No. 715,867. Patented Dec. 16, 1902.

G. H. REYNOLDS.

FRAME FOR STEAM ENGINES.

(Application filed June 17, 1901.)

(No Model.) 2 Sheets—Sheet 1.

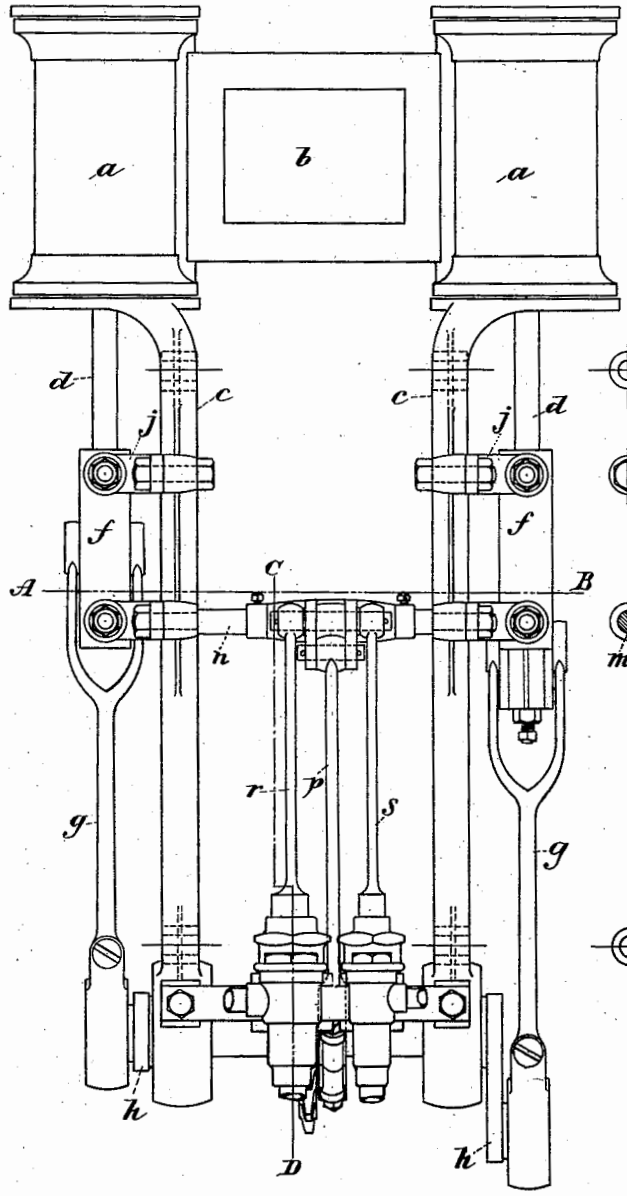

Fig. 1.

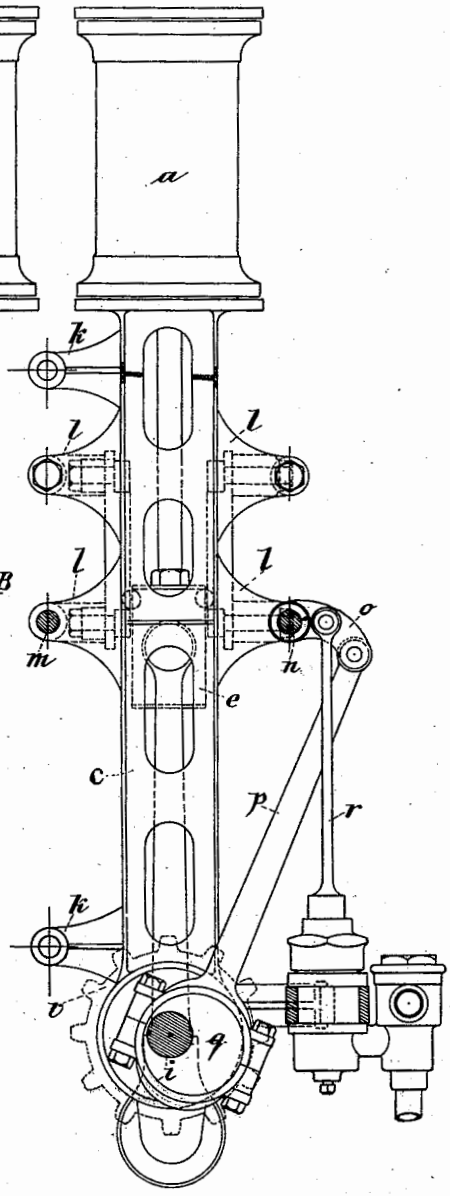

Fig. 2.

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Fig. 3.

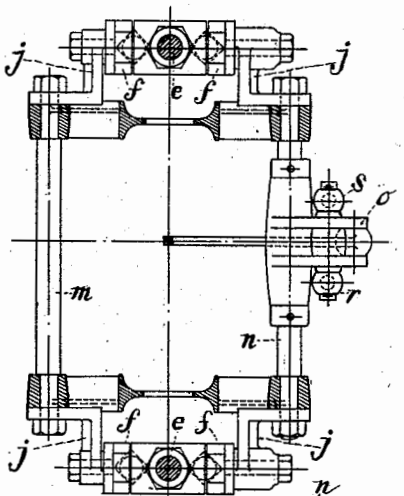

Fig. 4.

