

(No Model.)

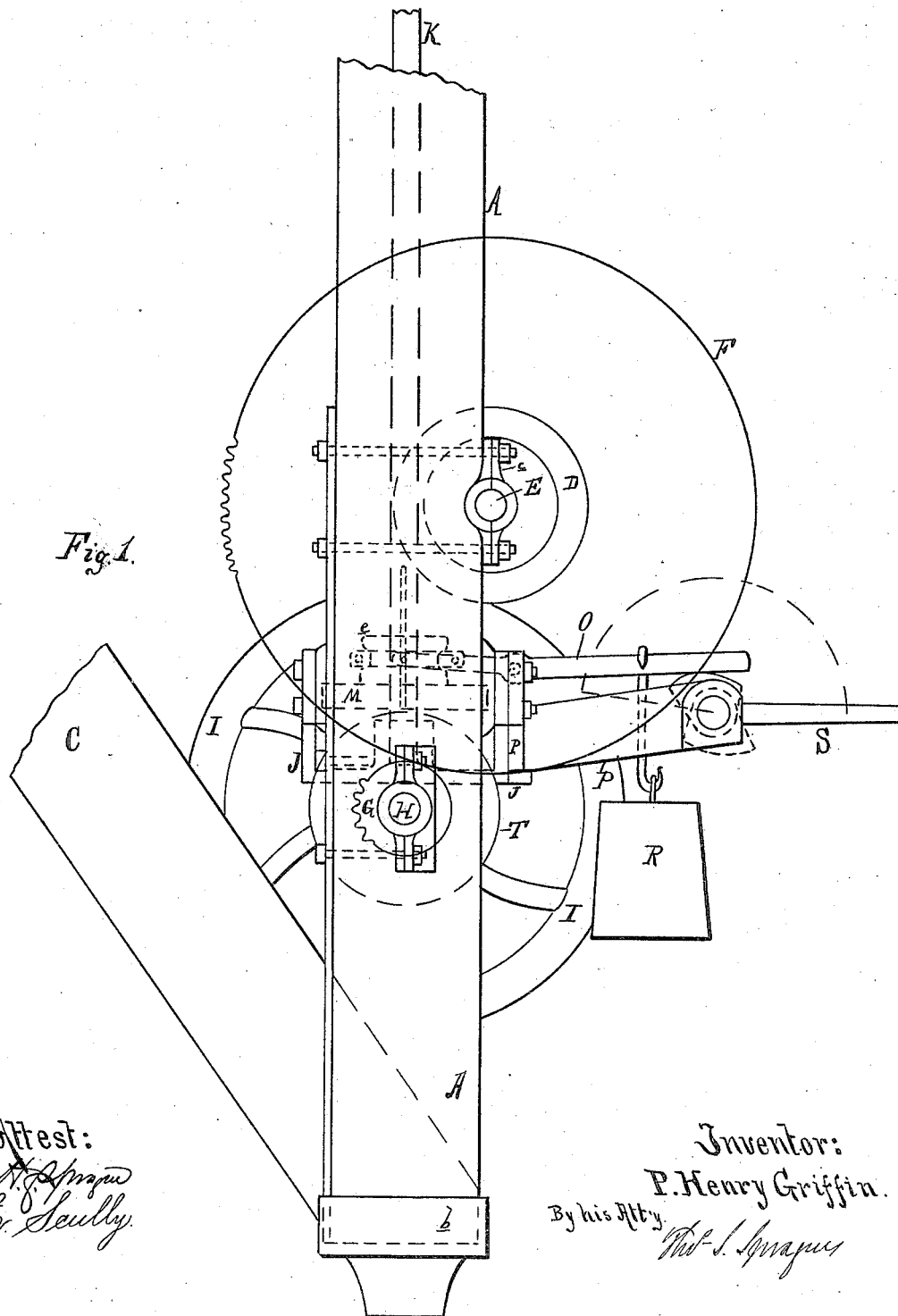
P. H. GRIFFIN.

2 Sheets—Sheet 1.

CRANE.

No. 301,231.

Patented July 1, 1884.



