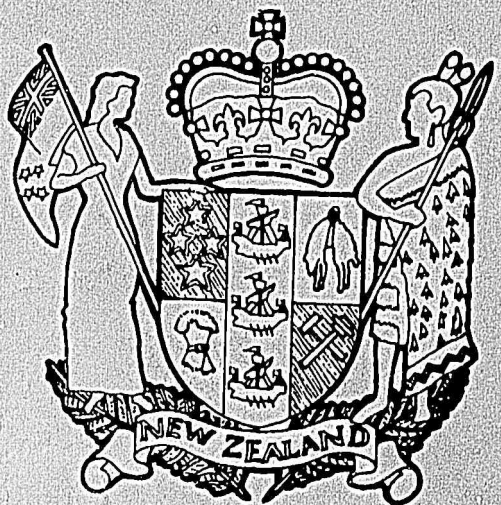


NEW ZEALAND

PATENT SPECIFICATION

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25 NOV. 1913
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25 / 11 / 13

HENRY HUGHES, LIMITED

907

COMPLETE SPECIFICATION.

"IMPROVEMENTS IN WINDMILLS."

I, ERNEST HAYES, of Oturehua, in the Dominion of New Zealand, Windmill Manufacturer, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:-

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This invention has been designed in order to provide improvements in the construction of windmills by which simplicity in construction and economy in cost are obtained. The invention consists in a special construction of rotatable frame for carrying the wind wheel and other gearing and providing for a fixed axle for such wheel and gearing, and also in a special form of wind vane for directing the swing of the frame.

In fully describing the invention reference will be made to the accompanying sheet of drawings in which:-

Figure 1 is a front elevation of the top of a windmill constructed according to this invention.

Figure 2 is a perspective side elevation of the wind vane.

A represents the ordinary rotating table or stand mounted upon the top of the windmill frame B. From opposite sides of this table pipe standards C extend upward. These standards at their top ends are provided with any suitable form of bearing E to receive and support the main axle F which is then kept from movement in its bearings by means of the set screws e or other fastenings. These standards and axle form the frame to support the wind wheel G which is of any of the ordinary constructions of wheel, but which in this invention is provided with a coupling boss g by means of which it is coupled to the driving pinion H also mounted on the axle F. Thus there is direct motion conveyed from the wind wheel to the driving pinion, the two revolving together upon the fixed axle and thus distributing the wear over a wide surface as compared with the axle rotating in its bearings. If desired the wind wheel hub may be bushed with a suitable wear resisting metal.

The driving pinion H gears with the gear wheel J to which the pump crank rod K is attached in any suitable

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manner. This gear wheel is also mounted on a horizontal fixed axle pin M that is attached to the adjacent standard C by means of the clamp m.

The wind vane shewn in the drawings is constructed of two pieces N of sheet metal each of which has its top and bottom edges bent outward at right angles to its main part as at O. These are then arranged back to back as shown in the drawings with their flanges O respectively extending in opposite directions. A pipe P is fastened by means of a clamp p on to one of the standards C so as to extend horizontally and the metal sheets composing the vane are arranged on opposite sides of the pipe and are fastened together by bolts R passing through them so as thereby to tightly grip the pipe. The pipe support extends along the middle line of the vane.

A wind vane constructed in this manner provides for the wind obtaining a quicker grip of it than with the usual constructions so that a quicker response is obtained in the movements of the rotating table.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:-

1. In windmills, a wind wheel frame consisting in the combination with the rotating table or platform of a pair of standards extending upwards on opposite sides of the table or platform and an axle carried in bearings upon the top of such standards and held firmly therein and upon which the wind wheel is mounted and revolves, substantially as specified.

2. In windmills, a fixed axle, a windwheel mounted to rotate thereon, a driving pinion also mounted to rotate on the axle and a coupling connecting the windwheel and driving pinion together, substantially as specified.

3. In windmills, a wind vane constructed of two

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sheet metal plates each having its top and bottom edges turned outwards at right angles, secured together back to back and attached to a horizontal supporting arm upon the windmill rotating frame, substantially as specified.

4. The improvements in windmills constructed and operating substantially as herein described and explained, as illustrated in the accompanying drawings and for the purposes set forth.

Dated at Wellington the 25th day of November 1913.

HENRY HUGHES, LTD.
per W Alexander
AGENT FOR THE APPLICANT.

