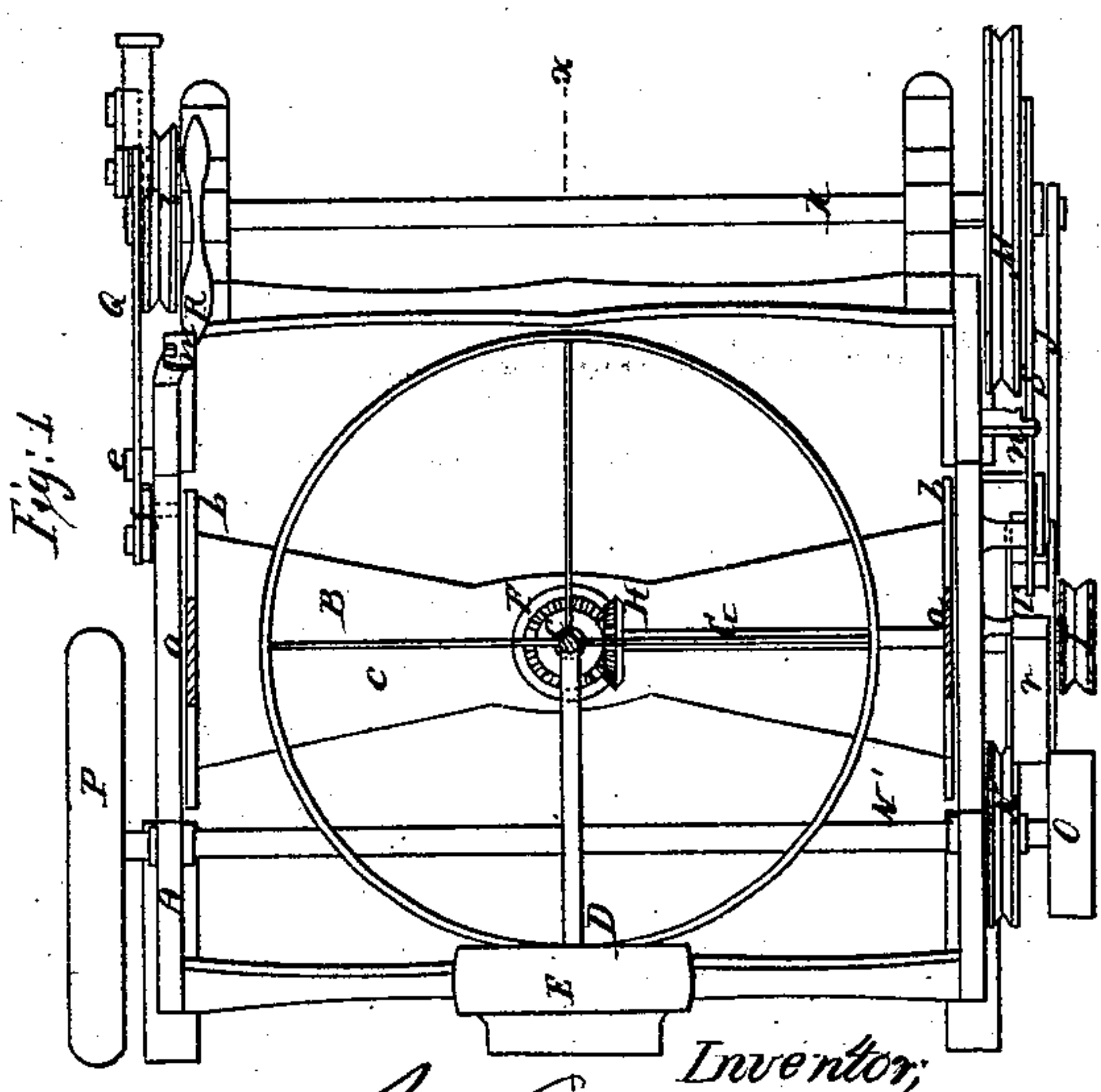
