(No Model.)

H. S. WILSON.

POWER TRANSMITTER.

No. 302,076. Patented July 15, 1884.

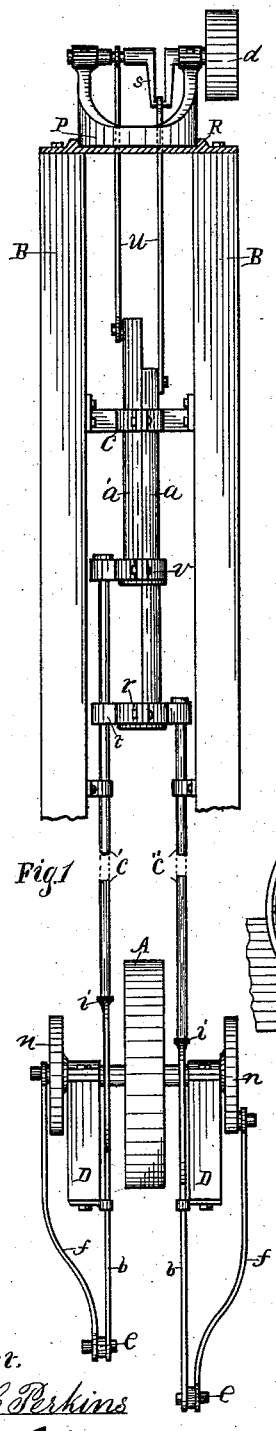

Fig. 1

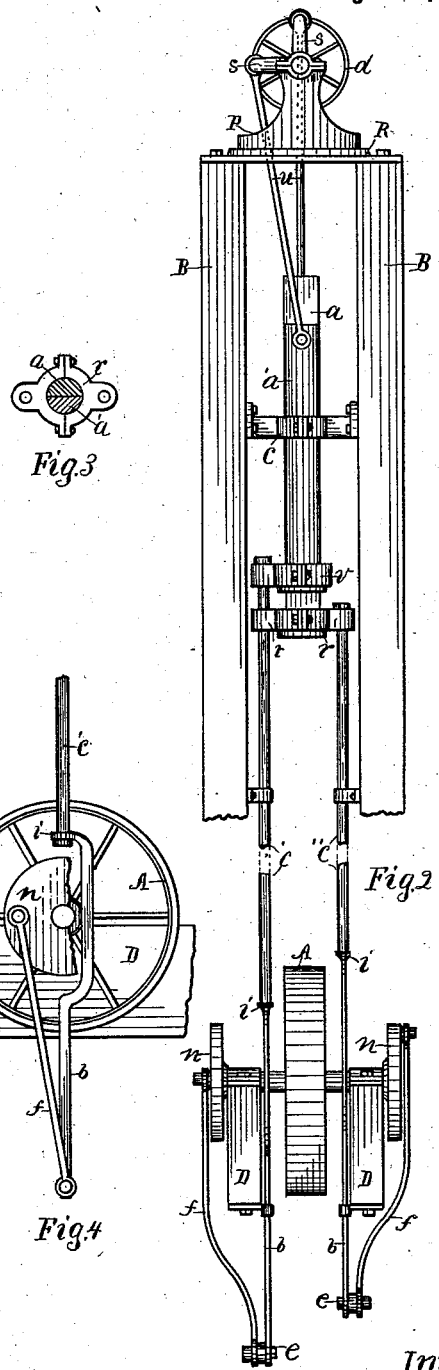

Fig. 2

Fig. 3

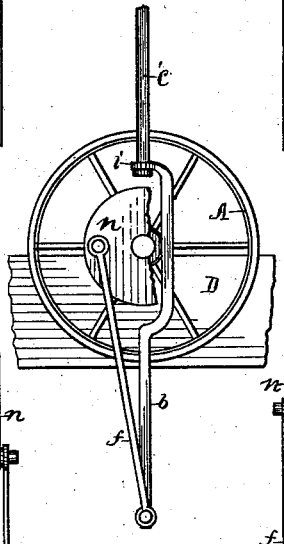

Fig. 4

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UNITED STATES PATENT OFFICE.

HERBERT S. WILSON, OF KALAMAZOO, MICHIGAN, ASSIGNOR OF TWO-THIRDS TO H. JAY HAMMOND AND MALCOLM B. WILLIAMS, BOTH OF SAME PLACE.

POWER-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 302,076, dated July 15, 1884.

Application filed January 3, 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.

My invention consists of a certain construction and combination of parts, substantially as hereinafter described and claimed, whereby economy and simplicity are secured and utility greatly increased.

