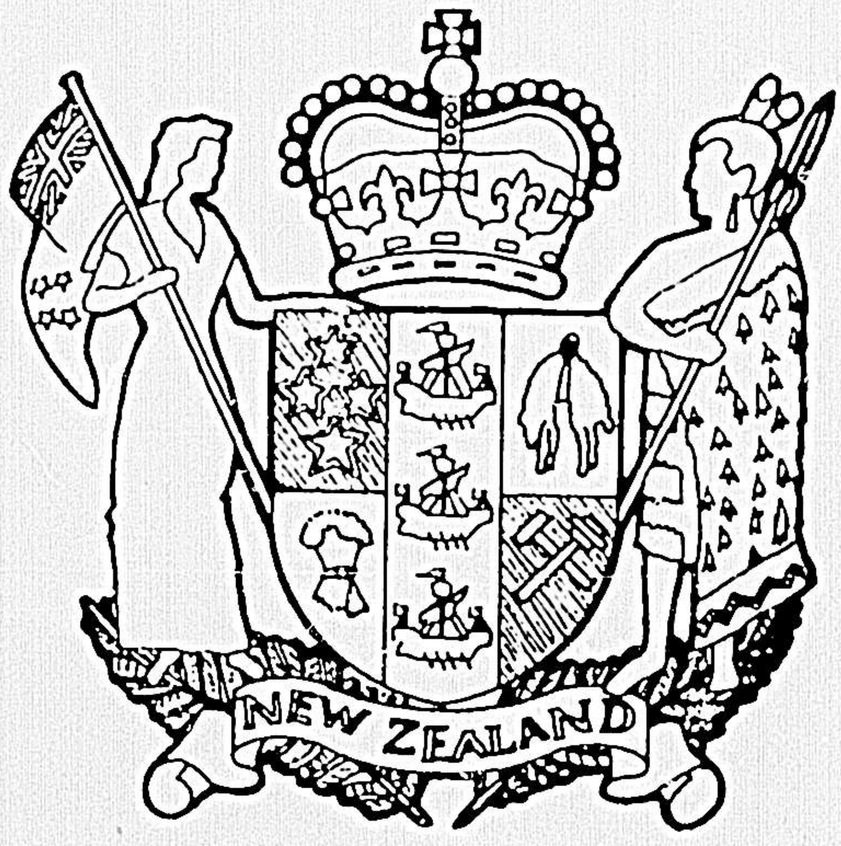


NEW ZEALAND

PATENT SPECIFICATION

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18. 11. 15.

HENRY HUGHES, LIMITED

PATENT OFFICE
17 AUG. 1916
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Date: 28 · 9 · 16

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NEW ZEALAND.

"The Patents, Designs and Trade Marks Act 1911."

No. 36,947.

18th November 1915.

COMPLETE SPECIFICATION.

"IMPROVEMENTS IN WINDMILL GEARING."

WE, HENRY PETER MEYER, Carpenter, of Kihi Kihi, and GEORGE SPINLEY, Blacksmith, of Te Awamutu, in the Dominion of New Zealand, 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:-

This invention has been devised in order to provide an improved construction of windmill gearing and in which the power from the sails is conveyed by simple means to reciprocate the pump plunger or power rod. The construction designed also provides for the complete lubrication of all of the windmill parts.

According hereto an oil chamber to hold the mech anism is provided and mounted on the ordinary tubular pillar journalled vertically in the frame. The chamber is made approximately of oblong shape in plan and the tubular pillar is carried up on its inside to a height above the normal level of the oil placed within the chamber,

The sail shaft is journalled in the sides of the chamber near one end and extends transversely at right angles therewith, and is formed with a crank arranged within the chamber or has a crank disc secured upon its end and situated within such chamber. A pitman beam has one of its ends pivoted to the opposite end of the chamber and its other end connected to the crank or crank disc by a suitable connecting rod so that the rotation of the sail shaft will convey an up and down rocking motion to such beam. The beam is bifurcated at a point between its ends so as to enclose the top end of the pillar and thus permit of its free up and down movement, and pivoted to the two sides of the bifurcated portion, are vertically extending rods that are formed with slides that pass up within guides formed on the sides of the chamber, and are connected together at their top ends by means of a cross head. This cross head thus extends across above the end of the tubular pillar and moves up and down with the rocking movements of the pitman beam

The top end of the pump plunger or power rod is passed up through the tubular pillar and is secured to the cross head so that its movements will be conveyed to such plunger or rod in the desired manner.

