

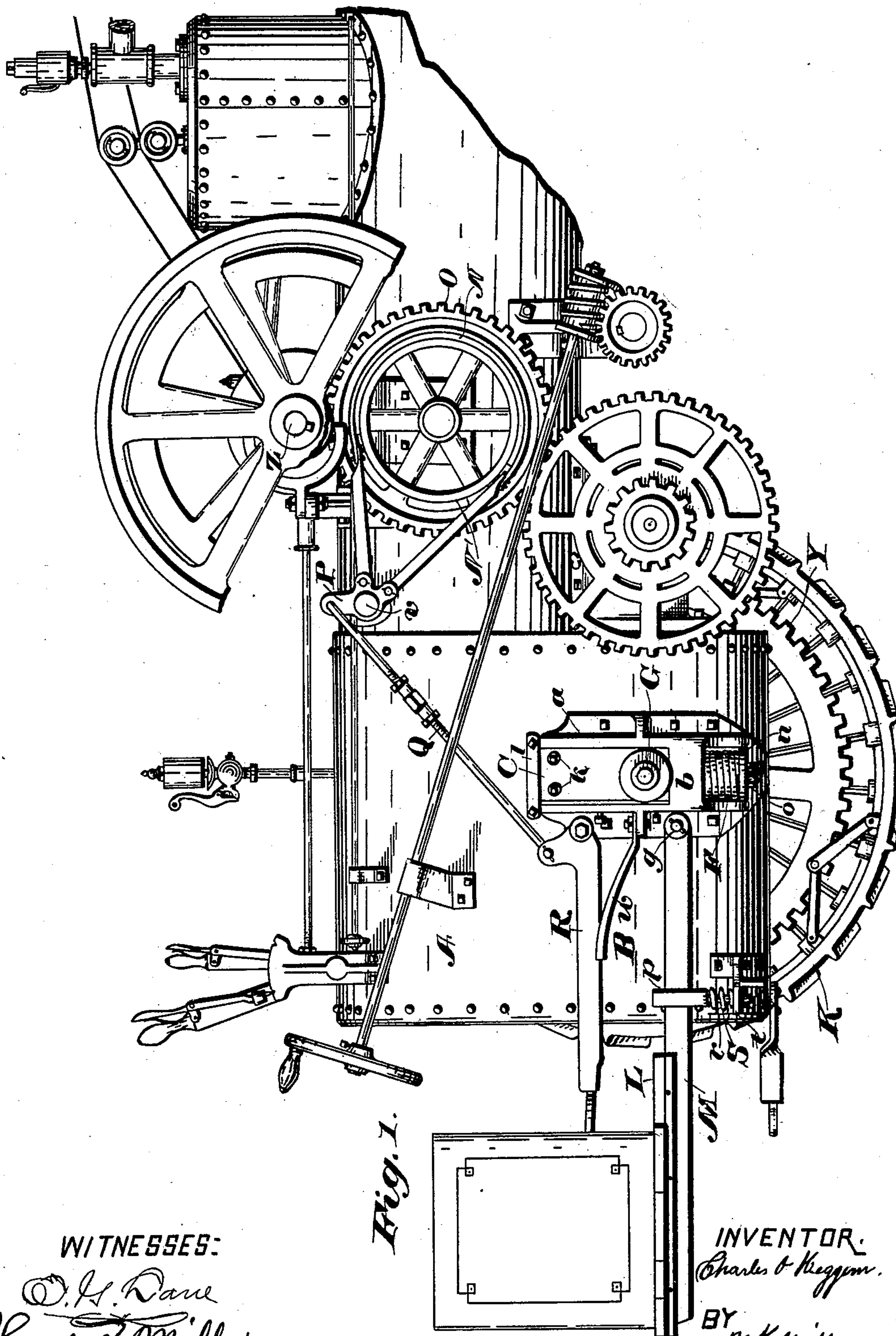
(No Model.)

