

(No Model.)

2 Sheets—Sheet 1.

M. C. NILES.

ROTARY PLOW.

No. 314,260.

Patented Mar. 24, 1885.

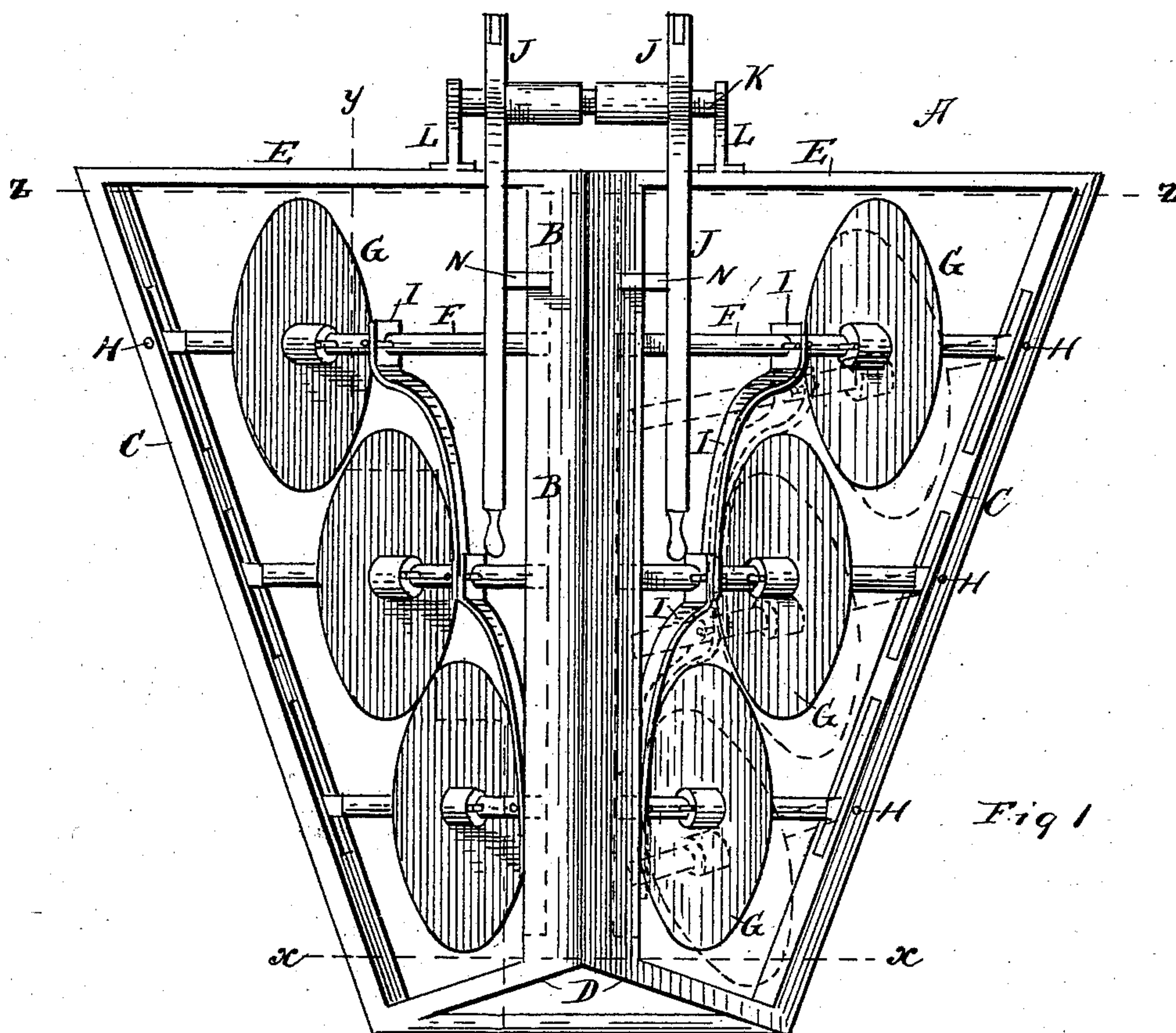


Fig 1

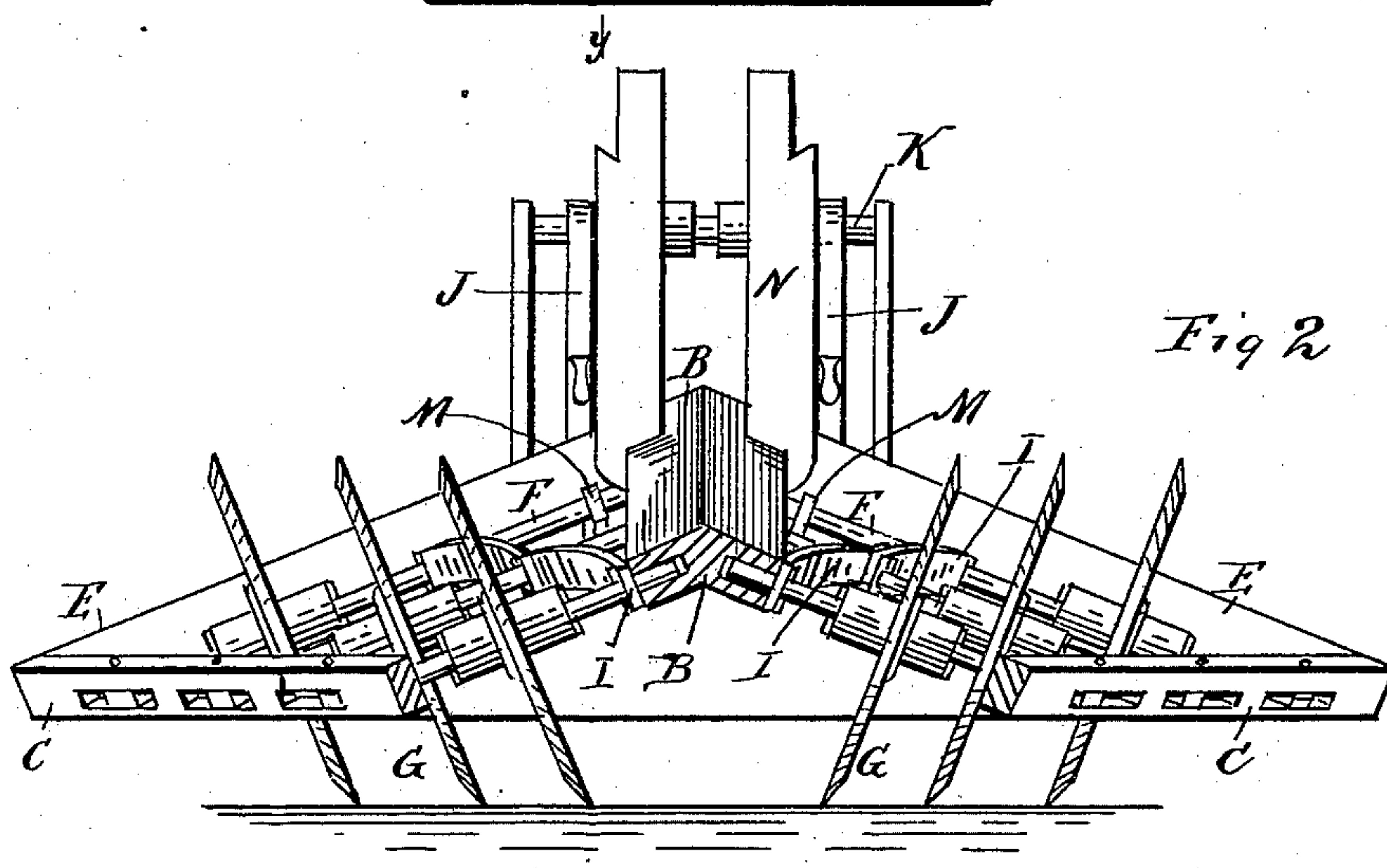


Fig 2

Witnesses

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Inventor

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*By Robt. W. Thacher*  
Attorneys

