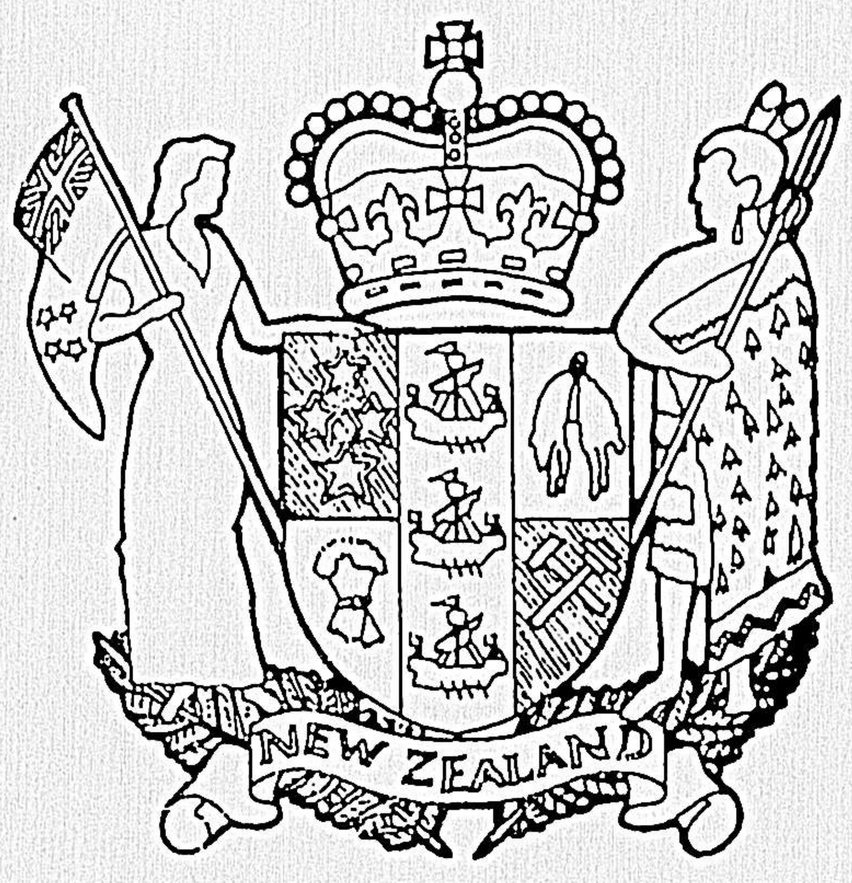


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PATENT SPECIFICATION

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Date: 11 MAR 1920

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The Patents, Designs, and Trade-marks Act, 1911.

C O M P L E T E S P E C I F I C A T I O N.

"IMPROVEMENTS IN WINDMILLS".

I, JOHN JACKSON, of "Talavera", Ipswich Road, South Brisbane, in the State of Queensland, Commonwealth of Australia, Mechanic, 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 relates to improvements in windmills, its object being to obtain greater power from the wind pressure than can be obtained from windmills of the present type; this I obtain by employing wind planes which receive the wind in a direct line upon their faces instead of obliquely.

The invention consists of rectangular-shaped metal wind-planes, fixed at their centres to axles, said axles revolving in pivot bearings between arms attached to metal plates mounted upon an axle revolving in bearings supported by suitable framework. On one of the metal plates are mounted upon pins a number of cog-wheels and cog-pinions according to the number of wind-planes employed, and on the frame of the mill is a central staticnary cog-wheel which meshes with the cog-pinions and through the hub of which passes the main central axle, the hub serving as a bearing for the axle. To each of the cog-wheels otherm than the centre one is pivotally connected a pitman, which by means of a crank fitted to one end of the wind-planes' axle rotates the wind-planes as the main axle revolves in its bearings on the supporting-frame, by which means the wind-planes are brought into and taken out of the wind; instead of the pitman and crank, I may use sprocket-wheels mounted upon the main axle and upon the wind planes' axle, and rotate the wind-planes by these sprocket-wheels and sprocket-chains.

A tail is fitted to the mill of any suitable type to bring the mill into the wind, and when taken out of the wind the mill requires no brake, as when in that position the edges of the wind-planes are dead against the wind and offer little or no resistance to the wind-pressure.

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Any suitable head may be fixed to the top of the tower for the mill to revolve upon.

The mills may be constructed of either four or six wind planes, two of which are always exposed to the full pressure of the wind when mill is in operation.

To fully describe the invention, reference is now made to the drawings in which:-

Fig. I, is a perspective view of a mill with four planes in which the wind planes are rotated by pitman and crank.

Fig. 2, is a perspective view of the mill in which the wind planes are rotated by sprocket wheels and sprocket chains.

Fig. 3, plan view to enlarged scale of wind planes supporting arms, pitman and crank.

Fig. 4, plan view of sprocket wheels and chains to enlarged scale.

Fig. 5, elevation to enlarged scale of main axle and discs and sprocket wheels mounted thereon.

The reference numerals indicate like parts in all figures.

