

No. 850,628.

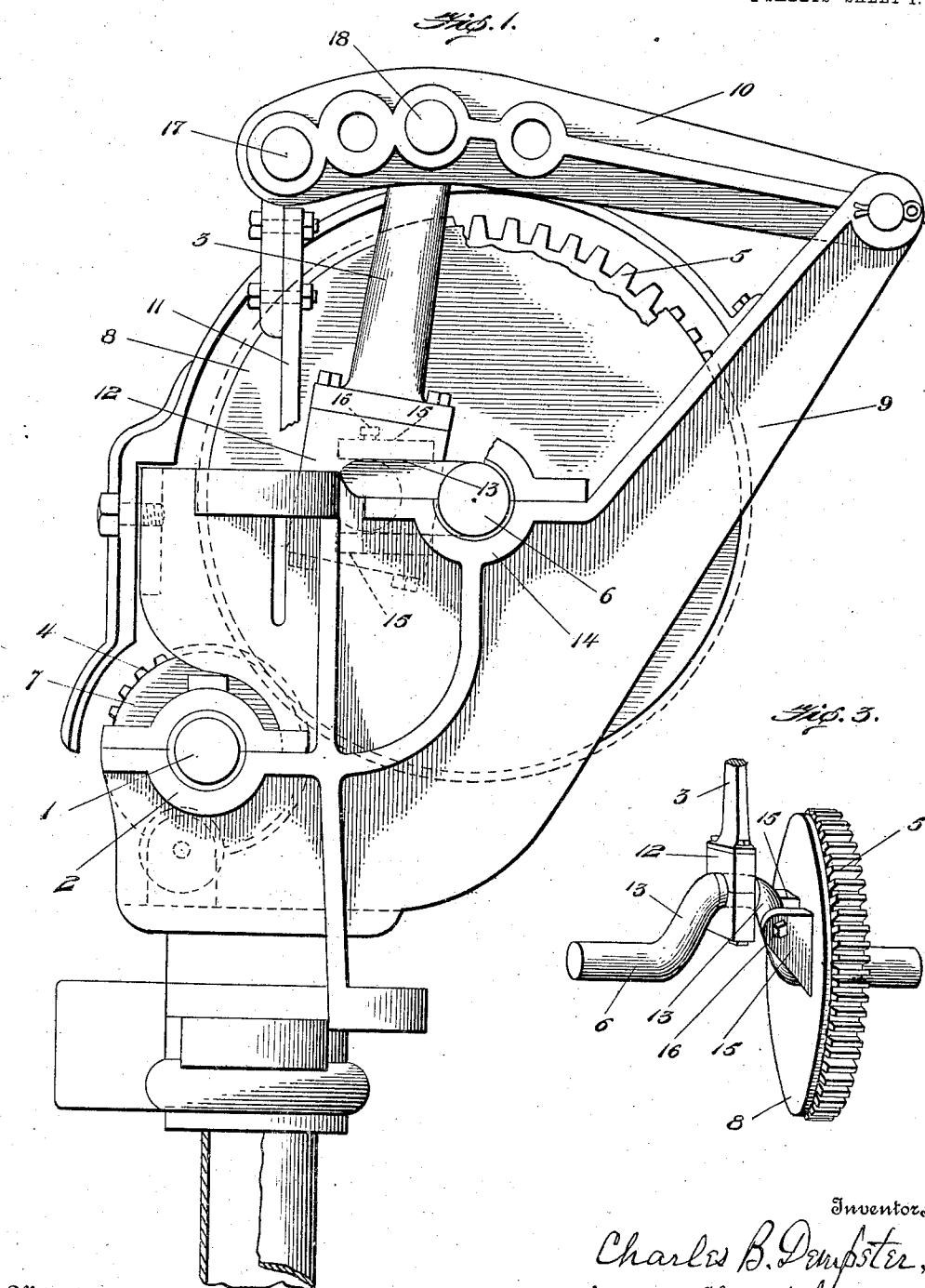
PATENTED APR. 16, 1907.

C. B. DEMPSTER & H. S. MOLONY.

WINDMILL.

APPLICATION FILED JAN. 22, 1907.

