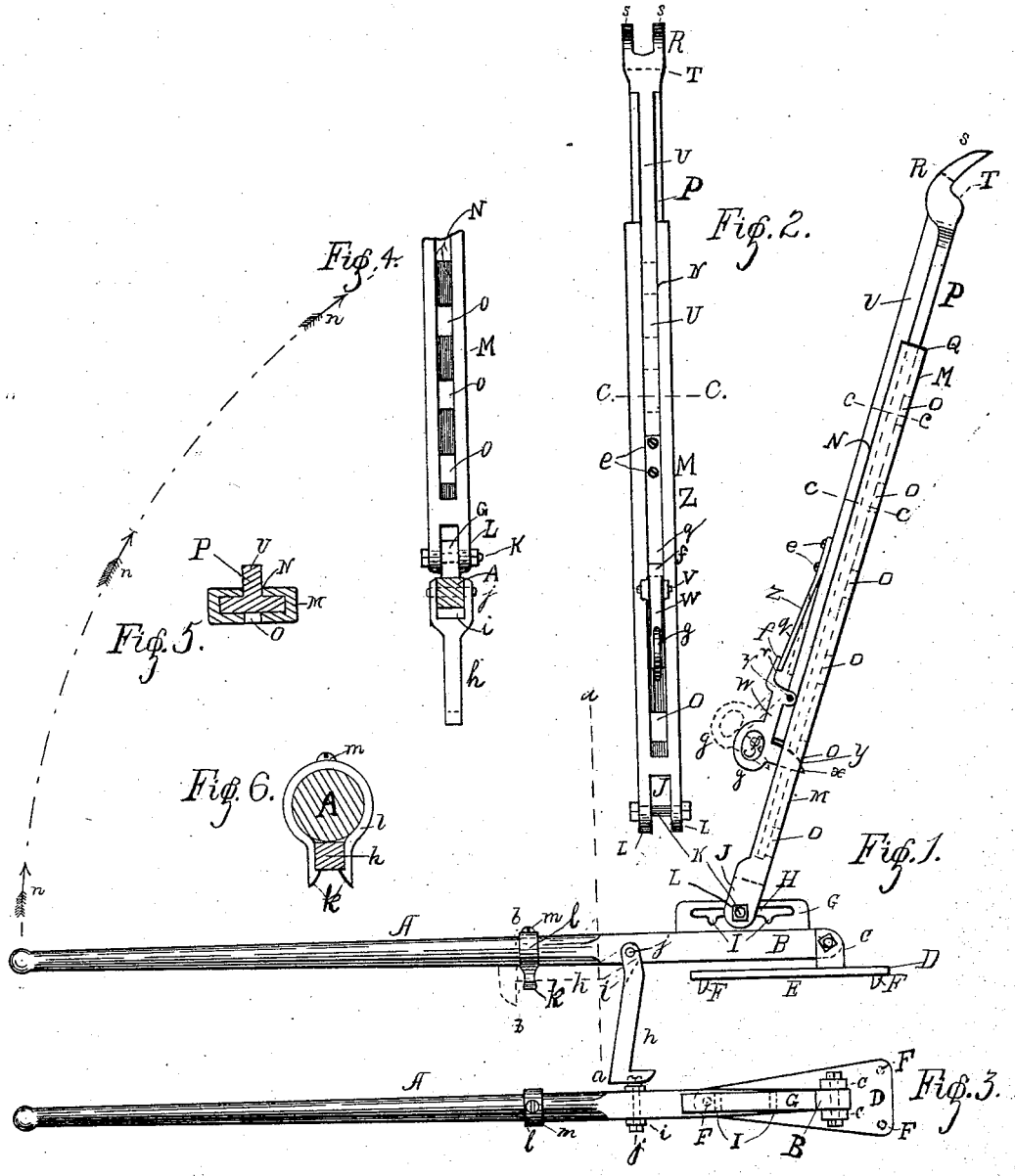
(No Model.)

D. H. BURKE.

DOOR OPENER FOR FIRE APPARATUS.

No. 522,315. Patented July 3, 1894.



Witnesses:
F. Bradbury.
C. C. Carlsen

Inventor:
David H. Burke
By A. M. Carlsen
his Attorney.

UNITED STATES PATENT OFFICE.

DAVID H. BURKE, OF ST. PAUL, MINNESOTA.

DOOR-OPENER FOR FIRE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 522,315, dated July 3, 1894.

Application filed May 4, 1893. Serial No. 473,044. (No model.)

To all whom it may concern:

Be it known that I, DAVID H. BURKE, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Door-Openers for Fire Apparatuses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in door openers, of the class used in connection with fire apparatuses for forcing open the doors of burning buildings.

