

(No Model.)

L. E. FAGAN.
EQUALIZING DEVICE FOR WINDMILLS.

No. 581,882.

Patented May 4, 1897.

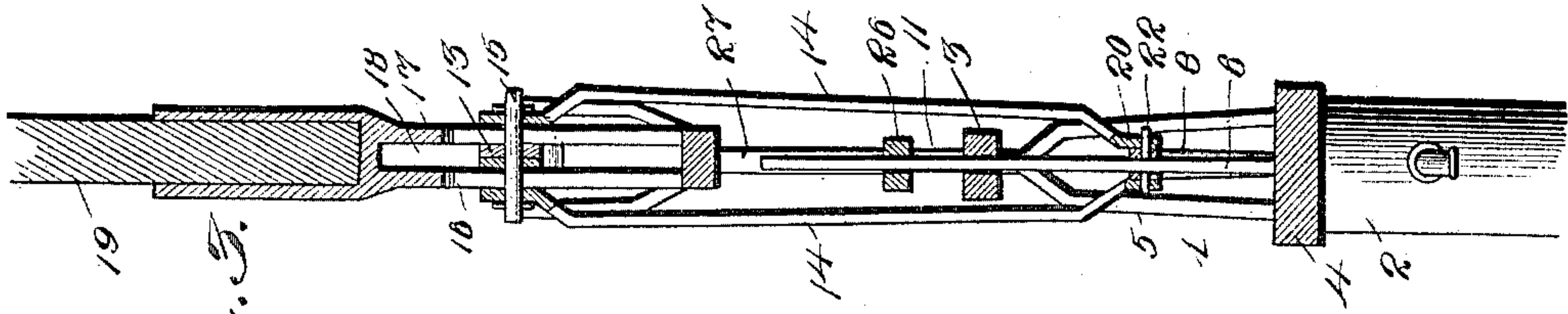


Fig. 3.