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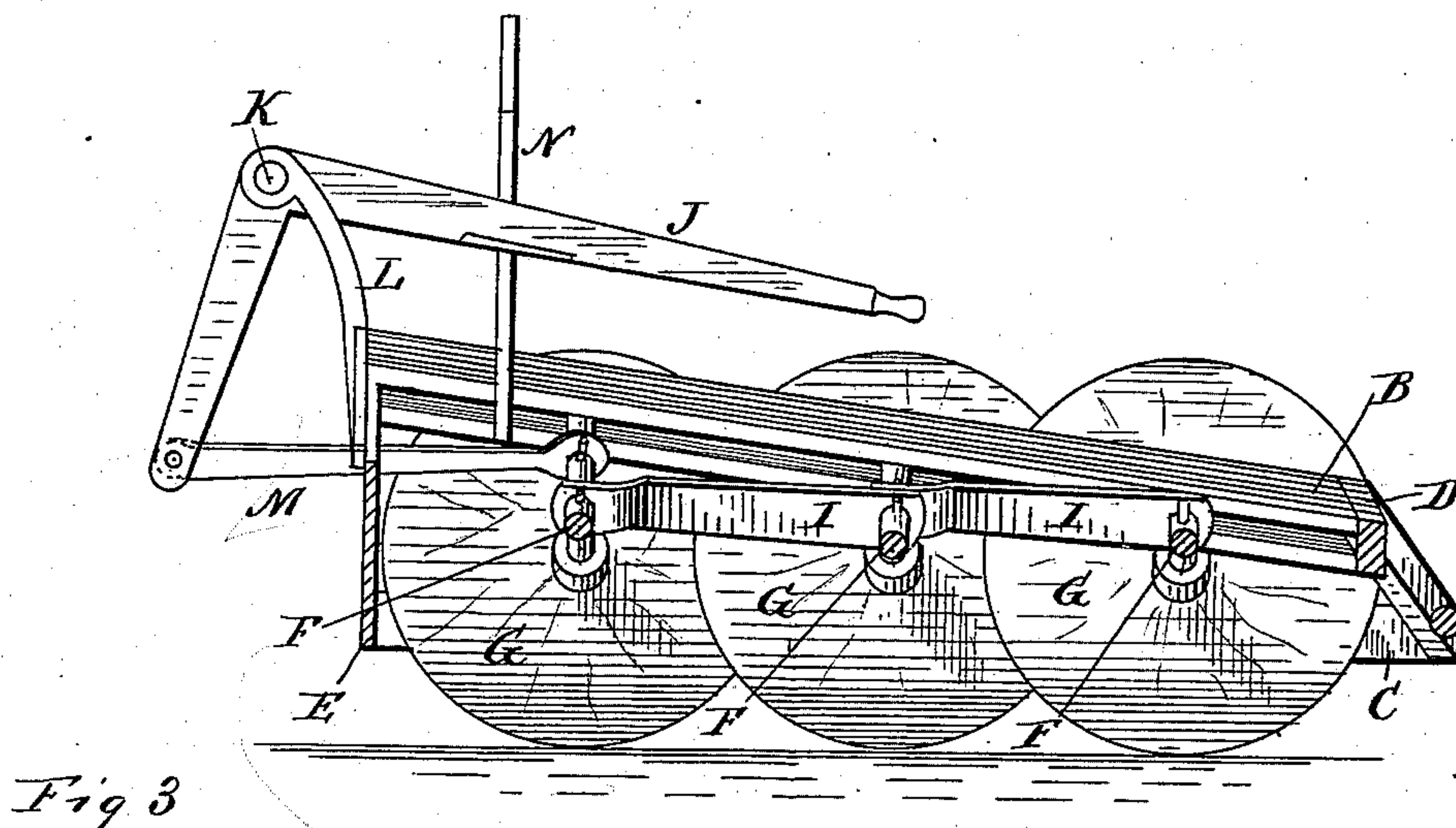


