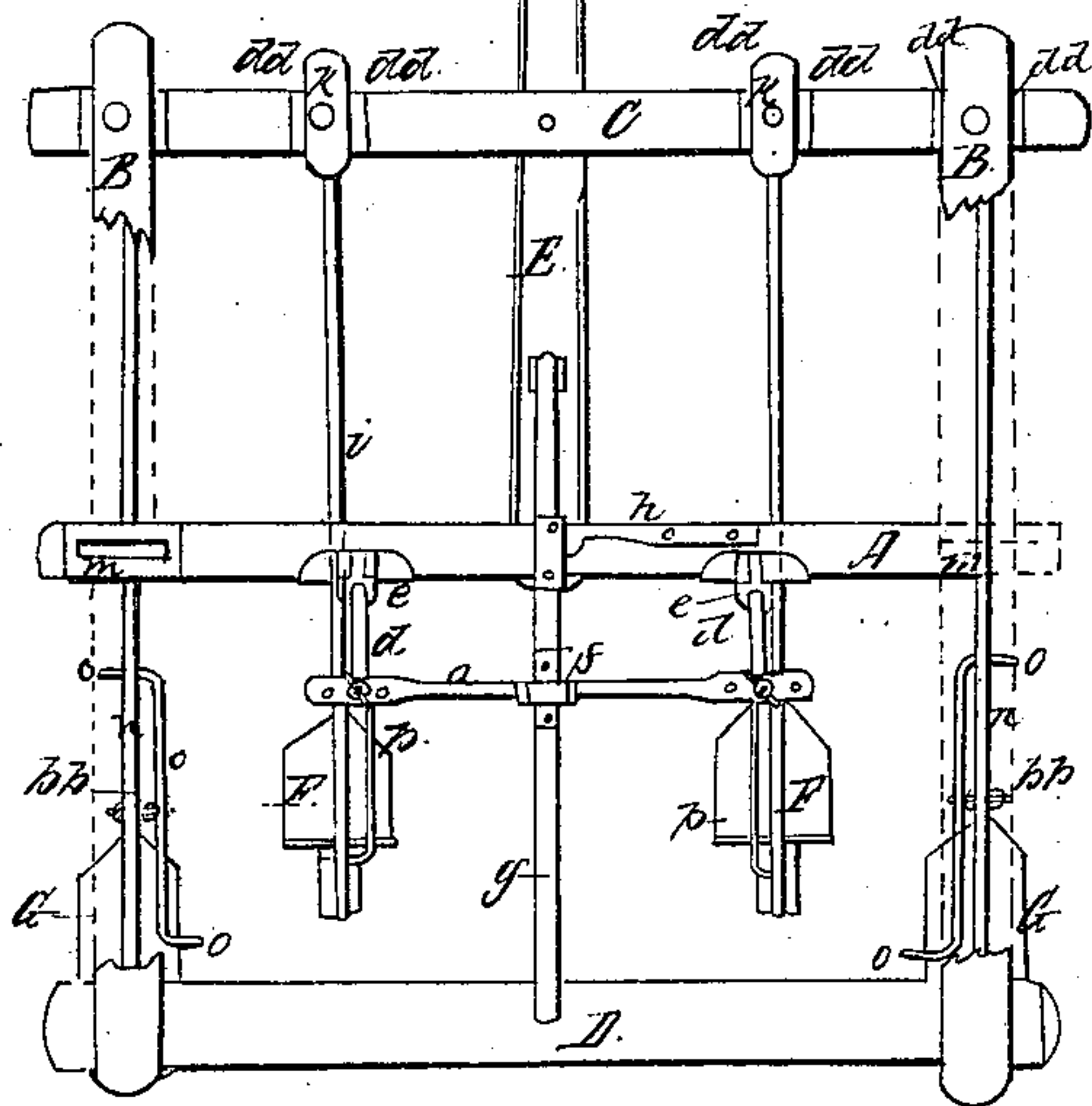
