W. T. UNDERWOOD.

Portable Fire-Engine.

No. 209,202. **Patented Oct. 22, 1878.**

Fig. 1.

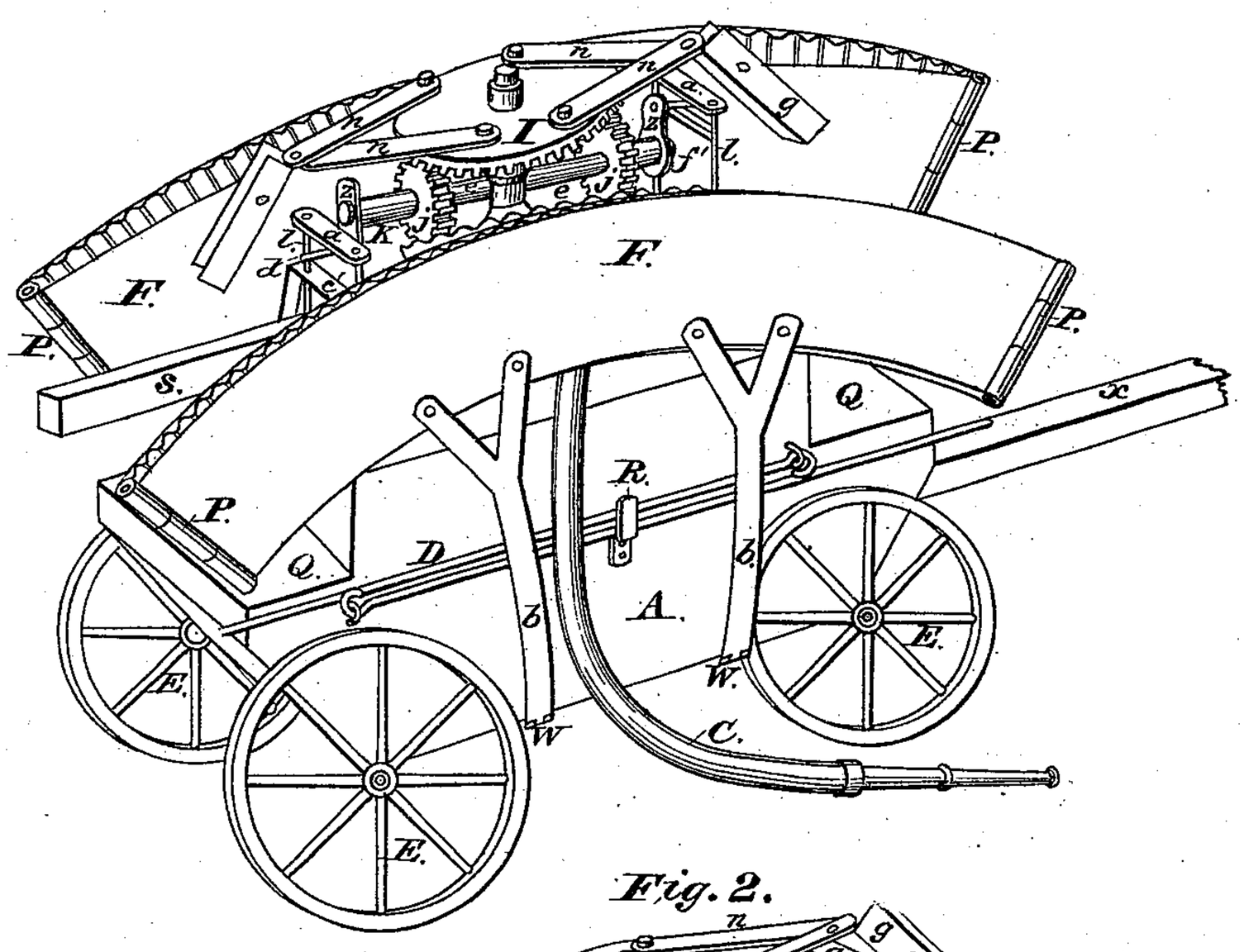
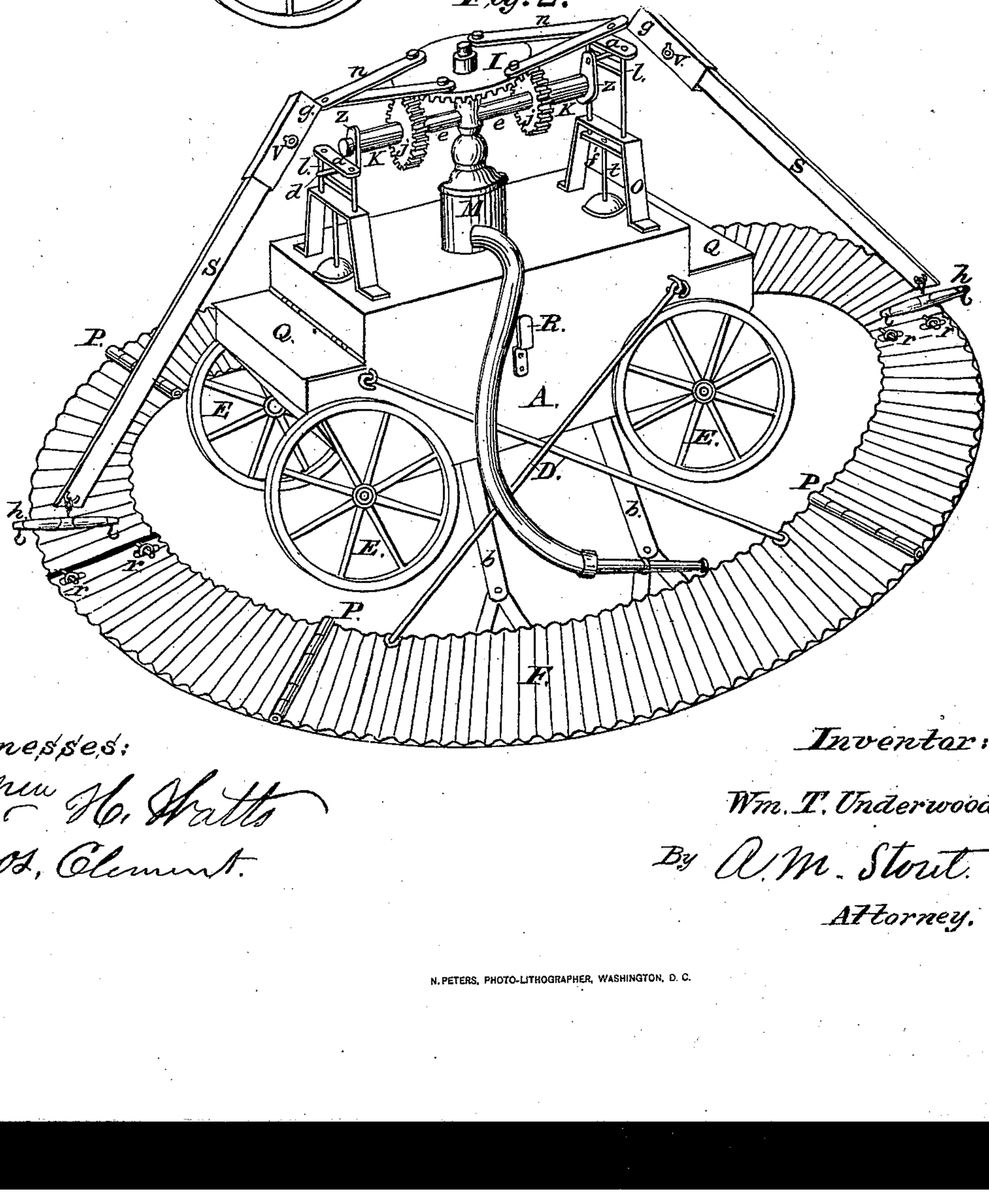