2 SHEETS—SHEET 1.



Witnesses

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White

By

Inventors
Charles B. Dempster,
Harry Stuart Molony,
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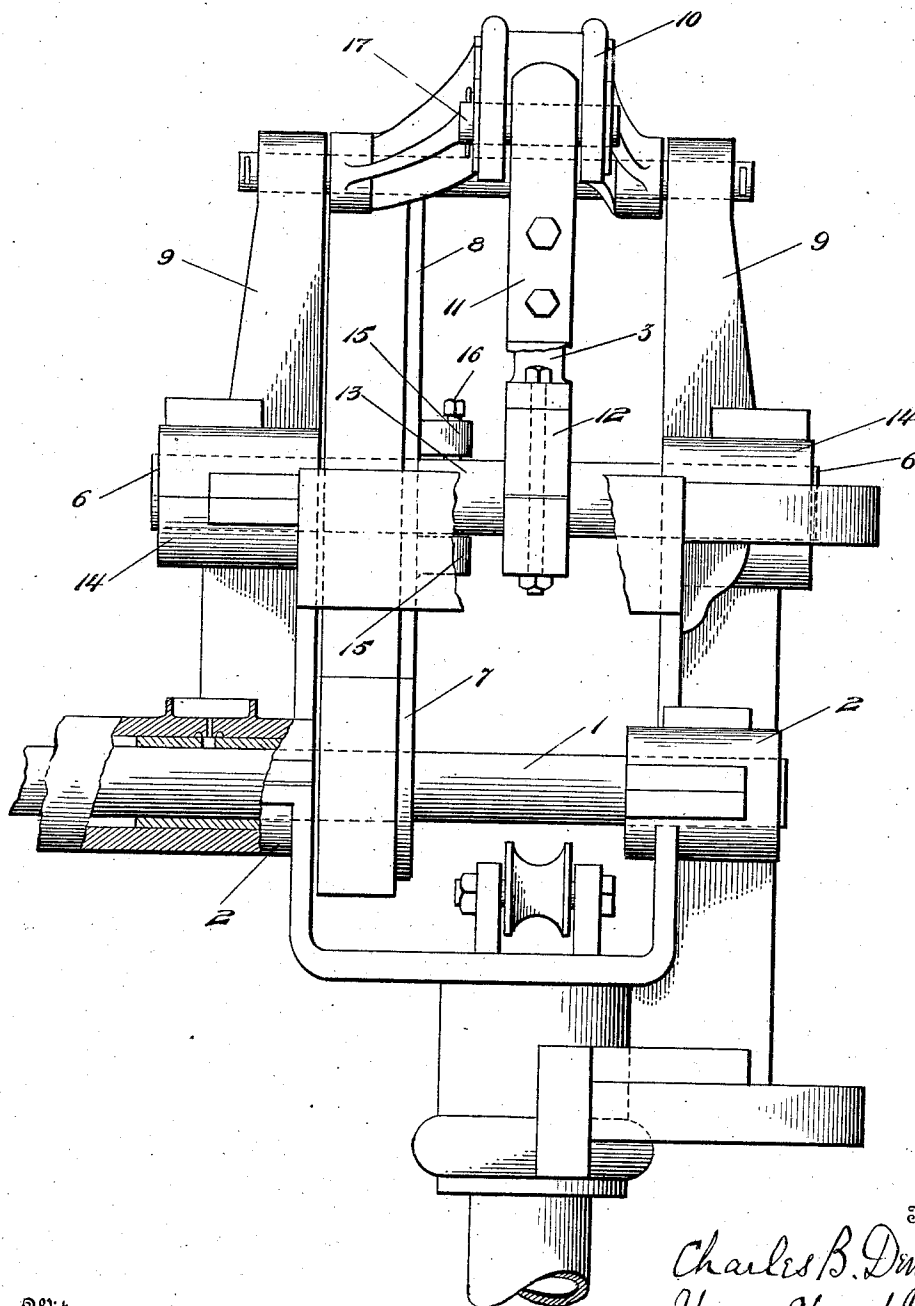
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES B. DEMPSTER AND HARRY STUART MOLONY, OF BEATRICE,
NEBRASKA, ASSIGNORS TO DEMPSTER MILL MANUFACTURING COM-
PANY, OF BEATRICE, NEBRASKA.

WINDMILL.

No. 850,628.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed January 22, 1907. Serial No. 353,463.

To all whom it may concern:

Be it known that we, CHARLES B. DEMPSTER and HARRY STUART MOLONY, citizens of the United States, residing at Beatrice, in the county of Gage and State of Nebraska, have invented certain new and useful Improvements in Windmills, of which the following is a specification.

Our invention relates to windmill construction, and especially to improved mechanism for transmitting the power of the wind-wheel to the pitman and pump-rod.

In the accompanying drawings, Figure 1 is a side elevation of some of the working parts of a windmill-head, certain parts being omitted and other parts broken away for greater clearness. Fig. 2 is an end elevation of the same, partly in vertical section and viewed from the left-hand side of Fig. 1. Fig. 3 is a detail view of the main gear-wheel and crank-shaft detached, showing our special means of applying the power of the gear to the crank.