The object of my invention is to produce a very powerful adjustable and extensible door opener of such construction that it will take a good hold on most any kind of ground or floor that may be in front of the door, and which may also be used for opening grates and man-holes in the sidewalks for gaining entrance to the cellar story of a burning building. I attain this object by the novel construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1, is a side view of my complete device shown as in the position it is placed when it is to be used. Fig. 2, is a rear view of the adjustable pushing bar which is shown in a leaning upright position in Fig. 1. Fig. 3, is a top plan view of the main lever and all other parts of Fig. 1, that are not shown in Fig. 2. Fig. 4, is a sectional rear view of Fig. 1, on the line *a*, *a*. Fig. 5 is a sectional top view on the line C, C, in Fig. 1 or 2. Fig. 6, is a sectional rear view on the line *b*, *b*, in Fig. 1.

Referring to the different parts in the drawings by letters of reference, A, designates a hand lever fulcrumed at its front end B, between two lugs C, projecting upward from a plate or shoe D, which is a strong elongated metallic plate preferably of a three-cornered pattern. Near each corner it is provided at its under side E, with a sharp, strong, slightly rearwardly bent steel tooth or prong F, adapted to be pressed into the ground or floor but especially stone side-walks near the door to be opened to prevent the plate D, from slipping.

The lever A, is provided at the upper side of its front end B, with an upwardly projecting rib G, in which is a slot H, having several (in the present instance only two) notches I, at its lower side. J, is a fork fitting loosely over the rib G, of the hand lever A.

K, is a bolt passed through the lips L, L, of the fork and the notched slot H, of the intervening rib G. The fork J, forms the bottom end of a flattened tube M, in the rear side of which is cut a slot N, the entire length of the pipe, and the front side of the pipe is provided with elongated holes or apertures O.

P, is a bar of T-shaped iron or preferably steel sliding in and extending beyond the top end of tube M, where its end is formed into a fork as R, having the sharp prongs S, at the base of which is formed a shoulder T, by which to push against the door and to prevent the prongs S, from going too far into or through the door to be forced open. The central or back rib U, of the T-shaped extensible bar P, projects rearwardly through and beyond the slot N, where I pivot to it at V, a dog W, having a tooth X, engaging the lower ends of the notches, or in the present instance apertures O; the front side Y, of the tooth X, passes close by the end of the bar P, and near its point is slanted off, so that in sliding the bar P, upward to extend it, the tooth of the dog disengages itself from the holes O, as it passes them.

Z, is a flat spring secured at one end by screws *e*, to the rib U, of the sliding bar P, and with its other and outwardly bent end *q*, engages the inner side *r*, of the projection *f*, of the dog W, thereby tending at all times to hold the tooth X, of the dog W, engaged with the holes O, in the hollow bar M.

When the bar section P, is to be retracted into the hollow bar section M, the operator takes hold of the finger hold *g*, with which the dog is provided, and holds the dog against the resistance of the spring Z, out of engagement with the holes O, until the desired hole is reached and then releases his hold of it. *h*, is a hook bifurcated at its upper end *i*, slipped over the lever A, and pivoted to it by a bolt *j*, (as best shown in Fig. 4;) when this

hook is not in use it is folded up to the under side of the lever A, (as shown in dotted lines in Fig. 1,) and retained there by two spring hooks *k*, *k*, which in the present instance are formed of the ends of a spring clasp *l*, almost encircling the lever A, and secured to it by a screw *m*.

In operation, when a grate or the cover of a coal hole in a sidewalk is to be forced open, the lever A, is placed about horizontal, as in Fig. 1, the hook *h*, engaged with the bars of the grate or the hand hold of the cover, as the case may be, and the free end of the lever A, is swung upward as indicated by the arrows *n*, *n*. If a door is to be forced open the plate or shoe D, is placed on the ground at such a distance from the door that when the fork R, engages the lock, knob-spindle, bolthead or other selected resisting point of the door, the bar M, P, will assume an inclined position about as shown in Fig. 1, and the lever A, is raised. If the resistance is very great as in opening iron doors, or other heavy doors, the bolt K, is slipped forward into the notch I, that is nearest to the fulcrumed end of the lever, thereby giving the operators more purchase. For ordinary use the bolt K, is left in one of the other notches I, so as to give less force and more motion to the bar M, P.

It will thus be seen that I combine in one handy strong tool a coal hole opener, a grate opener and a door opener which may be adjusted so as to give more or less force and more or less motion according as the case may require. The T-shaped form of the extension bar P, enables me to combine strength with lightness in the tool, and the shoe D, with pegs at its under side prevents the end of the operating lever from slipping or working down into the ground.

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

1. In a door opener of the class described, the combination of the extensible push bar M, P, having the forked bottom end J, with the hand lever A, having the rib G, sliding in said fork and provided with the notched slot H, and the bolt or pin K, passed through the arms of the fork and the notched slot, substantially as shown and described and for the purpose set forth.

2. In a device of the class described and pivoted at one end to a hand lever, the extensible push bar consisting of the hollow bar M, having at one side the apertures or holes O, along its body and at the opposite side a slot as N, with the T-shaped bar P, sliding in the hollow bar and having one of its ribs extending out through the slot N, the spring-held dog W, pivoted to the lower end of the rib and engaging the apertures O, in the hollow bar, said dog being slanted off so that it disengages itself and plays over the apertures O, when the bar is being extended, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID H. BURKE.

Witnesses:
THOS. P. BRENNAN,
A. M. CARLSEN.