PATENTS.

Applicant: T. H. Hughes — No. 8084.

Invention: Windmill — Date: 25 : 11 : 1895

MEMORANDA.

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Cost of copying spcn. — 7/-

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to T. Hughes

Advice to Agent with No. — 7541

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Fee (£10) paid

HENRY HUGHES,
FOR. MEM. CHARTERED INST. OF P.E.
FEL. AUST. INST. P.E.
LAMBTON QUAY, WELLINGTON, N.Z.
NEW ZEALAND.

8084

11-15
2/2

APPLICATION FOR PATENT.

(a) "I," or "We" followed by name in full, address and calling of applicant or applicants.

(a) I, Henry Hughes, of 42 Lambton Quay, in the City of Wellington, in the Colony of New Zealand, Consulting Engineer and Patent Agent

declare that I am in possession of an invention

(b) Insert title of invention.

for (b) "An improved windmill or wind motor"

(c) "I am" or "We are," but insert inventor's name if applicant is the assignee.

that (c) I am (an assignee of the inventor) the true and first inventor thereof; and that the same is not in use by any other person or persons to the best of my knowledge and belief, and I pray that a Patent may be granted to me for the said invention, as described in the specification herewith.

Dated this 25th day of November, 1895.

(a) Henry Hughes

Accepted for publication on the 25th day of November 1895
Registrar of Patents, Designs, and Trade-Marks

(Signature, address, occupation and witness.)

Witness to signature (a) Walter Alexander
Clerk to Henry Hughes,
Wellington

COMPLETE SPECIFICATION
Lodged 5th March, 1896
Accepted 16th March, 1896
Registrar of Patents, &c.

8084

HENRY HUGHES,
LAMBTON QUAY, WELLINGTON.

No 8084.
Date 25th Nov., 1895.

COMPLETE SPECIFICATION.

"An improved wind-mill or wind motor"

I, Henry Hughes, of 54, Lambton Quay, Wellington, in the Colony of New Zealand, Consulting Engineer and Patent Agent, do hereby declare the nature of my invention for "An improved wind-mill or wind motor" and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement,-

This invention relates to improvements in windmills or wind motors. Fixed on the building is a wind wheel provided with sails rotating about a vertical axis. Half of the apparatus is protected by a shield (which is automatically regulated by the wind) to stop back resistance thereby bringing the whole force of the wind on the exposed portions of the sails. There is fixed to the spindle a wheel which may be geared for driving purposes to work a pumping grinding or other machine.

In the accompanying drawings

Figure 1 is a section of elevation. Figure 2 is a plan of the sails shield and outer frame, Figure 3 is a section shewing the connection of the sails to a portion of spindle C and the arrangement of the two spindles C and 1 and the connection of the shield with spindle 1.

Figure 4 is a section of a portion of spindle C shewing spindle C passing clear through bearing of the shield down to its own bearing g on the bottom portions of the framwork.

The sails (a) Figures 1 & 2 being made of wood or other suitable materials are preferably convex in form and are carried on curved arms (b) see Figures 1 & 2. The numbers required depend upon the size and strength of apparatus. The arms (b) are secured to iron bosses provided with lugs. The bosses being keyed or bolted at suitable distances on spindle (C) the arms (b) sails (a) and spindle (C) all rotate together when set in motion by the wind. On the concave side of each sail (a) are secured a number of ridges (e) Figures 1 and 2 so as to lie at a small angle with the horizontal, their upper ends pointing towards spindle (C.) I have found the addition of such ridges to be very advantageous and to give increased power in the working of the wind wheel. The sails (a) do not extend right up to the spindle (C) but between it and the inner edge of each sail a considerable space (f) is left for the wind to pass through.

The spindle (C) carries the whole weight of the wind wheel with its sails and arms and passes clear through center of the bearing which carries the weight of the shield and continues down through the sleeve (g) and trough (j) to take wheel for driving. The sleeve (g) is keyed or bolted to spindle (C) and rotates on rollers (h) journalled in a plate (i) in trough (jj) which is bolted to bottom cross piece of (X) the lower portion of the external framing. The trough (j) is made deep enough to hold oil for rollers to work in. Around outer edge of sails (a) and inside the outer framing (X) is a round framework (k) Figures 1 and 2 supported and secured on four or more cross arms (k') bolted to bearings (y) and carried on rollers (h) in trough (j) see Figures 1 and