Fig 3

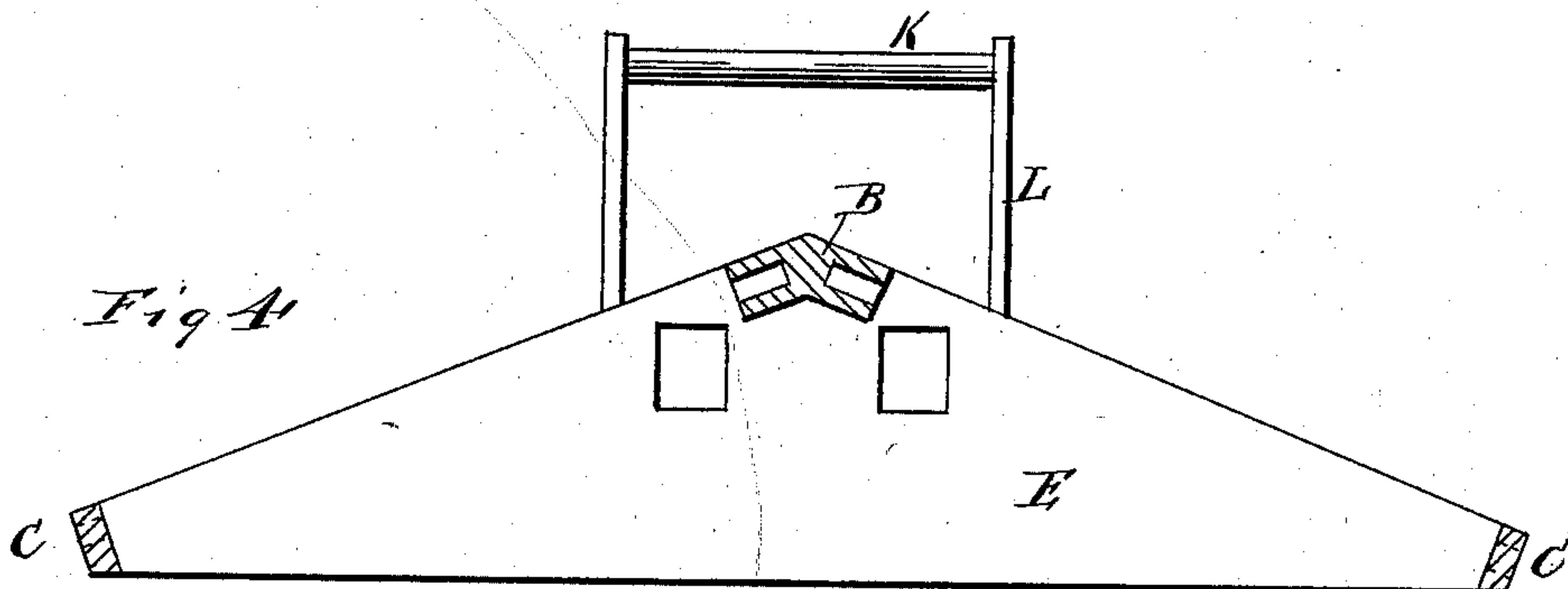


Fig 4

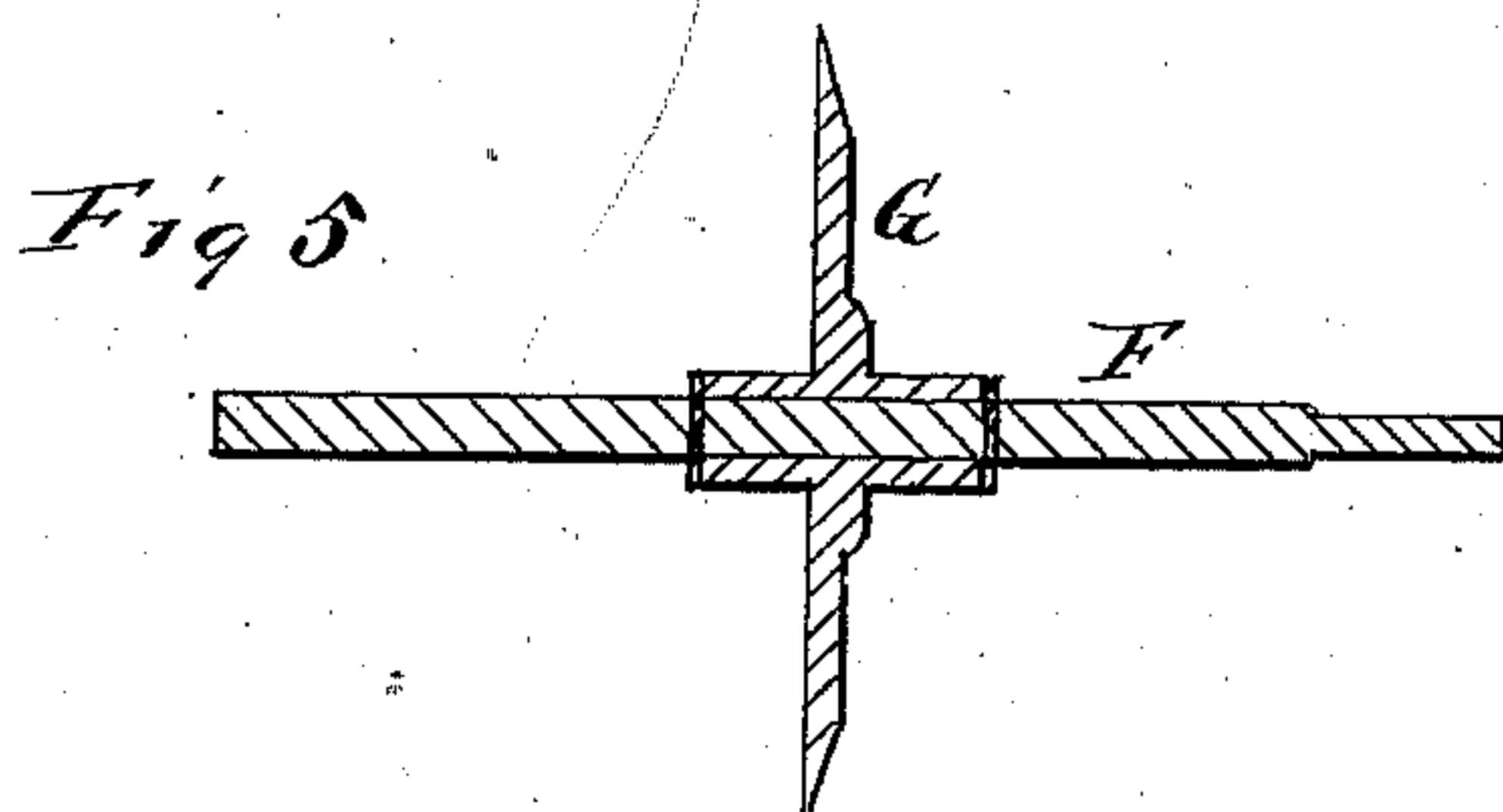


Fig 5

Witnesses  
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# UNITED STATES PATENT OFFICE.

MILTON C. NILES, OF OAK PARK, ILLINOIS.

## ROTARY PLOW.

SPECIFICATION forming part of Letters Patent No. 314,260, dated March 24, 1885.

Application filed July 9, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, MILTON C. NILES, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Rotary Plows, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a top or plan view of my plow; Fig. 2, a vertical cross-section taken at the line  $x x$ , Fig. 1; Fig. 3, a longitudinal section taken at the line  $y y$ , Fig. 1. Fig. 4 is a cross-section taken at the line  $z z$ , Fig. 1; and Fig. 5 is a longitudinal vertical central view of one of the disks and its axle.

My invention relates to gang-disk rotary plows; and my invention consists in the mechanisms by which the plow-disks are held inclined to the earth and made capable of being adjusted at an angle to the line of draft of the plow-frame, which gives the plow-disks a mold-board position relative to the furrows which they turn; and it further consists in connecting the plow-axes together by means of a connecting-arm which is attached to each axle at the same distance from its pivoted end, so that all the disks on one side are thrown to the same angle relative to the direction of the draft of the plow.

My invention further consists in making the axes of the disks of varying lengths, so that the same distance from the connecting-arms to the pivots may be maintained and at the same time the plows have a position lateral to each other sufficient to enable each to cut a furrow.

My invention further consists in the special construction of the frame and the combination of the frame with the axes, levers, and connecting-arms, whereby the operative parts are controlled and operated, as hereinafter more especially described and specified.

In the accompanying drawings, A represents the frame. B is the central slotted beam or beams of said frame. C are the side beams of said frame, to which the plow-beams are pivoted. D are the front pieces of the frame A, by which the side pieces are connected to the central pieces, B, and E are the rear pieces of the frame, serving the same purpose. The side pieces, C, of the frame are lower than the central pieces, B, as clearly shown in Fig. 2.