I is the frame supporting the main axle 2, 3 the metal plate fixed to the main axle, 4 cog wheels revolving upon pins fixed to the metal plate 3, 4a central cog wheel fixed to the frame of the mill, the hub of which serves as a bearing for the main axle, 5 pinions meshing with the said cog wheels. 6 the wind planes, 7 the wind planes' axle, 8 the supporting arms for same fixed at their lower ends to the metal plates 3, 9 the pitman and I0 the cranks.

In Figs. 2, 4 and 5, II are the sprocket wheels, I2 the sprocket chains and I3 discs mounted upon the main axle which I substitute for the square metal plates.

I4 in Fig. 2 is the tail.

By the use of directly driven wind planes the gain in power is very considerably more than mills driven obliquely for instance, an ordinary disc type of windmill now in common use with an I8 ft. wheel at a I2½ miles breeze per hour generates about I horse power, whereas a windmill constructed under this invention with a wheel of I8 feet having six wind planes six feet by three feet which equals three full planes exposed to the direct force of the wind, generates approximately 9½ horse power, but to be within a margin of safety I will presume that only I½ full planes are exposed to the direct force of the wind which would generate approximately 4½ horse power, or nearly five times more power than generated by the disc mill of ordinary type.

The above estimate is based on a lift of 33,000 lb. I foot per minute to an indicated horse power and a wind pressure of 5 lb. per square inch on the exposed surfaces of the planes.

This gain in power makes it possible to employ the mill for driving various descriptions of machinery up to the power capacity of the mill, instead of limiting its use to lifting water as in the present types of windmills.

~~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:-

I. In improvements in windmills, the combination of rectangular planes centrally fixed to axles revolving in arms, said arms fixed to metal plates mounted upon a central axle, said axle revolving in bearings supported in suitable framework, as herein described and illustrated by drawings.

2. In improvements in windmills, wind planes as claimed in claim I in combination with cranks and crank rods, cog

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

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1. In improvements in Windmills, the combination of rectangular planes centrally fixed to axles supported by arms revolving between same, said arms fitted to metal plates such as 3 mounted upon an axle revolving in bearings supported in suitable framework, cog wheel such as 4a fixed to the framework, cog pinions such as 5 revolving upon pins fitted to the metal plates and meshing with the central cog wheel 4a fixed to the framework and with cog wheels such as 4 revolving upon pins fitted to the metal plates, pitmans such as 9 pivotally connected to the cog wheels 4 and to cranks such as 10 and said cranks connected to the axles of the planes whereby the planes are revolved around their axis at a uniform rate as herein described and illustrated by drawings.

Dated at Wellington this 4th day of February 19.20

Agents for the Applicant.

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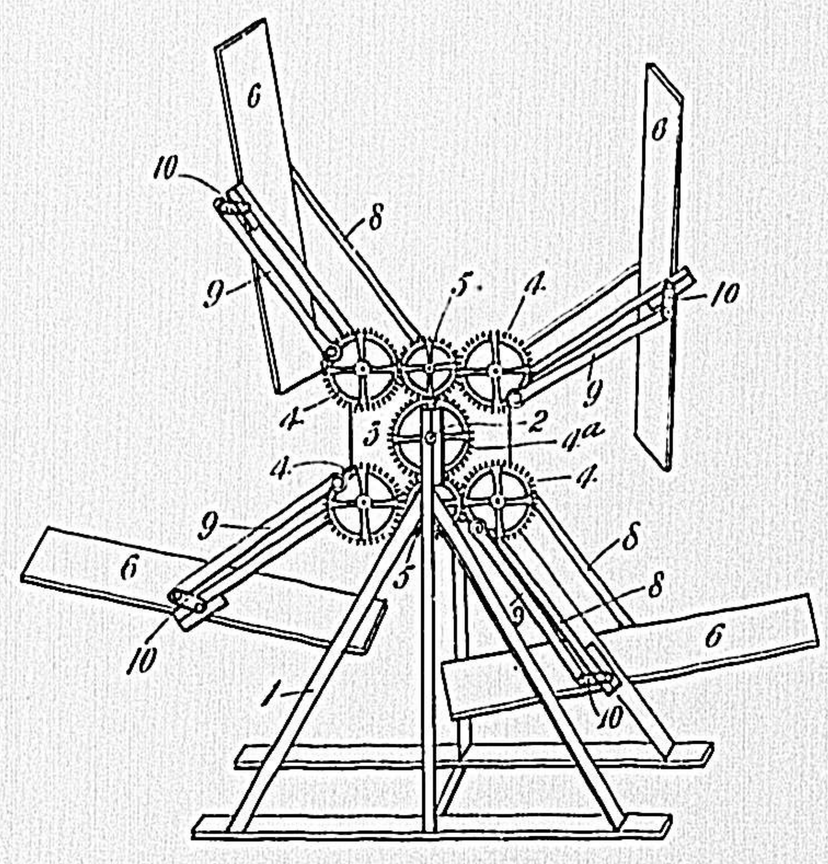


Fig: 1.