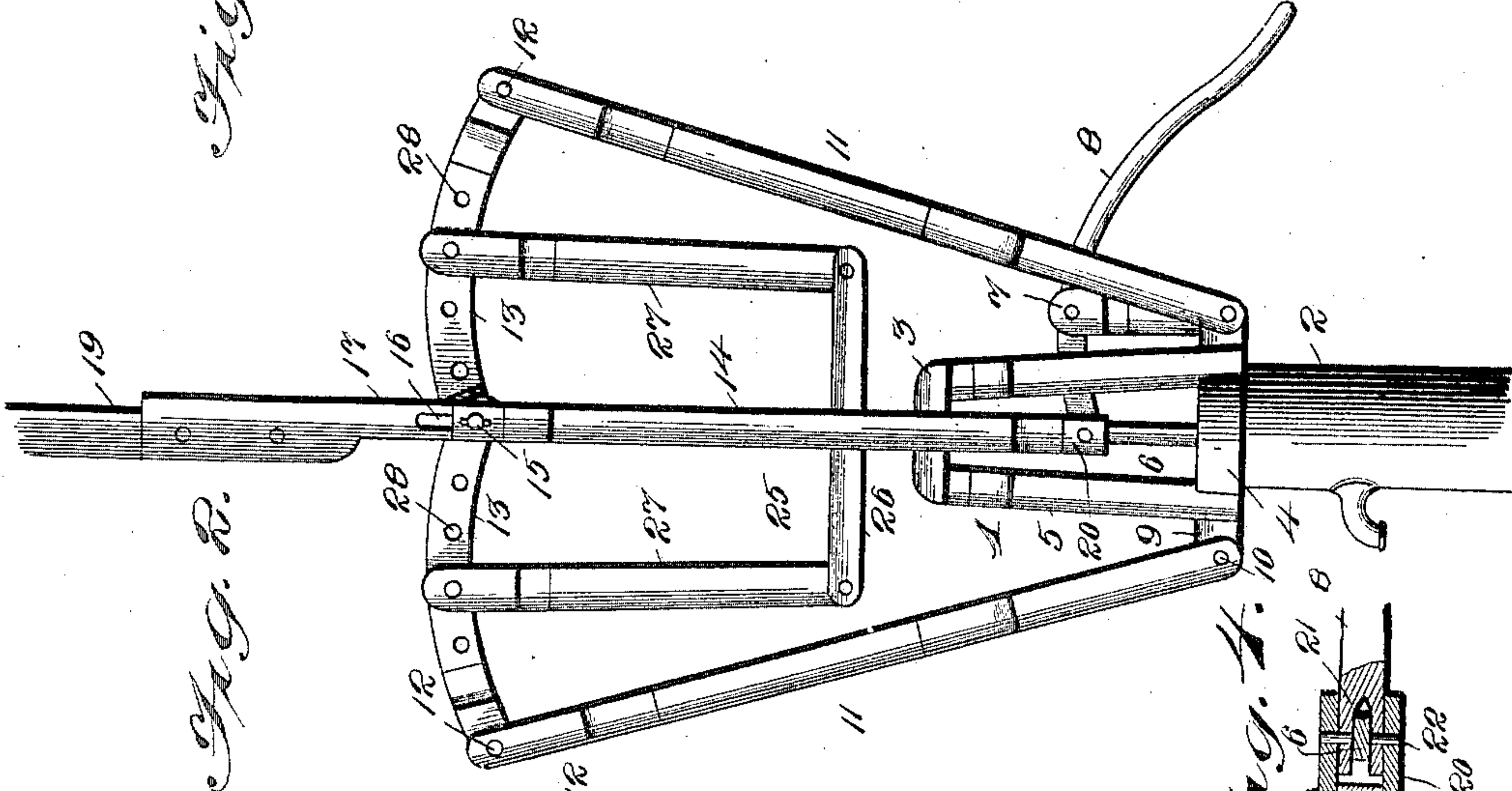


Fig. 2.