2 Sheets—Sheet 1.

C. O. HEGGEM.  
TRACTION ENGINE.

No. 400,846.

Patented Apr. 2, 1889.



**WITNESSES:**

O. H. Kane  
Phas. R. Miller

**INVENTOR.**

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BY

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(No Model.)

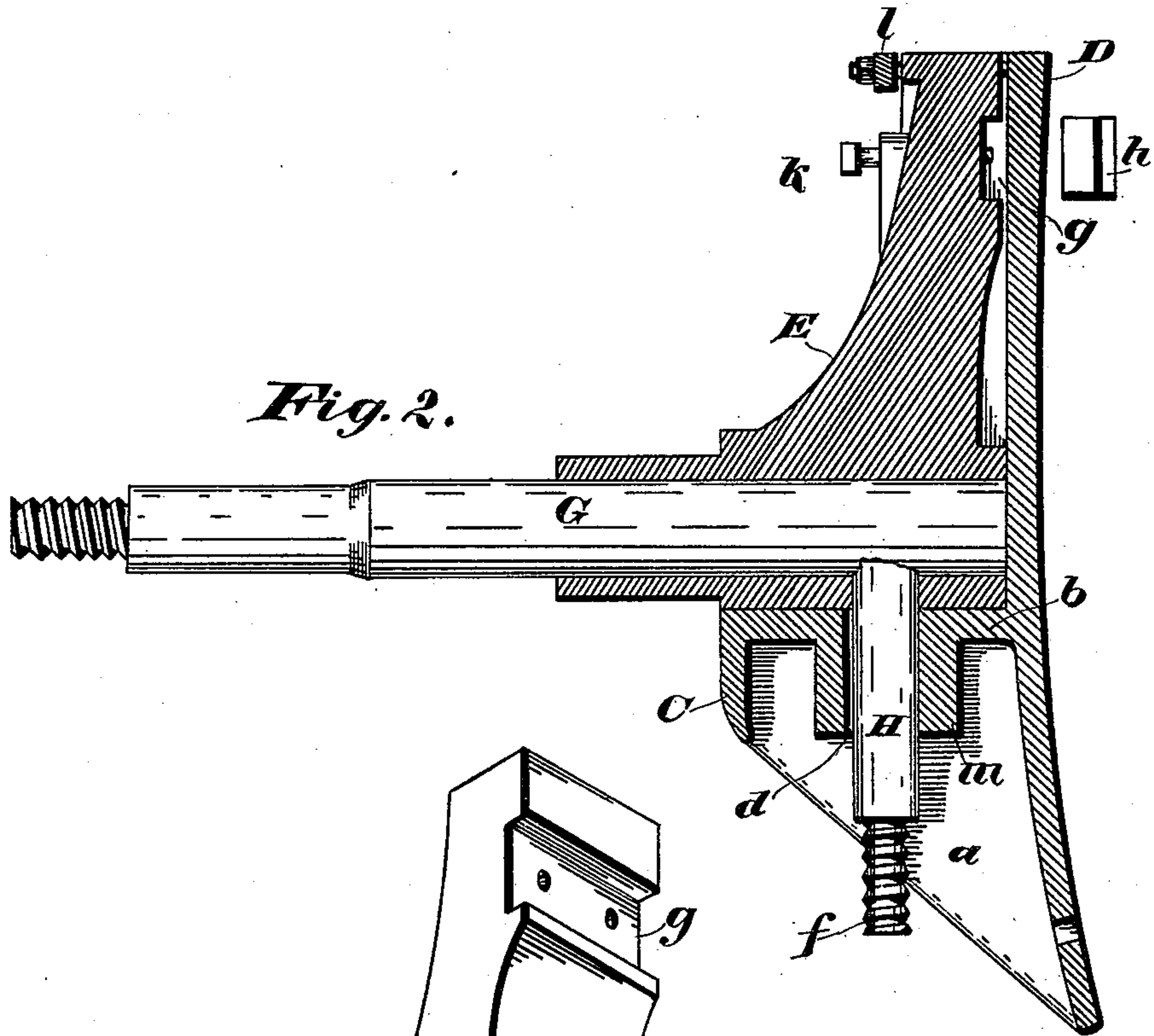
