

(No Model.)

H. S. WILSON.  
POWER TRANSMITTER.

No. 303,094.

Patented Aug. 5, 1884.

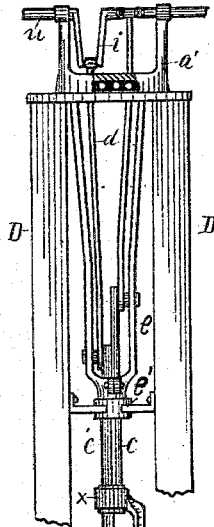


Fig. 1

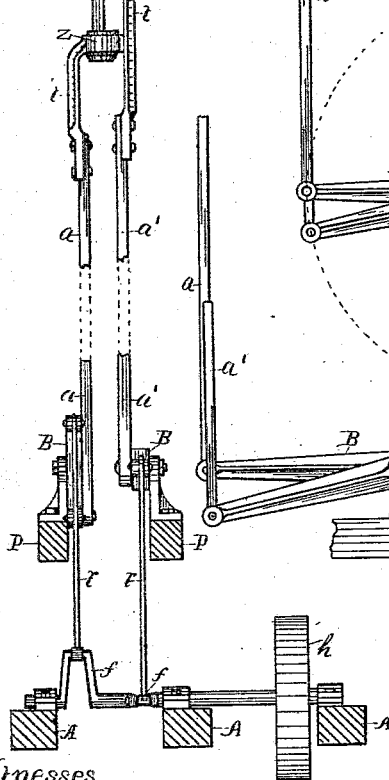


Fig. 2.

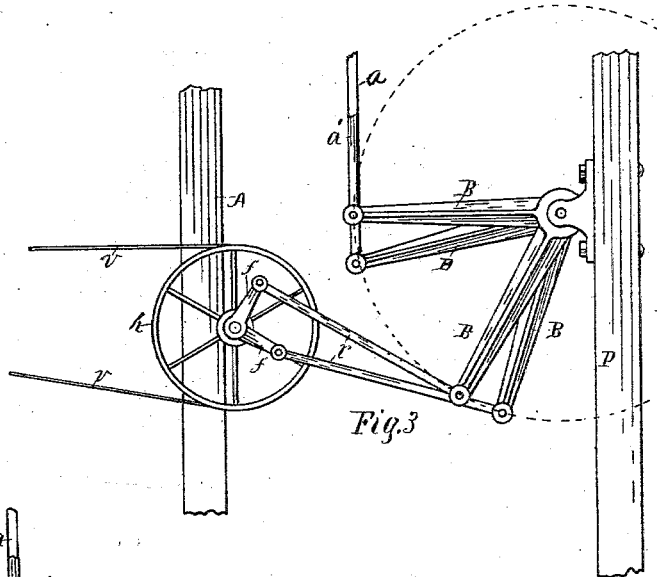


Fig. 3

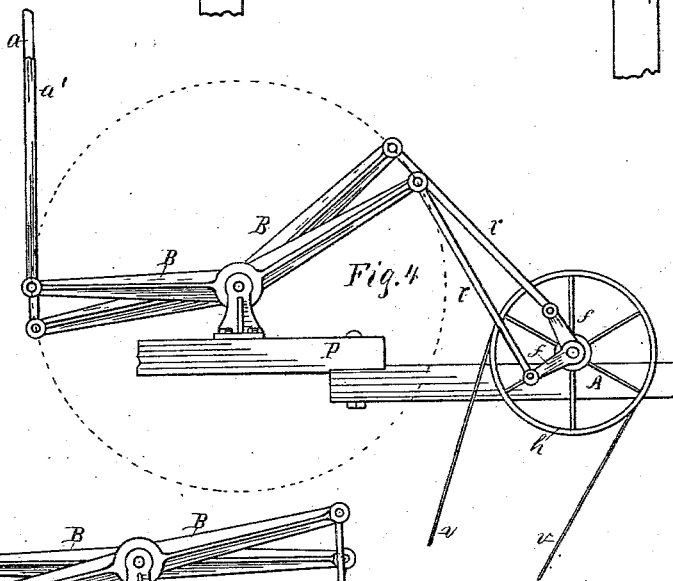
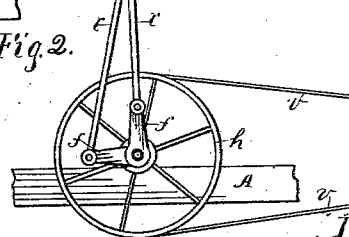


Fig. 4



Witnesses.  
John C. Perkins.....  
John H. Chase

Inventor.  
Herbert S. Wilson  
By Lucius C. West  
Att.

# UNITED STATES PATENT OFFICE.

HERBERT S. WILSON, OF KALAMAZOO, MICHIGAN.

## POWER-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 303,094, dated August 5, 1884.

Application filed June 22, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT S. WILSON, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Power-Transmitter, of which the following is a specification.