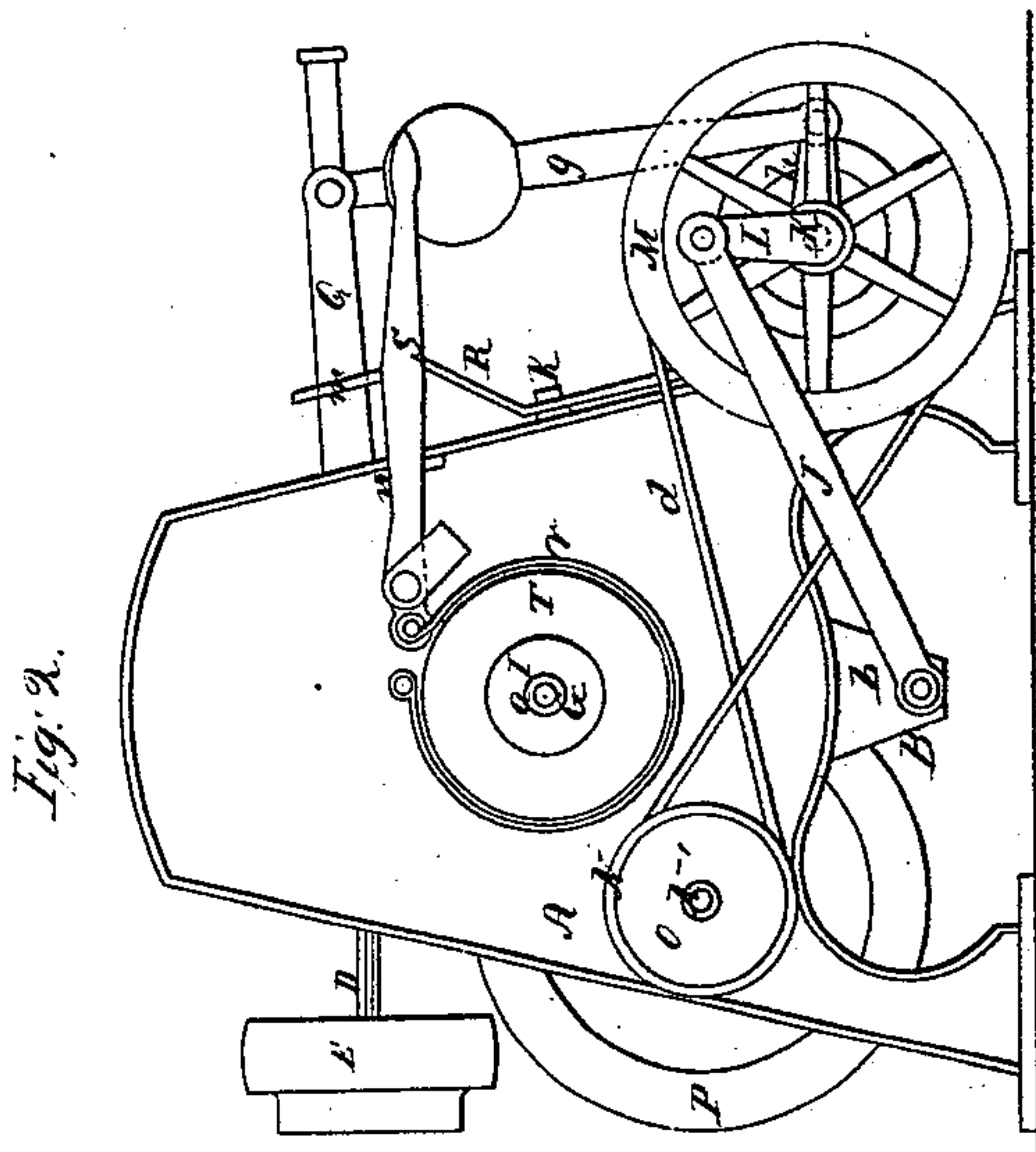