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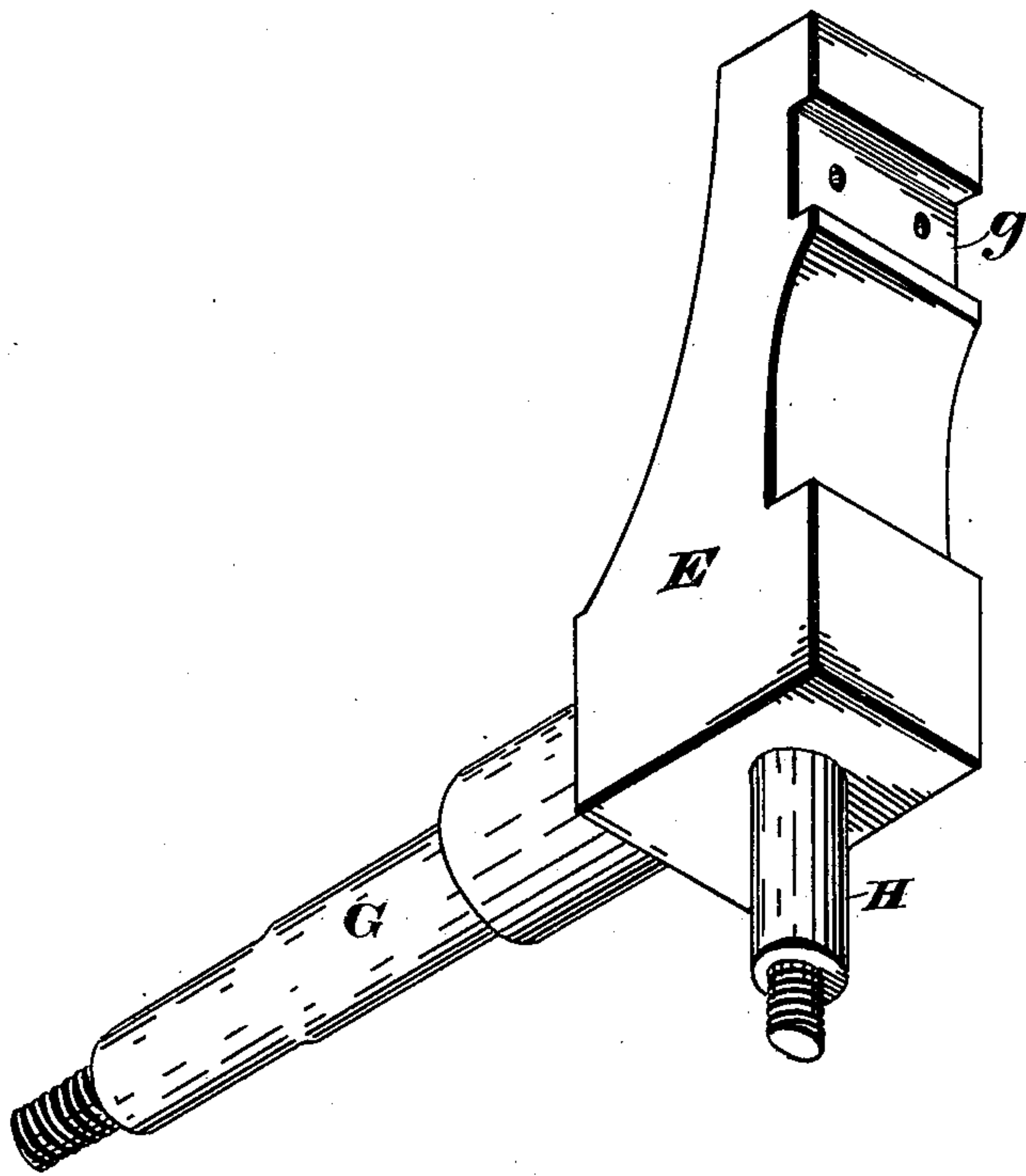
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*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

CHARLES O. HEGGEM, OF MASSILLON, OHIO, ASSIGNOR TO RUSSELL & COMPANY, OF SAME PLACE.