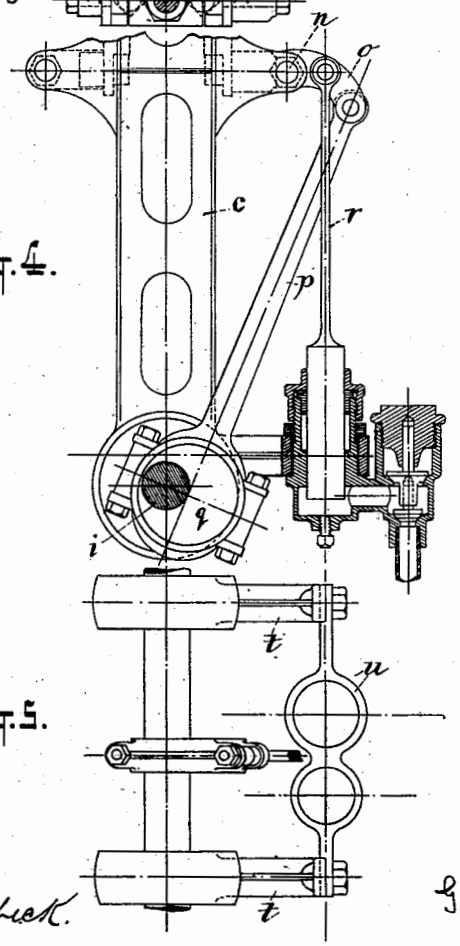

Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE H. REYNOLDS, OF MANSFIELD DEPOT, CONNECTICUT, ASSIGNOR TO THE LOCOMOBILE COMPANY OF AMERICA, A CORPORATION OF WEST VIRGINIA.

FRAME FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 715,867, dated December 16, 1902.

Application filed June 17, 1901. Serial No. 64,921. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. REYNOLDS, a citizen of the United States, and a resident of Mansfield Depot, Tolland county, Connecticut, having invented certain new and useful Improvements in Frames for Steam-Engines and in the Means for Mounting Operating Parts Thereon, of which the following is a specification.

My invention relates to improvements in the frames of steam-engines and in the means of mounting operating parts thereon, and is adapted for use in connection with that class of engine wherein lightness in weight, compactness, and simplicity are of the utmost importance. It has a special relation to engines adapted to be vertically suspended without a bed-plate, such as are used in connection with motor-vehicles.

In the following, with reference to the accompanying drawings, I have described a structure embodying my invention, the features thereof being more particularly pointed out hereinafter in the claims.

Figure 1 is a front elevation of a vertical engine embodying my improvements, parts not essential to my invention being removed in order to show the features thereof more clearly. Fig. 2 is a side view of the same, partially in section. Fig. 3 is a sectional view along the line A B of Fig. 1, the main shaft and eccentric being removed. Fig. 4 is a sectional view along the line C D of Fig. 1, the upper portions being broken away. Fig. 5 is a bottom view of Fig. 1, parts being removed and parts being broken away to show the construction more clearly.

Similar letters of reference refer to similar parts throughout the several views.

a a represent the steam-cylinders, and *b* the steam-chest.

c c represent the frames, to which the working parts of the engine are attached, said frames depending from the cylinders and the whole being supported by means of lugs *k k*, attached to any convenient support.

d d represent the piston-rods, *e e* the cross-heads sliding in guides *f f*, and *g g* the connecting-rods attached at one end to the cross-heads and at the other to the cranks *h h* on the main shaft *i*. The guides *f f* are held on the frame by means of brackets *j j*, bolted to lugs *l l*.

m and *n* are ties for holding the frame from springing, and on one of said ties, as *n*, is mounted a rocking arm *o*, connected at its outer extremity with the upper end of eccentric-rod *p*, operated by eccentric *q* on the main shaft. Mounted on rocking arm *o* between the tie and the rod are pump-rods *r* and *s*. Brackets *t t* project outwardly from the ends of frames *c c*, and connecting the same is a tie *u*, adapted to form a seat for the pumps operated by pump-rods *r* and *s*.

v represents a sprocket-wheel, shown in outline only, mounted on the main shaft *i* and by means of which the power of the engine may be transmitted as desired.

It is obvious that the pumps mounted on tie *u* are operated from the rocking arm *o* through eccentric *q*, the reciprocating motion of the arm causing the alternate raising and lowering of the pump-rods.

It is to be noted that in engines of the kind described no bed-plate is possible and that the frame is held from springing by the ties *m*, *n*, and *u*, which are also utilized as supporting means for working parts of the engine, thus economizing weight and space and producing a more simple and compact engine than heretofore.

I have not described or claimed the construction of the cross-head, as I have reserved that as the subject for another application.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a multiple-cylinder steam-engine the combination of vertically-suspended frames adapted to support the working parts of the engine, a pump, ties adapted to hold said frames from springing, one of said ties forming a fulcrum for a rocking arm adapted to operate the pumps.

2. In a steam-engine the combination of a vertically-suspended frame adapted to support the working parts of the engine with ties adapted to hold said frame from springing,

one of said ties forming a fulcrum for a rocking arm adapted to operate the pumps and another of said ties forming a seat for the pumps.

3. In a steam-engine the combination of a vertically-suspended frame adapted to support the working parts of the engine and ties adapted to hold said frame from springing with a single eccentric operated by the main shaft and connected with a rocking arm mounted on one of the ties in such manner as to afford driving means for the pumps.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

GEORGE H. REYNOLDS.

Witnesses:
A. COLUMBUS SMITH,
SEABURY C. MASTICK.