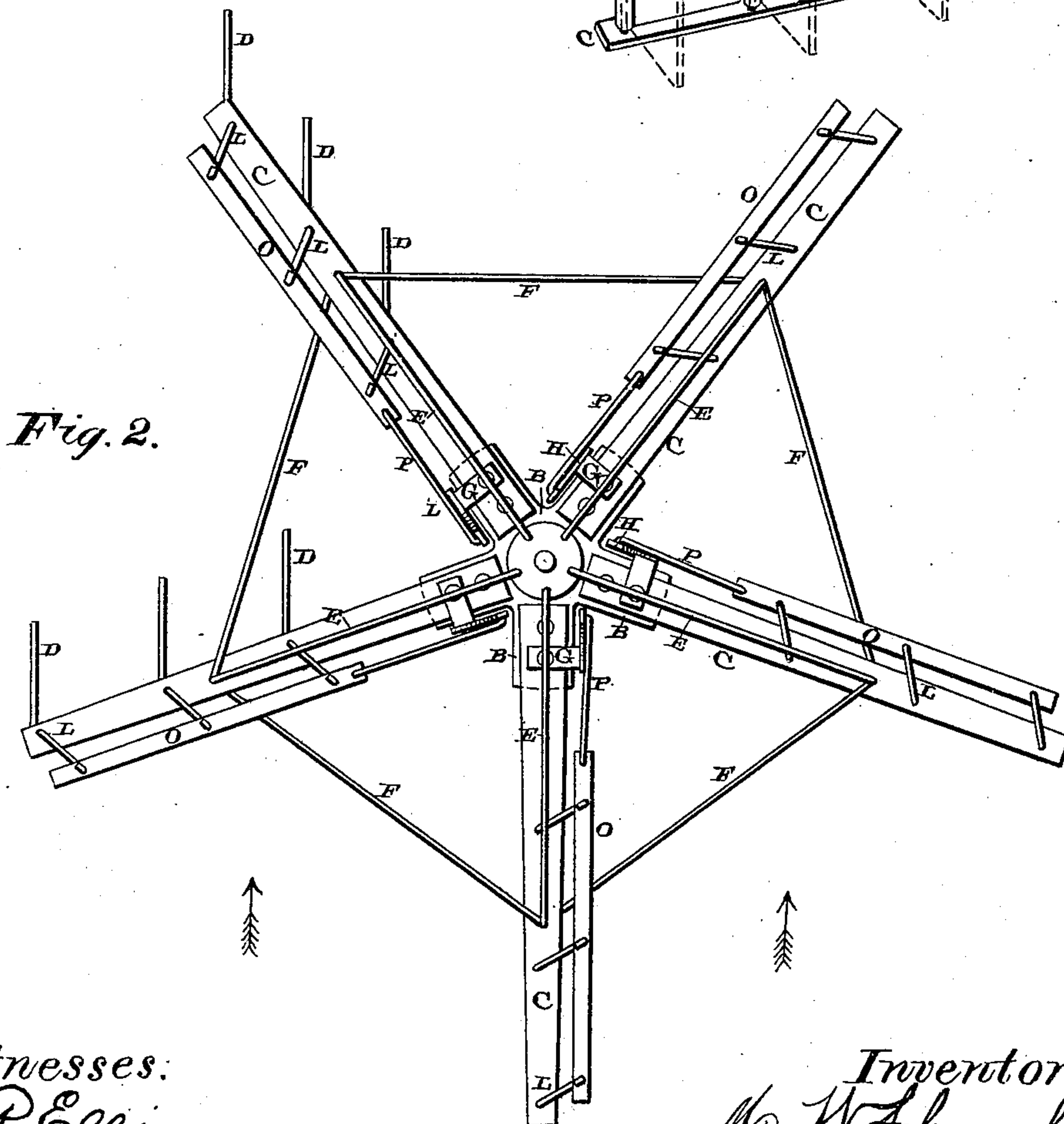
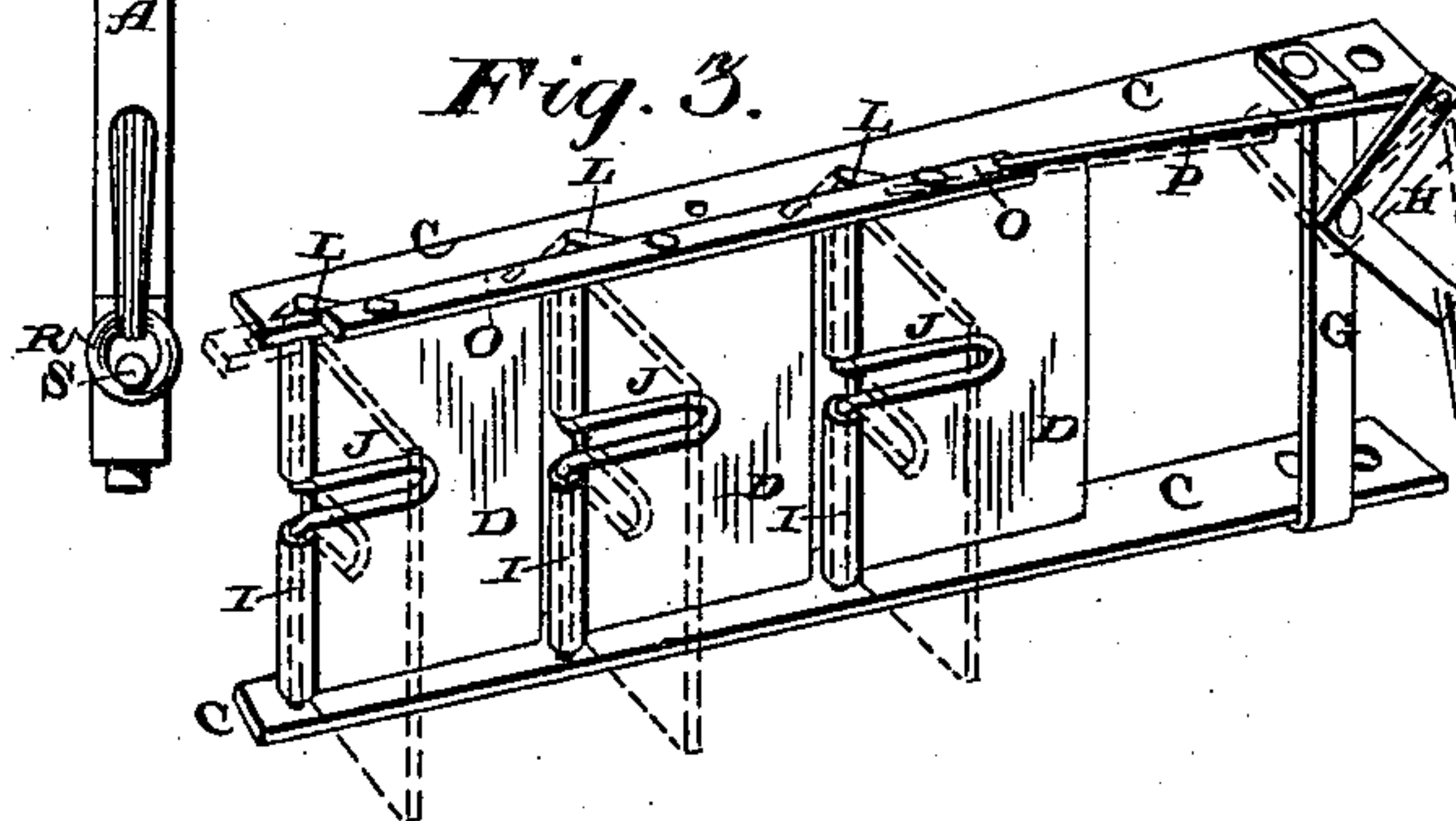