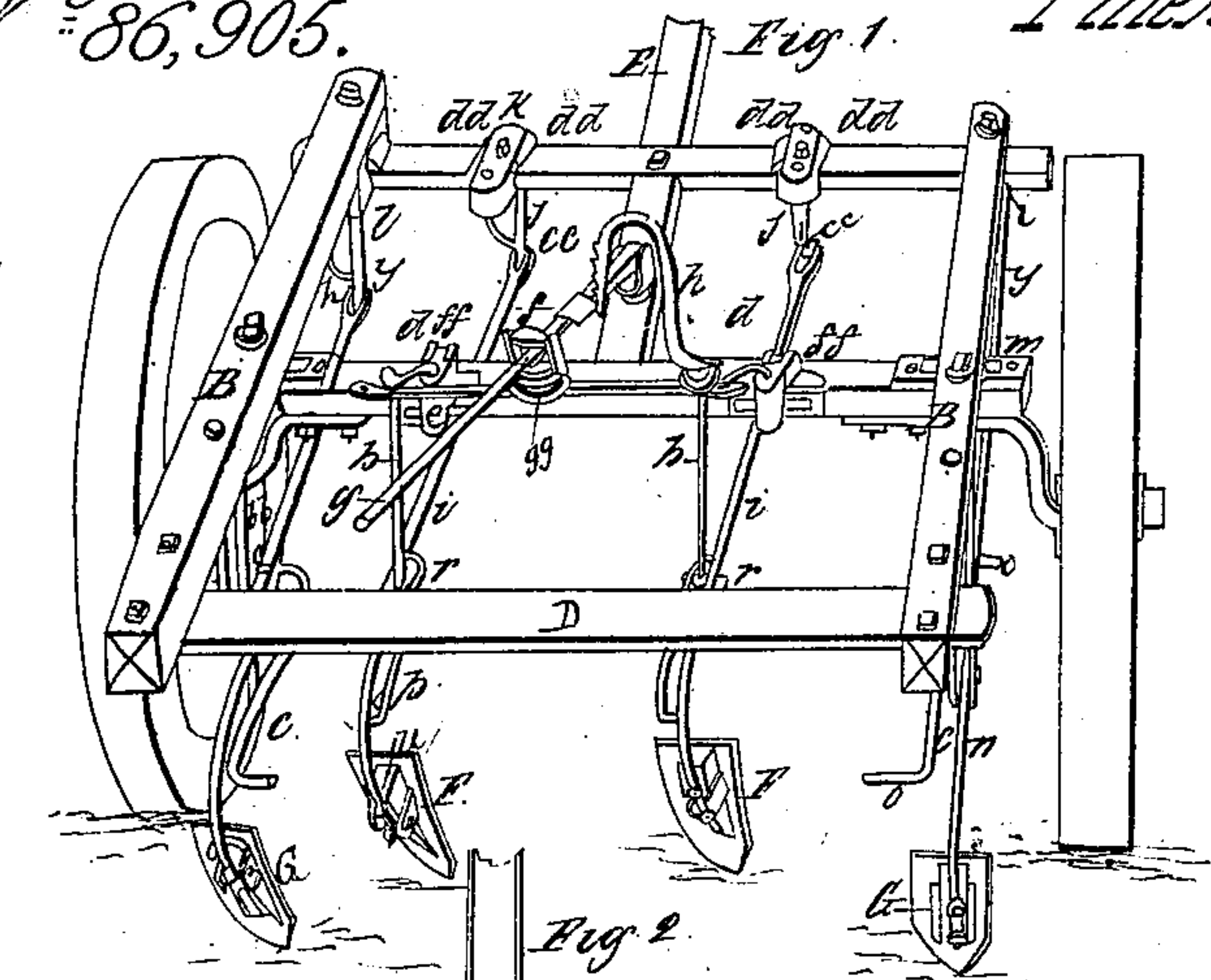