4 the trough (j) being screwed down to cross piece (X') Figures 1 and 4. The top of framework (k) is ~~connected~~ connected by four or more arms (k^2) Figures 1 and 3 to spindle (1.) The spindle (1) is carried upward through the top of apparatus (X) the vane (m) is secured to spindle (1.) The frame work (k) spindle (1) and vane (m) revolve together. The two sleeves (Z) and (g') carrying the weight of the spindle and vane in a similar manner to the sleeve (g) and the sleeve (Z) taking the side thrust. The spindle (1) passes clear through the troughs of (Z) (g') and cross pieces of (X) down below framework (k^2) to form a pivot or top center for the wind wheel. The bearing (o) (see Figure 3) on the top of the wind wheel takes the end of spindle (1) and this forms the top bearing of the wind wheel. Fixed from bottom to top of framework (k) are boards or other suitable materials to cover about a third of the distance round to form the shield for shielding half of the apparatus see k Figures 1 and 2 to prevent the wind from striking the convex side of sails (a) thus stopping back resistance. The pointer vane (m) is set in a line with edge of shield (n) Figure 2 so as to bring the whole force of the wind upon the concave portion of sails. The small arrow Figure 2 denotes the direction the wind is supposed to be blowing thus shewing the object of shielding half of the apparatus. As the direction of the wind changes the vane regulates the position ~~fur~~ (74) of the shield and causes it to travel round sails (a) until the pointer vane (m) faces the wind again. The weight of the shield and its spindle and vane is wholly taken by the bearings (y) and (g') so that the friction of the bearing (g) of the wind wheel is only that due to the weight of the wind wheel alone. It will be seen that by placing the framing (X) which supports the moving

parts outside both shield and wind wheel I am enabled to obtain a lower bearing for the shield as described. This outer framing may conveniently take the form of a turret and be placed on the loftiest part of a building. The wheel on spindle (0) is geared or arranged for driving purposes.

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. The general arrangements of wind-mill hereinbefore described comprising a wind wheel rotating round a vertical axis, a shield rotating round the same axis and automatically shifted by means of a vane and an external supporting framing, outside both the wind wheel and the shield which may conveniently take the form of an open turret substantially as described.

2. The arrangement for taking the weight of the shield with its spindle and vane, so that such weight does not come upon the working spindle of the wind wheel but is independently supported, substantially as described.

3. The combined arrangement for taking the weights of the shield, wind wheel and other moving parts so as to obviate friction substantially as described.

4. The construction of wind wheel with its concave sails (a) ridges (e) and openings (f) substantially as described.

5. The arrangement of the upper bearing (0) of the wind wheel in combination with the spindle (1) or the shield or vane

substantially as described.

Dated this fifth day of March, 1896.

A. Alexander Stephens
Witnesses: [illegible]

HENRY HUGHES,
PCR. MEM. CHARTERED INST. OF P.A.
FEL. AUST. INST. P.A.
LAMBTON QUAY, WELLINGTON, N.Z.

084

APPOINTMENT OF NOMINEE.

(a) Here insert the name, address, and occupation of the communicator of the invention, followed by the words, "the actual inventor," or in the event of his being the assignee of the inventor, say, "the assignee of John Jones, of &c., the actual inventor."

KNOW ALL MEN THAT (a) The Rollason Wind Motor Company, Limited, 18 Berners Street, London, W. the assignee of Sarah Jane Rollason, of 50 Goldhurst Terrace, South Hampstead, Middlesex, England

(b) Title of invention.

the actual inventor of an invention entitled (b) "An improved windmill or wind motor"

for which it is desirous of obtaining Letters Patent in the Colony of New Zealand, ~~it~~ does hereby nominate and appoint

(c) Leave name, address, and occupation of agent blank

(c) Henry Hughes, of 42 Lambton Quay, in the City of Wellington, in the Colony of New Zealand, Consulting Engineer, and Patent Agent

its Agent to represent it in all matters relating to the said application for Letters Patent. And it hereby gives him full power to apply for the said Patent in his own name as its nominee.

Dated this Ninth day of January 1896

(d) George Robert Rollason
Managing Director of the
Rollason's Wind Motor Company Ltd.

(d) Signature of communicator.

Witness (e) L. B. Pearman
Agent for Messrs Johnson & Phelps
13 Victoria St London S.W.

(e) Signature, address, and occupation of witness.