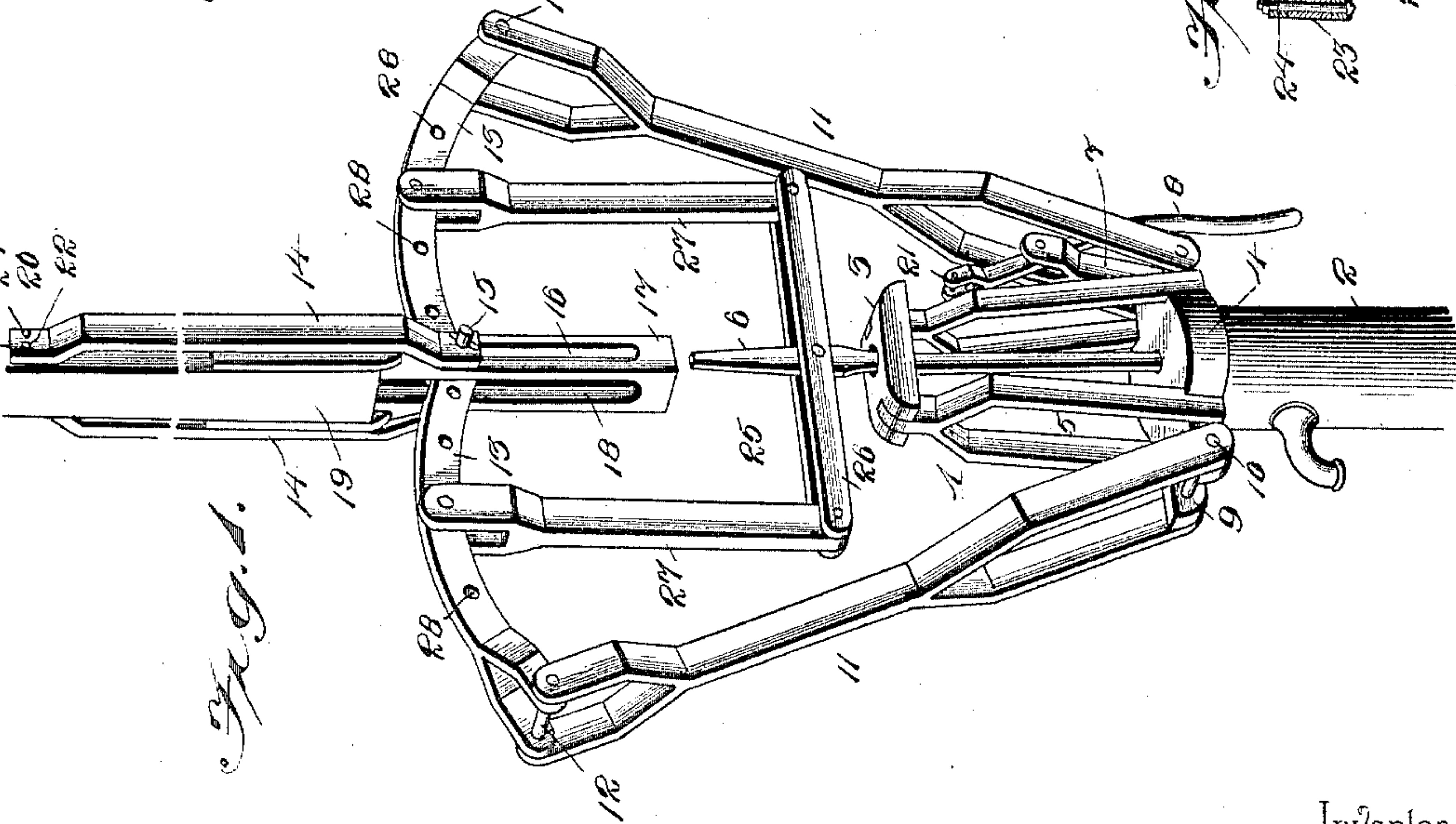


Fig. 1.

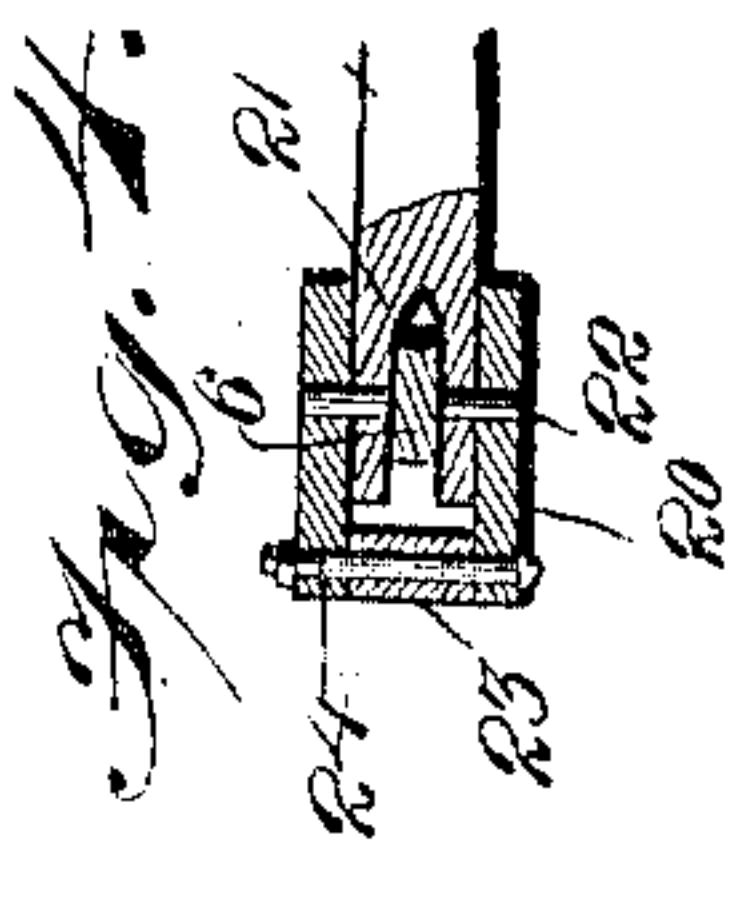


Fig. 4.

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UNITED STATES PATENT OFFICE.