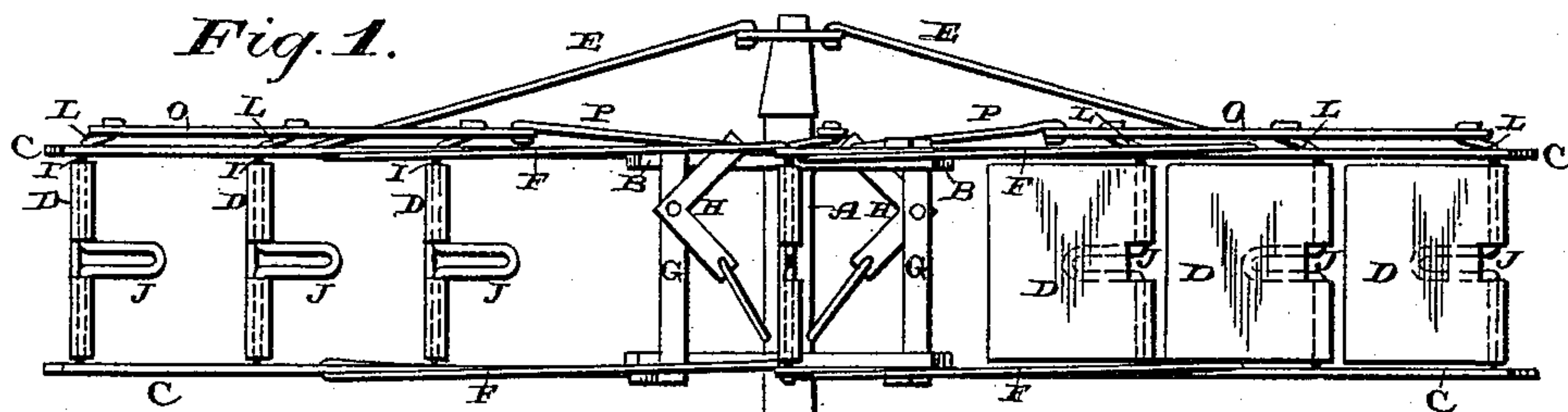