8081

HENRY HUGHES,
FOR. MEM. CHARTERED INST. OF P.A.
PRINCL. AUST. INST. P.A.
WELLINGTON QUAY, WELLINGTON, N.Z.

DECLARATION.

I, George Robert Rollason

of 13 Berners St in the County of Middlesex in England

Engineer —

(a) Managing Director, Chairman of Directors, or President of Company.
(b) Insert full name and address of Company.

do solemnly and sincerely declare that I am the (a) Managing Director — of (b) Rollason's Wind Motor Company, Limited, 15 Barners Street, London, W. ——————

(c) Insert full name, address, and calling of inventor.

who is I verily believe the bona fide assignee of (c) Sarah Jane Rollason, of 50 Goldhurst Terrace, South Hampstead, Middlesex, England ——————

who is I verily believe the actual inventor of an invention entitled "An improved windmill or wind motor"

And I make this solemn declaration conscientiously believing the same to be true and by virtue of (d) the provisions of the Statutory Declarations Act 1835

(d) Here recite Statute in force where declaration is made.

(e) George Robert Rollason

(e) Signature of Managing Director, Chairman of Directors, or President of Company.

Declared at 13 Victoria St London this Ninth day of January 1896.

Before me, (f)

E. H. Rowe

Agent General for the Colony of New Zealand

(f) This declaration can be taken by a Justice of the Peace, Notary Public, or other officer duly authorised to take declarations by by the law of the country where the same is taken.

Note.—This Form is to be used when a Company is the applicant for Letters Patent.

HENRY HUGHES,
MEM. INST. CHARTERED INST. OF PAT.
FEL. AUST. INST. PAT.
LAMBTON QUAY, WELLINGTON, N.Z.

8084

ASSIGNMENT.

KNOW ALL MEN THAT I, Sarah Jane Rollason, of 50 Goldhurst Terrace, South Hampstead, Middlesex, England

do hereby acknowledge and declare that I am the actual inventor of a certain invention entitled "An improved windmill or wind motor"

and that I have assigned the said invention so far as the Colony of New Zealand is concerned to Rollason's Wind Motor Company, Limited, 15 Berners Street, London, W.

with full power to apply for and obtain Letters Patent for the said invention in their own name in the said Colony of New Zealand.

Dated this eighth day of January 1896.

Sarah Jane Rollason

(a) Signature, address, and occupation of witness.

Witness (a) John William Pearce
Woollen Warehouseman
16 Greenhill Road, Harlesden
London N.W.

HENRY HUGHES,
FCH. MEM. CHARTERED INST. OF P.A.
FELL. AUST. INST. P.I.
LAMBTON QUAY, WELLINGTON, N.Z.

8084

PROVISIONAL SPECIFICATION.

"An improved windmill or mind motor"

I, Henry Hughes, of Wellington, in the Colony of New Zealand, Consulting Engineer, and Patent Agent, do hereby declare the nature of my invention for "An improved windmill or wind motor" to be as follows,-

The object of my invention is to provide a windmill or wind motor which is exceedingly simple in construction, having only four working parts, three of which move only as the wind changes. The windmill also is accurately balanced and works with a minimum of fricition as it is fitted with ball bearings running in oil.

The form of my wind motor is different from the ordinary construction of windmills which are now in use, it being a horizontal arrangement erected within a skeleton turret. From the top to the bottom of the centre or axis of the turret is provided a vertical shaft having concave sails attached which revolve on radius rollers immersed in oil. On the sails are fixed inclined ridges or planes which deflect the force exerted by the wind to their peripheries.

/1/

Between the sails and the shaft is arranged a considerable open space, which when five sails are made use of allows the wind to actuate three sails out of five at the same time. Outside the sails is a framing supported by radial or cross arms bolted to a centre bearing which is free to rotate independently of the sails. From the top of this shield is a second vertical shaft continued through the roof of the turret and to this is fixed a vane so that when the direction of the wind changes it moves the shield into the correct position for only the concave sides of the sails to catch the wind. On the top of the sail shaft is fixed /by preference/ a cup containing oil within which are rollers by which the shaft actuates the shield.

The weight of the vane shaft is carried on an independent roller bearing fixed in the roof of the turret. The whole weight of the sails and framing carrying the shield is carried by centre bearings on the bottom of the turret and thus balance the motor.

Dated this 25th day of November, 1895.

A Douglas

LARGE DRAWING

FILMED

SEPERATELY