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HENRY HUGHES, LTD.
per W Alexander

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FIG. 1

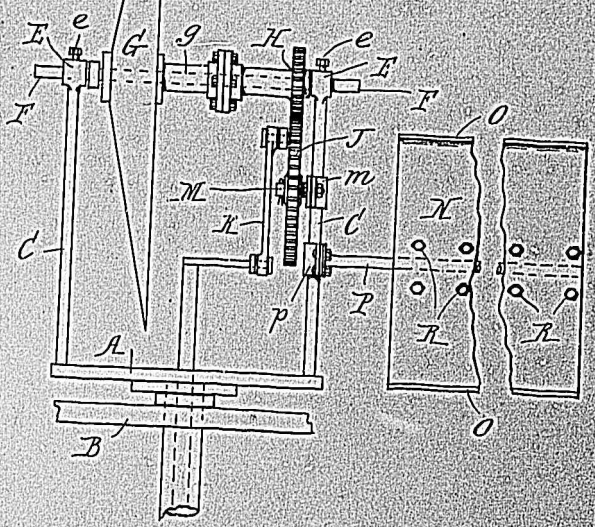
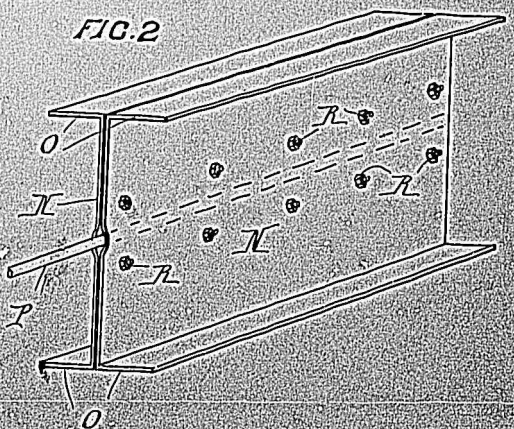
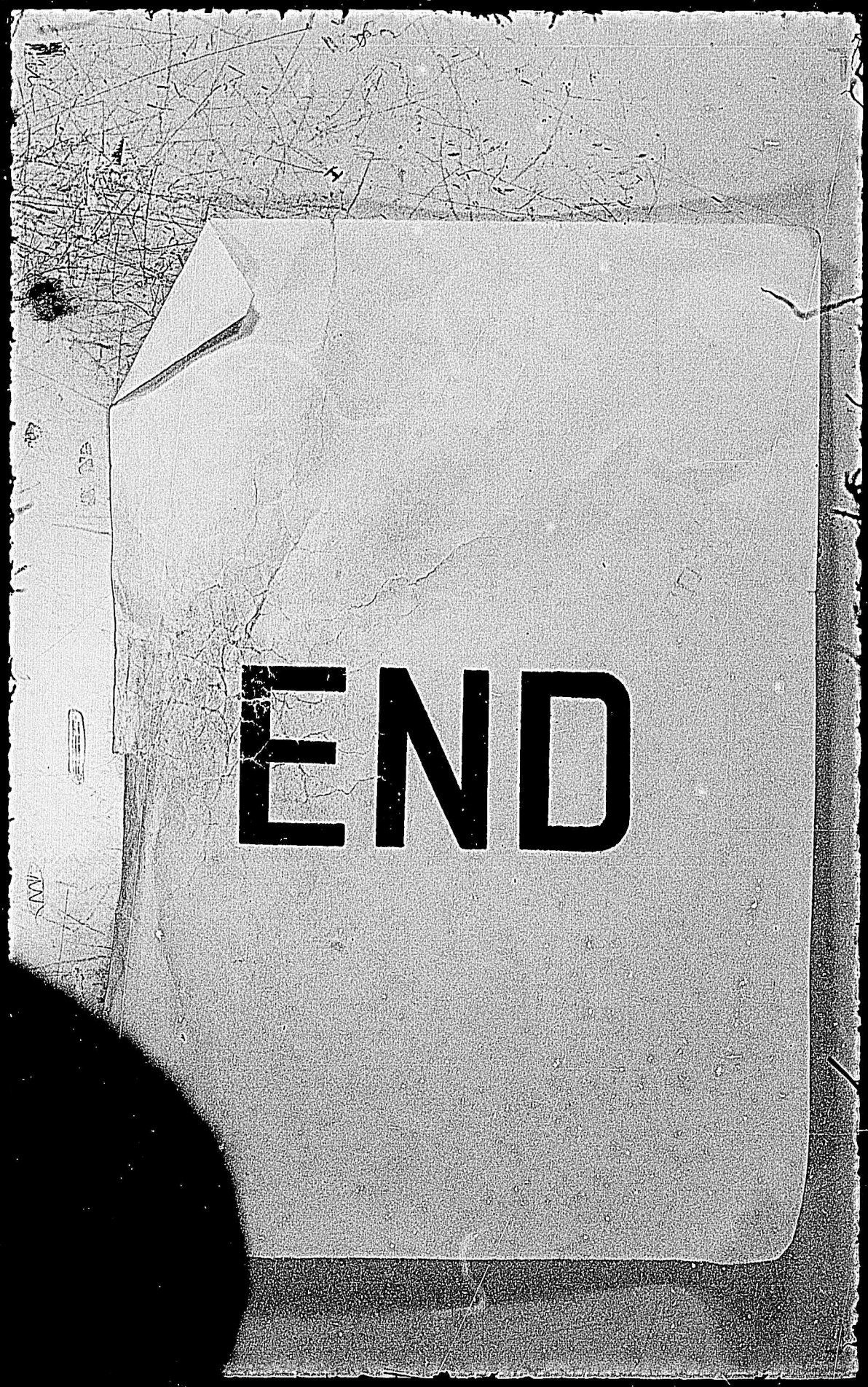


FIG. 2



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END