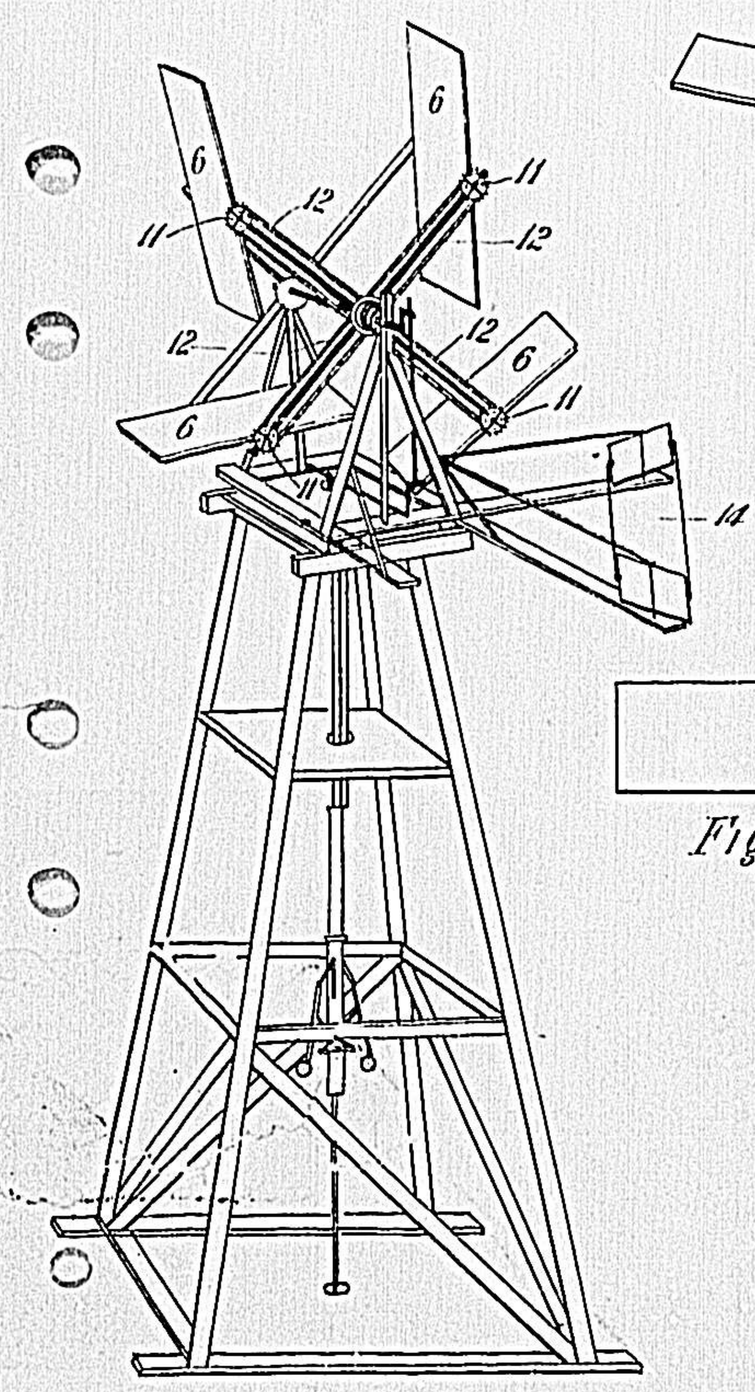


Fig: 2.

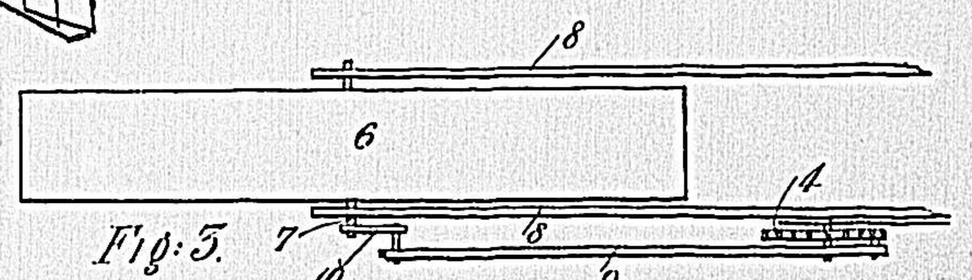


Fig: 3.

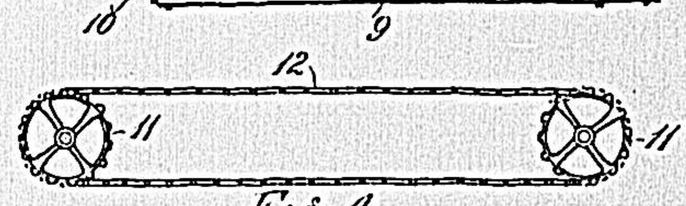


Fig: 4.

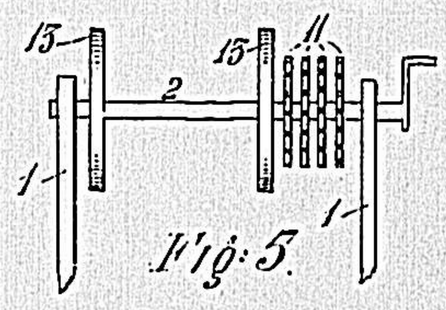


Fig: 5.

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