(No Model.)

M. W. SCHUMACHER.  
HORIZONTAL WINDMILL.

No. 441,510.

Patented Nov. 25, 1890.



Witnesses:

E. F. Ellis,  
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Inventor:

M. W. Schumacher,  
per  
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attys



# UNITED STATES PATENT OFFICE.

MATHIAS W. SCHUMACHER, OF REYNOLDS, NORTH DAKOTA.

## HORIZONTAL WINDMILL.

SPECIFICATION forming part of Letters Patent No. 441,510, dated November 25, 1890.

Application filed June 26, 1890. Serial No. 356,822. (No model.)

*To all whom it may concern:*

Be it known that I, MATHIAS W. SCHUMACHER, of Reynolds, in the county of Grand Forks and State of North Dakota, have invented certain new and useful Improvements in Horizontal Windmills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in horizontal windmills; and it consists in the combination and arrangement of parts, which will be fully described hereinafter, and pointed out in the claim.

The object of my invention is to produce a horizontal windmill in which the sections in case of a storm will cause the cranked rods upon which they are pivoted to turn partially around, and thus allow the sections to present their edges to the wind and stop the wheel.

Figure 1 is a side elevation of a wheel which embodies my invention. Fig. 2 is a plan view of the same. Fig. 3 is a perspective of one of the pair of arms between which the sections are journaled, and showing the parts in one position in solid lines and in another position in dotted lines.

A represents a metallic pipe of any suitable size, and which can be placed either on a tower or barn, as may be desired. Secured to this pipe at any suitable distance apart are the two castings B, which are provided with horizontal radial arms and which are secured to the pipe in any suitable manner.

Secured to each of the arms of the castings B is a horizontal arm C, which extends sufficiently far outward to receive any desired number of sections D between them. These arms C are braced from above by means of the rods or wires E, and they are connected horizontally by the wires or braces F. The outer ends of the arms upon the castings and the inner ends of the arms C are braced by the vertical braces G, which also form supports for the L-shaped levers H, pivoted upon them. Each one of the sections D is pivoted upon a rod I, which can be turned partially around in its bearings in the arms C, and

which is provided with a bend J at or near their centers for the purpose of supporting or bracing the sections in position, so as to receive the pressure of the wind, and with the cranks L at their upper ends. The cranks of the rods pivoted between each pair of arms C are connected by a rod O, and this rod is in turn connected to the upper end of the corresponding L-shaped lever H by means of a connecting-rod P. When the upper ends of the connecting-rods H are moved inward toward the pipe A, the rods O are made to turn the cranked rods I, so that their bends J extend in a line with the arms C. The sections D, pivoted upon the rods I, then stand, while moving with the wind, in a line with the arms C, and present a solid front to receive the pressure of the wind. As the wheel revolves and these sections begin to move against the wind, they turn upon the rods I so as to present only their edges to the wind, and then as they move into position where the wind begins to strike them again upon their front sides they again turn upon their rods so as to bear against the bends J.

Connected to the lower end of each of the levers H is a wire, cable, or chain, and these wires or chains pass down through the pipe A and have their lower ends connected to a ring R, which is made to catch over a pin or projection S. As long as this ring is fastened upon the pin or projection the rods I are locked in position, so that their bends J extend in a line with the arm C; but if the ring is loosened the levers H are left free to turn upon their pivots, and then when the wind presses against the front of the sections D this pressure causes the rods to turn so that the bends extend at a right angle to the arms C, thus allowing the sections D to also stand at an angle and present only their edges to the wind. The consequence is that the wheel comes to a stand and will not again revolve until the levers H are again operated through their corresponding wires or chains. Just as soon as the levers H are released the pressure of the wind, no matter how slight, will cause the rods I to turn so as to let the sections present their edges to the wind.

The sections D may be made of sheet metal or any other material that may be preferred.

Having thus described my invention, I claim—

5 In a horizontal windmill, the combination of the central supporting-shaft, the arms which radiate therefrom in pairs, the cranked rods provided with bends at or near their centers and which are journaled in the arms, the sections pivoted upon the rods, the rods which connect the cranks, the pivoted levers,

and the wires or chains connected to the levers, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

MATHIAS W. SCHUMACHER.

Witnesses:

P. S. SAY,

HENRY KIMBER.