

(No Model.)

C. E. WILLIAMSON.
POWER TRANSMITTER FOR WINDMILLS.

No. 525,778.

Patented Sept. 11, 1894.

Fig. 1.

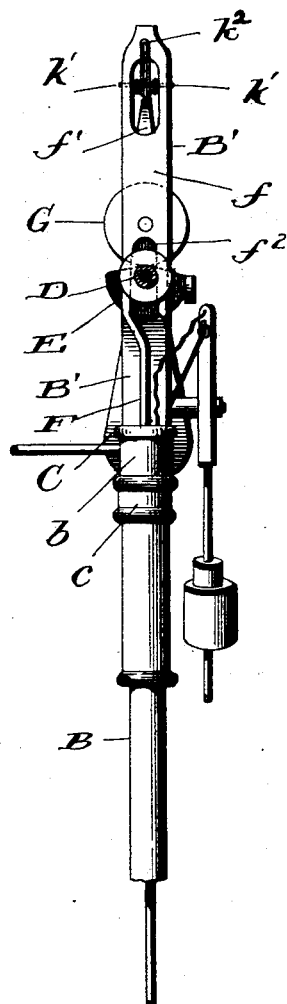


Fig. 2.

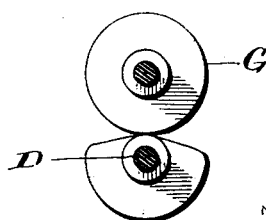


Fig. 3.

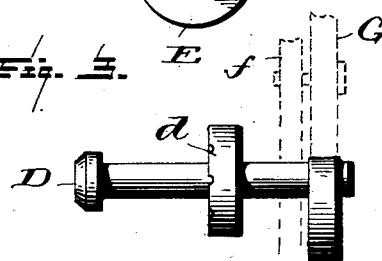
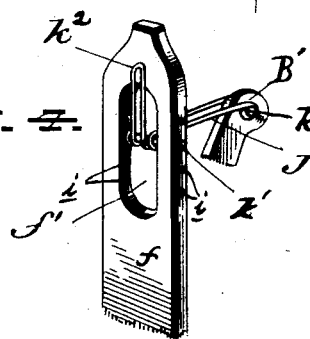


Fig. 4.



Witnesses:
L. C. Mills.
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UNITED STATES PATENT OFFICE.

CHARLES E. WILLIAMSON, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF ONE-HALF TO MARTIN BEALS, OF SAME PLACE.

POWER-TRANSMITTER FOR WINDMILLS.

SPECIFICATION forming part of Letters Patent No. 525,778, dated September 11, 1894.

Application filed December 22, 1893. Serial No. 494,442. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. WILLIAMSON, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Power-Transmitters for Windmills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in power transmitters for windmills, and the objects and advantages will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is an elevation with parts broken away and the wind wheel shaft in section, showing my improvements. Fig. 2 is a view of the cam and the wheel which it actuates. Fig. 3 is a detail in side elevation showing the wheel hub with its cam, and, in dotted lines, the pitman and the wheel thereon. Fig. 4 is a perspective detail, on an enlarged scale, of the upper end of the pitman, showing the attachment of the spring.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, B is a tube supported in the upper end of a tower or support (not shown) and at its upper end carrying the casting B' which is offset on the same side as the tail vane and thus the center of gravity of the wheel is brought nearer the center of the mill.

D is a stationary shaft supported in the casting B' and upon this shaft the hub *d* of the wind wheel revolves. This wheel may be of any well known construction, its hub *d* only being shown in Fig. 3. Fast on the hub of this wheel is the cam E which is of peculiar contour, being practically half a circle with its upper face on slightly inclined lines as seen in Fig. 2. This gives a quick up stroke on the pump rod, then a rest and then a quick down stroke, thereby gaining a strong draft

on the water to prevent the water drawing back past the plunger of the pump and by being held on the up stroke while the wheel makes a half revolution it gives a chance for the vacuum or space below the plunger to fill up with water before the down stroke is made, thus doing away with the pounding of the mill.

F is the pitman designed for connection with the pump rod in any suitable manner, or it may be a continuation of the pump rod. It is formed at its upper end with a flattened portion *f* which, at its upper end, is provided with an elongated opening *f'* as seen best in Fig. 1 and the object of which will soon be explained. The lower portion of the flattened portion is provided with a vertical slot *f*² which is offset from the lower portion of the pitman as seen in Fig. 1 and is open at its lower end as is also shown in said Fig. 1. The open ended slot permits of the ready removal of the pitman when desired, or of its being replaced without disturbing any of the other parts. This pitman has journaled thereon a wheel G which is arranged in vertical line with and designed to rest upon the cam E as seen best in Fig. 2.

J is a spring having its ends coiled or otherwise fastened around a pin *k* projecting from the upper end of the casting B', and coiled around a pin *k'* held in the walls of the opening *f'* in the upper end of the pitman as seen best in Fig. 1, the spring being bent upon itself at its center to form a loop *k*² which extends through the said opening and bears against the flattened portion of the pitman as seen in Fig. 1. This forms a guide for the pitman and cushions it on the down stroke and aids materially in preventing pounding of the mill.

It will be seen that a portion of the spring is arranged horizontally while another part extends vertically to produce the desired result.

With the parts constructed and arranged substantially as above set forth the operation will be readily understood, especially when taken in connection with the annexed drawings, and a further detailed description thereof is not deemed necessary. The pin *k'* on which the spring J is supported in the pitman

may be readily adjusted into any one of the sets of holes *i* shown in Fig. 4 to regulate the tension of the spring as occasion may require.

What I claim as new is—

- 5 1. The combination of the pitman having flattened upper portion provided with vertically-elongated opening near its upper end and near its lower end with a vertical slot off-
 10 open at its lower end, the wind wheel shaft over which the open-ended slot of the pitman works, the casting B' having transverse pins $\frac{1}{2}$ and the spring coiled around said pins with
 15 a portion passed through the elongated opening in the pitman and coiled around a pin traversing said opening with the end of the spring bearing against the side of the flattened
 20 portion of the pitman opposite the said casting, substantially as shown and described.
2. The combination of the pitman having flattened upper portion provided with vertically-elongated opening near its upper end
 25 open at its lower end, the wind wheel shaft over which the open-ended slot of the pitman works, the casting B' having transverse pins $\frac{1}{2}$ and the spring coiled around said pins with

a portion passed through the elongated opening in the pitman and coiled around a pin 30 traversing said opening with the end of the spring bearing against the side of the flattened portion of the pitman opposite the said casting, with one portion of the spring arranged horizontally and another portion arranged 35 vertically, substantially as specified.

3. The combination with the pitman having flattened portion at its upper end provided with an opening, of the casting B', the wind wheel and its shaft, the spring connecting the 40 upper end of the casting with the pitman and having a portion passed through the said opening with a portion arranged horizontally and a portion vertically and bearing against the flattened portion of the pitman above the 45 opening therein, the cam on the wind wheel shaft, and the wheel on the pitman in line with the said cam and above the same, substantially as specified.

In testimony whereof I affix my signature in 50 presence of two witnesses.

CHAS. E. WILLIAMSON.

Witnesses:

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 EMILY C. MOHL.