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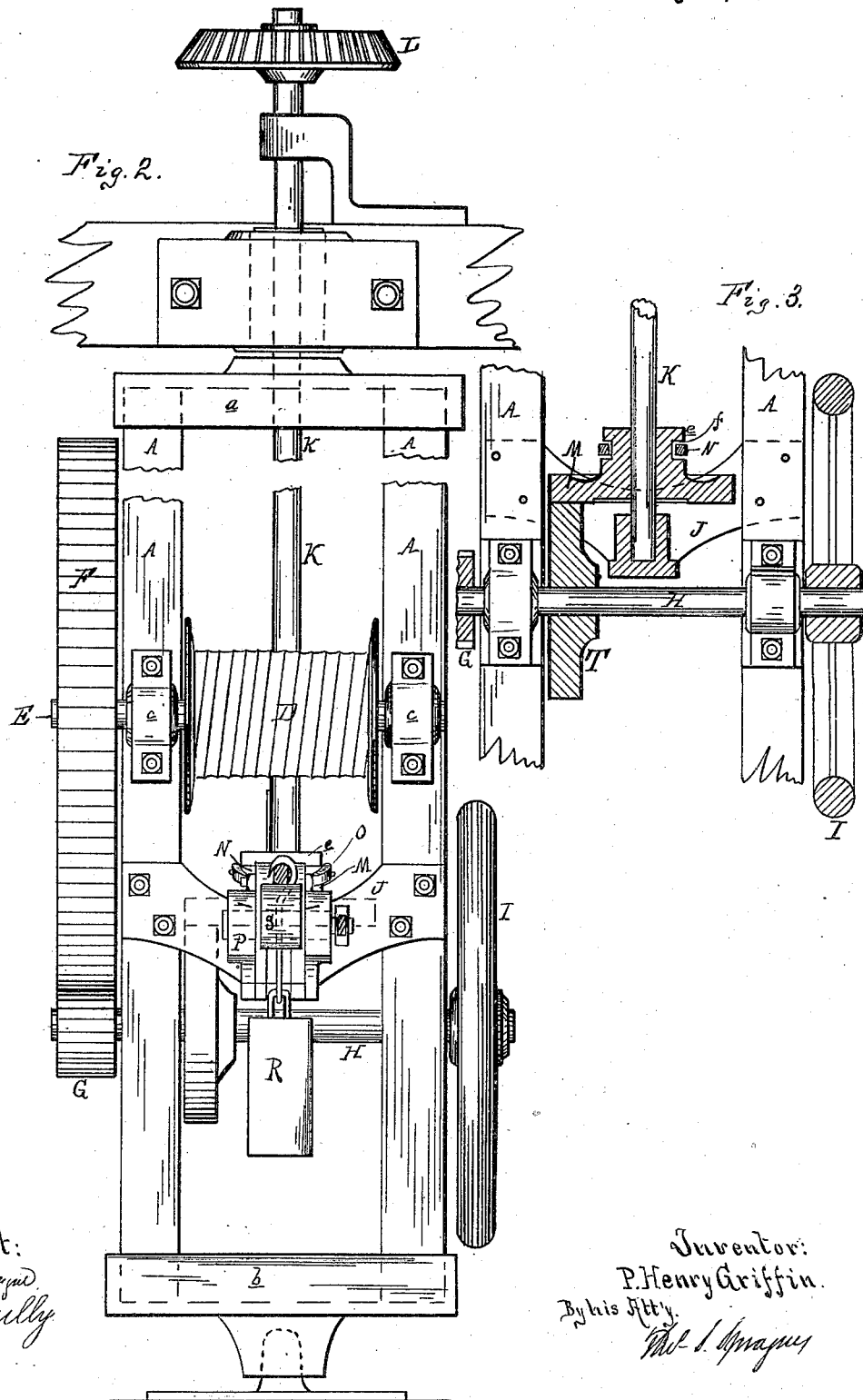
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Attest:  
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By his Atty.  
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# UNITED STATES PATENT OFFICE.

P. HENRY GRIFFIN, OF DETROIT, MICHIGAN.

## CRANE.

SPECIFICATION forming part of Letters Patent No. 301,231, dated July 1, 1884.

Application filed May 2, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, P. HENRY GRIFFIN, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Cranes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

10 This invention relates to certain new and useful improvements in the construction of cranes.

The object of my invention is to construct a crane that can readily be operated by power 15 or by hand, as the circumstances may require, or at the option of the operator; and to that end my invention consists in the peculiar construction and adaptation of a shaft to be driven from any suitable or convenient power, such 20 shaft being provided with a friction-gear, which is brought into contact with a friction-gear on the shaft which communicates motion to the winch, the two friction-gears being separated from engagement with each other by a 25 weighted lever, in which position the device is at all times ready to be operated as an ordinary foundry-crane is operated, and adapted to be thrown into engagement with each other by the movement of a cam-lever, all as more 30 fully hereinafter set forth.

