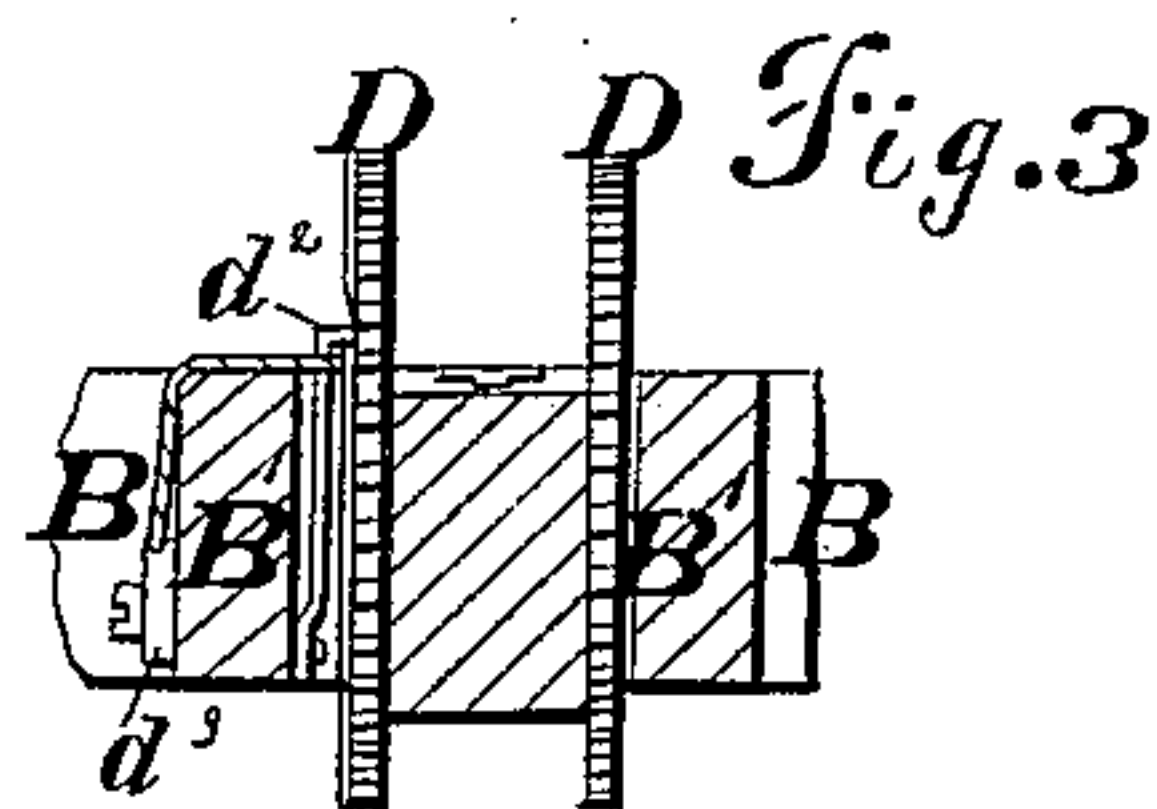