This invention has for its object certain improvements on a former power-transmitter described in an application filed by me January 3, 1884, Serial No. 116,339.

In the drawings forming a part of this specification, Figure 1 is a plan elevation with parts broken away; Fig. 2, a broken plan view of the lower part of Fig. 1, looking from the right hand; Figs. 3 and 4, same as Fig. 2, showing changes in construction and arrangement.

In Fig. 1 is a supporting-frame, D D, having a cap at the upper end, in which the swiveled bearings *a'* of the double-crank shaft *u* are located. With this double-crank shaft are connected swiveled reciprocating rods, the lower ends of which rods are connected with the double-crank shaft *f*, having a stationary bearing in beams A A, whereby rotary motion is transmitted from the upper crank-shaft to the lower. These features, in general, are like those shown in the former application, above referred to. The pendent portion *e* of the swiveled bearing *a'* is swiveled in the support *e'*, secured to the frame D D. This frame D, in a windmill, would be termed a "derrick," and with one end of the crank-shaft *u* the wind-wheel would be connected. The swiveled reciprocating rods consist of the half-round portions *e'c*, which are loosely located through an opening in the lower end of the pendent portion *e'* and the parts *t a' a'* and *t' a a'*. The upper end, *x*, of bar *t* is connected to the lower end of bar *c*, said end *x* being perforated, and the bar *c'* movably located therein. The lower end of bar *c'* is connected in a swiveled manner to the upper end, *z*, of bar *t'*. Thus the positions of the crank-shaft *u* may change by the rotation of the swiveled bearings *a'* without interrupting the operation of the reciprocating rods and lower crank-shaft, as shown in the prior application referred to. In said application the pitmen *d* and *r* were pivotally connected with each end of the swiveled reciprocating rods, and extended in like direc-

tions from said points of connection to their respective crank-shafts *u f*. In this construction the two sets of pitmen *d r* extend substantially in opposite directions from their points of connection with the reciprocating rods, and their movements during the operation are in substantially opposite directions—that is, when the pitman *d*, which is connected with the rod *c t a a*, moves down, the pitman *r*, which forms connection with the lower end of said rod, moves upward, and the same with the pitmen connecting with each end of the other rod, *c t a' a'*. This is attained by the use of the centrally-pivoted levers B B. These levers may be pivoted exactly in the center of their two ends, or approximately so, according to the peculiar form and location. The lower ends of the reciprocating rods are pivotally connected with one end of the levers B B, and the upper ends of the pitmen *r r* are pivotally connected with the other ends of the levers B B. If preferred, the levers B B may be connected with the other ends of the reciprocating rods, and with the other pitman, *d*, in lieu of the arrangement in Fig. 1. The terms "upper" and "lower" are here used as referring to the position of the figures in the drawings, and not to fix the position of parts, which may vary in differently-located devices. To illustrate, the device may be located horizontally instead of vertically, as in Fig. 1. In this construction, the distance from the upper cranks over the lines of the upper pitman, reciprocating rods, pivoted levers B B, and the lower pitman to the lower cranks is the same at any and all positions said parts take during the operation. This distance was the same in my former device referred to, and must be so in any practically operative transmitter of this class; but in the present device the general operation of parts is greatly facilitated, being more reliable and satisfactory, and I am enabled to locate the lower crank-shaft in many desirable positions otherwise impossible, and, as above stated, the pitmen at each end move in directions opposite to each other, which insures no possibility of strains upon the reciprocating rods adversely to each other, the tendency of which in former constructions has been to pull said rods in two or to retard the operation.

Figs. 3 and 4 of the drawings illustrate

equivalent forms of the pivoted levers B B. Thus by changing the angle of the lever-arms each side of the point of pivoting, from the horizontal angles shown in Fig. 2, the point  
5 where the levers B B are pivotally connected with the pitmen *r r* may be located at any point in a circle of which the lever-pivots form the axis, with a corresponding change in the position of the stationary crank-shaft.

10 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a mechanism for transmitting rotary motion from one crank-shaft to another, the  
15 combination, with the crank-shafts, reciprocating rods, and pivotally-connected pitmen, of the centrally-pivoted pivotally-connecting levers or their equivalents, whereby the pitmen of one set move in substantially an opposite  
20 direction to corresponding pitmen of the other set, for the objects set forth.

2. In a mechanism for transmitting rotary motion from one crank-shaft to another, the combination, with a crank-shaft having a swiveled bearing, a crank-shaft having a stationary bearing, swiveled reciprocating rods, and pivotally-connecting pitmen, of pivoted  
25 pivotally-connecting levers or their equivalents, whereby the pitmen of one set move in substantially an opposite direction to the pitmen of the other set during the operation, for  
30 the objects set forth.

In testimony of the foregoing I have hereunto subscribed my name in the presence of two witnesses.

HERBERT S. WILSON.

Witnesses:

E. E. FORD,

HOMER MAUVEL.