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EQUALIZING DEVICE FOR WINDMILLS.

SPECIFICATION forming part of Letters Patent No. 581,882, dated May 4, 1897.

Application filed September 22, 1896. Serial No. 606,645. (No model.)

To all whom it may concern:

Be it known that I, LEWIS E. FAGAN, a citizen of the United States, residing at Onslow, in the county of Jones and State of Iowa, have invented a new and useful Equalizing Device for Windmills, of which the following is a specification.

The invention relates to equalizing devices for windmills.

The object of the present invention is to improve the construction of equalizing devices for windmills and to provide a simple and effective one adapted to relieve the pump of any jerking movement and capable of ready adjustment to regulate the length of the stroke to suit the strength of the wind.

A further object of the invention is to enable the equalizing device to be readily connected with the pump-rod of a windmill or a pump-handle and to be adjusted, when connected with the latter, to regulate the stroke of the pump.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of an equalizing device constructed in accordance with this invention and shown applied to a pump and connected with a windmill pump-rod. Fig. 2 is a side elevation of the same, the equalizing device being connected with a pump-handle. Fig. 3 is a longitudinal sectional view, the parts being arranged as shown in Fig. 2. Fig. 4 is a detail sectional view illustrating the manner of connecting the equalizing device with the pump-handle.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a bracket mounted upon a pump 2 and comprising a top 3, bottom 4, and similar sides 5, mounted on the bottom or base and supporting the top, and the bracket is provided at its top and bottom with openings, through which passes the plunger-rod 6 of the pump 2. The sides 5 of the bracket 1 are forked, as shown, and at one side of the bracket is pivoted an arm or bar 7, forming a fulcrum for a pump-handle 8, adapted when

not in use to be swung backward, as illustrated in Fig. 1 of the accompanying drawings.

The base of the bracket is provided at opposite sides with horizontal extensions or lugs 9, arranged in pairs and perforated for the reception of pivots 10, which connect upwardly-diverging fulcrum bars or supports 11 to the bracket. The diverging bars or supports 11 have their upper and lower ends forked, and their upper ends are perforated for pivots 12, which connect the outer ends of a pair of curved levers 13 to the fulcrum bars or supports.

The inner ends of the levers 13 are pivoted together and to a pair of connecting-bars 14 by a pin 15, which passes through registering perforations of the levers and the bars and which is also arranged in a slot 16 of a pump-rod casting 17. The slot 16 extends longitudinally of the pump-rod casting, which is provided with a longitudinal slot 18, extending through the casting at right angles to the slot 16 and receiving the inner ends of the levers 13.

The connecting-bars 15 are adapted to be attached either to the pump-rod 19 of a windmill to operate the pump by the latter, as illustrated in Fig. 1 of the accompanying drawings, or to be attached to the pump-handle 8, as illustrated in Figs. 2 and 3 of the accompanying drawings. When the connecting-bars 14 are attached to the pump-handle, the inner ends of the levers are adapted to slide freely in a slot 18 of the pump-rod without moving the latter. The ends 20 of the connecting-bars 14 are detachably secured to the pump-rod 19, and when it is desired to operate the pump by hand the said ends 20 are disconnected from the pump-rod to permit the connecting-bars 14 to be swung downward on the pivot or pin 15 in order that they may be attached to the inner end of the pump-handle. The pump-handle 8, which is fulcrumed intermediate of its ends on the bar 7, has its inner end 21 bifurcated and perforated for the reception of pivots 22 of the ends 20 of the bars 14. The pins 22 detachably engage the perforations of the pump-handle, and the ends 20 are spaced by a block 23 and are connected by a pin or bolt 24 or other suitable fastening device. The plunger-rod is loosely ar-

ranged in the bifurcation of the pump-handle, and it is connected with the levers 13 by a substantially rectangular frame 25.

