No. 25,137. PATENTED AUG. 16, 1859.

J. J. PARKER.

STEAM SLIDE VALVE.

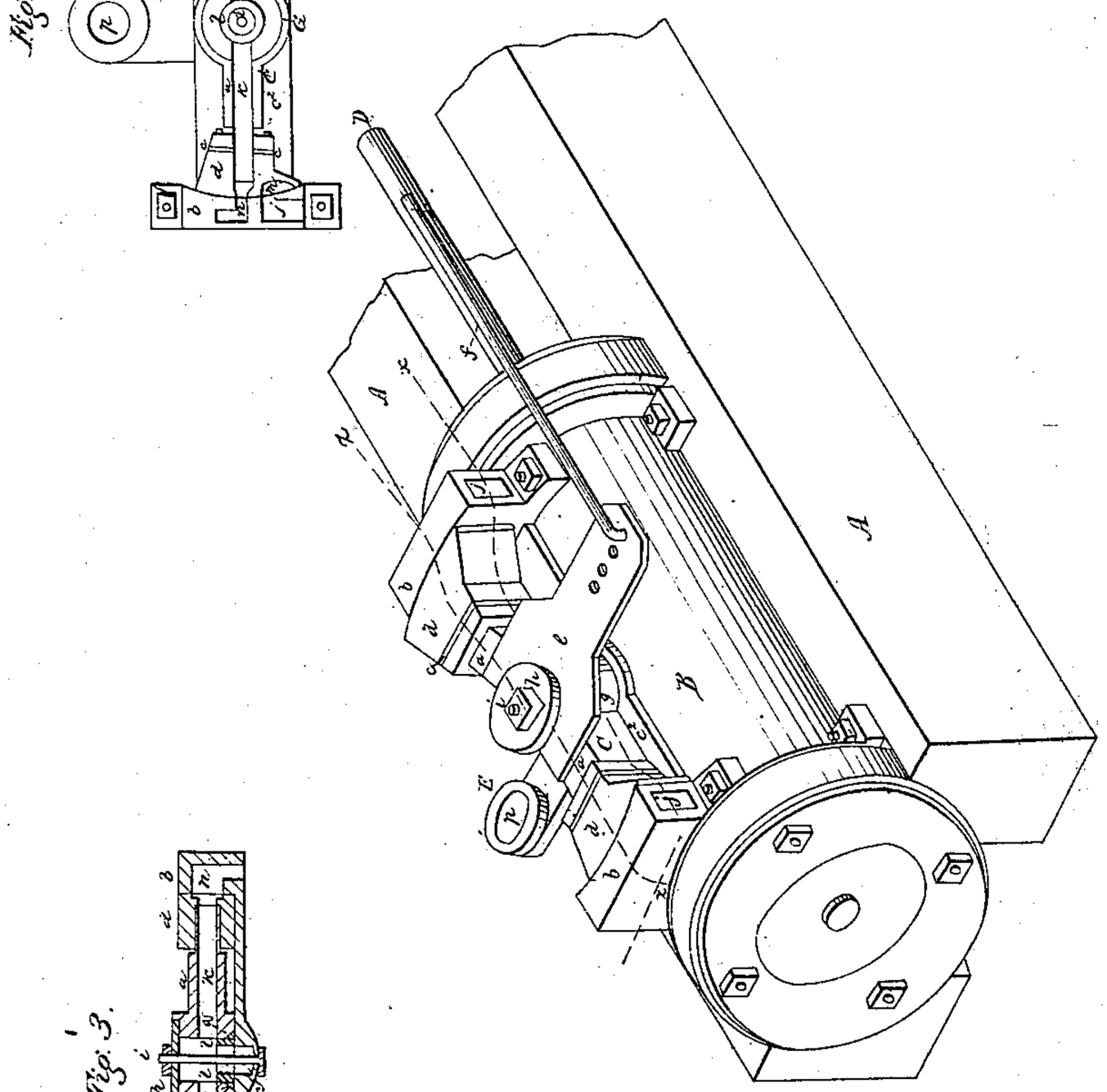

Fig. 1.

