(No Model.) 2 Sheets—Sheet 1.

T. KRIEG.

APPARATUS FOR TRANSMITTING POWER.

No. 470,201. Patented Mar. 8, 1892.

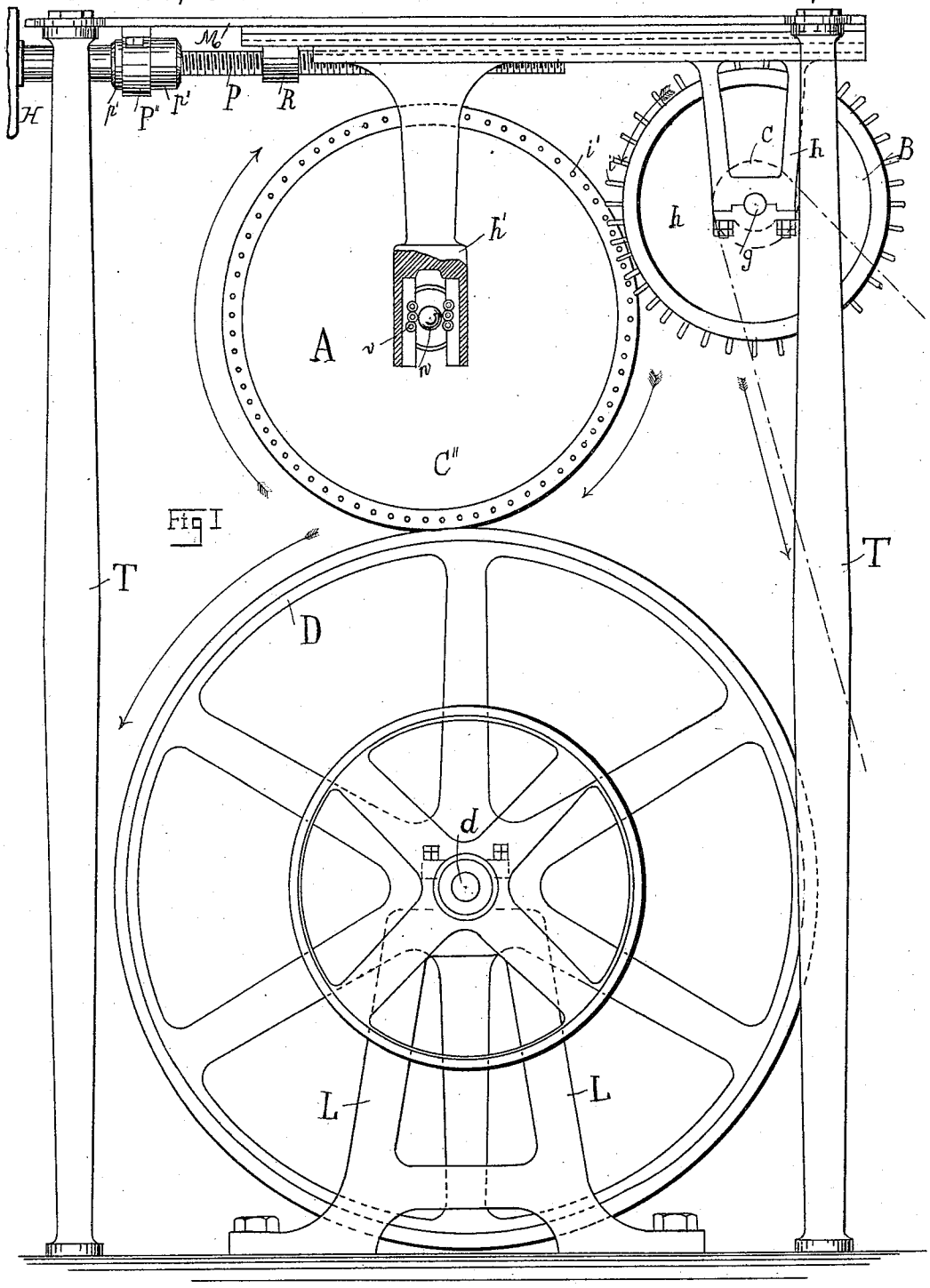


Fig I

Witnesses:
H. S. McArthur.
Alle N. Dobson

Inventor:
T. Krieg
By Foster & Freeman
Attorneys.

