

No. 658,475.

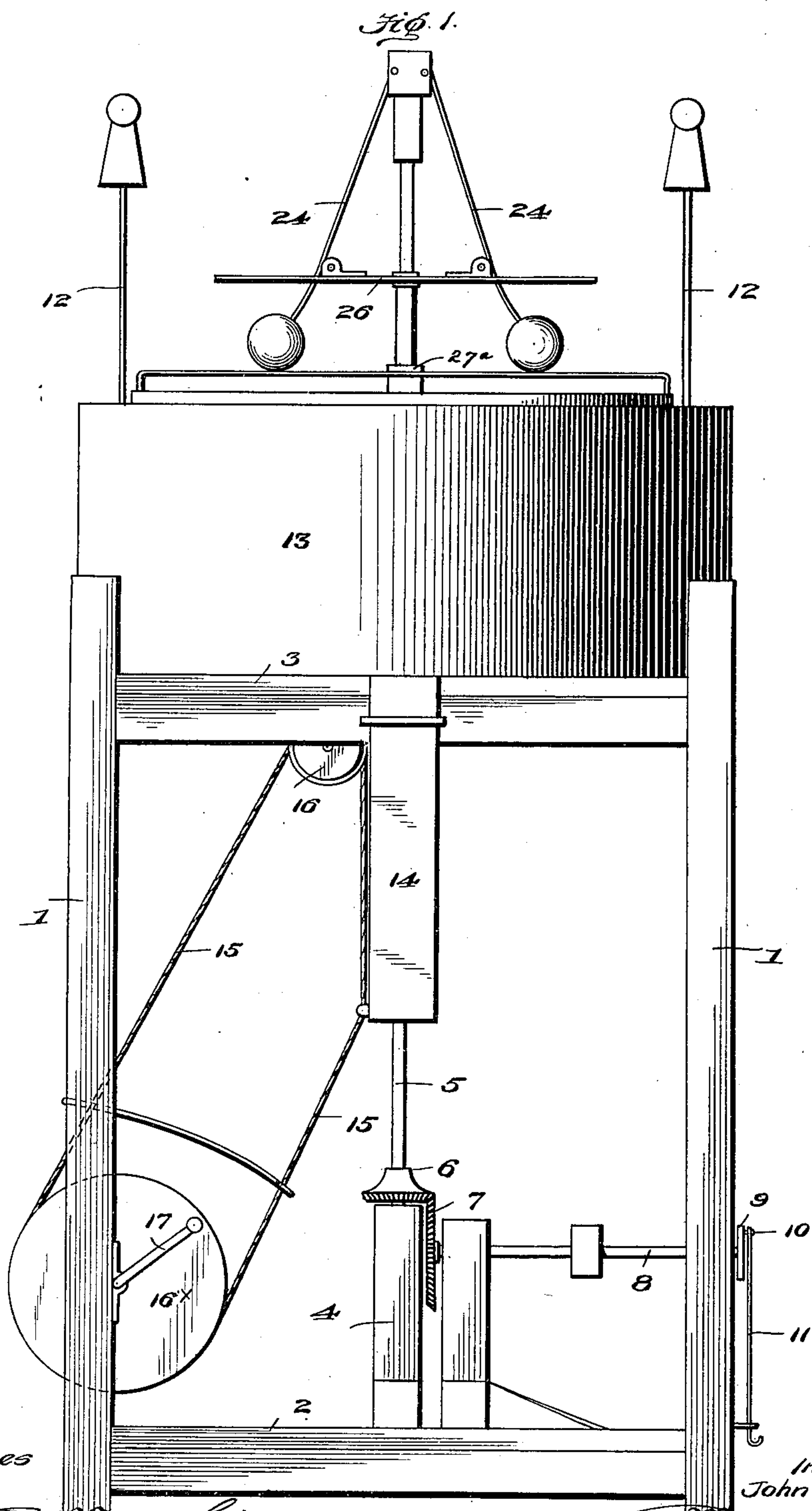
Patented Sept. 25, 1900.

J. H. STOLL.
WINDMILL.

(Application filed Aug. 9, 1899.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

David P. Moore.

Inventor
John H. Stoll

BY *David P. Moore* Atty.

