F. W. CLARK.

Improvement in Toy Steam-Locomotives.

No. 128,018. Patented June 18, 1872.

Fig. 1

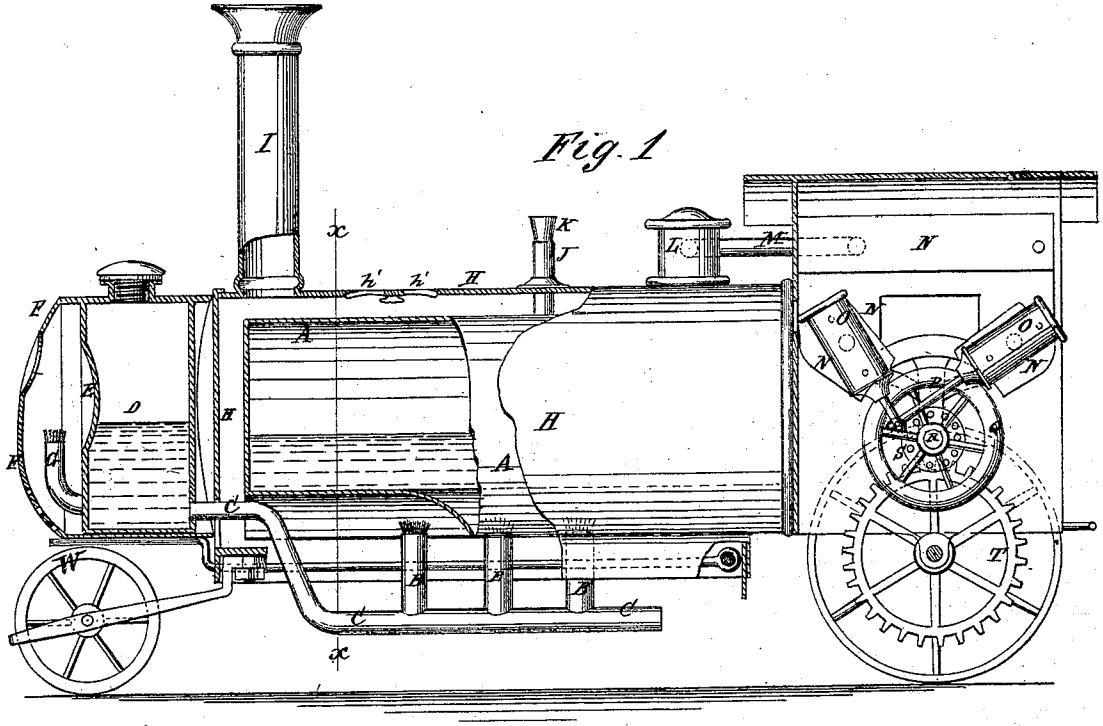


Fig. 2

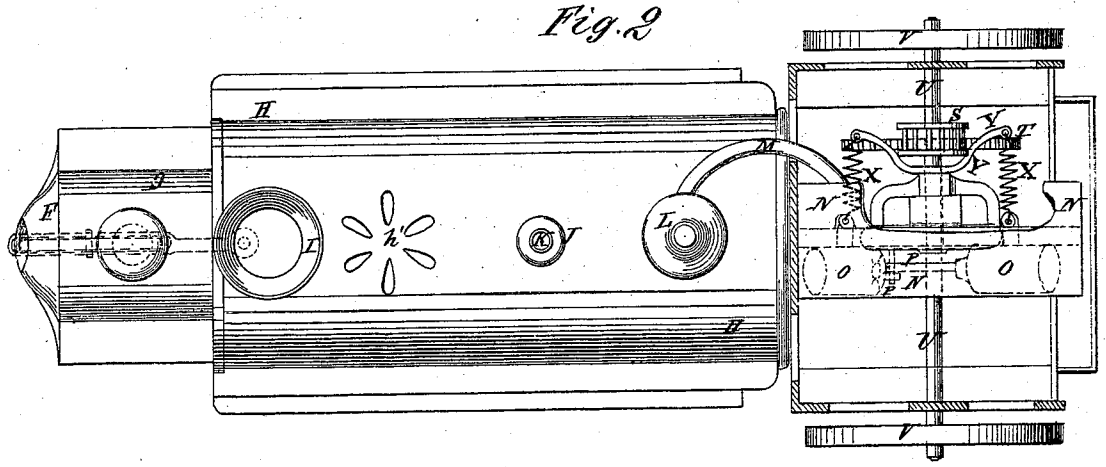
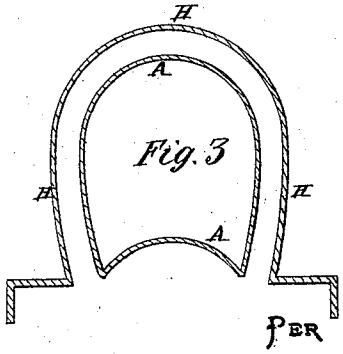


Fig. 3



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UNITED STATES PATENT OFFICE.