## TRACTION-ENGINE.

SPECIFICATION forming part of Letters Patent No. 400,846, dated April 2, 1889.

Application filed June 6, 1888. Serial No. 276,275. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES O. HEGGEM, a citizen of the United States, and a resident of Massillon, county of Stark, State of Ohio, have invented a new and useful Improvement in Traction-Engines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to improvements in traction-engines; and it consists in providing means whereby the jar on the foot-board may be reduced; also, in providing means to restore alignment of the axle-spindles; also, in providing means for arresting the momentum of the machine.

With these ends in view my invention relates to the detail and combination of parts, as herein described, and set forth in the claims.

Figure 1 is a side elevation of a fragment of a portable engine, illustrating my invention. Fig. 2 is a vertical sectional view of the spindle-frame, spindle-supporting frame, and spindle. Fig. 3 is an isometrical view of spindle and frame.

Similar letters of reference indicate corresponding parts in all of the figures of the accompanying drawings.

As my invention is applicable to many of the traction-engines now in use, I will proceed to describe it, referring to the parts not therein involved only as conjunctive thereto.

A represents a steam-boiler; B, the fire-box, to the sides of which are secured spindle-supporting frames C, having a back portion, as D, adapted to conform to the side of the fire-box, and side plates, *a*, of such width as to secure the axle-frame from rotation, and a bottom portion, *b*, as a support for the spindle-frame and a bearer for the spring F. The spindle G is formed of metal, to which is welded a spur, as H, on the lower end of which there is provided an annular screw-thread, *f*. These parts, as shown in Fig. 2, are placed in a mold and molten metal poured in said mold and about said parts to form a frame, as E, to hold the spindle in its proper working relation. The spindle and frame are placed in the supporting-frame C, the spur H

passed down into and through the perforation *d*, the upper end of the frame resting between the side plates, *a*, and against the bottom portion, *b*. In the upper portion of the frame E there is provided a recess, *g*, in which is placed a plate, *h*, of hard metal, that rests against the bottom *b*, and set-screws *k* are turned into threaded perforations in the recess *g*. The inner ends of said screws rest on the plate *h*. A cross-bar, *l*, secured to the sides *a*, spans the upper end of the box portion of the frame C, as shown in Fig. 1.

Below the bottom *b*, about the perforation *d*, there is provided a short sleeve, *m*, about which is placed a spiral spring, F, the spur H passing through said spring and a keeper, *n*, and nut O.

The weight of the machine is carried on the spindles G, resting on the hubs of carrying-wheels K, one of which is removed to better expose the parts, and on the springs F. To provide for the vertical movement of the boiler caused by the vibrations of the spring, the frame E will move vertically in the frame C, the plate *h* sliding on the back and the spur in the perforation *d* in the bottom *b*, and to set the spindles in desired alignment the set-screws *k* may be turned in or out, as the case may be, by which the top portion of the frame E may be moved out or in to raise or lower the outer portion of the spindles G, and should the wheels K incline inwardly at the top, as is usual with such machines, the set-screws *k* may be turned in and the outer portion of the spindles thrown down, thereby placing the wheels in their proper desired position.

The wheels may be secured on the spindles with a nut in the usual way.

The foot-board L is supported on a U-shaped metal frame, M, the ends of which are passed through loops *p* and pivotally secured to the frame C, as shown at *g*. The loop *p* is provided with a downwardly-projected stem, *r*, that is passed down through a spiral spring, S, said spring resting on a bracket, *t*, thus providing a yielding support for the foot-board, on which is carried a tank of water and a supply of fuel to provide against breakage and for the comfort of the operator.