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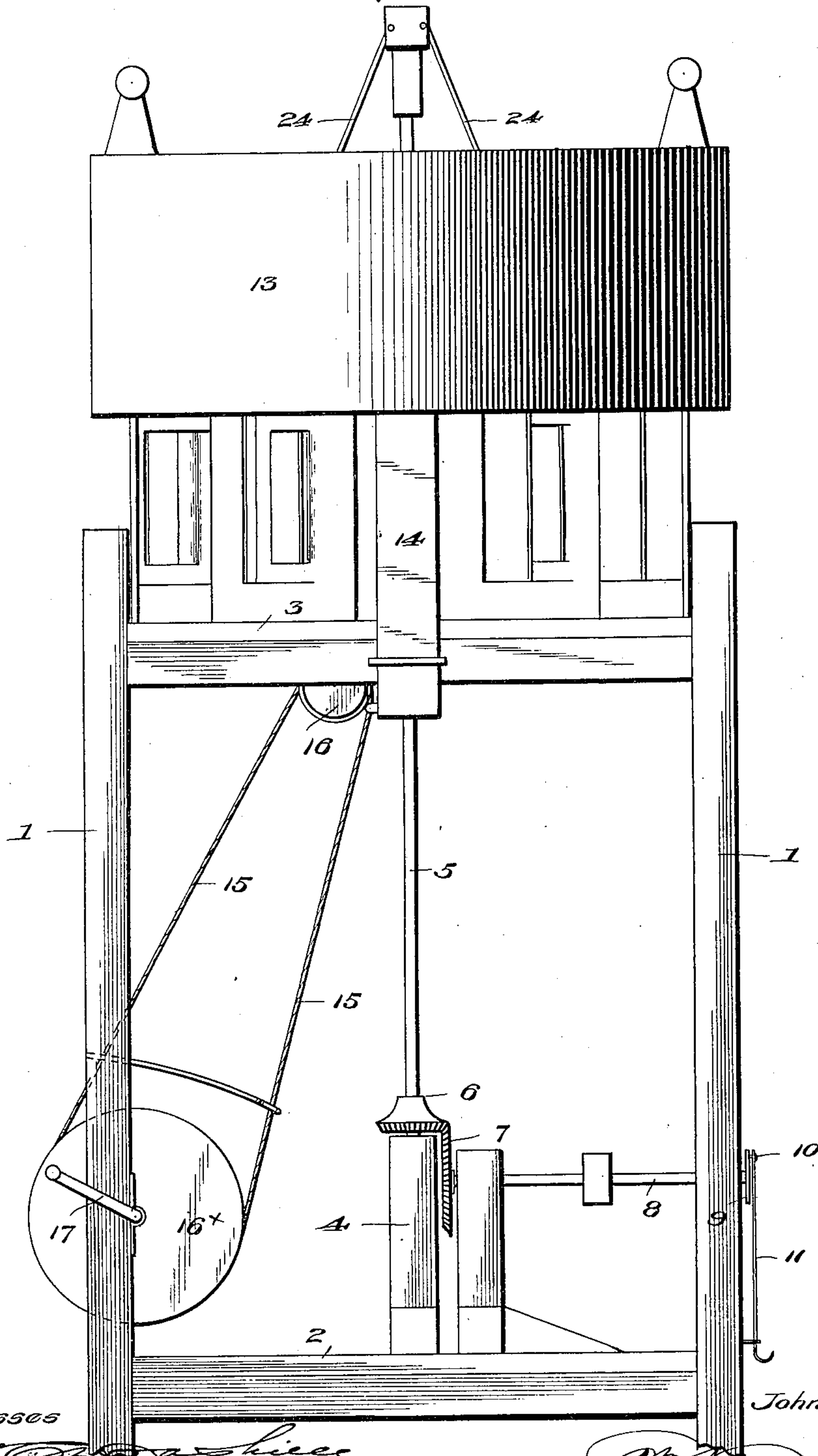
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Fig. 2.