In the drawings forming a part of this specification, Figures 1 and 2 are plan elevations illustrating the construction and operation; Fig. 3, a cross-section of Fig. 2 on a line with casting *r*, and Fig. 4 is a view looking against the side of the lower portion of Fig. 2 from the left hand of said figure.

The device is connected to a suitable supporting-frame, either in a horizontal, vertical, or other position. The drawings illustrate it in a vertical position. The lower part of the frame B B, which supports the device, is here shown broken away; otherwise it would connect with the end D D; or said parts B B and D D may have separate supports. This is not an important feature of the invention. With the end R is connected in a swiveled manner a bearing-support, P, in which support is revolubly located an axle or shaft provided with cranks S S. These cranks are located at right angles to each other, radiating from their axis or crank-shaft, Fig. 2. In lieu of the cranks shown in this construction, other devices equivalent to them may be employed, among which may be named gear-cranks, crank-wheels connected by gear, &c. (Not here shown.)

In suitable bearings on the beams D D a shaft is revolubly located. This shaft is provided with cranks *n n*, which are located at corresponding angles to those of the cranks S S.

A is a belt-pulley from which motion may be imparted to other machinery or devices.

The upper crank-axle is provided with a pulley, *d*, in the construction here shown. It is desired to impart rotary motion from different localities to said crank-axle, the latter being adapted to shift from one position to another to correspond to said different localities by turning its bearing-support P in its swiveled connections at R, and to transmit said motion by reciprocating rods to the lower or other crank-axle. This has previously been effected by connecting the crank-shafts and swiveled reciprocating rods by cumbersome and expensive connecting means. In my construction the device is greatly simplified and cheapened and the operation facilitated.

The reciprocating rods *a' c'* and *a c''* consist of the half-round swiveled parts *a' a* and the connected rods *c' c''* and *b b*. The portions below *i i* may be flattened and play through loops secured to the beams D D. The rods *c' c''* are located through loops connected with frame B B, Fig. 2. A casting, *c*, is connected with frame B B, having a central opening, in which the parts *a' a* of the reciprocating rods are swiveled, and are adapted to play through it. A casting, *v*, is secured to the end of rod *c'*, said casting being also secured to the lower end of portion *a'* in a swiveled manner. The portion *a* is swiveled in the casting *v*, and also adapted to play through it. A connecting-casting, *r*, is secured to the end of rod *c''*. Said casting is connected in a swiveled manner with the end of portion *a* of the other reciprocating rod. The rod *c'* plays through the lug *t* of the casting *r*.

More than two cranks may be employed on each crank-shaft, and a corresponding increase of swiveled reciprocating rods, if desired. It will appear obvious that three may be used, or any multiple of three, or any multiple of two.

The cranks *s s* and *n n* are connected with the reciprocating rods *a' c'* and *a c''* by means of the connecting-rods *u* and *f*. These rods are pivotally connected at both ends with said cranks and reciprocating rods. The connecting-rods *f f* are located on a like vertical plane with the connecting-rods *u*—that is, the plane is vertical, as herein illustrated.

The device might be located in a horizontal plane, when the connecting-rods would be on like horizontal planes. Said rods extend in

the same direction from their axis or crank-shafts—that is, the rods *u* extend below their crank-shaft, as do the rods *f* below their crank-shaft.

In Fig. 4 the rod *c' b* is bent to avoid conflicting with the lower crank-shaft.

The operation is clearly illustrated in Figs. 1 and 2, both as regards the vertical play of the reciprocating rods and their movements in their swiveled bearings. The upper crank-shaft in Fig. 2 is shown turned a quarter round in its swiveled bearings R. The connecting-rods *u* and *f* are still in like vertical planes with each other in this figure, but not on the same plane as before indicated.

Having thus described my invention, what I claim as new is—

1. In a device for transmitting rotary motion from a crank-shaft having a swiveled bearing-support to a crank-shaft having a stationary bearing-support by means of swiveled reciprocating rods, the combination, with reciprocating rods, of the connecting-rods, each set thereof extending back in a like direction to their crank-connections, substantially as set forth.

2. In a device for transmitting motion from one crank-shaft to another by means of swiveled reciprocating rods, the combination, with the crank-shafts, of the rods having the half-round portions, the pivoted rods extending in a like direction from their point of pivoting back to their crank-connections, and guide-loops to the lower free ends of the reciprocating rods, substantially as set forth.

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

HERBERT S. WILSON.

Witnesses:

H. JAY HAMMOND,

JNO. H. CHASE.