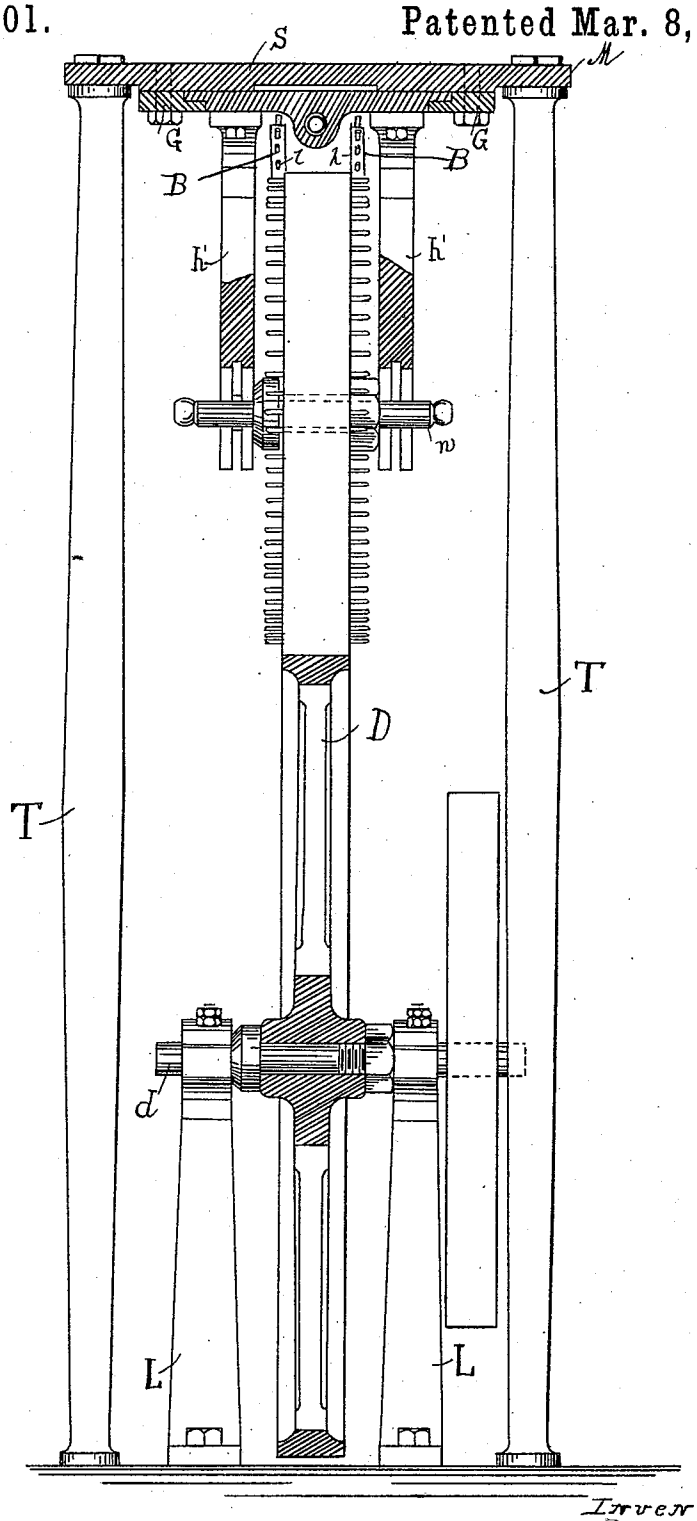
(No Model.) 2 Sheets—Sheet 2.

T. KRIEG.

APPARATUS FOR TRANSMITTING POWER.

No. 470,201. Patented Mar. 8, 1892.

Fig II



Witnesses:
H. S. McArthur
Alle N. Dobson

Inventor:
T. Krieg
By Foster Freeman
Attorneys.

UNITED STATES PATENT OFFICE.

THEODOR KRIEG, OF BRUNSWICK, GERMANY.

APPARATUS FOR TRANSMITTING POWER.

SPECIFICATION forming part of Letters Patent No. 470,201, dated March 8, 1892.

Application filed August 21, 1891. Serial No. 403,315. (No model.)

To all whom it may concern:

Be it known that I, THEODOR KRIEG, manufacturer, of Brunswick, Duchy of Brunswick, German Empire, have invented new and useful Apparatus for Transmitting Power, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to mechanism for transmitting power by means substantially as hereinafter set forth.

I shall first proceed to describe the arrangement of this gear or mechanism, and then I shall explain its mode of operation.

The gear or mechanism is shown in the accompanying drawings, in which—

Figure 1 is a front view, and Fig. 2 a vertical section through the center of Fig. 1.