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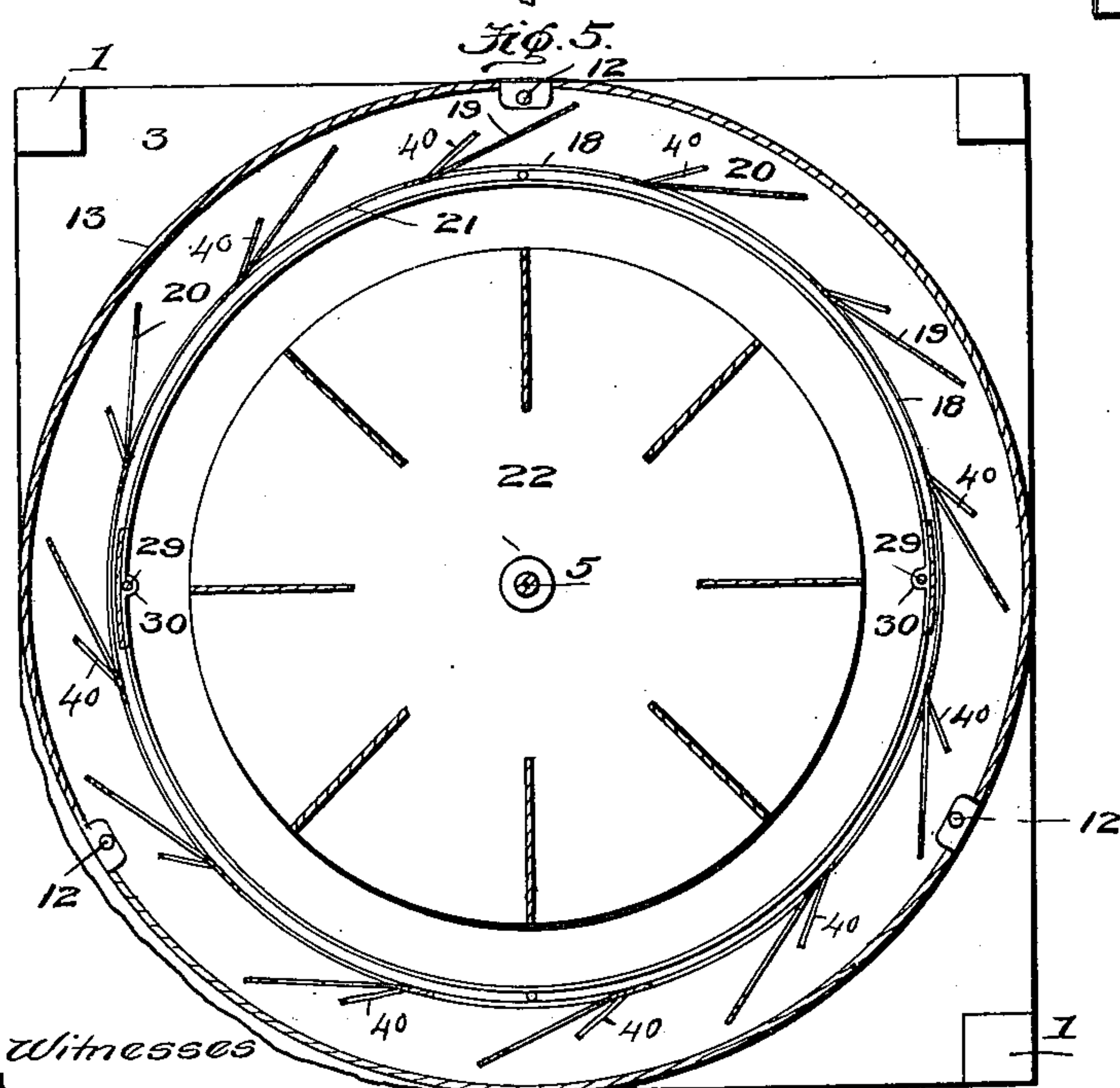
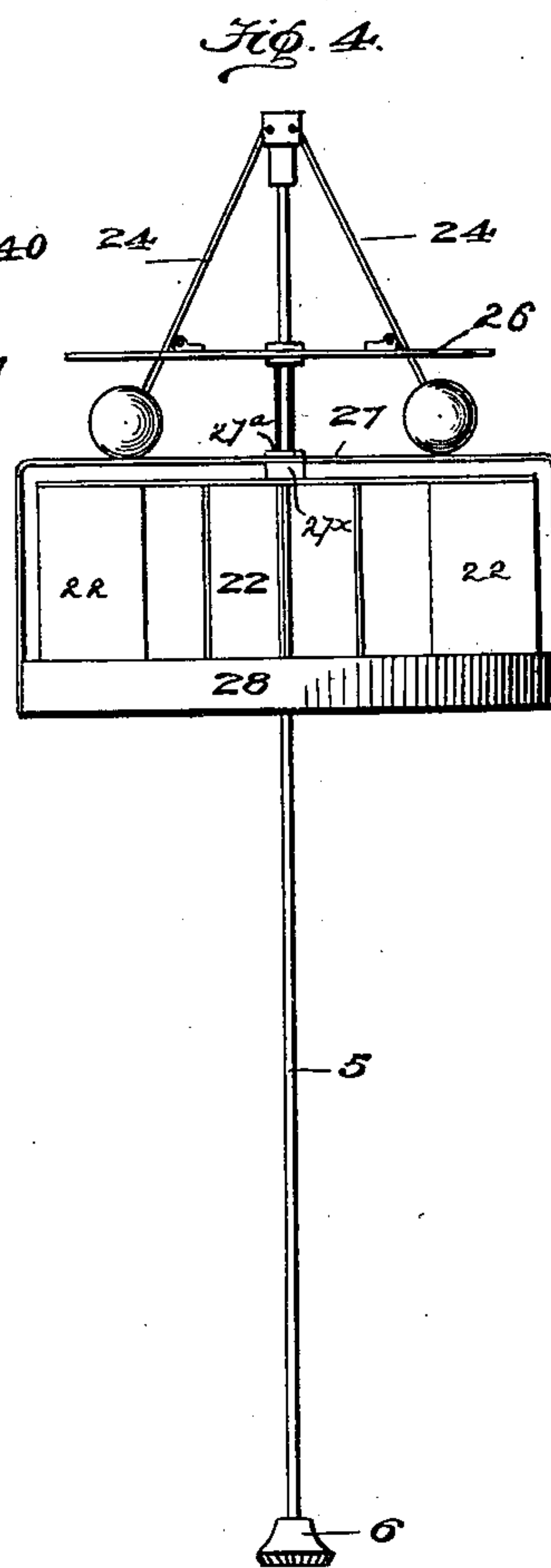