*M. & J. Caywood*

*Cultivator*

*N<sup>o</sup> 86,905.*

*Patented Feb 16, 1869.*



*Witnesses:*  
*J. B. Wing*  
*G. W. Nelson*

*Inventors:*  
*Martin Caywood*  
*John Caywood*



# United States Patent Office.

MARTIN CAYWOOD AND JOHN CAYWOOD, OF PEORIA COUNTY,  
ILLINOIS.

Letters Patent No. 86,905, dated February 16, 1869.

## IMPROVEMENT IN CULTIVATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, MARTIN CAYWOOD and JOHN CAYWOOD, of the county of Peoria, and State of Illinois, have invented a new and useful Improvement in Sulky-Cultivators; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view.

Figure 2 is a plan view, viewed from inside of machine.

Figure 3 is a side view of shovel and beam, seat-bar and foot-lever.

Figure 4 is a side view of inside plow-beam, crank, lever, hook, &c.

Figure 5 is a side view of crank, crank-box, and lifter-gauge.

Figure 6 is a view of gauge-block and brace-post of inside plows.

Figure 7 is a view of gauge-block and brace-post of outside plow.

Figure 8 is a view of shifting-block.

Figure 9 is a view of draught-gauge.

Figure 10 are views of figs. 8, 9, and 10, in combination, for adjusting shovel.

Figure 11 is a back view of shovel.

Figure 12 is a section of shifting-block.

Figure 13 is a view of inside of shifting-block.

Figure 14 is a view of swivel-clevis on tie-bar.

Like letters in the figures of the drawings indicate like parts.

This is a sulky-cultivator, or one in which the driver is seated. Like the common machines of this kind, there are two side or seat-bars, B B, each about six and one-half feet long and two by two and one-half in depth, and supported at their centres on the axle-tree A, where they are fastened by set-screws in the gauge-blocks m m.

The forward ends of bars B B have bolted to their under sides the metal gauge-block l l, from which the iron brace-posts y depend, and through which blocks the iron bar or guide, to which are attached the brace-posts y of the inner plows, passes.

To the rear ends of said bars B B, the seat D is suspended on the long staple under the bars, which staple allows the seat to be slid backward or forward to balance the neck-draught.

There are four adjustable shovels to this machine.

There is one plow under each seat-bar, supported by the beam n, which beam is suspended by bolt through eye, at lower end of brace-post y, coming from under side of beam-gauge block l.

These beams are two inches wide by one-half inch thick, if of iron; if of wood, about two by two and one-half inches, and from five feet six inches to six feet long, and bending downward in an arc of a circle,

to rear end of which curved part are fastened the shovels G.

The rear part of the beam n rises and falls in the slot of the adjusting-bar b b, which bar is, in shape, a tuning-fork, the handle being bolted through seat-beam B B perpendicularly, and fastened on top with nut equidistant between axle and seat.

The latter bar b b carries between its lower extremities, allowing it to freely turn, a quadrant-shaped block, of iron or wood, C, by which the plow is raised or lowered.

The adjusting-bar is about fifteen inches long, and is made of either wood or iron, and of sufficient strength to act as slot for plow-beam.

The block for raising beam turns on the pin or bolt running through lower end of said bar b b, and is so made as to graduate depth of shovel by a range of three inches.

The same bolt also passes through eye in a lever about twelve inches long, (of iron,) and five-eighths of an inch thick, placed alongside of said plow-beam, and has its forward end bent at right angles and passes under said beam n, its rear end being curved the reverse way, to present a hold to the driver's foot in raising the plow, when necessary.

To lower part of curve of beam n is fastened the apparatus, figs. 8 and 9, for adjusting a setting-shovel. The point of shovel is about two feet below horizontal part of beam.

The shovel is riveted to the iron draught-gauge g, fig. 9, of cast-iron, about five inches long by three inches wide, and three-fourths of an inch thick, having projecting jaws s, containing slots on each jaw, and with an eye, t, near lower extremity.

The eye is received within the jaws of the "shifting-block" u, fig. 8, and secured by bolt.

The block u is of cast-iron, and hollowed down to within one-quarter of an inch of its outer surface, and has two slots running transversely, to receive two bolts v v, passing thence through curve of plow-beam, and to enable shovel to be set either to right or left, if required. Said slots are two and one-half inches apart, corresponding with holes in plow-beam, a bolt to each hole.

In setting shovel to required inclination, the bolt passing through the slots in jaws s of draught-gauge, and through the "shifting-block" u, is loosened, by which means the incline of shovel is made, and then tightened at the required angle, the block u hinging on the eye and bolt at t, fig. 9.

The inside shovels are set in same manner, and are one foot in advance of the others; and their beams are of the same shape and materials, but shorter, excepting the addition of the staple p p, projecting from and parallel to side of beam, so as to allow the passage through it of the arm of crank b, used in lifting beam when shovels are raised.



This arm *b* of crank is furnished with the lifter-gauge *r*, a metal block, having therein a set-screw *a a*.

