(No Model.)

T. ANNIS.

ATTACHMENT FOR WINDMILLS.

No. 432,110. Patented July 15, 1890.

Fig. 1.

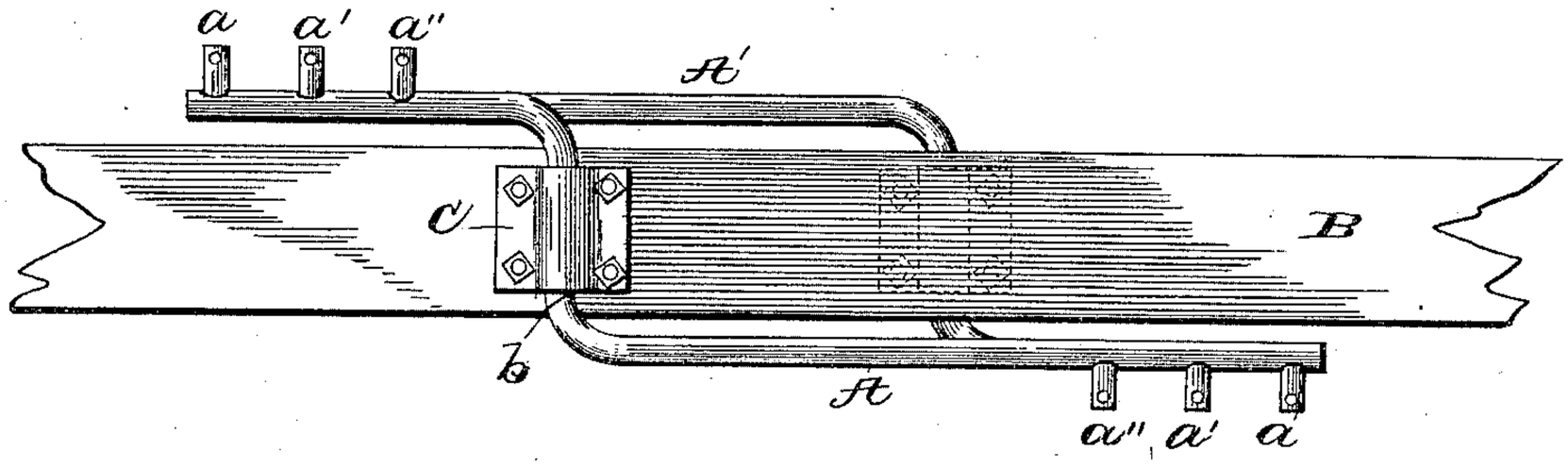


Fig. 2.

