

W. S. FINNEY.
STEAM-ENGINE FRAME.

No. 170,248.

Patented Nov. 23, 1875.

FIG. I.

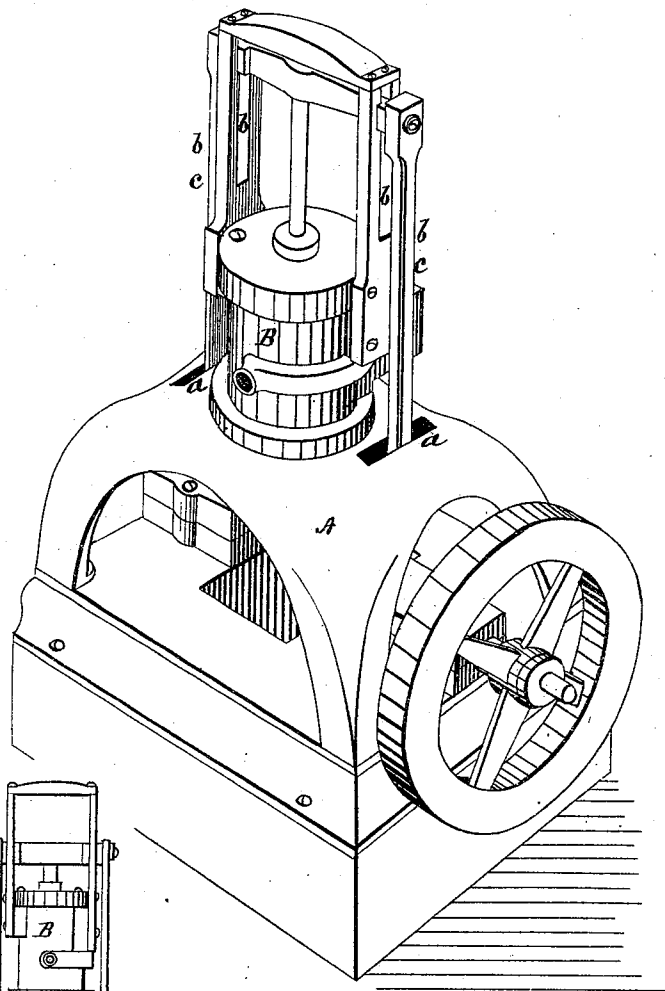


FIG. III.

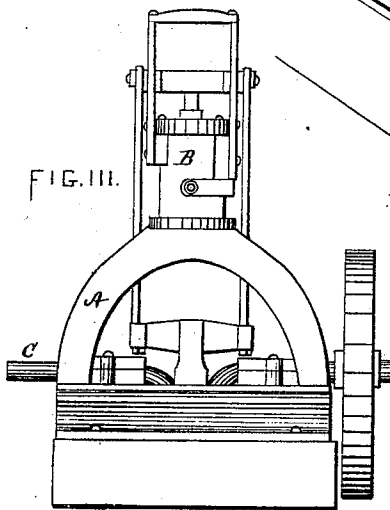
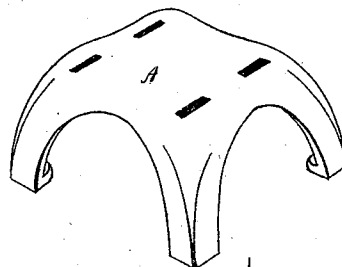


FIG. II.



WITNESSES.

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IMPROVEMENT IN STEAM-ENGINE FRAMES.

Specification forming part of Letters Patent No. **170,248**, dated November 23, 1875; application filed May 25, 1875.

To all whom it may concern:

Be it known that I, WILLIAM S. FINNEY, of the city of Harrisburg, county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Engine Frames, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings and the letters of reference marked thereon, said drawings making a part of this specification, in which—

Figure 1 is a perspective view of my improved engine-frame combined with an ordinary vertical engine. Fig. 2 is a perspective view of my improved engine-frame separate from the engine. Fig. 3 is a front elevation.

My invention relates to a class of engines known as upright or vertical engines; and consists in constructing the supporting-frame for the engine in one entire piece of casting, and giving the same the form of a compound or quadruple arch.

In order to enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A represents the engine-frame, constructed of one piece of casting, forming a quadruple arch, as shown in Fig. 2. The juncture of the four arches at the corners provide supporting-columns of great stability, with but a moderate consumption of material. The crowns of the several arches, uniting, produce a continuous shell, spheroidal in form. The apex is flattened to form a base, upon which is mounted the cylinder of the engine B. This is of ordinary construction, and is provided with a cross-head that is attached to the top of the piston-rod, moving in the vertical guides *b b*. To the ends of this cross-head are attached the side or connecting rods *c c*. Said rods work through the slots *a a*, that are cut or formed in the spheroidal crown, and are secured to the cross-tail lying beneath the arched frame. From the center of said cross-tail, considered lengthwise, a short rod or bar projects downward at right angles thereto, and serves to connect the same with the double crank-shaft C.

The side rods *c c*, cross-tail, and short connecting-rod form, together, a great forked connecting-rod, the upper end of which is attached to the cross-head, and the lower to the crank.

Upon inspection of the drawings it will be noticed that the columns formed by the junction of the four arches diverge at their feet or terminations, so that each column is an inclined brace, right-angular in cross-section.

It is evident from the foregoing description that my method and form of constructing engine-frames secures great stability, totally counteracting the wearing tendency common to engines of this class; also, that a remarkable economy in the consumption of material is effected, as well as a great reduction in the amount of labor required to produce an effective working engine.

By a slight modification of the device it may be constructed to accommodate two cylinders, both working off of the same shaft, without departing from the spirit of my invention, as is represented in Fig. 2.

I am aware that upright or vertical engines have been placed on tables supported by legs; but these tables have been flat on top, and therefore more liable to wear, and less able to stand the strain than my quadruple-arched frame. These flat tables also allowed oil and dirt to collect and accumulate around the engine, while my arched form allows everything to pass off, and the engine-frame is kept clean and free from extraneous matter.

Having thus described my invention, what I desire to secure by Letters Patent of the United States is—

In combination with a vertical engine, the frame A, constructed, as described, in the form of a quadruple arch, with the slots *a a* formed in crowns of two opposite arches, substantially as and for the purpose set forth.

W. S. FINNEY. [L. S.]

Witnesses:

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CHAS. SNYDER.