No. 885,720. PATENTED APR. 28, 1908.

E. H. CALLAWAY.

FIRING TOOL FOR BRICK KILN FURNACES.

APPLICATION FILED MAY 8, 1907.

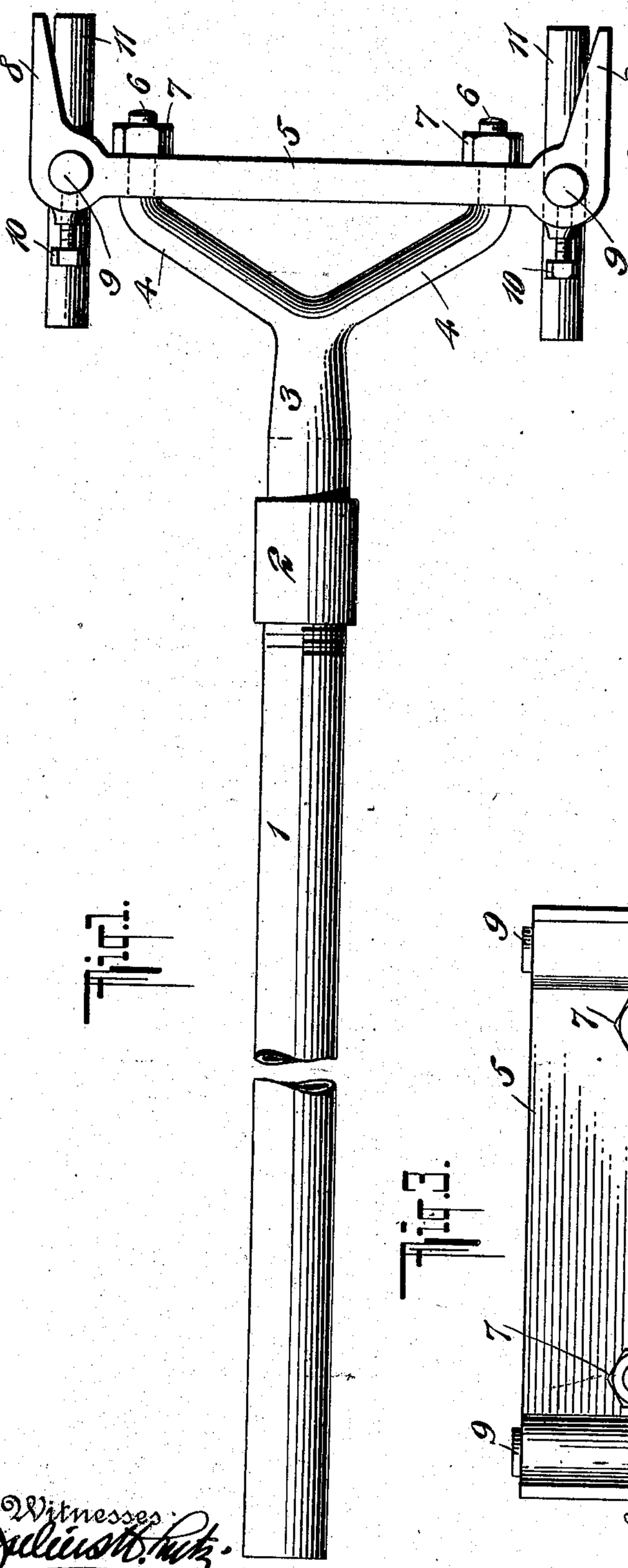

Fig. 1.