To arrest the momentum or movement of the machine, a brake is provided, consisting, essentially, of a face-wheel, N', integral with or secured to gear-wheel O, which is one of  
 5 the train of gear-wheels connecting a driving-pinion on the engine-shaft Z with a wheel similar to wheel Y on the carrying-wheel K, removed, as before stated, and a flexible shoe or band, N, placed about the face-wheel N' and  
 10 pivotally secured to a lever-plate, P, loosely mounted on a stud-pin, v, said lever P connected by an adjustable link, Q, to a foot-lever, R, which is pivotally secured to frame C. Under said lever R is provided a spring, w,  
 15 secured to the frame C, the free end of which rests under and against the lever. The energy of said spring is exerted upwardly to raise the lever, and thereby remove the shoe from the face of the wheel N, substantially as shown  
 20 in Fig. 1. To bring the parts into action, the foot of the operator is pressed on the free end of the lever R.

Having thus fully described the nature and object of my invention, what I claim as new,  
 25 and desire to secure by Letters Patent, is—

1. The combination, in a portable engine, of a spindle-supporting frame, C, having projecting side portions, a, a bottom portion, b, having a perforation, d, spindle G, a spindle-frame  
 30 having a downwardly-projected portion, H, a spiral spring, F, secured about said portion, and an upwardly-projected portion adapted for lateral adjustment, and means for securing said portion in desired adjustment, substan-  
 35 tially as described, and for the purpose set forth.

2. The combination, in a portable engine, of a spindle-supporting frame, C, and a spindle-frame, E, loosely secured to said frame C and  
 40 adapted for vertical vibration and lateral adjustment, substantially as described, and for the purpose set forth.

3. In a portable engine, the combination of the spindle G, and a spindle-supporting frame  
 45 having an upwardly-projected portion, E, and a downwardly-projecting portion, H, substantially as described, and for the purpose set forth.

4. The combination, in a portable engine, of

the U-shaped foot-board support, the ends  
 thereof pivotally secured to the sides of the fire-box, and supporting-springs, substantially as described, and for the purpose set forth.

5. In a portable engine, in combination with a U-shaped foot-board support pivotally se-  
 55 cured to the fire-box portion of the boiler, a spring supporting-bracket, t, spring s, and loop h, substantially as described, and for the purpose set forth.

6. In a portable engine, a brake composed,  
 60 essentially, of a brake-wheel, N', secured to the gear-wheel O, a flexible shoe, N, pivotally secured at both ends to a lever, P, stud v, adjustable link Q, foot-lever R, and a spring, w, fixed at one end to the engine and bearing  
 65 with its free end against the under side of the lever R, substantially as set forth.

7. A steam-engine having an axle and an adjusting device in connection therewith to regulate the inclination of the axle, substan-  
 70 tially as set forth.

8. A steam-engine having a vertically-yield-  
 ing axle and an adjusting device in connection with the axle to regulate the inclination of the same, substantially as set forth.

9. In a portable steam-engine, the combina-  
 75 tion, with the spindle-supporting frame C, of a spindle-frame, E, vertically movable in said frame C and provided with a recess, g, a block, h, fitting in said recess, and a set-  
 80 screw, k, for separating the upper ends of said frames, substantially as set forth.

10. In a portable engine, the combination of the pivoted foot-board support, the fixed  
 85 spring supporting-bracket, the loop embracing branches of the said foot-board support and provided with a stem working in an aperture of the spring-support, and a spring en-  
 90 circling the said stem and engaging, respectively, with its ends the loop and the spring support, substantially as set forth.

In testimony whereof I have hereunto set my hand this 23d day of May, A. D. 1888.

CHARLES O. HEGGEM.

Witnesses:

W. K. MILLER,  
 CHAS. N. MILLER.