FRANCIS W. CLARK, OF NEW YORK, N. Y.

IMPROVEMENT IN TOY STEAM-LOCOMOTIVES.

Specification forming part of Letters Patent No. 128,018, dated June 18, 1872.

Specification describing a new and useful Improvement in Toy Steam-Locomotive, invented by FRANCIS W. CLARK, of the city, county, and State of New York.

Figure 1 is a side view of my improved toy steam-locomotive, partly in section to show the construction. Fig. 2 is a top view of the same, the cover of the engine-room being removed and part of the steam-reservoir being broken away to show the construction. Fig. 3 is a cross-section of the boiler and its cover or jacket taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved toy steam-locomotive which will run for a considerable length of time, shall have sufficient power to propel it upon carpets or other uneven or resisting surfaces, and which shall, at the same time, be simple in construction and inexpensive in manufacture, enabling it to be put into market at a comparatively low price; and it consists in the construction and combination of the various parts of the toy, as hereinafter more fully described.

A is the boiler, the bottom of which is concaved, as shown in Figs. 1 and 3, to present a larger surface to the flames of the lamps, and to slightly confine the heat from said lamps, and thus obtain a better effect. B is a series of wick-tubes, which supply the heat, and which open into the tube C, which extends forward, and its forward end is connected with the reservoir D, placed at the forward end of the boiler A, and in which the alcohol or other burning liquid is contained. The upper part of the forward side of the reservoir D is concaved to form a head-light reflector, E, and is covered with a case, F, forming a space or chamber to receive the wick-tube G, connected with the reservoir D. The case F has a hole formed through its upper part directly opposite the reflector E to allow the light to shine through, and smaller holes in its lower part to admit air to support combustion. The boiler A is covered with a case or jacket, H, forming a narrow space all around the front and sides of said boiler, through which the heated products of combustion from the burners or wick-tubes B circulate before escaping through the smoke-stack I and through the openings *h'* in the upper part of the case H. J is a tube, leading from the upper part of the boiler A out through the top of the case H, and closed at its upper end with a cork or other stopper, K, which, should the steam pressure become too great, will be blown out, allowing the steam to escape, thus guarding against the possibility of explosion. The tube J also serves as an inlet-tube for supplying the boiler A with water. L is the steam chest or dome, from which the steam passes through the pipe M, through which it passes to the receiver N, and thence into the oscillating cylinders O, through the inlet-ports in the lower part of the steam-receiver. The exhaust-ports are also formed through the lower part of said receiver N. The cylinders O are set at an angle with each other, and the ends of their piston-rods P are pivoted to the crank-pin of the fly-wheel Q. The crank and fly-wheel Q is attached to a short shaft, R, to which is attached a small gear-wheel, S, into the teeth of which mesh the teeth of the larger gear-wheel T, attached to the axle U, to the ends of which the wheels V are attached that support the rear part of the locomotive. The forward part of the locomotive is supported by a caster-wheel, W, which may be adjusted to cause the locomotive to run forward in a straight line, or to cause it to run upon the arc of any desired circle. The cylinders are pivoted to their supports where they are secured in place by springs X, attached to the ends of the spring Y, so that should the steam pressure become too great it will push the cylinders O back from their supports and thus interrupt the steam-passage, thus forming another guard against explosion.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of jacketed boiler A H, tubes B C, reservoir D, and smoke-stack I, arranged as and for the purpose described.

2. The combination, with boiler A having dome L, of the pipe M and receiver N, the

driving-cylinders O O set at an angle to each other, and the piston-rods P pivoted to crank-pin of the fly-wheel Q, as and for the purpose described.

3. The arrangement, in a toy steam-locomotive, of the wick-tubes or burners B, tube C, reservoir D, case F, and wick-tube or burner G, with the forward end and concave bottom of the boiler A, substantially as herein shown and described, and for the purpose set forth.

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