PATENTS.

Applicant: J. Small No. 9960

Invention: windmill Date: 4 10 , 1897.

MEMORANDA.

Application recd. with spcf. and fee (10s.) Com'th 6 10 97

accepted

rect. ackgd.

gazd. (provl. spcf.)

Complete specification left with fee (10s.)

accepted

rect. ackgd. 28-10-97

gazetted 11-11-97

Cost of copying spcf. 4/6

drawings 5/6

Memo. and form posted to Agt 12:1:98

Issue applied for and fee (£2) paid

Letters Patent ppd.

issued

to

Advice to Govr. with No.

Reminder sent to

Fee (£5) paid

Reminder sent

Fee (£10) paid

HENRY HUGHES,
CONSULTING ENGINEER & PATENT
WELLINGTON, EDINBURGH,
AUCKLAND, NAPIER,
DUNEDIN & INVERCARGILL.
HERBERT H. RAYWARD,
F.R. Econ. Inst., M.I.C.E., Lon.;
Fel. Inst. Inst., M.I.,
KANSAS.

International Patent & Trade Marks Office,
71 CATHEDRAL SQUARE,
Christchurch, NEW ZEALAND.
Oct. 13th 1897.

16 NOV 97

Registrar of Patents.
Wellington

Dear Sir/.

re. John Small.
"Improved Windmill"

I am much obliged for your courtesy in this matter. The inventor finds it necessary to add a few words to the specification and this will be done by Mr. Lionel Hughes whom I am sending an authority from inventor. (sd) H.H. Rayward

C. NEW ZEALAND POST OFFICE TELEGRAM. PATENT OFFICE 12 OCT 97

Time Received 11 40 Time Finished 12 45 No. of Message 4

Instructions

TO Reg. Patents
Wellington

Please delay acceptance John Smeills improved windmill patent -

Reyward
Chch

H. H. Reyward 12-10-97
121 S.

No. 811) N.B.—Office of origin to be written after signature.

copy

1218

12th October 7

H.H.Knyvett Esq.,

71 Cathedral Square, Christchurch.

Mr. Small's Application for Letters Patent.

I beg to inform you that, as requested in your telegram of to-day, the acceptance of this application will be delayed.

(sd) J. Weldegrave.

Registrar.

PATENT OFFICE 7 OCT 97

NEW ZEALAND

Patents, Designs, and Trade-Marks Act 1889

Application for Patent

I, JOHN SMAILL, of 71 Cathedral Square, Christchurch, in the Colony of New Zealand, Engineer, declare that I am in possession of an invention for "An Improved Windmill" that I am 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 2nd day of October 1897.

John Smaill

Witness to Signature,- W B Cumming
Clerk
Christchurch.

Accepted at 11.30 am on the 4th day of October 1897
Registrar of Patents, Designs and Trade-Marks.

To the Registrar of Patents

Wellington

Oct. 15/97.

Sir,

I John Driscoll. Engineer. Christchurch, inventor of an invention for an ~~invention~~ Improved Windmill for which application for Patent was made by me on the 4th day of October 1897. Hereby appoint Mr. Ernest Hughes of Wellington. Patent Agent my Agent to make any ~~further~~ correction he may deem desirable in my specification and drawing accompanying my said application.

Witness Ernest Hughes

Mr. associate with Henry & Reynard of Christchurch.

John Driscoll

AUTHORIZATION

I, JOHN SMAILL, of 71 Cathedral Square, Christchurch, in the Colony of New Zealand, Engineer, the undersigned applicant for Letters Patent for "An Improved Windmill" desire that all official communication relating to the same, may be addressed to HENRIE H. RAYWARD, of 71 Cathedral Square, aforesaid, Patent Agent, and that he may be recognised as my authorised Agent in all proceedings incident thereto.

DATED this 2nd day of October 1897.

John Smaill

Witness, -

W. B. Cumming
Clerk
Christchurch

To the Registrar of Patents, &c.,
Patent Office, Wellington,
New Zealand.

Patnets, Designs, and Trade-Marks Act 1889

COMPLETE SPECIFICATION

for

LETTERS PATENT

"An Improved Windmill"

I, John Small, of 71Cathedral Square, Christchurch, in the Colony of New Zealand, Engineer, do hereby declare the nature of my invention for "An Improved windmill" and in what manner the same is tobe performed, to be particularly described and ascertained in and by the following statement,-

Windmills have hatherto been caused to swivel so as to bring the mill into correct angle with the wind by a "tail or vane extending at right angles to the face of the mill and various ~~exchange~~ devices have been employed automatic and otherwise to release or alter the angle of the tail and bring the mill "out of the wind" when desired to stop its operation or protect it from damage in case of storm.

This invention has for its object the provision of a mill which will swivel and assume the correct angle to wind without use of a tail and which will, in case of storm automatically assume a position in which it is comparative-ly safe.

In the accompanying drawings,-

Fig: 1 is a side, and

Fig: 2 A rear elevation of a mill according to my invention

The mill (a) is designed to present its face (b) to the wind and is mounted upon the horizontal shaft (c) which has a bevel wheel (d) gearing with another bevel wheel (e) fixed upon a vertical shaft (f) connected to a second vertical shaft (f') by a universal knuckle joint (g).

It is necessary that the vanes be constructed and attached to the mill so that the face (b) of the wheel presents a convex surface to the wind. This convex surface is not shown in the drawings but the construction to obtain it will be readily understood by windmill experts.

The shaft (c) is carried in bearings (h) (i) upon a standard (k) which is mounted in bearings (l) provided upon a lower standard (m).

