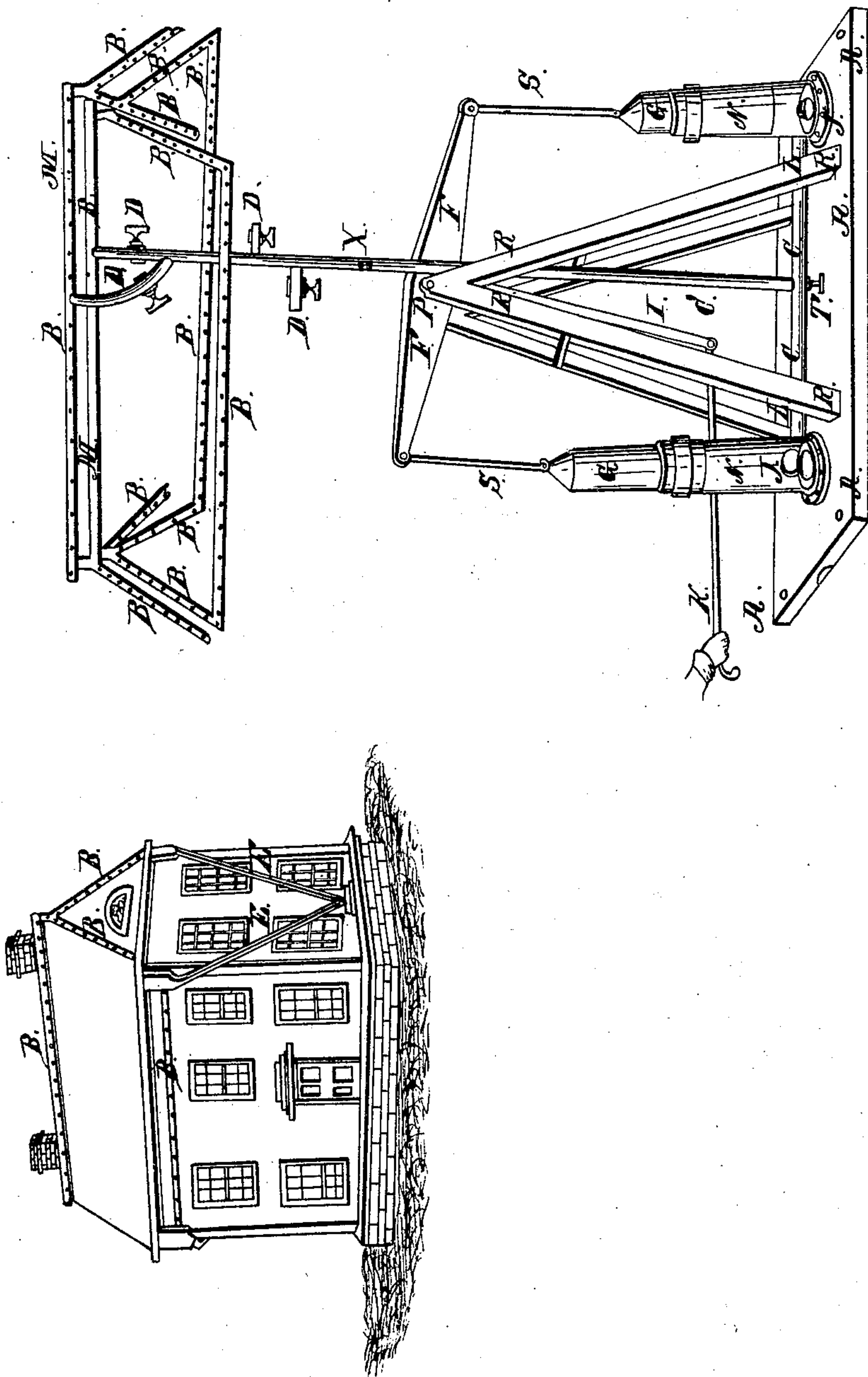


I. Lowell,

Rendering Buildings Fireproof.

No 1,489.

Patented Oct. 16, 1840.



UNITED STATES PATENT OFFICE.

ISAAC LOWELL, OF PENDLETON, NEW YORK.

IMPROVEMENT IN THE MODE OF SUPPLYING WATER IN BUILDINGS FOR THE PURPOSE OF EXTINGUISHING FIRES.

Specification forming part of Letters Patent No. 1,489, dated October 16, 1840.

To all whom it may concern:

Be it known that I, ISAAC LOWELL, of Pendleton, in the county of Niagara and State of New York, have invented a new and useful Machine or Apparatus for Preventing and Checking the Ravages of Fire in and upon Buildings; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in taking water from a reservoir, cistern, well, or from any other source and conducting it by pipes over, in, through, and upon any and every portion or section of a building, internally and externally, in such a way as that in a few minutes the whole surface externally and internally may be covered with water, and a constant flow of water kept up for any length of time by receiving the water back into the reservoir and using it over again and again, and all this to be effected by a machine which, for buildings of ordinary height, may be worked by one man. Two men can work a machine calculated for the highest building.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