I am aware that so-called "power-cranes" have been patented and are in use; but I am not aware that any of them are so constructed that they can either be operated by power or 35 by hand, as in my construction.

Figure 1 is a side elevation of an ordinary foundry-crane provided with my improvements. Fig. 2 is an elevation of the vertical post of the crane, showing the arrangement of 40 my improvement. Fig. 3 is a section through the engaging friction-gear and the shafts which operate them.

In the accompanying drawings, which form a part of this specification, A represents the 45 two posts of the crane. The jib and the stay C of the crane are constructed in the ordinary manner. The two posts A are connected together at their upper and lower ends by girts a b, respectively, such girts and post being 50 provided with the usual means, which allows the post to be rotatable upon its axis, as is ordinary in such constructions.

D is the winch, which is properly secured upon the shaft E in boxes c, secured to the rear sides of the posts A, as shown, one end of such 55 shaft E carrying a gear-wheel, F, which engages with a pinion, G, upon the shaft H, which is properly journaled transversely across the post, as shown, the opposite end of such shaft carrying a crank-wheel, I, by means of which 60 motion is communicated to the parts hereinbefore described by hand, such parts and arrangement being in ordinary use.

Above the shaft H, I rigidly secure to and between the posts the metal socket-girt J, into 65 which the lower end of the vertical shaft K is stepped, as will be clearly seen by referring to Fig. 3. This shaft extends upward between the posts of the crane, and projects through the pivotal bearing of the same at the 70 other end, and carries a bevel-pinion, L, or other suitable device, by means of which such vertical shaft may be rotated from any convenient power or line of shafting in the foundry in which the crane is located. The friction- 75 wheel M is placed upon the lower end of the shaft K, and is feathered thereon, so that it is compelled to rotate with the shaft, while it has a vertical movement and adjustment upon the shaft, for the purposes hereinafter set forth. 80 The upper face of this friction-wheel M is provided with a head, e, in the periphery of which is formed an annular channel, f, in which is secured a strap-ring, N, which in turn is pivotally secured in the bifurcated end of the lever O, the latter being fulcrumed between two 85 upwardly-extending ears of the bracket P, which is rigidly secured to the posts. This lever O carries a weight, R, which retains the lever in its depressed position, the end of the 90 lever resting upon the head cam-lever S, which is fulcrumed in the outer projecting end of the bracket in such manner that the friction-wheel M will be raised upon the shaft so as to free 95 engagement with the friction-wheel T, which is rigidly secured on the shaft H, Fig. 3.

When the parts are in the positions last above described, the device is free to be operated by hand for the purpose of winding the chains or cable usually employed upon the 100 winch. If it is desired to apply power for this purpose, I pull the cam-lever S into the position shown in Fig. 1, the cam of such lever in this movement raising the end of the lever O,

and its weight compelling the friction-wheel M to move downward upon its shaft and be brought in close frictional contact with the friction-wheel T, and in consequence of the shaft K being in motion the shaft H is compelled to revolve, and by the means hereinbefore described the winch is rotated for the purpose of winding the chain or cable thereon. A reverse movement of the lever S into the position shown in dotted lines in Fig. 1 allows the lever O to be drawn down by its suspended weight and compels a disengagement between the two friction-wheels M and T.

What I claim as my invention is—

1. In a crane, a friction-gear secured upon the shaft of the hand-power and a similar gear feathered upon the shaft of the mechanical power, and a system of levers, substantially

as described, for controlling the frictional contact between the parts, substantially as and for the purposes described.

2. In a crane, the combination of the shaft H, upon which is keyed a friction-gear, T, with the shaft K, upon which is feathered a friction-gear, M, provided with a system of levers for engaging and disengaging the frictional contact between the gears M and T, substantially as set forth.

3. In a crane, the combination of the shafts H K and friction-gears M T with the weighted lever O and cam-lever S, substantially as and for the purposes specified.

P. HENRY GRIFFIN.

Witnesses:

W. T. MOORE,  
A. M'PHERSON.