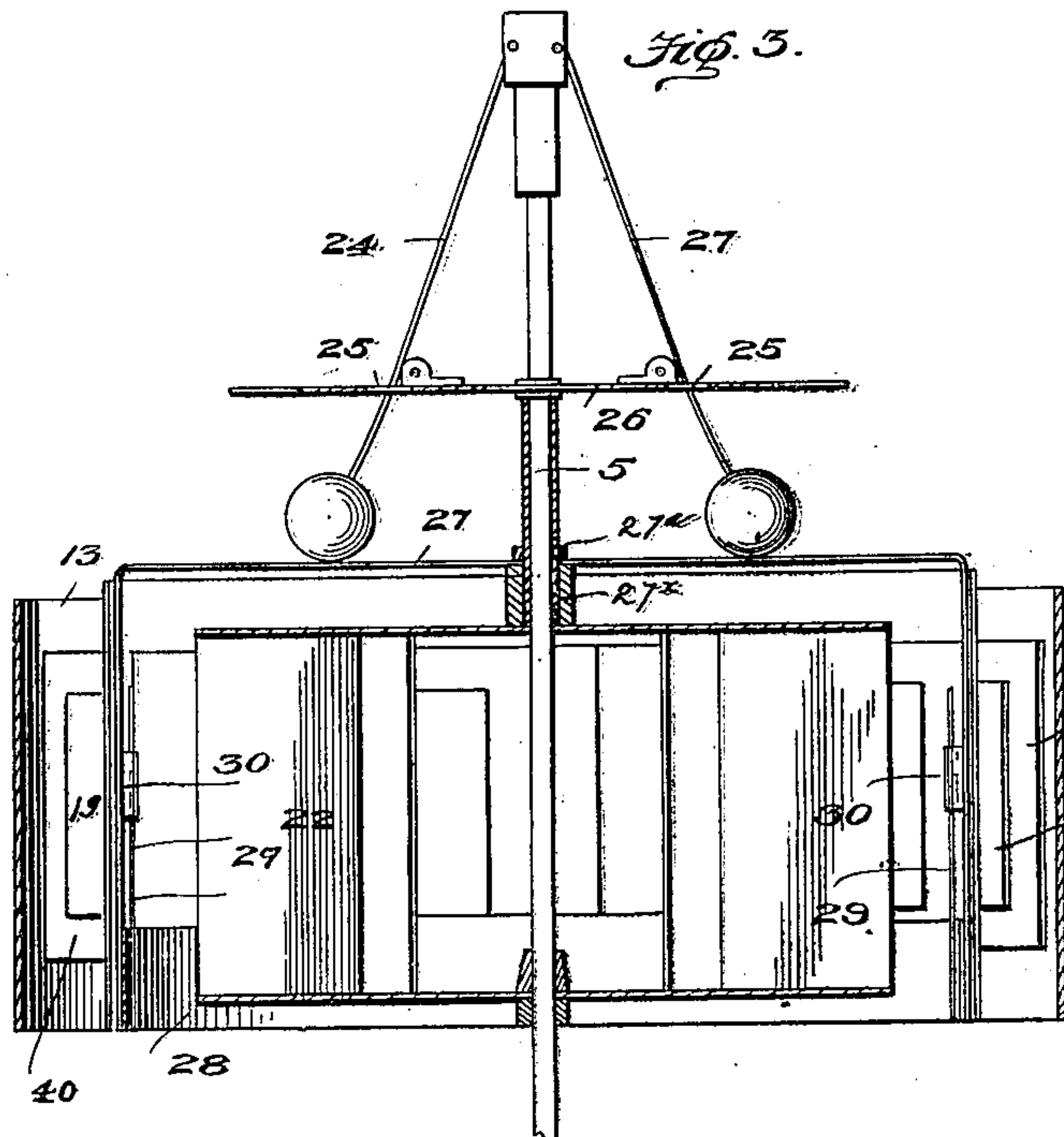
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

