No. 653,109. Patented July 3, 1900.

G. J. MOORE & F. E. COOK.

WINDMILL GEAR.

(Application filed Jan. 18, 1900.)

(No Model.)

Fig 1

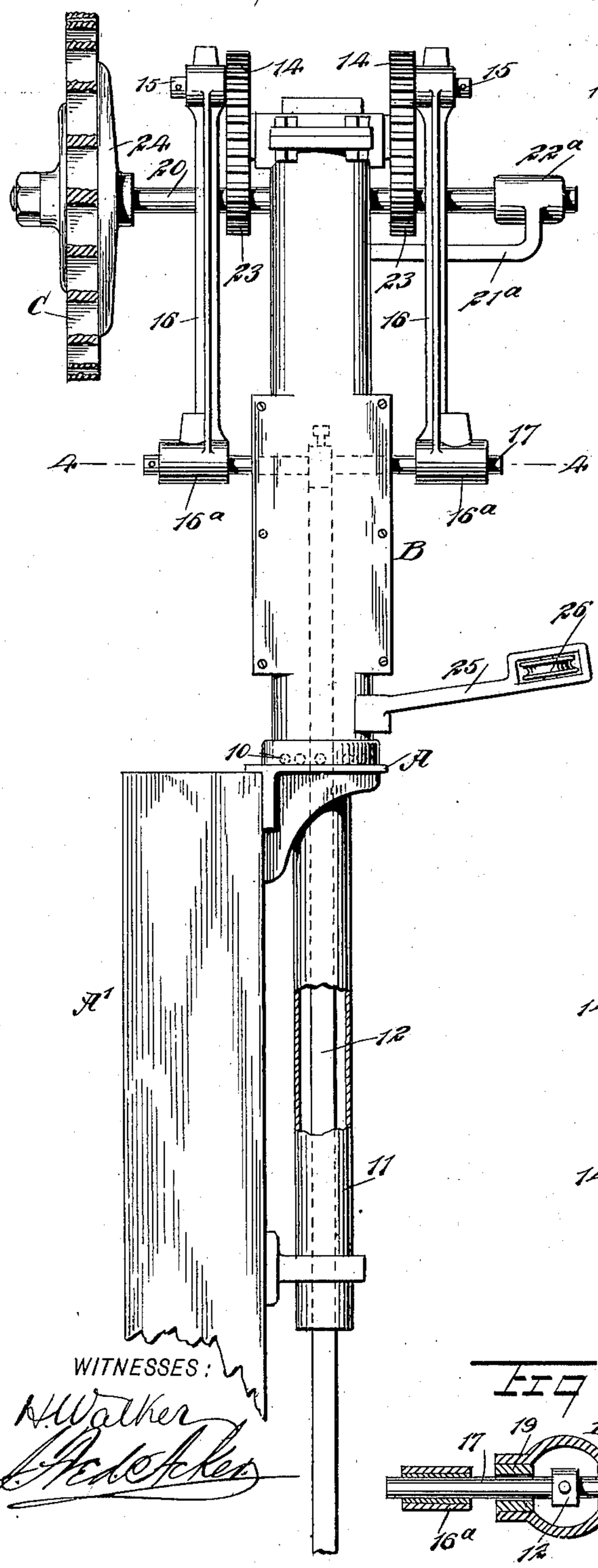

Fig 2

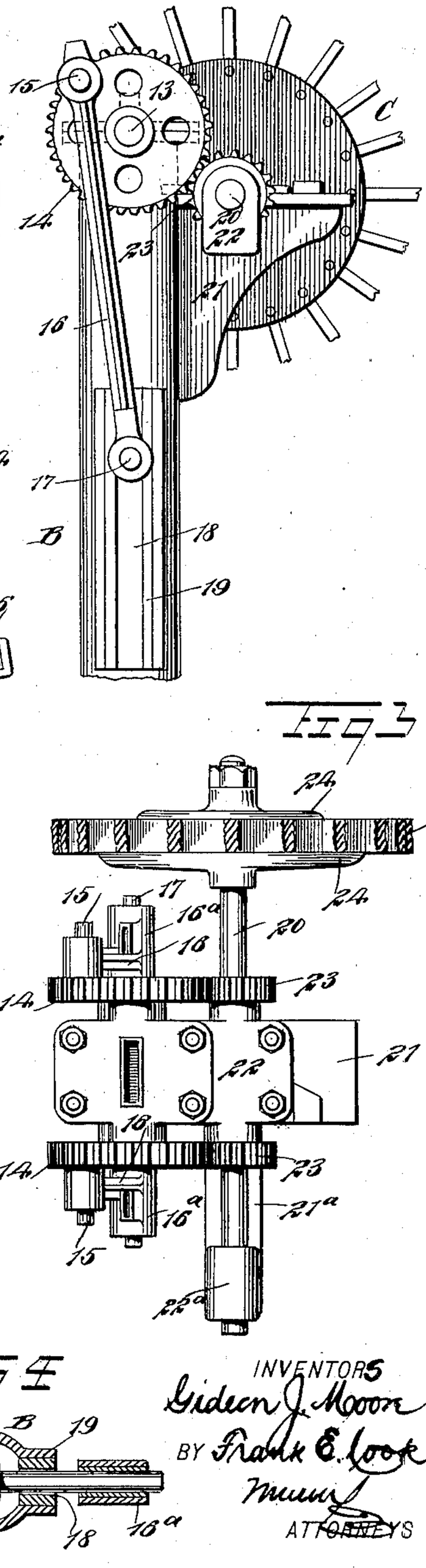

Fig 3

Fig 4

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WINDMILL-GEAR.