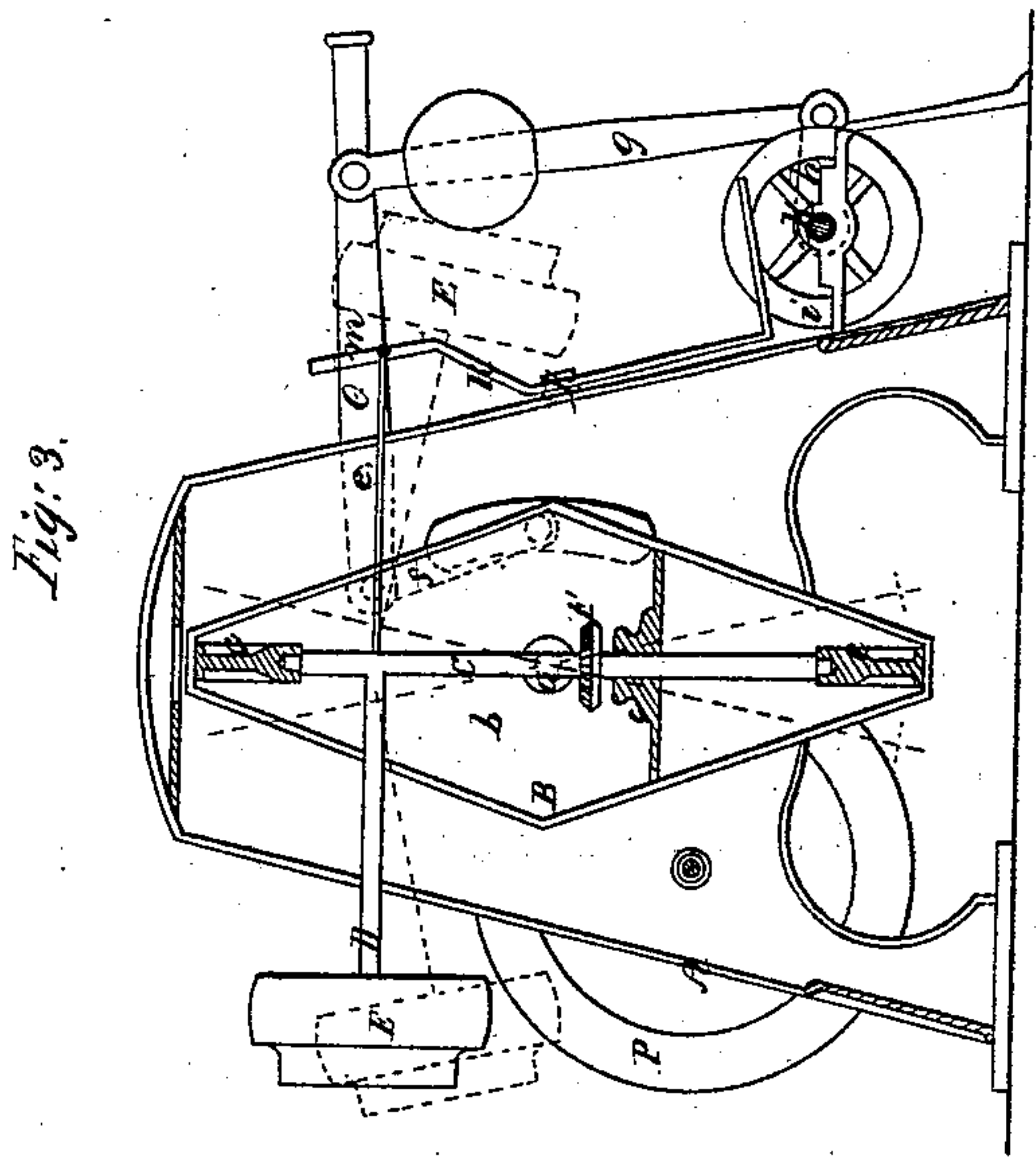


