

(No Model.)

C. W. ROBERTS.
GEARING FOR WINDMILLS.

No. 304,454.

Patented Sept. 2, 1884.

Fig. 1

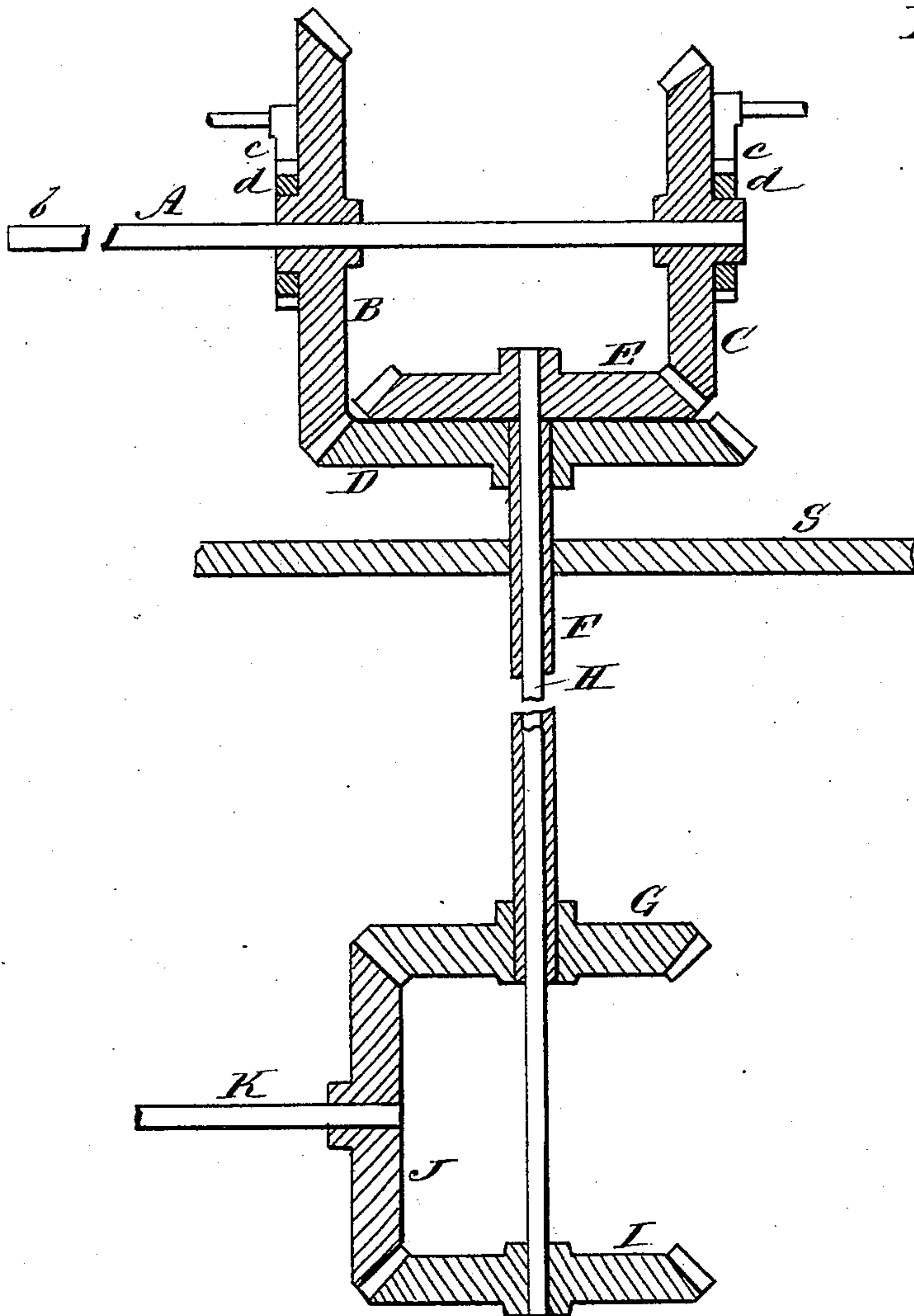
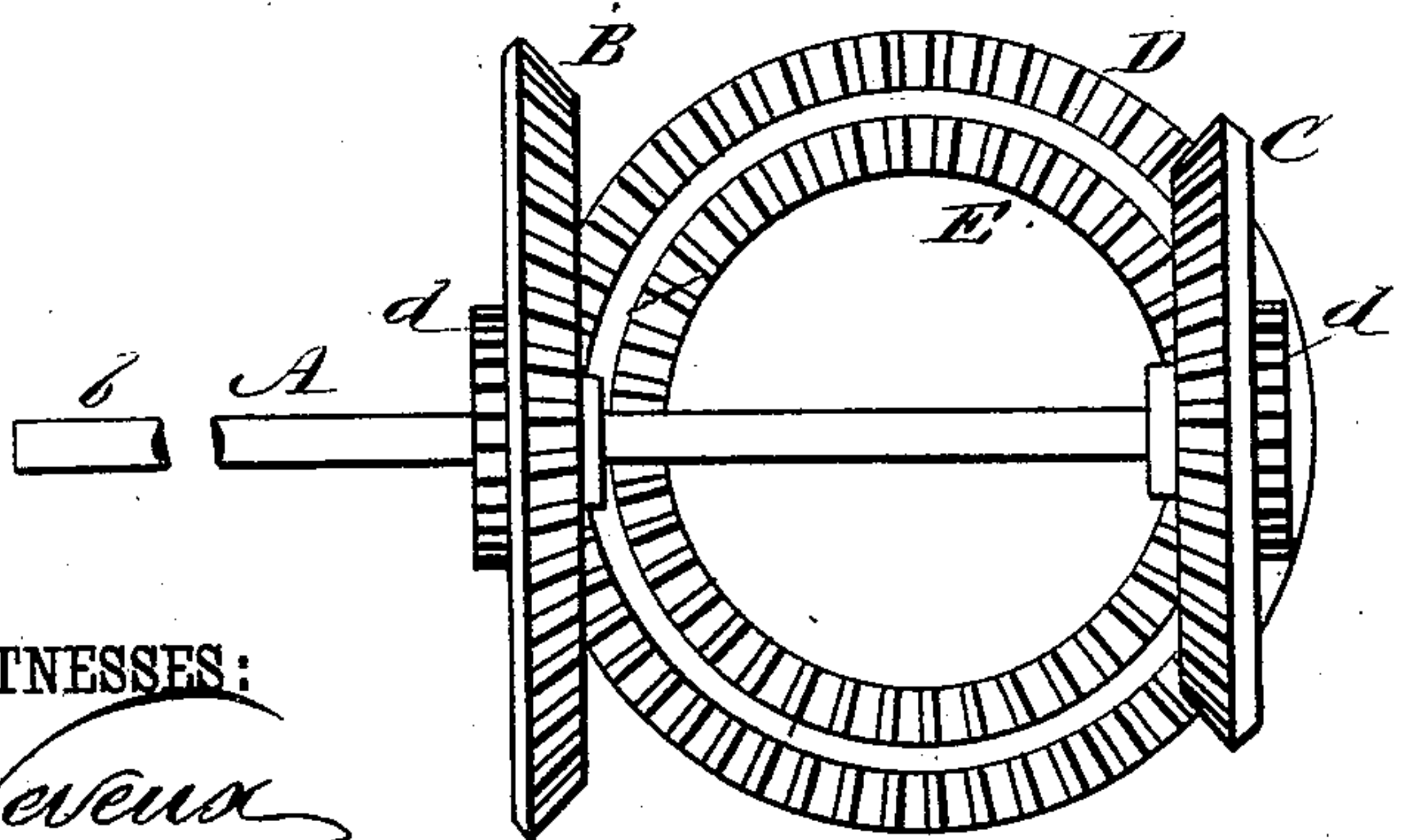