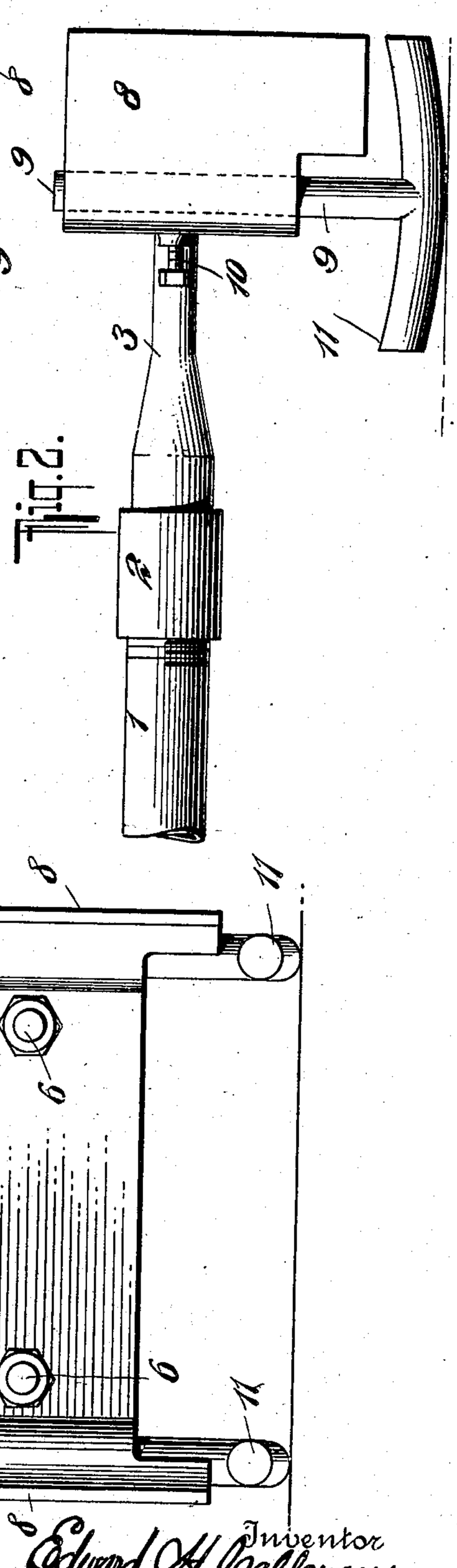

Fig. 2.

Fig. 3.

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FIRING-TOOL FOR BRICK-KILN FURNACES.

No. 885,720. Specification of Letters Patent. Patented April 28, 1908.

Application filed May 8, 1907. Serial No. 372,526.

To all whom it may concern:

Be it known that I, EDWARD H. CALLAWAY, a citizen of the United States of America, and a resident of Westfield, county of Union, State of New Jersey, have invented certain new and useful Improvements in Firing-Tools for Brick-Kiln Furnaces, of which the following is a specification.

My invention refers to a firing tool for the grates of furnaces, and is primarily adapted to brick-kiln furnaces, though this is not the only use, and I reserve the liberty of employing it wherever found serviceable.

The object of the invention is to provide a tool or implement which may be more serviceable than the pokers or similar devices now in use, and which can be effectively utilized for spreading coal or other fuel over the surface of a grate with a distribution which will be even and satisfactory to the end that combustion may be promoted and the furnace enabled to perform its function in the best possible manner.

Not only is the tool primarily adapted for use with brick-kiln furnaces, but I have devised it to be employed in connection with the particular type of furnace shown and described in my co-pending application for Letters Patent on brick-kiln furnace, filed May 8, 1907, Serial No. 372,527 wherein the grate is comparatively narrow, and is customarily furnished with parallel flanges at the edges. With a grate of this kind, the present firing tool combines neatly for operation, for its runners slide between the guide flanges and the scraper bar pushes the fuel forward and distributes it over the grate. This special brick-kiln furnace of my co-pending application is, however, only one of the many kinds of furnaces with which the tool is adapted to serve, and I am not to be restricted to any kind of grate or any dimensions for the tool or the grate.

The present invention, therefore, consists essentially in the construction, arrangement and combination of parts, substantially as will be hereinafter described and claimed.

In the annexed drawing, illustrating my invention, Figure 1 is a plan view of my improved firing tool for brick-kiln furnaces. Fig. 2 is a partial side elevation. Fig. 3 is a front elevation.

Similar characters of reference designate corresponding parts throughout the different figures of the drawing.

1 denotes the handle of the implement, the same preferably consisting of a length of piping, although any suitable handle of metal or other substance may be employed. At the working end of the tool, there is a section 3 which is coupled to the handle 1 by means of a screw-threaded union 2, and said section 3 bifurcates or forks to form the prongs 4, 4, the ends of which are bent parallel and screw-threaded at 6, the said screw-threaded parts 6 being furnished with nuts 7 and passing through openings in the bar or plate 5.

The bar 5 may be termed a scraper bar, and it occupies a position at right-angles to the direction of the handle 1 and transversely across the working end of the device, so that t may engage the fuel which is to be spread about upon the grate. The width of the scraper bar 5 may vary, but will ordinarily be sufficient, as indicated in Figs. 2 and 3, to afford the necessary surface to act upon the fuel. The scraper 5 is provided at each end with a forwardly-extending angular wing 8 which digs into the mass of fuel and breaks it up so that it can be more easily distributed. These angular wings 8 are preferably somewhat wider than the bar 5, dropping below the lower edge of the latter, as shown in Figs. 2 and 3, so as to afford downwardly projecting cutters to cleave into and disintegrate the coal or other substance.