SPECIFICATION forming part of Letters Patent No. 653,109, dated July 3, 1900.

Application filed January 18, 1900. Serial No. 1,897. (No model.)

To all whom it may concern:

Be it known that we, GIDEON J. MOORE and FRANK E. COOK, citizens of the United States, residing at Eureka, in the county of Humboldt and State of California, have invented a new and Improved Windmill-Gear, of which the following is a full, clear, and exact description.

The object of our invention is to so simplify the driving mechanism of a windmill construction that gearing is employed and connected with the pump-rod in such manner that the driving motion of wind-power will be simultaneously and practically directly applied to the pump-rod at opposite sides. The construction is also such that all cranks, crooked arms, or walking-beams to be found in almost all windmills to bring the pump-rod to the center are dispensed with.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the upper portion of the structure, the wind-wheel being in section. Fig. 2 is a side elevation of the upper portion of the structure, the spokes of the wind-wheel being broken away. Fig. 3 is a plan view of the structure, the wind-wheel being in section; and Fig. 4 is a horizontal section taken practically on the line 4 4 of Fig. 1.

A represents a turn-table, which is attached to any suitable support A′—as a tower, for example—and the head B of the windmill-frame is mounted to revolve on the table A, suitable roller-bearings 10 being provided. The head B is tubular and is closed at the top, so that rain and snow cannot enter the head and rust the mechanism contained therein. The head B is practically closed at the bottom, being provided with a tubular extension 11, extending downwardly and mounted to turn in suitable guides attached to the tower or support A′, and the pump-rod 12 is carried up through the extension 11 to a point about centrally between the top of the head B of the windmill and the turn-table A, as is shown in dotted lines in Fig. 1.

A driven shaft 13 is journaled in suitable bearings formed at the upper portion of the head B directly over the pump-rod, and a gear 14 is secured to each end of the shaft 13, since the ends of this shaft extend out beyond opposite sides of the head. Each gear 14 is provided with a crank-pin 15, and a pitman 16 is pivoted on each crank-pin, adapted for connection with the pump-rod 12. This connection is effected by passing a shaft 17 through slots 18, made in opposite sides of the central portion of the head B, as shown in Figs. 1, 2, and 4, and each slot 18 is preferably provided with hard-wood sides 19 or with sides of other hard material, which will serve to prevent the slot from becoming worn. The pump-rod 12 is attached in any suitable manner to the center of the vertically-movable shaft 17, and the pitmen 16 are provided at their lower ends with long sleeves 16ª, receiving the shaft 17. These sleeves are lined with Babbitt metal or with equivalent material, as shown in Fig. 4.

The wind-wheel shaft 20 is journaled in boxes 22, located upon a bracket 21, extending rearwardly from the head B, and this bracket is provided with an arm 21ª, extending to one side of the head, carrying a suitable bearing 22ª, as shown in Fig. 1. Two pinions 23 are secured on the windmill-shaft 20, and these pinions mesh with the gears 14 on the shaft 13, to be driven through the medium of the windmill-shaft. The windmill-shaft is also provided at one end with clamps 24 or their equivalents, the clamps being adapted to hold the wind-wheel C firmly on the shaft. We have also illustrated the head B as provided with an arm 25 at one side, carrying a friction-pulley 26, the said pulley 26 being adapted to engage with the cord that is usually employed to shift the position of the vane.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a windmill, the combination of a hollow and slotted head, a shaft extending loosely through the slot of the head and to which the pump-rod is secured, a wind-wheel shaft

mounted in brackets projecting from the head and provided with pinions, a transverse shaft mounted on the upper end of the head at the center thereof and having its ends projecting beyond the same and carrying gear-wheels meshing with the pinions of the wind-wheel shaft, said gear-wheels being provided with crank-pins, and pitmen having their upper ends pivoted to the said crank-pins and their lower ends to the shaft to which the pump-rod is secured, substantially as described.

2. In a windmill, the combination, with a closed tubular head having a longitudinal slot, a shaft extending loosely through the slot of the head, and a pump-rod attached to the said shaft, the pump-rod extending within the head, of a wind-wheel shaft carried by the head, a driven shaft mounted in the upper end of the head directly above the pump-rod, pinions carried by the wind-wheel shaft, a gear on each end of the driven shaft, engaging with the said pinions, and pitmen connected with the said gears and with the end portions of the pump-rod shaft, for the purpose specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GIDEON J. MOORE.
FRANK E. COOK.

Witnesses:
W. J. CRANE,
PETER BEECHER.