The forward ends of inside beams *i i* are held by the swivel-clevis at lower end of brace-posts *j j*, which posts are further braced by an iron rod of three-quarters of an inch in diameter, welded to lower end of said brace-posts, and curving backward and upward through the gauge-block *k*.

The swivel or clevis-block *c c*, fig. 6, has an eye in its forward end for pinning to plow-beam, and plays on the lower end of brace-post, by means of hole cast therein, to allow lateral motion to beam.

The gauge-blocks *k k* are of cast-iron, eight inches long, two and one-half inches wide, and two inches in depth, cast with an oblong mortise transversely through them, three-quarters of an inch wide and two inches long, through which the metal bar or guide supporting plow-beams passes. It is two inches wide and one-half inch thick.

Between said block *k* and upper surface of metal guide *C* are the gibs *d d*, as also in the blocks *l l*, under bars *B B*, on side of machine.

All the gauge-blocks are fitted with set-screws. The blocks *l l*, under the side-bars *B B*, receive same in a shoe cast in upper side of block.

The inside plows are guided and raised with the wooden lever *g* running beneath the swivel-clevis *f*, on the tie-bar *a*, of iron, about three-eighths by three-fourths inch width by two feet length, and pierced at the flattened ends with three holes, at which point the bar is fastened to the angle of the cranks *d d* by set-screws.

The cranks *b b* stand perpendicularly when plowing, and support the beams, as before described, and are bent at upper end forward, forming a horizontal arm about nine inches long, and are then bent downward, and turn to right or left, or up and down, in the crank-boxes *e e*. The lower arm of crank is two feet long, and of three-fourths inch iron rod, and passes through the iron gauge-block, before described.

The lever by which the tie-bar, cranks, and beams are raised is about three feet long, its fulcrum being the swivel-clevis on the tongue *E*.

It has a metal plate screwed to its upper surface, projecting a little beyond edge of it, by which to hitch lever to the bent hook *h*, bolted to the axle-tree *A*.

The hook is bent like a siphon, its longest arm being bolted to axle-tree, and allowing lever *g* to pass freely beneath the short arm or hook.

The swivel-clevis *f*, on tie-bar, has a roller above the lever, allowing it easily to slide over the lever, when latter is raised.

The crank-box *e* is attached to the jaws of gauge-block *f f* by pin, fig. 5, allowing of a vertical semicircular motion to cranks.

The block *f f* is attached to axle-tree by means of slot running horizontally through it, by which it is adjusted on the axle-tree in gauging of plow *F*.

The operation of the machine is this:

On going to plow, the centre plows are lowered, by means of lever *g* and cranks *b b*, off the hook *h*. The side plows are lowered by means of the foot-levers *o o*. The gauge-blocks *k k*, *l l*, regulate width of furrows, and the inner plows are guided, in case of crooked corn-rows, by the lever *g*; the inclination of shovels, by the devices behind the shovels, and the depth of plow by means of the gauges *n*, on cranks, and the blocks *e e*, in the adjusting-bars *b b b b*.

#### *Advantages.*

The facility of setting plows at any distance apart on the guide-bar, which cannot be done on common plows of this kind. Also, the double motion of lifting and dodging by one contrivance. The facility of raising or lowering inner plows and outer plows, and also of setting the inclination of plow to horizon, and of setting same obliquely by one contrivance of gauge-draughts *g* and shifting-blocks *n*.

Having thus fully described our invention,

What we claim therein as new, and desire to secure by Letters Patent, is—

1. Beams *n n*, slotted bars *b b b b*, brace-posts *y y*, gauge-blocks *l l*, slotted guides *m m*, foot-levers *o o*, and swivel-clevises *c c*, all constructed and operated substantially in the manner and for the purpose as herein set forth.

2. Beam-gauge blocks *k k*, gibs *d d*, brace-posts *j j*, and beams *i i*, in combination with cranks *b b* and crank-boxes *f f*, cross-bar *a*, lever *g*, and hook *h*, all when constructed, and arranged, and operated in the manner and for the purpose as herein set forth.

3. Providing the shovel with a draught-gauge *q*, and combining therewith a shifting-block, *n*, for adjusting the shovel, substantially as set forth.

As evidence that we claim the foregoing, we have hereunto set our hands, in the presence of two witnesses.

MARTIN CAYWOOD.  
JOHN CAYWOOD.

Witnesses:

J. B. WING,  
G. W. WILSON.