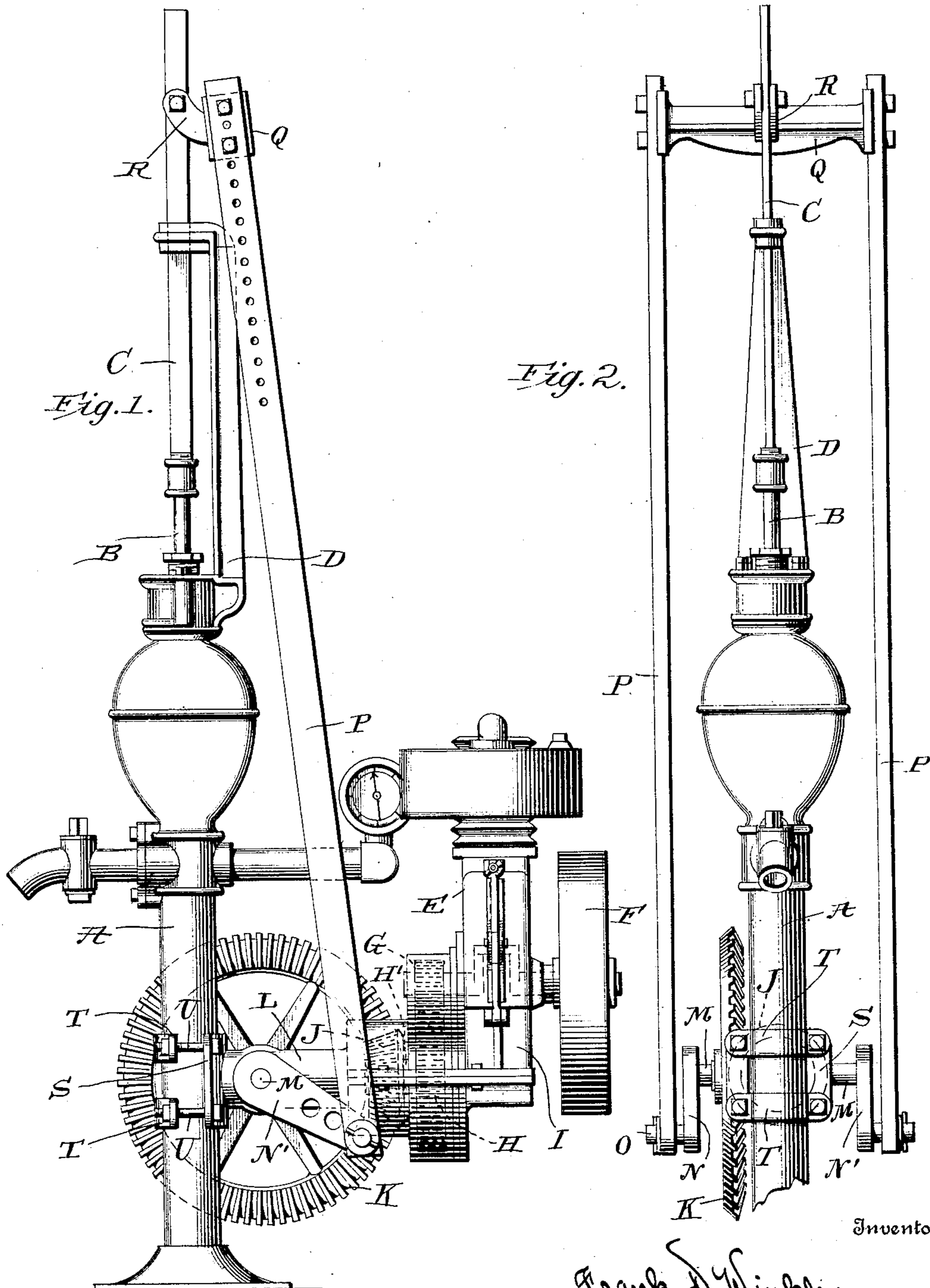


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PUMP.

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# UNITED STATES PATENT OFFICE.

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## PUMP.

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Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, FRANK D. WINKLEY, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Pumps, of which the following is a specification.

My present invention pertains to improvements in pumps and has reference more particularly to the manner of mounting an engine directly upon the pump, and connecting the same to the pump or piston-rod.

The main object of the invention is to provide an engine or motor which may be connected directly to the pump-body, the arrangement being such that the engine and pump are entirely contained within themselves. With this arrangement a stiff and strong construction is produced, and furthermore, the engine with its allied parts may be readily attached to an ordinary pump and the gearing connected to the pump or piston-rod without difficulty.

The invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevation of the combined pump and engine; and Fig. 2 a front elevation thereof, the engine being omitted.

In the drawings, A denotes the body of the pump; and B the piston-rod thereof which is shown as provided with an upward extension C, the latter passing through a guide-way formed in the upper end of the standard D. An internal-combustion engine of any improved type is shown at E, the crank-shaft thereof carrying at one end a fly-wheel F and at its opposite end a pinion G, as shown in dotted lines in Fig. 1, which pinion meshes with a gear H, the latter being secured to a horizontally-disposed shaft H' which is mounted in suitable bearings formed in the housing or shell I which incloses the working portions of the engine and the gearing. A bevel pinion J is carried by the shaft H', said pinion meshing with a bevel gear K mounted on a shaft M which has its bearings in an extension L of the casing I. Crank-arms N and N' are secured to shaft M, and mounted upon the wrist-pins O carried by the crank-arms are pitmen P, the upper ends of which are connected to a cross-bar Q, which latter in turn is provided with an arm R through which a bolt is passed to form a pivotal connection between it and the upper end of the pump rod C.

The engine, the gearing and the housing, which form one integral structure, may be secured to the body of the pump in any desired manner. In the form shown the extension L is provided with a foot-piece S which bears against one face of the pump body and is held in position by straps T and connecting bolts U.

Any improved method of securing the engine and its allied parts directly to the pump may be employed.

From the foregoing it will be seen that the engine, the gearing and the driving mechanism are all connected directly to the pump and to each other. The driver, namely, the engine and its gearing, and the driven member, to wit, the pump rod, are connected to and supported by the same frame. Consequently, the construction is quite stable, much more efficient, and less liable to get out of order than constructions in which the engine is mounted upon a separate support and connected to the piston-rod of the pump. In other words, the apparatus being self-contained there is no tendency to rack the structure. Furthermore, the engine and gearing may be readily attached to any pump, and there is no necessity of providing a separate foundation or support for the engine.

In the drawings I have shown, and my invention contemplates, an engine of the internal combustion type. Such engines, provided as here represented with a fuel tank, are wholly self-contained, and by forming the gear housing, the engine frame and the clamp (or one section thereof) in one solid structure, the gear housing constitutes an intermediate support between the pump-stock about which the clamp is secured, and the engine or motor; hence the structure as an entirety is wholly self-contained. It may be shipped complete, and applied to any ordinary type of pump without any change or addition to the latter, save the mere clamping of the motor structure to the pump-stock, and the attachment of the pitman cross bar Q to the pump-rod. By this simple means a structure is produced which any person of ordinary intelligence can apply to any ordinary pump in a few minutes without difficulty, and with the certainty that the parts will be brought into proper working relation to the pump itself. The location of the crank shaft M close to the pump-stock or body brings the greatest stress close to the

point of attachment of the structure to the pump, and places said shaft as nearly as practicable under, or in vertical alinement with, the point of connection with the pump-rod, thus enabling the motor to apply its power to advantage, and without liability of loosening the clamp by which it is held upon the pump-stock or body.

In speaking of the housing or shell I as inclosing the working parts of the engine and the gearing, I do not mean that the housing shall necessarily entirely surround the gearing, nor completely inclose all parts of the engine, but merely that it shall carry said parts, and inclose or protect them to such extent as may be necessary or desirable. The essential point is that it shall constitute one structure, complete in itself, to carry the engine, the gearing, and the clamp, or attaching device.

Having thus fully described my invention, what I claim is:

1. In combination with a pump body; an internal-combustion engine; a combined support and housing for said engine; gearing carried by said housing; a pump rod; driving connections between said gearing and the pump rod; and means for securing the housing directly to the pump body.

2. In combination with a pump body; a pump rod; an internal-combustion engine; a combined support and housing for said engine; means for securing said support di-

rectly to the pump body; gearing operated by said engine; a pair of crank-arms connected to said gearing; and pitmen pivotally connected to the crank-arms and to the pump-rod.

3. In combination with a pump body, a pump-rod; an internal-combustion engine; a combined support and housing for said engine; means for securing said support directly to the pump body; gearing operated by said engine; a pair of crank-arms connected to said gearing; pitmen pivotally connected to the crank-arms and to the pump-rod; a cross-bar connected to the upper ends of said pitmen; and a pivotal connection between said cross-bar and the upper end of the pump-rod.

4. In combination with a pump-body; an engine of the internal-combustion type; a pump-rod or piston; driving connections between said pump-rod and the engine, permitting a relatively fast movement of the engine as compared with the movement of the pump-rod or piston; and a support for the engine and driving connections, secured directly to the pump-body.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK D. WINKLEY.

Witnesses:

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