It consists of a frame made of timber, as represented by A A A R R R R, in the drawing hereto attached, the size and construction of which will vary according to circumstances, being constructed in or over the cistern, reservoir, or fountain of water, which may be movable or permanent, according to circumstances, and which serves only as a support to the machine or engine. Next, there are two cylinders, which may be made of wood or metal, which in the drawing hereto attached are represented by the letters N N. These cylinders are to be hollow and of even bore, the length and size of which and the dimensions or size of the tubes or bore will vary according to circumstances. In cases where the reservoir is deep they will require to be longer. In ordinary cases and for common purposes the length of two or three feet, with a circumference, if they are made of wood, of three feet, if of metal, of two feet, and a tube of five or six inches in diameter will probably be sufficient; but these can be varied at pleasure to suit the building or purpose for which the

machine may be constructed. The lower or bottom ends of these cylinders are to be placed in the water, to the bottom ends of which are adapted valves opening inward and upward, which in the drawing are marked J J. To the bore or tube of the cylinders are fitted movable pistons closely fitting the internal surface of the tube, which act on the principle of the forcing-pump, and which in the drawing are marked G G. When one of these is raised, the valve adapted to the lower end of the cylinder rises and admits the water. When it descends, the weight of water closes the valve and prevents its being driven back into the reservoir. In the drawing the pistons are represented—one rising, the other descending—and the valves—one raised and the other closed—according as the piston is ascending or descending. To these pistons are to be attached rods, which in the drawing are represented by S S, by which the pistons are forced up and down. These rods are to be attached to the ends of a lever, which is represented in the drawing by F, and which resembles the lever or beam to which the rods or shafts of steam-engines are attached, such steam-engines as are usually used in steam-boats. This beam or lever plays or partly revolves on a revolving support or roller, which in the drawing is represented by P, the ends of which are seen in the frame A at O O. This roller is to be fastened or immovably attached to the lever F, so that when this revolves it may give full motion to the lever. To this roller and at a short distance from the lever is to be permanently attached a pendulum, which in the drawing is represented by I. This pendulum should be made of heavy materials, or a weight should be attached to the lower end to give power to its vibrations. It is to be moved by a handle or rod acting horizontally and moved by hand, which in the drawing is represented by K.

Toward the lower ends of the cylinders or pumps are to be made orifices into the tubes of the cylinders, with pipes or tubes fitted to such orifices and valves opening inward and upward. These pipes in the drawing are represented by C C, and the orifices with valves adapted to them by L L. After the union of these two pipes into one it may be

carried in any direction to any height or distance, according to circumstances, and orifices made at any section out of which to take water in large or small quantities, according to circumstances, as at D D in the figure or drawing. This pipe leads into the distributor, which in the drawing is represented by B. This is to be a tube perforated with holes, as M M M, and closed at each end, and is to be permanently fixed on the ridge-pole or saddle-board of the house. All the water which is thrown upon the roof of a building, or nearly all, may be received into the eaves-troughs, and by means of pipes reconducted to the cistern, as by the pipe E in the drawing.

When K is drawn or pushed horizontally, it causes P to revolve. The revolution of P causes the motion of F, the motion of F both the upward and downward motion of G. The upward motion of G causes the elevation of the valve J and the filling of the tube or cylinder N with water. The downward motion of G forces the water through the orifice L into the pipe C, and the valves admit the water, but will not permit its return. It is thence forced along the pipe or pipes to the distributor B, whence it is showered over the roof of the building. Cylinders or distributors similar to B, with perforations on one side and this side turned toward the wall, may be fixed under the eaves-troughs of a house or building, or against the top or upper part of the ceiling of any and every room or department in a building, and supplied by tubes, as at the sections D D in the drawing, and thus the whole surface, internal and external, kept constantly wet. These tubes may be fitted with stop-cocks, so that any one may be used in case of fire in one department, or all or any may be used at once, as occasion may require. After using the machine the water may be taken from the pipes by means of a faucet or water-cock, at T, and returned into the reservoir.

The construction and principles of this machine are such as require preparations to be made for its use at the time or after the building of a house, and is designed generally not for a movable but a permanent machine or ap-

paratus. There is, however, no difficulty in so constructing it as to detach the operative part of the machine and remove it on occasion and apply it to the fixed apparatus, consisting of the pipes, distributor, &c., fixed to any other building. For this purpose I design (and would now so apply for a patent) to construct the pipe C in the drawing so as to detach the same somewhere above the frame and below the section D, as at X, and by means of hose or leather pipes attach the operative part to the pipes on any other building by means of screw-caps or screw-joints, and in this way to make this machine operate upon the building for which it is intended at any distance, so that the operative part may be placed in a reservoir at any distance and force the water through the hose into the pipes, or in case of necessity any number of these may be brought into operation upon the same building, some in the way above described and others in the way that ordinary fire-engines are operated.

The simplicity of the machine and apparatus is such that the whole expense of one will be comparatively trifling compared with the expense of any machine now in use designed for the same purpose, and will bring it within the means of almost every person to have one permanently attached to his buildings. In villages and cities, the inventor believes, it will be found very valuable in preventing the spreading or extending of fires by keeping buildings constantly covered with water while any fire is raging or building burning in the immediate vicinity.

I claim as new—

The arranging of pipes along the roofs of houses, having apertures to admit of the water flowing out upon the roof for the purpose of extinguishing fires, the water being forced into said pipes by a double-acting force-pump, as described, or by any other means substantially the same, preventing, checking, or extinguishing fires consuming buildings.

ISAAC LOWELL.

Witnesses:

SAMUEL ROGERS,
LEWIS BESSAC.