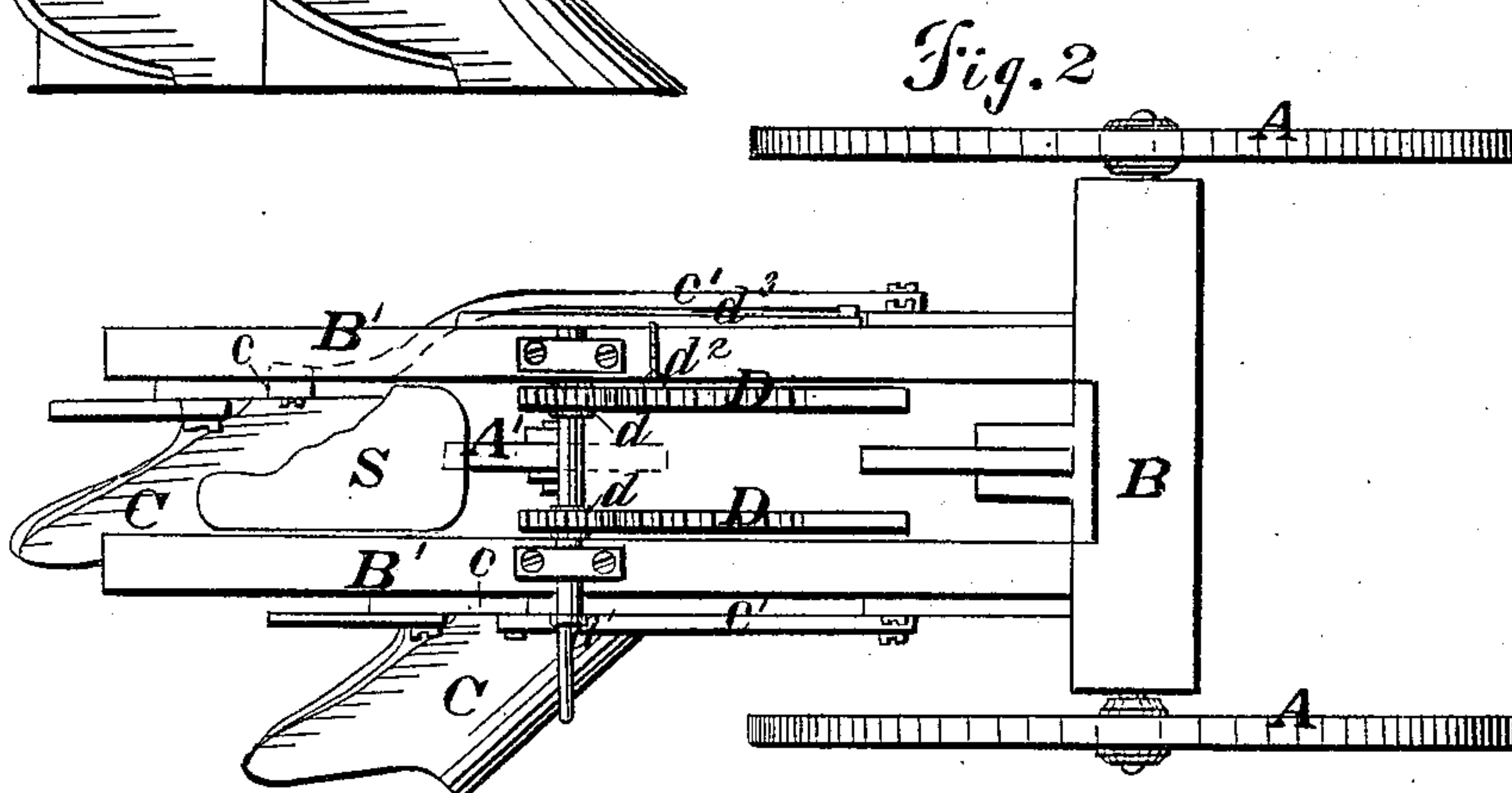