F are the plow-axes. G are the plows. These plows are rigidly secured to the axes F. The axes F are pivoted to the side pieces, C, at H. One end of the axes F rests in slots in the center beam or beams, B, of the plow.

I are connecting rods or arms, which connect the axes F that are on one side of the plow together. These connecting arms or rods I are attached to each of the axes F at the same distance from its pivot H.

J is a bent lever with its fulcrum K supported on the frame A by the standards L. M is a rod by which said lever is connected to the rear axle, F. There are two of these levers J, one connected to each of the rear axes, F, of the plow. N are standards or supports, having notches in which the lever J can be placed for the purpose of holding the axes at the desired angle. When the lever J is thrown down, the upper ends of the axes are thrown back in the slots in the center beam, B, so that the plows stand in the direction of the line of draft of the plow and do not turn a furrow. When the lever J is raised, the lever, through the connecting-rod M and the connecting-rods I, throws the upper end of the plow-axes forward in the slots in the center beam, and the disks assume a position indicated by the dotted line in Fig. 1, and each turns a furrow. They all assume the same angle and cut the same width furrow. Those on one side have an angle opposite to those on the other side, so that the lateral pressure of one set of plows offsets the lateral pressure of the other set of plows. The entire gang has no lateral pressure.

It will be observed that when the plows are thrown into the position shown by the dotted lines in Fig. 1 it is necessary that all the plows should have the same angle relative to the line of draft of the plow-frame. It is necessary that each axle should be thrown the same distance forward on its pivot H, in order to accomplish this result, by means of one lever J. It is necessary that the connecting-rods I should be attached to each of the axes F at the same distance from its pivot H, and it is necessary to have the plows that are placed on one side of the frame at varying distances from the center of the frame, in order that each plow may turn its respective furrow.

The side pieces, C, must be placed at an an-



gle to the center piece, B. The front plow being placed near the center piece, B, its pivot must be correspondingly near the center piece. The second plow from the front being placed  
 5 enough farther from the center piece than the front plow to give it its width of furrow, its pivot must be placed correspondingly farther from the center piece. So with each successive plow. The central beam, B, rises toward  
 10 the broad end of the frame, in order that the axles, resting in the beam at different distances from their pivots, may nevertheless all rise at the same angle.

Each of these disk-plows must set at an angle or slant to the ground, as shown in Fig. 2, and when it is desired to have the plows turn a furrow they must also have an angle to the line of draft of plow, as shown by the dotted lines in Fig. 1; and when the plows on each  
 20 side are thrown into position to turn the furrows the side pressure of one set of plows presses against the side pressure of the other set of plows, as above specified. When it is desired to turn the plow at the end of the furrows, one set of plows can be left at an angle  
 25 to the direction of the plow, and the other set be thrown to the different angle, so that one set of plows will run around the other, thus turning the plow around.

30 By this construction of my plow-frame, and by this method of hanging the plows and adjusting them to different angles, I am enabled to overcome the objections heretofore found in the practical operation of rotary disk gang-plows, and at the same time have a simple,  
 35 cheap, and durable plow.

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

1. The center beams, B, converging side beams, C, double series of axles F, each axle being pivoted at one end to a side beam and having a sliding support at the other in a center beam, and plow-disks G, arranged upon  
 40 the axles at equal distances from the nearer side beam, all in combination, substantially as and for the purpose described. 45

2. The side beam, C, the series of parallel axles F, each pivoted at one end to the side beam, and the connecting-rods I, attached to  
 50 the axles respectively at equal distances from the pivots, all in combination, substantially as and for the purpose described.

3. The axles F, made of different lengths, pivots H, and connecting arms or rods I, connecting the axles together at the same distance from their respective fulcrums, as and  
 55 for the purposes specified.

4. The diverging side beams, C, in combination with the central beam, B, sloping upward  
 60 in proportion as the side beams diverge, and with the axles F, each supported at one end in a side beam and at the other in the central beam, for the purpose of setting all the axles at the same angle to the ground, substantially  
 65 as described.

5. The combination, in a plow-frame, A, of the two sets of pivoted axles F, each axle carrying a plow-disk, G, connecting-rods I, adjusting-lever J, and connecting-rods M, substantially  
 70 as specified and shown.

MILTON C. NILES.

Witnesses:

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