The ends of the bar 5 are provided with vertical passages to receive the vertical rods 9 which carry on their lower ends curved runners that are made integral with the ends of rods 9, or are securely fastened thereto. The two runners 11 are parallel to each other, and are adapted to slide upon the surface of the grate. The rods 9 are held in place in the passages in the scraper bar 5 by means of set screws 10 which can be tightened or loosened for enabling the runners to be adjusted relatively to the scraper.

The forward ends 6 of the prongs 4, as already explained, project through openings in the scraper bar 5, and are furnished with shoulders that abut against the bar 5 on the one side, while the nuts 7 on the opposite side of the bar are screwed up against the bar on the screw-threaded portions 6, and thus the bar 5 and the forks are securely fastened to-

gether. When the device is used with a grate having guide ledges thereon, the runners 11 will easily operate between said ledges and slide back and forth upon the top surface of the grate under the manipulation of the device by the user who grasps the handle and pushes the tool back and forth. During each movement, the angular wings 8 exercise a cutting or breaking action on the mass of fuel, and the scraper pushes against the fuel, propelling it forward upon the grate and causing it to be distributed in the desired way.

Various changes in the precise construction, combination and relative location of the various features may be made without departing from the invention.

The forwardly projecting wings 8 have their inner opposing faces inclined outwardly, as clearly indicated in Fig. 1, so that the distance between the outer cutting edges of these wings 8 is somewhat longer than it is between the faces thereof further back or nearer to the scraper bar 5. The object of thus inclining the inner faces of wings 8 is to exercise such an action on the fuel as will press it towards the center or crowd it together more or less. Thus when the scraper 5 pushes against the fuel, not only will these angular wings 8 exercise a cutting or breaking action on the mass, but will also crowd it toward the center of the grate, or push the side portions toward the middle, thus more thoroughly disintegrating it and placing it where it will be most thoroughly ignited.

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

1. The combination of a handle, a forked front part therefor, a transverse scraper secured to the fork, said scraper having terminal vanes which project forward and also below the scraper, and runner means adjustably supported on the scraper.

2. The combination of a handle, a transverse scraper carried thereby, said scraper having projecting wings whose opposing faces are outwardly inclined, and runner means consisting of curved slides adjustably supported on the scraper.

3. The combination of a handle, a transverse scraper secured thereto, said scraper having projecting wings with inclined inner opposing faces, and sliding means at the forward end of the device for the purpose of enabling it to move easily over the surface on which it acts, said sliding means having rods entering passages in the scraper, and means for holding said rods in place so that the runners may be adjusted relatively to the scraper.

4. In a firing tool for furnaces, the combination with a handle, of a transverse scraper secured thereto, said scraper having terminal vanes which project forwardly of the scraper, and curved runners arranged below the scraper and having rods secured in passages in the scraper.

5. In a firing tool for furnaces, the combination of a handle having a forked end, a transverse scraper secured to the fork, said scraper having terminal vanes which project forwardly, and curved runners having upwardly-extending rods secured in passages in the scraper, and set screws bearing against said rods, so that the runners may be adjusted relatively to the scraper.

6. In a firing tool for furnaces, the combination with a handle, of a scraper having forwardly projecting wings, having inclined inner opposing faces, together with sliding means for the tool.

7. In a firing tool for furnaces, the combination with a handle, of a scraper having forwardly projecting wings, and runners consisting of curved slides carried by the device at points substantially below the scraper.

8. In a firing tool for furnaces and the like, the combination with a handle, of a scraper having forwardly projecting wings with inclined inner opposing faces, and runners supported below the scraper.

9. In a firing tool for furnaces and the like, the combination with a handle, of a scraper having forwardly projecting wings with inclined inner opposing faces, and runners supported below the scraper, said runners consisting of curved pieces having rods connected to the scraper.

10. In a firing tool for furnaces, the combination of a handle having a forked end, a transverse scraper secured to the forked end and having forwardly projecting wings provided with inclined inner opposing faces, and runners consisting of curved slides supported at points below the scraper.

Signed at New York city, this 27th day of April, 1907.

EDWARD H. CALLAWAY.

Witnesses:

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