Fig. 2.

Fig. 3.

Witnesses.

A Wiley

W B Mason

Inventor.

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UNITED STATES PATENT OFFICE.

J. J. PARKER, OF MARIETTA, OHIO.

STEAM SLIDE-VALVE.

Specification of Letters Patent No. 25,137, dated August 16, 1859.

To all whom it may concern:

Be it known that I, J. J. PARKER, of Marietta, in the county of Washington and State of Ohio, have invented a new and Improved Slide-Valve for Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a horizontal cylinder with my improved valve attached; Fig. 2 is a horizontal section of the side pipe, on line *x*, *x*, of Fig. 1; and Fig. 3 is a vertical section of the side pipe, valves and valve seats, on line *z*, *z*, of Fig. 1.

The same parts are marked by the same letters in all the figures.

The nature of my invention consists in placing the slide valves loosely on the hollow arms of the side pipe, and giving to the valves a contracted opening, so that they shall be forced against the valve seats by the pressure of the steam, in the manner hereinafter more particularly described and shown.

In the drawings, A marks. the timber frame of the engine; B, the cylinder; C, the side pipe; D, the piston rod; E, the throttle valve or main steam pipe; C^2, the bearing on which the side pipe, C, rests and moves.

a marks the hollow arms of the side pipe; *b*, the valve seats; *c*, the packing between the valves and side pipe; *d*, the valves placed on cylindrical ends of hollow arms *a; e*, the rock arm; *f*, the cam or eccentric rod, by which the rock arm is worked; *g*, the hub of the side pipe; *h*, the cap of the same; *i*, a bolt, passing up from the bearing C^2, through the hub and cap of side pipe; *j*, the exhaust openings from valve seats; *k*, steam passage from hub of side pipe, through arms *a*, to the valves *d; l*, hollow axis of side pipe; *m*, exhaust openings in the valves; *n*, the supply openings in valve seats; *p*, openings to side pipe from throttle valve pipe.

On the cylinder, B, is placed the bearing plate C^2, to which, at either end, are attached the valve seats *b*. Under the center of the bearing plate C^2, the steam pipe *p*, Fig. 3, is received, the plate being perforated to allow the steam to pass up through *p* into the hollow axis of the side pipe. The hub of the side pipe rests on the upper surface of plate C^2, and fits upon a conical hollow rim, or axle, on which it has vibratory play. A bolt, *i*, passes up from the steam pipe, through the cap of the side pipe, and receives a nut which holds the cap and the hub in place. The arms of the side pipe are hollow, and, their ends are cylindrical, as shown, and receive the valves, *d*, which fit upon them so loosely as to have both vibratory and longitudinal play. Between the valves and the shoulder of the side pipe, a plate is interposed, as seen in Figs. 1 and 2, and an elastic packing in placed between this plate and the valve, to keep the valve in close contact with the seat. The supply openings from the valves, are of less diameter than the passage, *k*, through which the steam flows to them; and the result of this construction is that the steam pressure coöperates with the packing to keep the valves in close contact with the valve seats. The valves move in arcs of circles; and the line of contact between them and their seats, is an arc of a circle. The form of the valves and seats is clearly shown in the drawings. The side pipe is moved by means of the rock arm *e*, which receives motion from the rod *f*, which may be attached to an eccentric, or be driven in any convenient way.

In the operation of this valve, the steam passes into the side pipe, through its center or hub, and enters one end of the cylinder through supply opening *n*, while the exhaust takes place from the other end of the cylinder, through the openings, *m*, *j*, as seen in Fig. 2.

Having thus described the construction and operation of my improved slide valve, what I claim, and desire to secure by Letters Patent, is—

Placing the valves loosely on the hollow arms of the side pipe, and contracting the supply openings from the valves, substantially in the manner described, for the purpose of employing the pressure of the steam to keep the valves in contact with their seats, as specified.

J. J. PARKER.

Witnesses:

W. B. MASON,

ARTHUR WILEY.