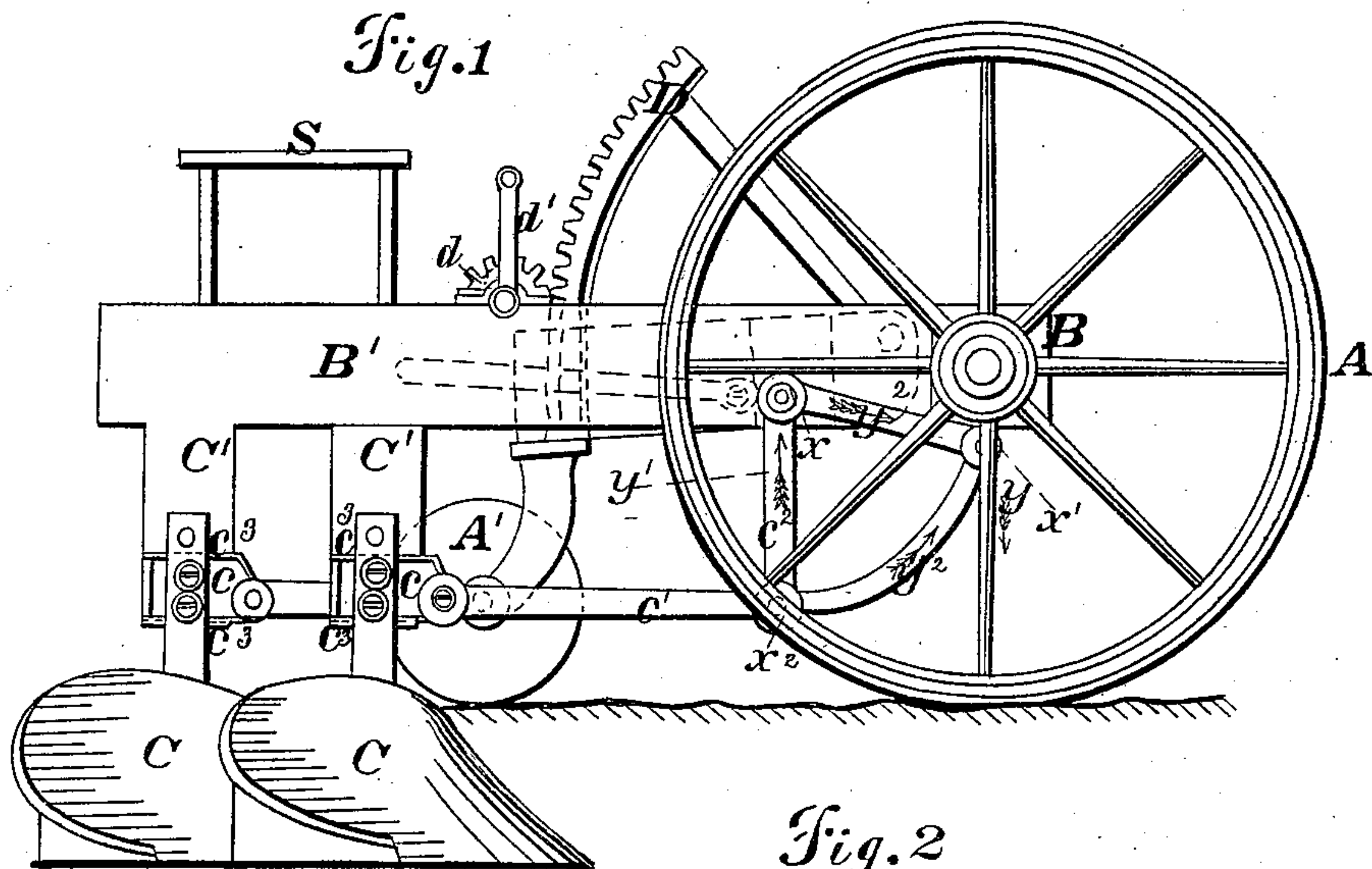