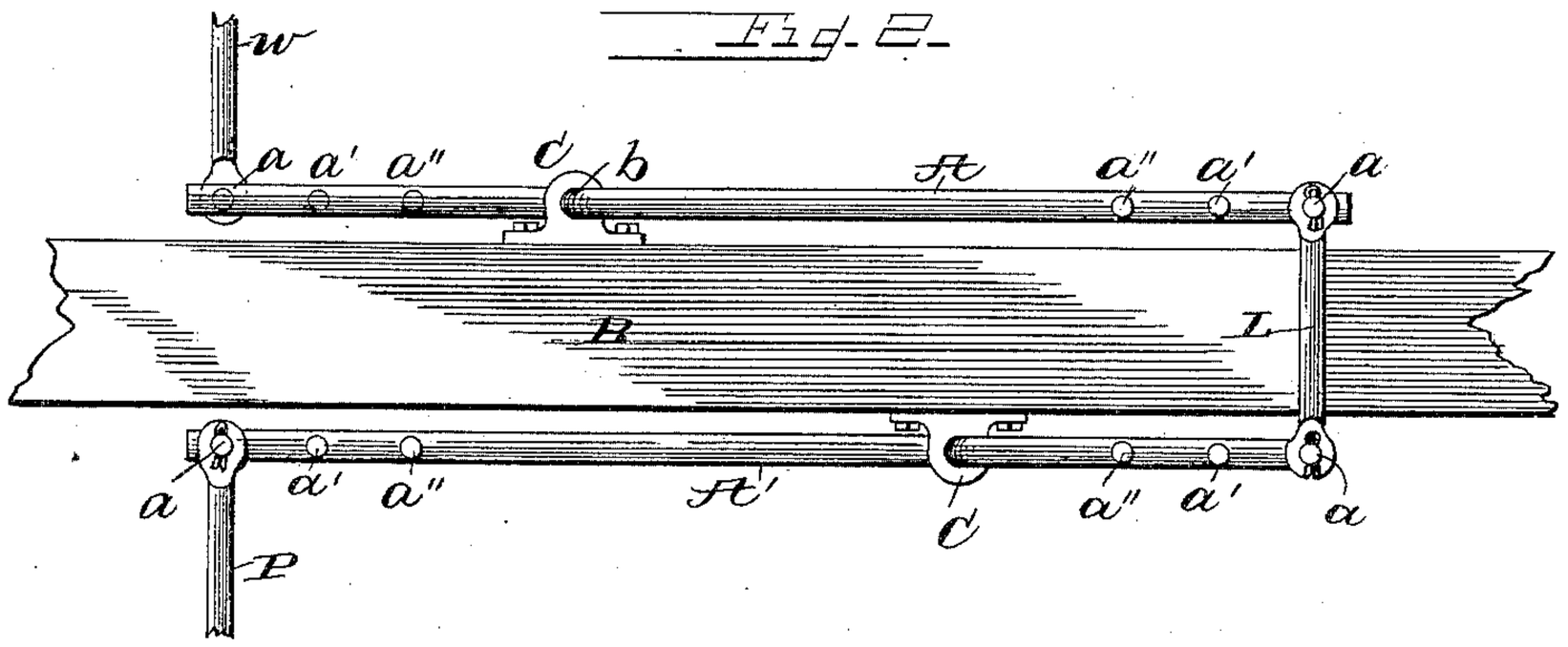
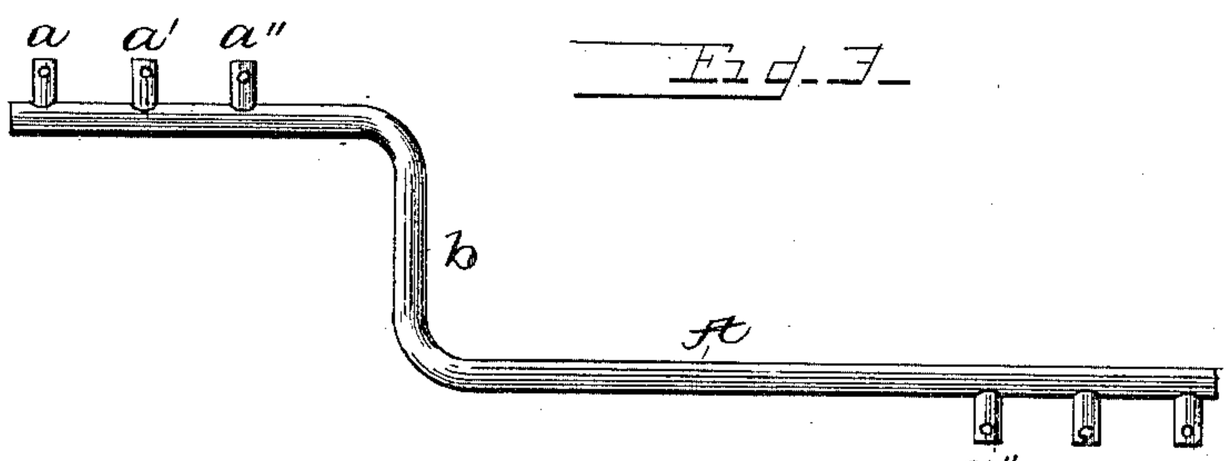


Fig. 3.



a'' a' a

Witnesses

G. A. Laubenschmidt.
Wm. A. Crosby.

Inventor

Thomas Annis

By Attorney Martin Metcalf

UNITED STATES PATENT OFFICE.

THOMAS ANNIS, OF BATTLE CREEK, MICHIGAN, ASSIGNOR OF ONE-HALF TO CHARLES WILLARD AND WESLEY C. WILLIAMS, BOTH OF SAME PLACE.

ATTACHMENT FOR WINDMILLS.

SPECIFICATION forming part of Letters Patent No. 432,110, dated July 15, 1890.