Fig. 2



WITNESSES:

C. Stevens
C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

CHARLES W. ROBERTS, OF OSKALOOSA, KANSAS, ASSIGNOR OF ONE-HALF
TO THOMAS M. VAN COURT, OF OMAHA, NEBRASKA.

GEARING FOR WINDMILLS.

SPECIFICATION forming part of Letters Patent No. 304,454, dated September 2, 1884.

Application filed March 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. ROBERTS, of Oskaloosa, in the county of Jefferson and State of Kansas, have invented certain new and
5 useful Improvements in Gearing for Windmills, of which the following is a full, clear, and exact description.

This invention consists in a certain combination of double gears and shafts for transmitting rotary motion from the wheel-shaft of
10 the mill to the line or driving shaft, with provision for certain of the driving-gears to run idle in a back direction when the mill shifts or turns in the wind, substantially as herein-
15 after described.

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

20 Figure 1 represents a sectional elevation of the transmitting and driving mechanism of the mill in its relation with the turn-table thereof, and Fig. 2 is a plan view of the same.

A is the wheel-shaft of the mill, said shaft
25 carrying the wind-wheel on its forward end, as at *b*. On this shaft are fitted two miter or bevel wheels, B C, the same being made to engage with the shaft by pawls and ratchets *c d*, arranged to admit of said wheels running
30 idle when moving back with the shifting or turning of the wheel in the wind along with the turn-table S of the mill, but so that said wheels B C are driven with or by the shaft A, when the wheel is not being shifted by the
35 wind. These miter or bevel wheels B C are arranged to gear with and drive in opposite directions two other miter or bevel wheels, D E, having the same vertical axis, on the one side of which the wheel B engages with the
40 wheel D, and on the other side thereof the

wheel C engages with the wheel E. The wheel D is fast on the upper end of a vertical tubular shaft, F, which carries at its lower end another miter or bevel wheel, G, and the wheel E is fast upon a shaft, H, arranged to pass
45 down through the hollow shaft F, and having secured on its lower end a miter or bevel wheel, I. The wheels G and I accordingly revolve in opposite directions, and the upper gears are so proportioned that the reversely-
50 moving upright shafts F H travel at the same speed. Said wheels G and I are of like diameters and engage on opposite sides of its axis with another miter or bevel wheel, J, fast
55 upon the line or driving shaft K, from which motion is taken to put in operation the mechanism or devices the mill is designed to work.

By this system of duplicate and reverse gears with their shafts arranged to give rotary motion to the line or driving shaft of the mill
60 one sided or lateral pressure upon the line-shaft is avoided, and the strain and wear is so generally divided over the several gears that there is much less liability to breakage, and
65 a steadier or more uniform rotary driving motion is obtained.

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

The combination, with the wind-wheel shaft 7c
A of the mill and its ratchet-engaged wheels B C, of the wheels D E, the shafts F H, the wheels G I, the line or driving shaft K, and the wheel J, arranged for operation in relation
75 with each other, substantially as and for the purposes herein set forth.

CHARLES W. ROBERTS.

Witnesses:

BENJ. WALKER,
T. H. NOBLE.