

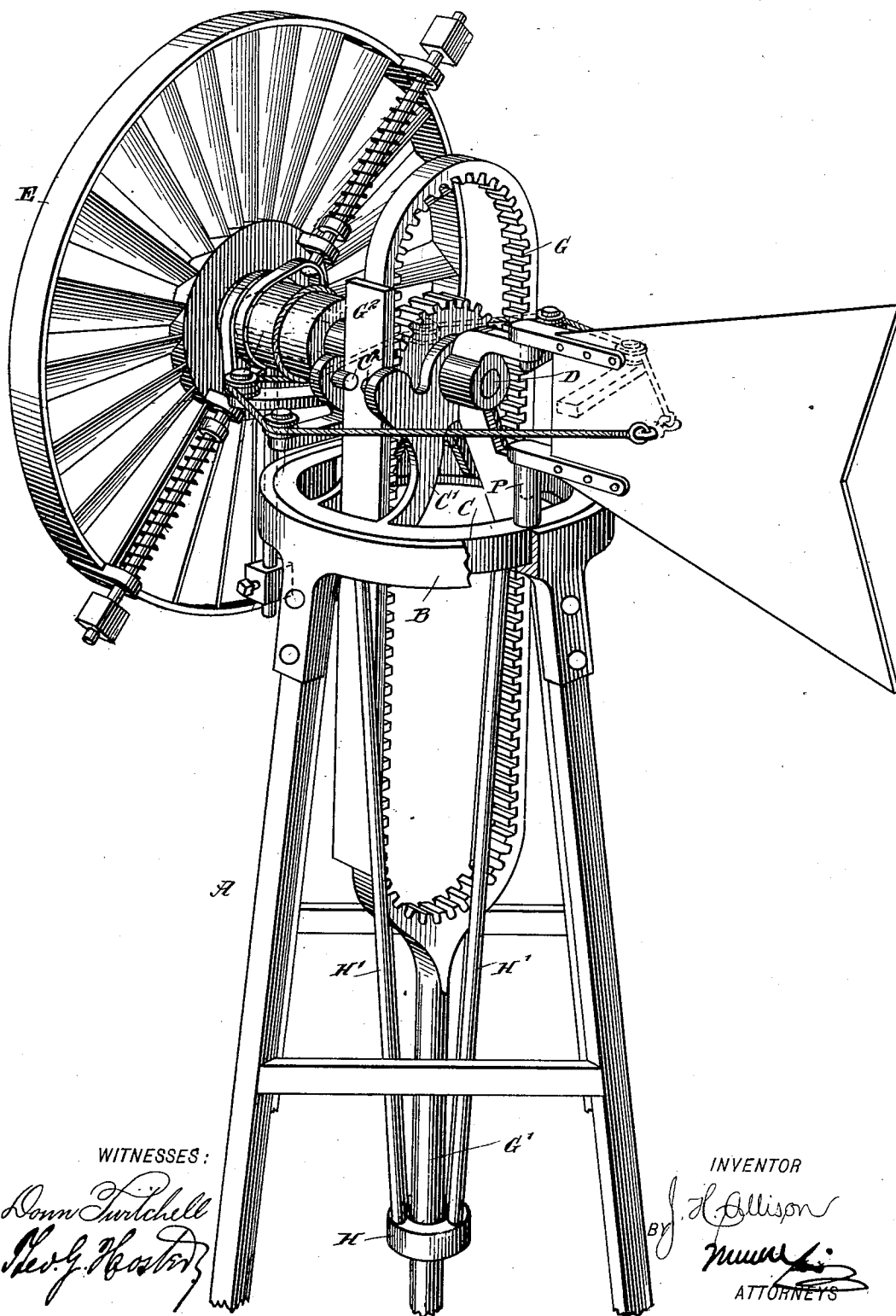
No. 666,590.

Patented Jan. 22, 1901.

J. H. ALLISON.
TRANSMITTING GEAR FOR WINDMILLS.

(Application filed Mar. 26, 1900.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

JESSE H. ALLISON, OF SAN ANTONIO, TEXAS.

TRANSMITTING-GEAR FOR WINDMILLS.