The driven pin-wheels B, which are separated by a pulley, receive motion transmitted to them by means of belts from the fly-wheel of a steam-engine or of any other motor. These wheels B are firmly keyed upon a shaft *g*, carried by the two suspended bearings *h*. The upper ends of the two bearings *h* are firmly screwed to the top of the engine-frame. The driving-wheels B gear by means of the steel pins *i*, arranged upon their peripheries, with the pins *i'* of the disk or wheel A, which pins *i'* are arranged on both sides or edges of the periphery of the said wheel, as shown. The solid disk or wheel A bears with its whole weight upon the periphery of the large disk or wheel D at the contact-point C''. The shaft *w* of the pulley A turns between the anti-friction rollers *v*, fixed to the bearing-forks *h'*, for the purpose of reducing friction, the said bearing-forks being firmly screwed upon a slide S, which is moved to and fro by means of the hand-wheel H and screw P in guides or rails G, fixed to the top M of the frame of the engine. Upon the axis P is mounted an adjustable collar *p'*, limiting its forward motion, and a guiding-collar *p''*, which abut against the bearing P'' of the screw P. By moving the slide S forward or backward, Fig. 2, by means of the screw P, carried by P'', Fig. 1, the horizontal and vertical positions of the shaft *w* of the pulley A are determined or can be altered, while the forks *h'* being open downwardly the contact-point C'' of the wheel A with the large wheel D can be likewise determined by the to-and-fro motion of the said slide S. The wheel D is firmly keyed upon the motor-shaft *d*, carried by the plumber-block L. The to-and-fro motion of the slide S by means of the axis P serves also to couple or uncouple the wheel A with or from the wheel B, according as the teeth or pins *i* and *i'* are in gear or not, the wheel A being consequently drawn back when it is required to uncouple until the said teeth *i* and *i'* are disconnected.

The top M of the machine-frame is carried by the pillars T, which may, however, be dispensed with in practice, this top being replaced by the cover of the machine-frame, if desired.

Mode of operation: The gear or mechanism operates as follows: The pulley *c* between the two pin-wheels B is set in rotation by a belt *l*, so that the pins *i'* of these two wheels gear with the pins *i*, arranged on both sides of the heavy wheel A, and thus transmit a rotary motion to the latter. The working of each pin *i'* of the wheels B resembles the action of a lever having its fulcrum situated in the center of the shaft *g*. The power transmited by this lever is applied on the outermost end of each single lever or pin *i'*. The comparatively small amount of friction developed in this pin-gearing which is necessary to set the solid wheel A in rotation causes an economy of driving-power. As soon as the intermediate wheel A is set in motion power will be transmitted to the wheel D, due to its weight on the said wheel D, owing to its shaft being unsupported. If the relative position of the axis *w* and of the shaft *d* in different vertical planes is taken into consideration, while at the same time the intense pressure, as well as the immense friction between the pulley A and the wheel D, is also kept in view, it will be obvious that by this friction a power-transmitting effect of great intensity will be obtained at the contact-point C'', and the heavier the pulley A the greater will be this effect.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a device for transmitting power, the combination, with the driven wheel B and the wheel D, of the intermediate wheel gearing positively with the driven wheel and fric-

tionally with the wheel D, said intermediate wheel being adjustable into and out of mesh with the driven wheel, substantially as described.

2. In a device for transmitting power, the combination of the driven wheel B, having radial pins, the intermediate adjustable wheel having lateral pins, means for adjusting said wheel into and out of engagement with the driven wheel and the wheel D, said intermediate wheel resting frictionally on the wheel D, substantially as described.

3. The combination, with the wheel D and the driven wheel B, having radial pins, of the intermediate wheel A, having lateral pins adapted to engage with the radial pins, the shaft of said intermediate wheel being free to move vertically in its bearing to permit said wheel to rest upon the wheel D and the bearings of said intermediate wheel being adjustable laterally to throw said wheel into and out of mesh with the driven wheel, substantially as described.

4. The combination of the driven wheel having radial pins, the wheel D, the intermediate wheel resting frictionally upon the wheel D and provided with lateral pins adapted to mesh with the radial pins of the driven wheel, the shaft upon which said intermediate wheel is mounted, the bearings for said shaft provided with anti-friction rollers, the slide carrying said bearings, and the screw and hand-shaft for adjusting said slide to carry the intermediate wheel into and out of mesh with the driven wheel, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

THEODOR KRIEG.

Witnesses:

WILLY FRANTZ,

PAUL FISCHER.