The invention is illustrated in the accompanying drawings, in which:-

Figure 1 is a side elevation of the gearing box or chamber and its mounting.

Figure 2 is a sectional elevation of such chamber showing the gearing arranged therein.

Figure 3 is a plan thereof.

A is the gearing chamber that is mounted on the tubular pillar B carried in the stand C in the usual way to provide for the chamber swinging in a horizontal plane.

The chamber B is made of suitable size and of a shape such as to receive the gearing and to allow for its free working.

D is the sail shaft that is carried in bearings E arranged on the top of the chamber sides so that the shaft extendistransversely across the chamber.This shaft is formed with the crank D' situated between the chamber sides.

F is the pitman beam that is pivoted in a bearing F' at the opposite end of the chamber and extends along within the chamber to the other end where it is connected by means of the connecting rod G with the crank D' of the sail shaft. The rotation of the shaft will thus cause the beam F to be moved up and down on its pivot F'.

Instead of the crank D', its equivalent, a crank disc, may be employed to impart the up and down movement to the beam F.

The beam F is bifurcated, as at H, so as to

enclose the pillar B which in this invention is carried right up into the chamber A and to allow of the beam moving freely up and down on both sides of such pillar.

The pump plunger rod J is carried up through the tubular pillar B and projects beyond its top end where it is connected to the cross head K extending transversely across the chamber. The two ends of this cross head are fastened respectively to the upper ends of the rods or links M that pass down through guides N on the chamber sides, and at their bottom ends are pivoted to the outsides of the respective members of the bifurcated portion of the beam F. By these means the up and down movements of the beam are communicated to the pump rod J.

The chamber A is filled with oil to a suitable depth so that in the working of the gear, the slide rods M dip into such oil and lift enough to keep the guides N properly lubricated. The crank D' also in its rotation dips into such oil which oil runs down the crank arms as they rise and lubricates the bearings E.

A cover O, shown in dotted lines in Figure 2, is provided to fit over the chamber and to enclose the working gear in order to protect the chamber from the weather and to save the evaporation of the oil.

The ordinary wind vane P (Fig.3) is articulated to the side of the chamber and governed by any of the well known automatic appliances.

Having now particularly described and ascertained the nature of our said invention, and in

what manner the same is to be performed, we declare that what we claim is:-

1. Gearing for the transmission of power from a windmill consisting in a chamber adapted to contain oil and across the top of which near one end, the windmill said shaft is journalled, a crank upon such sail shaft situated between the sides of the chamber, a pitman beam extending along within the chamber, pivoted at one end to the corresponding end of the chamber and attached at its other end by a connecting rod to the crank of the sail shaft, a tubular guide extending upward through the chamber in which the power rod is mounted, a cross head fastened to such rod above the top end of the guide and link connections between such cross head and the pitman beam, substantially as specified.

2. Windmill gearing consisting in a chamber adapted to contain oil and across the top of which near one end, the sail shaft is journalled, a crank upon such sail shaft situated between the sides of the chamber, a tubular guide extending up through the chamber and a power transmission rod passing up through such guide, a pitman beam extending along within the chamber and bifurcated between its ends to loosely enclose the guide, such beam being connected at one end to the sail shaft crank and at its other end pivoted to the corresponding chamber end, connecting rods or links pivoted at their lower ends to the respective sides of such beam and passing upward in guides upon the corresponding sides of the chamber, and a cross head extending between the upper ends of such rods or links and connected to the top end of the power

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rod, substantially as specified.