JOHN H. STOLL, OF HUTCHINSON, KANSAS.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 658,475, dated September 25, 1900.

Application filed August 9, 1899. Serial No. 726,628. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. STOLL, a citizen of the United States, residing at Hutchinson, in the county of Reno and State of Kansas, have invented certain new and useful Improvements in Windmills, of which the following is a specification.

My invention relates to improvements in windmills; and the object of my invention is the provision of a windmill which will possess merit in point of simplicity, durability, and inexpensiveness and which can be thrown into or out of operation with ease and facility and which will be thoroughly efficient and practical.

To attain the desired objects and such others as pertain to an invention of this character my invention consists of a windmill embodying novel features of construction and combination of parts, substantially as disclosed herein.

In order that the details of construction and the operation of my improved windmill may be readily understood and its advantages be fully appreciated, I have illustrated in the accompanying drawings a windmill constructed in accordance with and embodying my invention.

Figure 1 represents a side elevation of my windmill with the parts in the position they assume when the mill is not in operation. Fig. 2 represents a similar view with the parts in the position they assume when the mill is in operation. Fig. 3 represents a vertical central sectional view of the windmill. Fig. 4 represents a detail perspective view of the driving-shaft, driving or operating mechanism, drum, turbine wheel, and governor. Fig. 5 represents a horizontal sectional view through wind-shield, drum, and wind-wheel or turbine.

Referring by numerals to the drawings, in which similar numerals of reference denote corresponding parts in the several views, the framework of my improved and novel windmill consists of the series of uprights or standards 1, supporting the lower platform 2 and the upper platform 3. Upon the lower platform is provided a bearing 4 for the vertical driving-shaft 5, which carries the small bevel gear-wheel 6, with which meshes the gear-wheel 7, carried by the horizontal power-