A. L. Freeman.

Transmitting Power.

N^o 95,578.

Patented Oct. 5, 1869.



Witnesses;
W. Coombs,
Fred. Haynes

Inventor;
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per Brown & Coombs
Atty

United States Patent Office.

ARTHUR L. FREEMAN, OF SOUTH BOSTON, MASSACHUSETTS.

Letters Patent No. 95,578, dated October 5, 1869.

IMPROVED APPARATUS FOR TRANSMITTING POWER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ARTHUR L. FREEMAN, of South Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Improvement in Apparatus for Transmitting Power, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figure 1 represents a plan of an apparatus constructed in accordance with my improvement;

Figure 2, an end view of the same; and

Figure 3, a transverse section, taken as indicated by the line *x x* in fig. 1.

Similar letters of reference indicate corresponding parts.

My invention consists in an apparatus for transmitting power, in which a swinging frame, that rocks on horizontal centres, is made to carry a loose or free cross-shaft, which has connected with it, at any desired leverage or distance from its centre, by a radial arm, wheel, or other attachment, a weight, that in the rocking of the swinging frame is caused, by its gravity, to rotate the cross-shaft, and so impart power to be used either as an independent motor, or as an auxiliary to the swinging frame, or to a shaft or shafts connected with the same, and driving or driven by said frame.

Referring to the accompanying drawing—

A represents a frame, of any suitable construction, for carrying the operating-parts.

B is a swinging frame, that vibrates in or on horizontal bearings, as at *a a*, and which may be composed of end or side-beams *b b*, and cross-ties or beams *c c*, or be otherwise suitably constructed.

C is a cross-shaft, hung to freely rotate within the cross-beams of the swinging frame B, and arranged to intersect the axis of said frame.

This cross-shaft C has connected with it, by a radial arm or wheel D, at any desired distance from it, so as to give an effective leverage, a weight, E, which, as the swinging frame B is rocked, is alternately elevated on opposite sides of the axial line of the swinging frame, and, once started from its highest elevation, swings by its gravity to or slightly past the lowest elevation it is capable of assuming, by the rocking of the swinging frame on the opposite side of the axial line of the latter, and so on, alternately, from side to side thereof, and, in thus swinging, necessarily giving rotary motion to the cross-shaft C, to which it is attached, as well as assisting the swinging frame in its vibrations.

On this cross-shaft C may be hung a bevel-pinion, F, which, in rotating with said shaft, gives motion to a horizontal shaft, G, through a bevel-pinion, H, thereon.

From this shaft G, power, as derived from the action of the weight E, may be communicated, by a pulley, I, or power may be conveyed from the swinging frame B, by a pitman, J, to a horizontal shaft, K, through a crank, L, and speed or power multiplied from this shaft by a pulley, M, belt *d*, and pulley N, to a horizontal shaft, N, from which motion may be conveyed by a pulley, O, and which may have a fly-wheel, P, on it, to aid the crank L over its centres.

The application of the primary power may be varied. Thus, it may be communicated direct by engine, or otherwise, to the swinging frame B, or through the intervention of a lever, Q, pivoted as at *e*, and connected by a rod, *f*, with the swinging frame; also, if desired, connected by a weighted or other rod, *g*, and crank *h*, with the shaft *k*, that may, if necessary, carry an additional pulley, *i*.

R is a catch-lever, pivoted as at K, and that, by means of a slot, *m m*, in it, may be thrown into lock with the lever Q, to stop the swinging frame B when the cranks L and *h* have passed their dead-centres, or are in their most effective positions for starting said frame again, on releasing the catch-lever R from lock with the lever Q.

It also is desirable to provide means for arresting the weight E, at its most effective position for starting again.

This may be done by means of a brake-lever, S, hung so as to be capable of being worked in and out of a stop or catch, *n*, and operating a brake-strap, *r*, on a wheel, T, hung on the shaft G.

It will be obvious that the invention is not restricted to the gearing or number of the shafts employed for communicating motion to or from the swinging frame B, and independently rotating and rising and falling weight E, which latter, while it requires but little power to start or set in motion, secures a motion of a rotary character, distinct from, though working in concert with that of the swinging frame B.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination, with the frame B, arranged to swing on or in horizontal bearings, of the weight E, in radial connection with a cross-shaft, C, hung to freely rotate within said swinging frame, and to intersect the axial line of the same, substantially as specified.

2. The combination of the shaft G, in gear with the cross-shaft C, the weight E, carried by the latter, and the swinging frame B, essentially as herein set forth.

3. The combination of the shaft K with the swinging frame B and weight E, in radial connection with

the cross-shaft C, carried by said frame, substantially as specified.

4. The catch-lever R, in combination with the lever Q, connected to the swinging frame B and shaft K, in gear by crank or cranks with the latter, essentially as and for the purpose herein set forth.

5. The combination, with the independently-rotating shaft C, and weight E, carried by the swing-

ing frame B, of a brake to arrest the motion of said weight at any desired point, and irrespective of the motion of the swinging frame, substantially as described.

ARTHUR L. FREEMAN.

Witnesses:

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