1 indicates the wind-wheel shaft, which is journaled in boxes 2, located on each side of the vertical plane of operation of the pitman 3. Said shaft carries a pinion 4, which meshes with a gear-wheel 5, mounted on the crank-shaft 6. Said pinion and gear are provided with circular extensions 7 8 on the pitch-line of their teeth, which extensions receive the impact of the two wheels and prevent their teeth from meshing too closely.

9 indicates the upwardly-extending arms of the main casting of the windmill-head. To the upper ends of and between said arms is pivoted one end of a duplex rocking lever 10, to the opposite end of which lever, at 17, is pivotally connected the vertically-acting plunger 11, which extends downwardly to a connection with the pump-rod. (Not shown.) At an intermediate point 18 on said rocking lever 10 is pivoted the pitman 3, carrying the head 12, mounted on the crank 13 and actuated thereby.

A peculiarity of our invention consists in the means of imparting power to the crank. The crank-shaft 6 is journaled in boxes 14 on each side of the pitman-well. The gear 5, which is mounted on said crank-shaft in close juxtaposition with one of the radial arms of the crank, is not keyed or splined to said shaft in the usual manner, but fits the

shaft loosely. On the face of said gear which is toward the crank and at a suitable distance from the center of the gear (see Fig. 3) are provided two lugs 15, which extend outward in such a manner as to include between them one of the radial arms of the crank and bear against said arm on each side thereof.

Any preferred means may be adopted for holding the gear in close juxtaposition with the crank-arm, such as set-screws 16, extending through the lugs 15 and bearing against said arm.

It is obvious that when the power of pinion 4 is applied to gear 5 the latter must rotate and will carry with it the crank 13 in the same manner as if the gear were keyed to the crank-shaft in the usual way. The advantage of this construction consists in the lessening of the strain on the hub of the gear and the weakening of the shaft, both of which occur when the gear is keyed to the shaft. Our construction locates the point where the power is actually applied to the shaft, not on the shaft proper, but on the crank and at some distance from the shaft, thus relieving the shaft and gear from unnecessary strains.

Any other preferred means for connecting the gear 5 with the crank-arm, so as to transmit power to the crank in substantially the same manner as herein described, may be substituted for the lugs 15, and we therefore do not limit our claims to the specific connecting means shown.

We claim as our invention and desire to secure by Letters Patent—

1. In a windmill, the combination of the wind-wheel shaft, a crank-shaft mounted parallel with said wheel-shaft, a crank, a pitman pivoted on said crank to move in a vertical plane, bearings for said crank-shaft on each side of the plane of movement of the pitman, a pinion on said wheel-shaft, a gear driven by said pinion and loosely mounted on said crank-shaft in juxtaposition with a radial arm of the crank, means for connecting said gear with said radial arm so that the rotation of the gear will turn the crank, a plunger, and suitable operative connections between said plunger and said pitman.

2. In a windmill, the combination of the wind-wheel shaft, a crank-shaft parallel with

said wheel-shaft, a crank, a pitman pivoted on said crank to move in a vertical plane, bearings for said crank-shaft on each side of the plane of movement of the pitman, a pinion on said wheel-shaft, a gear loosely mounted on said crank-shaft and driven by said pinion, lugs projecting from the face of said gear, upon each side of the crank and bearing against said crank to rotate the same in either direction, a plunger, and means for operatively connecting said plunger with the pitman.

3. In a windmill, the combination of the wind-wheel shaft, a crank-shaft parallel with said wheel-shaft, a crank, a pitman mounted on said crank to move in a vertical plane, bearings for said crank-shaft on each side of the plane of movement of the pitman, a pinion on said wheel-shaft, a gear loosely mounted on said crank-shaft and driven by said pinion, said pinion and gear having lateral extensions at the pitch-line of their teeth, adapted to bear against each other and prevent said teeth from meshing too closely, lugs projecting from the face of said gear, upon each side of the crank, and bearing

against said crank to rotate the same in either direction, a plunger, and operative connections between said plunger and the pitman.

4. In a windmill-head, the combination of the main frame, the wind-wheel shaft, a crank-shaft parallel with said wheel-shaft, a crank, a pitman mounted on said crank to move in a vertical plane, bearings for said crank-shaft on each side of the plane of movement of the pitman, a pinion on said wheel-shaft, a gear driven by said pinion and mounted on said crank-shaft in juxtaposition with a radial arm of the crank, means for connecting said gear with said radial arm so that the rotation of the gear will turn the crank, a rocking arm pivoted to the main frame and actuated by said pitman, and a vertically-acting plunger operated by said rocking arm.

In testimony whereof we affix our signatures in presence of two witnesses,

CHARLES B. DEMPSTER.
HARRY STUART MOLONY.

Witnesses:

W. Z. WARNER,
R. H. YALE.