Application filed April 8, 1890. Serial No. 347,090. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ANNIS, a citizen of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Attachments for Windmills, of which the following is a specification, reference being had therein to the accompanying drawings, forming a part thereof, and wherein like letters of reference designate similar parts in all the views.

The object of this improvement is to provide simple and effective means for altering and regulating the stroke of the power-transmitting rod of the engine, and it is particularly adapted to be applied to windmills for the adjustment of the length of stroke of the pump-piston, whereby the loss of power of the mill and consequent volume of water elevated from the well when the wind is light or fitful, caused by slight leaks in the pump-valves constantly occurring, is overcome or in a measure neutralized, and the maximum of engine-power is utilized. I accomplish this desideratum by means of the novel mechanism now to be described, as follows:

Referring to the drawings, Figure 1 represents a plan view of my invention. Fig. 2 shows a vertical elevation of the same, and Fig. 3 is a horizontal or plan view of the power-transmitting and regulating beam.

A designates a vibratory rod or beam, made of wood or iron and formed nearer one of its ends than its other with an angular bend, which forms a journal *b*, on which said rod or beam vibrates vertically. This journal *b* has its bearing in a box C, which is fixed to a transverse horizontal timber B or other suitable support. Near each extremity of this rod or beam A, and projecting horizontally therefrom, is a series of wrist-pins *a a' a''*, of which any one of those at one end of the rod is pivotally engaged by an end of an engine or power-transmitting rod *w*, while any one of those at the opposite end of the rod is pivotally engaged by a link L, which connects said rod or beam A with a rod or beam A', which is of the same construction as said rod A, but is oppositely placed on the under side of the timber B. The wrist-pins at the free end of this rod or beam A' are pivotally engaged by an end of the pump-piston or power-receiving rod.

On reference to Fig. 2 it will be seen that the bend in the rod or beam A is nearer that end of the same which is engaged by the power-transmitting rod *w*, while the bend in the rod or beam A' is nearer that end of the same which is connected with the rod or beam A. By this construction and the employment of two rods or beams instead of one double the adjustment of stroke is obtained without in any way disturbing the position of the windmill and pump-rods now in use.

The stroke of the power-receiving rod P is determined by the relative position of said rod, the power-transmitting rod, and the link L—that is to say, to obtain the longest stroke of power-receiving rods the parts referred to are located in the relative positions shown in the drawings, and to obtain the shortest stroke said parts will be in engagement with those wrist-pins located nearest the journals of said rods or beams.

It is well known that with a light or fitful wind and slight leak of pump-valve, to which all water-elevators are constantly subject, the fixed stroke of pump practically renders water elevating from deep wells ineffective. By the above simple construction the stroke of the power-receiving rod can be adjusted to suit the condition of wind and leakage of valves, the slightest motion of the engine being utilized and the engine-power placed under perfect control at all times.

Having now described my invention, what I believe to be new, and desire to secure by Letters Patent, is—

1. The combination, with two vibratory rods or beams A A', each having a plurality of wrist-pins at each end, the journals of said beams being located different distances from the ends thereof, of a link connecting together the longer end of one rod or beam and the shorter end of the other, a power-transmitting rod connected with the shorter end of rod or beam A, and a power-receiving rod connected with the longer end of rod or beam A', substantially as shown and described.

2. The combination, with two vibratory rods or beams A A', each having an angular bend nearer one of its ends than its other end and

bearing-boxes in which said bent portions are journaled, of a link connecting together the longer end of one of said rods or beams and the shorter end of the other, a power-transmitting rod secured to the shorter end of rod or beam A, and a power-receiving rod secured to the longer end of rod or beam A′.

3. The combination, with the rods or beams A A′, each having an angular bend nearer one of its ends than its other end and bearing-boxes in which said bent portions are journaled, of an adjustable link connecting together the longer end of rod or beam A and the shorter end of rod or beam A′, a power-transmitting rod adjustably attached to the shorter end of rod or beam A, and a power-receiving rod adjustably attached to the longer end of rod or beam A′.

In testimony that I claim the foregoing I hereunto set my hand and signature in the presence of two witnesses.

THOMAS ANNIS.

Witnesses:
FRANK W. CLAPP,
MORGAN G. BEACH.