Projecting arms (n) from the bottom of standard (k) are connected by chains or wire ropes (o) with a chinese windlass (p) the chain upon the larger drum (p') of which supports a weight (r) attached to its lower end.

The lower standard (m) is pivoted upon a fixed pillar (t) and is turned with the mill when the latter is swivelled by the wind.

In case of strong wind liable to damage the mill the standard (k) turns over upon its bearings until in an extreme case it assumes the angle shown in dotted lines Fig: 1 with a small surface only presented to the wind.

Any convenient form of pulleys and tackle or friction gear may be employed in place of the chinese windlass for maintaining the standard (k) in its normal position and the weight may be adjusted upon a lever or otherwise.

Spiral or other springs may be employed to assist, or instead of, the weight to return the mill to its normal position. And buffer springs may be employed to prevent shock.

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 improved windmill constructed, arranged and operated substantially as and for the purposes herein described and illustrated in the drawings.

2 A windmill without a "tail" caused to swivel and assume a correct angle to the wind by means substantially as specified herein and illustrated.

3 A windmill carried upon a standard hinged in bearings upon a lower standard the upper standard being provided with means for maintaining it in a vertical position when the mill is subject to normal wind pressure and for allowing it to assume an angle with the lower standard when a storm occurs substantially as herein specified and illustrated.

4 In combination a windmill carried upon a shaft normally horizontal having a bevil pinion gearing with a bevil wheel upon a shaft within a standard which is normally vertical said shaft being connected by a universal joint with another shaft carried in a vertical standard. One standard being hinged upon the other and means being provided to retain the upper standard in a vertical position when the mill is under normal wind pressure substantially as and for the purposes herein described and illustrated.

5 In combination the mill (a) shaft (c) carried in bearings (h)(i) upon standard (k) hinged to standard (m), Standard (m) having projecting arms (n) to which are attached chains (o) passing round windlass (p) the larger drum (p') of windlass having a chain the lower end of which is attached to weight (r). Bevil wheel (d) upon shaft (c) gearing with bevil wheel (e) upon shaft (f) which is connected by universal joint (g) with shaft (f') as specified and illustrated.

DATED this 2nd day of October 1897.

John Smaill

Patent 9960

The mill (a) is designed to present its face (b) to the wind and is mounted upon the horizontal shaft (c) which has a bevil wheel (d) gearing with another bevil wheel (e) fixed upon a vertical shaft (f) connected to a second vertical shaft (f') by a universal knuckle joint (g).

The shaft (c) is carried in bearings (h)(i) upon a standard (k) which is mounted in bearings (l) provided upon a lower standard (m).

Projecting arms (n) from the bottom of standard (k) are connected by chains or wire ropes (o) with a chinese windlass (p) the chain being upon the larger drum (p') of which supports a weight (r) attached to its lower end.

The lower standard (m) is pivoted upon a fixed pillar (t) and is turned with the mill when the latter is swivelled by the wind.

In case of strong wind liable to damage the mill the standard (k) turns over upon its bearing until in an extreme case it assumes the angle shown in dotted lines Fig. I with a small surface only presented to the wind.

Any convenient form of pulleys and tackle or friction gear may be employed in place of the chinese windlass for maintaining the standard (k) in its normal position and the weight may be adjusted upon a lever or otherwise.

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

I The improved windmill constructed, arranged and operated substantially as and for the purposes herein described and illustrated in the drawings.

(8)

Fig. 1 sheet was filed separately with specification and was withdrawn & fresh sheet furnished by Examiner on 26th Oct 87

9960

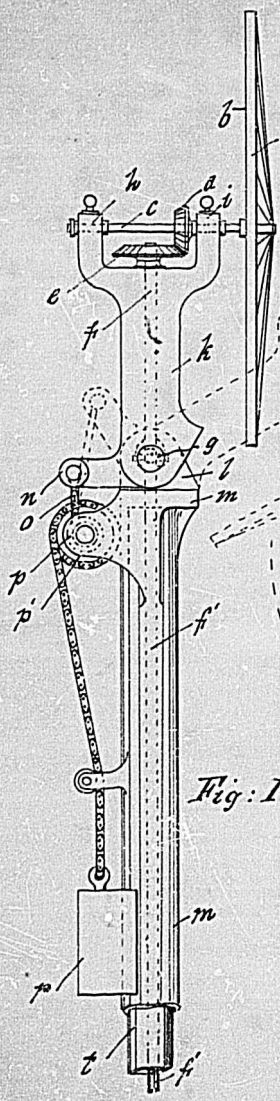


Fig: 1.

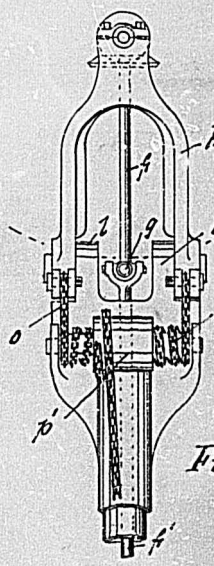


Fig: 2.

John Traill

"THE PATENTS, DESIGNS, AND TRADE MARKS ACT, 1889."

Received from John Small per F. H. Reynard for transmission to the Registrar of Patents, Designs, and Trade-marks, Wellington, application for Letters Patent for an invention for "An improved windmill"

at the hour of 11.30 o'clock A.M., on this Fourth day of October, 1897.

F. Wilkes
Patent Office Agent.

Local Patent Office,
Ch. Ch.

[1944-95