transmitting shaft 8, which is provided with the wheel 9, having the crank or pin 10, to which is secured the upper end of the rod 11, the lower end being connected to the mechanism which is to be operated, as will be readily understood. Rising from the upper platform is a series of vertical guide-rods 12, which form guides for the wind shield or band 13, from which depends the guiding-frame 14, and to the lower rail of this guiding-frame, which is in the form of a bail or yoke, is connected the cord or chain 15 for raising and lowering the frame, and in consequence the shield connected to said frame. The said raising and lowering cord is also guided by the pulley 16 and is connected to the wheel 16^x, having the crank-shaft 17 for turning said wheel. From this construction it will be seen that the wind-shield can be raised or lowered by simply turning the crank in opposite directions, the purpose of which is to shut off the supply of air or permit its entrance through the openings 19 and 18 of the wings 20 and the drum 21, respectively, to the turbine wheel 22, which is mounted on the driving-shaft 5. The driving-shaft also carries at its upper end the governor-arms 24, passing through openings 25 in the cross-head 26, said cross-head being mounted to slide on the driving-shaft, and said shaft also carries the frame 27, which supports the band 28, vertically movable on the driving-shaft and guided in its vertical movements by the rods 29, which rise from the upper platform and pass through bearings or eyes 30 in said band 28. The upper cross-bar of the frame 27 is held between the collars 27^a and 27^x, sliding on the shaft 5, as seen in Figs. 3 and 4. A sliding sleeve on the shaft 5 serves as the connection between the governor-arms and the frame 27. The purpose of this band 28 is: When the wheel or turbine is being revolved at too rapid a speed, the governor-arms will rise and carry with them the cross-head, which will lift said band and partially cover the turbine wheel and decrease the amount of wind supplied to said turbine wheel, and in consequence reduce the speed of rotation of said turbine, as is evident.

40 represents supplemental wings disposed at a different angle than the wings 20 and of less length, as shown.

From the foregoing description, taken in connection with the drawings, the operation of my windmill will be readily understood, and I will simply state that when it is desired to start the operation of the windmill the wind shield or guard is elevated by turning the cranked wheel, which allows the current of wind to pass through the drum and strike against the blades of the turbine, which revolves the driving-shaft and supplies the power for driving any desired mechanism or machinery. When the wind is entering too forcibly and driving the turbine at a greater rate of speed than necessary, the governor mechanism will raise and carry the regulating-band into the path of the wind and in front of the blades of the turbine and check the speed of said turbine. When it is desired to stop the operation of the windmill, it is simply necessary to turn the crank-shaft in the opposite direction, which will bring the wind-shield down in front of the drum and shut off the supply of wind to the turbine.

It is evident from the foregoing description, taken in connection with the drawings, that I provide a windmill or motor which can be easily thrown into or out of operation, which will transmit the full power from the force of the wind, which can be regulated perfectly to insure a smooth and steady running of the windmill and machinery operated thereby, and which is simple, durable, and thoroughly efficient and practical.

I claim—

1. The combination of a supporting-frame, a driving-shaft mounted therein, a turbine carried by said shaft, a governor, a wind shield or guard, a cross-head movable on said shaft, a vertically-movable frame, a vertically-movable band carried by said frame and connections between the band and governor, substantially as described.

2. The combination of a supporting-frame, a driving-shaft mounted therein, a turbine carried by said shaft, a governor, a wind shield or guard, a guiding-frame depending

from said shield, a cord or chain connected to said depending frame for raising and lowering the frame and shield, a cross-head movable on the shaft, a vertically-movable frame, a band carried thereby and connections between the band and governor substantially as and for the purpose specified.

3. The combination of a supporting-frame, a driving-shaft mounted therein, a turbine carried by the shaft, a governor, a wind shield or guard, a cross-head, a frame depending from the shield, a cord or chain connected with said frame, the pulleys over which the cord or chain passes, a crank-shaft carrying the lowermost pulley, a vertically-movable frame, and means for raising and lowering said frame; and a band carried by the said frame, all substantially as specified.

4. The combination of a supporting-frame, a driving-shaft mounted therein, a turbine on said shaft, governor-arms on the upper end of said shaft, a cross-head with openings through which said arms pass, the vertically-movable frame, the band supported thereby, guides for said band and means connecting the governor-arms and cross-head for raising and lowering said band, all substantially as shown and described.

5. The combination of a supporting-frame, a driving-shaft mounted therein, a turbine on said shaft, governor-arms pivotally mounted on the upper end of said shaft, a cross-head with openings through which said arms slide, the vertically-movable frame, a sleeve slidably mounted on the shaft and movable with the said frame, a band supported by said frame, guides for said band and connections for raising and lowering the band by the motion of the governor-arms, substantially as specified.

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

JOHN H. STOLL.

Witnesses:

LEMUEL ANDREWS,
PETER B. PRICE.