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM T. UNDERWOOD, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN PORTABLE FIRE-ENGINES.

Specification forming part of Letters Patent No. **209,202,** dated October 22, 1878; application filed October 4, 1878.

To all whom it may concern:

Be it known that I, WILLIAM T. UNDERWOOD, of the city of Louisville, county of Jefferson, and State of Kentucky, have invented certain Improvements in Portable Fire-Engines, of which the following is a specification:

The object of my invention, generally stated, is to provide for small towns and villages a cheap and efficient fire-engine, drawn on wheels by horses or other animals to the water-supply, and there operated by the power of the same animals.

My invention relates, in the first place, to providing the carriage for the water-pumps with a portable track made in two equal parts, each of which is made up of sections which are hinged together, and each half-circle of the track is permanently connected with a side of the carriage by means of hinged bars, so that when the carriage is being moved from place to place the two semicircular sections of the track can be folded up and packed upon it; but when at the water-supply the two parts can be unfolded and fastened together around the carriage, for the animals to walk upon while operating the water-pumps, the track being so connected with the body of the carriage and so braced as to secure firmness in both.

My invention relates, in the second place, to the combination of the levers to which the animals are hitched and the gear-wheels and shaft by means of which the power is transmitted to the water-pumps.

My said invention will be more fully described hereinafter with reference to the accompanying drawings, in which Figure 2 represents a perspective view of an engine embracing my improvement, the track being down upon the ground and ready for use; and Fig. 1, a like view of the same, the two semicircular parts of the track having been taken apart and folded and packed upon the carriage, ready for removal.

F indicates the portable track, and P the hinges by means of which the sub-sections of the same are connected, one-half or three sub-sections of the track being on each side of the carriage, and the two parts connected in the front and rear by means of eyes and removable bolts.

b b indicate the two hinged bars, branched at their outer ends and permanently attached to the track F, while their inner ends are hinged to the body A or the running-gear of the carriage by means of hinges W W.

D indicates brace-rods, which connect the body and the track by means of hooks and eyes, and keep the whole steady.

s indicates the levers to which the draft-animals are hitched, and are attached to the frame *n* by being inserted in the sockets *g* and fastened there by the pins *v*, and during removal of the machine one of them can be used for a tongue of the carriage.

A indicates the body and E the wheels of the carriage, and R the rests for the brace-rods D when not in use; and C, the water-pipe leading from the cylinder M of the pump; *e*, the shaft upon which the cog-wheels J revolve, and these cog-wheels, by means of their sleeves K, which encircle the shaft *e*, and their cranks Z and crank-pins *d*, operate the frames *a l f*, and give reciprocal vertical motion to the piston-rods *t* of the pumps within the body A whenever the wheels *j* are themselves set in motion by the large horizontal cog-wheel I, with which they are geared, it being turned by the power of the animals hitched to the levers *s*.

In both figures of the drawings a large box or body, A, is shown resting on the running-gear of the carriage, and between the near and off wheels; but that structure is no part of my invention, and there is no necessity for anything more than a proper frame for one or more water-pumps, and for the support of the two half-circular sections of the portable track F, and the machinery for operating the pumps may be located much lower than it is shown to be in the drawings, and so in like manner the two equal parts of the track may be carried in a much lower position, if necessary, to prevent the machine from being top-heavy during transportation. For instance, the hinge-bars *b* could be made with the hinge-joint midway of their lengths respectively, and their lower ends could be run into grooves on ways under the running-gear, and in that way the two sec-

tions of the track brought much lower than they appear in Fig. 1.

It is obvious that the power might be applied to the pumps by other mechanical means than those shown in the drawings; but those shown will effectively do the work required of them.

As to the material of the track and how the materials shall be combined, that is no part of this my invention. It may be made of a network of iron rods, and that covered with slats of wood or with other fibrous material.

My improvement may be easily and cheaply applied to such hand-engines as have heretofore been in use, and the engine could be drawn and driven by men in the absence of animals.

The track and carriage being firmly fastened together, one could not be moved without moving the other, and the feet of the animals would have a tendency to drive the track in one direction, while the force of their draft would move the carriage in an opposite direction, and so the two forces would counteract each other and the whole would remain stationary, and from this results the great value of the portable track.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The portable track F, in two parts, each provided with hinges P, so that it can be folded together, and the hinge-bars *b*, by means of which the track is permanently connected with the carriage, and in its folded condition raised upon or against the carriage for transportation, substantially as shown and described.

2. The combination of the levers *s*, the horizontal cog-wheel I, the two vertical cog-wheels *j*, having sleeves *k*, cranks Z, pins *d*, and the frames *a l f*, and the shaft *e*, as mechanical means adapted to transmit the power from the animals to the piston-rods *t*, substantially as described and set forth.

WM. T. UNDERWOOD.

Witnesses:

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