M. FLINN.  
Gang Plow.

No. 76,735.

Patented April 14, 1868.



Witnesses;  
G. F. Schutze  
Geo. W. Herbert

Inventor;  
M. Flinn  
By his Atty  
W. Randolph Co

# United States Patent Office.

MATTHEW FLINN, OF ST. LOUIS, MISSOURI.

*Letters Patent No. 76,735, dated April 14, 1868.*

## IMPROVEMENT IN GANG-PLOUGH.

*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, MATTHEW FLINN, of St. Louis, in the county of St. Louis, and State of Missouri, have made certain new and useful Improvements in Gang-Ploughs; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates, firstly, to an improved construction of the parts which allows both of the wheels to run on the land, instead of having one of them run in the furrow, as most gang-ploughs now do; secondly, the invention relates to an arrangement of the draught-connections of the ploughs, whereby the draught is thrown down upon the axle, instead of making the said connections in a right line, between the ploughs and the animals drawing it, thereby saving in the traction-power required; thirdly, the invention relates to an improved device for raising the ploughs up out of the ground.

To enable those skilled in the art to make and use my improved ploughs, I will proceed to describe their construction and operation.

Figure 1, of the drawings, is a side elevation of the improved plough.

Figure 2 is a plan of the same.

Figure 3 is a detail view.

The wheels A are so arranged upon the axle B, and the ploughs C are attached to the said axle in such a manner, as to enable the wheels to run on the unploughed ground, instead of having one wheel to run in the furrow, as is usually the case with gang-ploughs. By means of this improved arrangement, which is shown in fig. 2, the draught of the machine is made much lighter than in the machines formerly constructed.

The second feature of this invention consists in attaching the ploughs C to the axle B, by means of the sliding blocks  $c$ , connecting-rods  $c^1$ , and sectors  $c^2$ . The two arms of the sector  $c^2$  are pivoted to the beam B', at  $x$ , while one end of the sector-rail is linked to the axle at  $x^1$ , and the other end of it is attached to the connecting-rod  $c^1$ , by means of a knuckle-joint at  $x^2$ . The blocks  $c$  are dove-tailed into the face plates  $c^3$ , which are attached to the bottom of the plough-post C'. The blocks  $c$  being allowed to move forward and backward in their bearings in the plates  $c^3$ , the draught of the ploughs is made independent of the posts C', which said posts are only used for the purpose of affording the necessary lateral support to the ploughs. The sectors,  $c^2$ , being constructed and arranged as before described, the force which is transmitted through them to the ploughs, will be divided into the forces indicated by the arrows  $y$ ,  $y^1$ , and  $y^2$ . The force  $y$  is drawing down from the axle, while the force  $y^1$  is lifting up on the beam B', which transmits the strain thus thrown upon it back to the axle, which is thus made to sustain a large portion of the weight of the machine while in operation, and the lifting force  $y^1$  serves to assist the operator in raising the ploughs out of the ground. The forces exerted in the direction of the arrows  $y^2$  are those acting really as traction forces, to draw the ploughs forward.

The third feature of this invention relates to the device for raising the ploughs out of the ground. This device consists of one or more cogged sectors, D, and a cogged pinion,  $d$ , gearing into the same. The front ends of the sectors are sustained on the axle B, while the rear ends of them are carried on the caster-wheel A'. The pinion  $d$  is placed upon a shaft having its bearings in the frame or beams B', and is actuated by a crank,  $d^1$ . As the driver sits upon the seat S, he can easily turn the crank  $d^1$  so as to cause the pinion  $d$  to roll up in the rack or sector D, and as the axle of the said pinion is fixed to the said beams B', they, and the ploughs C, which are attached thereto, will be raised thereby, the traction force expended in the direction of the arrow  $y^1$  acting to assist in the raising operation. A hook,  $d^2$ , attached to the side of one of the beams B' will catch in a notch in the side of the sector D, when the ploughs are up, and serve to hold them up when not in use. A foot-lever,  $d^3$ , attached to the side of the beam B', is connected with the hook  $d^2$ , by means of a rod or link, in such a manner that the operator, by pressing his foot thereon when required, can withdraw the hook from the notch in the sector, and allow the ploughs to fall as required. When coulters are required, they may be attached to the connecting-rods  $c^1$ .



Having described my invention, what I claim, is—

1. I claim the sliding blocks  $c$ , connecting-rods  $c^1$ , and sectors  $c^2$ , when arranged and employed, substantially as herein shown and described, for the purpose of transmitting the draught from the axle to the ploughs.
2. I claim the sectors or sector D, pinion  $d$ , and beams B', when combined and arranged as herein shown and described.
3. I claim the hook  $d^2$ , and lever  $d^3$ , when combined with the beam B', and sector D, as described and shown.

MATTHEW FLINN.

Witnesses:

M. RANDOLPH,  
GEO. W. HERBERT.