3. The Improvements in windmill gearing, constructed and operating substantially as herein described and explained and as illustrated in the accompanying drawings.

Dated at Wellington the 17th day of August 1916.

HENRY HUGHES, LTD.

Per H. Alexander

Secretary

True copy

HENRY HUGHES, LTD.

Per H. Alexander

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FIG.1

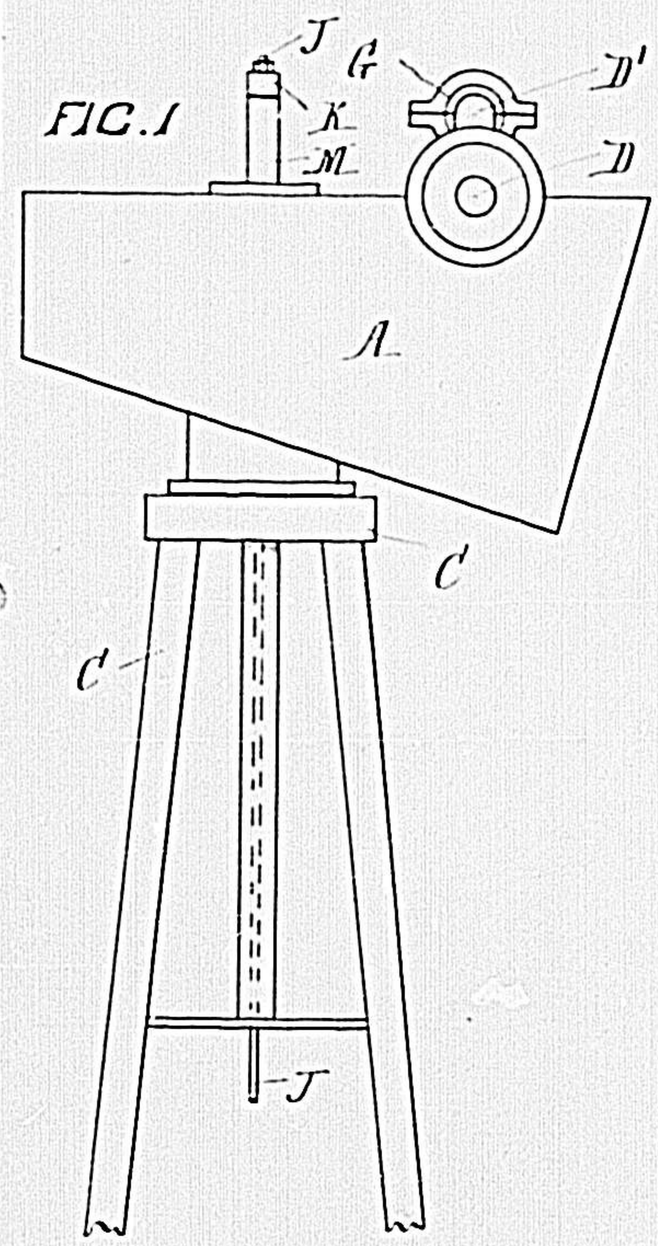


FIG.2

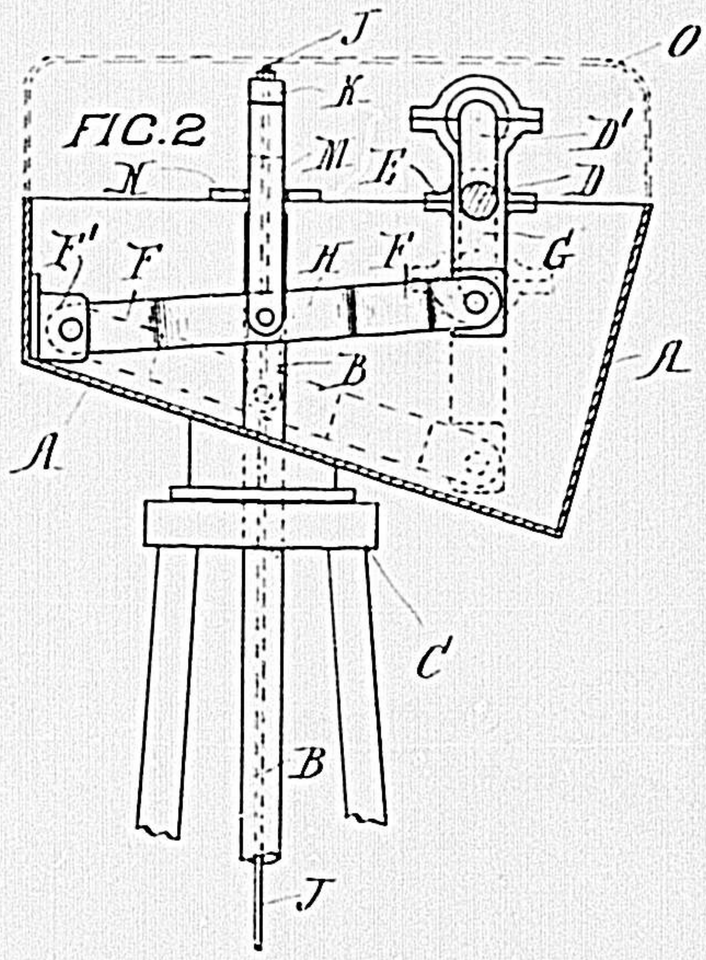
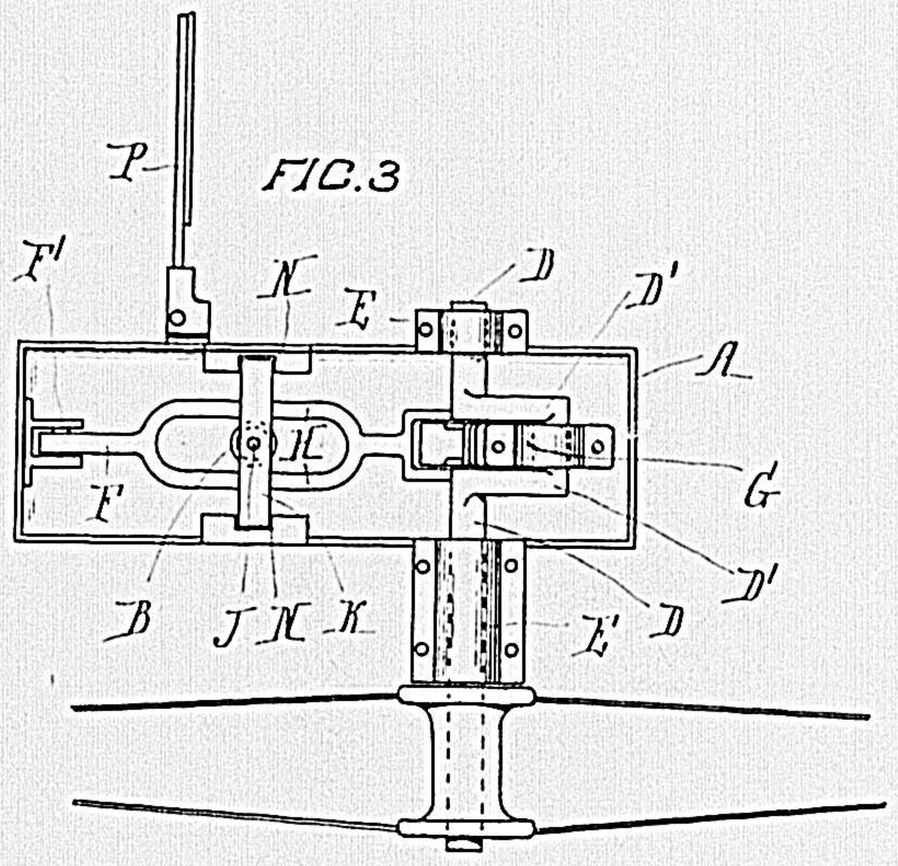


FIG.3



Meyer & Spinley

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