The rectangular frame comprises a pair of
5 horizontal bars 26, centrally pivoted to the upper portion of the plunger-rod 6, at opposite sides thereof, and a pair of substantially vertically-arranged bars 27, pivoted at their lower terminals between the ends of the bars
10 26 and having their upper ends bifurcated and adjustably pivoted to the levers 13. The levers 13 are provided at intervals with perforations 28, and the upper terminals of the sides 27 of the connecting-frame 25 are adapted
15 to be moved inward or outward on the levers 13 to vary the length of the stroke of the plunger-rod of the pump. By moving the ends of the sides 27 of the connecting-frame toward the fulcrum bars or supports 27 the
20 stroke is shortened, and to lengthen the strokes the sides of the connecting-frame are adjusted toward the pump-rod of the windmill. When the levers 13 are oscillated by the pump-rod of the windmill or by the pump-
25 handle, the plunger-rod 6 of the pump will be vertically reciprocated, and the equalizing device, which is adapted to regulate the stroke of the plunger-rod, prevents the jerky motion of the windmill being communicated
30 to the pump.

It will be seen that the equalizing device is simple and comparatively inexpensive in construction, that it is adapted to be readily applied to any ordinary windmill and pump,
35 and that it is capable of effecting the reciprocation of the pump-rod either through a pump-handle or the pump-rod of a windmill.

It will also be apparent that it is adapted to take up the jerky motion of a windmill
40 and prevent the same from being communicated to the pump and to regulate the stroke of the plunger-rod of the pump to suit the force of the wind.

The equalizing device is also applicable to
45 engines and motors and may be applied wherever it is desired to obtain a steady reciprocation free from all jerky motion.

Having described this invention, what I claim is—

50 1. In a device of the class described, the combination with a pump having a pump-handle, and the pump-rod of a windmill, of the opposite supports or fulcrums, the substantially horizontally-disposed levers piv-
55 oted at their outer ends to the fulcrums or supports and connected at their inner ends, a connecting-bar pivoted to the inner ends of the levers and adapted to be attached either to the pump-rod of the windmill or to the
60 pump-handle, and means for connecting the

plunger-rod of the pump with the levers at points intermediate of the ends of the latter, substantially as described.

2. In a device of the class described, the combination of a bracket designed to be
65 mounted upon a pump, oppositely-disposed fulcrum-bars pivoted to the bracket, the substantially horizontally-disposed oscillating levers pivoted at their outer ends to the fulcrum-bars and similarly connected at their
70 inner ends, a connecting-bar pivoted to the inner ends of the oscillating levers and adapted to be connected to a pump-rod or a pump-handle, and a connecting-frame depending from the oscillating levers, pivoted to the
75 same at points intermediate of the ends thereof and adapted to be attached to the plunger-rod of a pump, substantially as described.

3. In a device of the class described, the combination of a bracket designed to be
80 mounted upon a pump and forming a guide for the plunger-rod thereof, a pair of fulcrum-bars pivoted to the bracket at opposite sides thereof, oscillating levers arranged substantially horizontally, pivoted at their outer
85 ends to the fulcrum-bars and similarly connected at their inner ends, the rectangular connecting-frame comprising a horizontal bottom portion adapted to be centrally pivoted to the plunger-rod of a pump, and sides piv-
90 oted at their lower terminals to the said bottom portion and adjustably connected at their upper ends to the levers, and means for connecting the inner ends of the levers to a windmill pump-rod or to a pump-handle, substan-
95 tially as described.

4. The combination of a pump-rod provided with longitudinal slots extending at right angles to each other, a bracket designed to be mounted upon a pump, fulcrum-bars
100 pivoted to the bracket, oscillating levers pivoted at their outer ends to the fulcrum-bars and having their inner ends arranged in one of the slots of the windmill pump-rod, a pivot arranged in the other slot of the pump-rod
105 and connecting the inner ends of the levers, a pump-handle fulcrumed on the bracket, means for connecting the levers with the plunger-rod of the pump, and the connecting-bars mounted on the said pivot and adapted
110 to be swung upward or downward to connect them with the pump-rod or with the pump-handle, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
115 the presence of two witnesses.

LEWIS E. FAGAN.

Witnesses:

WM. J. MCCREADY,
IRVIN DALBEY.