SPECIFICATION forming part of Letters Patent No. 666,590, dated January 22, 1901.

Application filed March 26, 1900. Serial No. 10,191. (No model.)

To all whom it may concern:

Be it known that I, JESSE H. ALLISON, a citizen of the United States, and a resident of San Antonio, in the county of Bexar and State of Texas, have invented a new and Improved Transmitting-Gear for Windmills, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved transmitting-gear for windmills which is simple and durable in construction, very effective in operation, and arranged to impart a long stroke to the pump-rod or other device to be actuated.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which the figure is a perspective view of the improvement.

On the upper end of a tower A is arranged a suitable circular bearing B, in which is mounted to turn a ring C, carrying brackets C' for the bearings of a windmill-shaft D, at one end of which is secured a wind-wheel E of any approved construction. On the shaft D between the brackets C' is secured a pinion F, in mesh with an elongated internal rack G, provided at its lower end with a shank G' for connection with the rod of a pump or other machinery to be driven. The shank G' passes loosely through a ring-shaped bearing H, carried by rods H', secured to the under side of the ring C to properly guide the rack G in its up-and-down movement and to allow said rack to swing transversely as it reciprocates, the rack-teeth engaging the pinion F at one side.

In order to hold the elongated internal rack G in mesh with one side of the pinion F, the said rack G is provided on one side with a guide-bar G², extending beyond the faces of the said rack G to engage guide-pins C², secured on the brackets C', the arrangement being such that the bar G² during one of its strokes travels with its outer face on the inner side of said pins C², as shown in the drawing, and when the other side of the rack G is in engagement with the pinion F then the inner face of the guide-bar G² is in engage-

ment with the outer side of said pins to properly hold the rack G in mesh with the pinion F'. By reference to the drawing it will be seen that for the purpose mentioned the pins C² are located in a horizontal plane extending through the axis of the shaft D and through the point of contact between the pinion F and the rack G. By the arrangement described the elongated internal rack G is at all times in proper mesh with the pinion F, so that when the wind-wheel E is in motion the pinion F transmits the rotary motion of the wheel E and shaft D to the rack G to cause the same to reciprocate and actuate the pump or other machinery to be driven.

It is understood that the transmitting-gear can be used in other machines besides a windmill—for instance, on pumping-jacks, hand-pumps, and the like. When used on a pumping-jack, only a slight change is needed on the frame, and the ring will be made square to bolt on the sills.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a transmitting-gear, the combination with a support provided with brackets, a shaft mounted in said brackets, a pinion on the shaft between the brackets, and an elongated internal rack meshing with the pinion, of a guide-bar secured to one side of the rack and projecting beyond the side faces thereof, and guide-pins secured to the brackets, said pins projecting toward each other, and adapted to alternately engage the inner and outer faces of the said guide-bar, substantially as described.

2. In a transmitting-gear for windmills, the combination with a tower provided with a circular bearing, of a ring mounted in the bearing and provided with upwardly-extending brackets, a wind-wheel shaft mounted in the brackets, a pinion on the shaft, an elongated internal rack, means for holding the rack in mesh with the pinion, and downwardly-projecting rods secured to the ring and carrying a bearing at their lower ends, through which the shank of the rack loosely passes, substantially as described.

3. In a transmitting-gear for windmills, the combination with a tower provided with a circular bearing, of a ring mounted in the bear-

ing and provided with upwardly-projecting
brackets, a wind-wheel shaft mounted in the
brackets, a pinion on the shaft, an elongated
internal rack meshing with the pinion, a
5 guide-bar secured to the rack and projecting
beyond the sides of the same, guide-pins se-
cured to the brackets and adapted to alter-
nately engage the inner and outer faces of
the guide-bar, and downwardly-projecting
10 rods secured to the ring and carrying at their

lower ends a bearing through which the shank
of the rack loosely passes, substantially as
herein shown and described.

In testimony whereof I have signed my
name to this specification in the presence of 15
two subscribing witnesses.

JESSE H. ALLISON.

Witnesses:

J. L. MANLEY,

W. H. VAN RIPER, Sr.