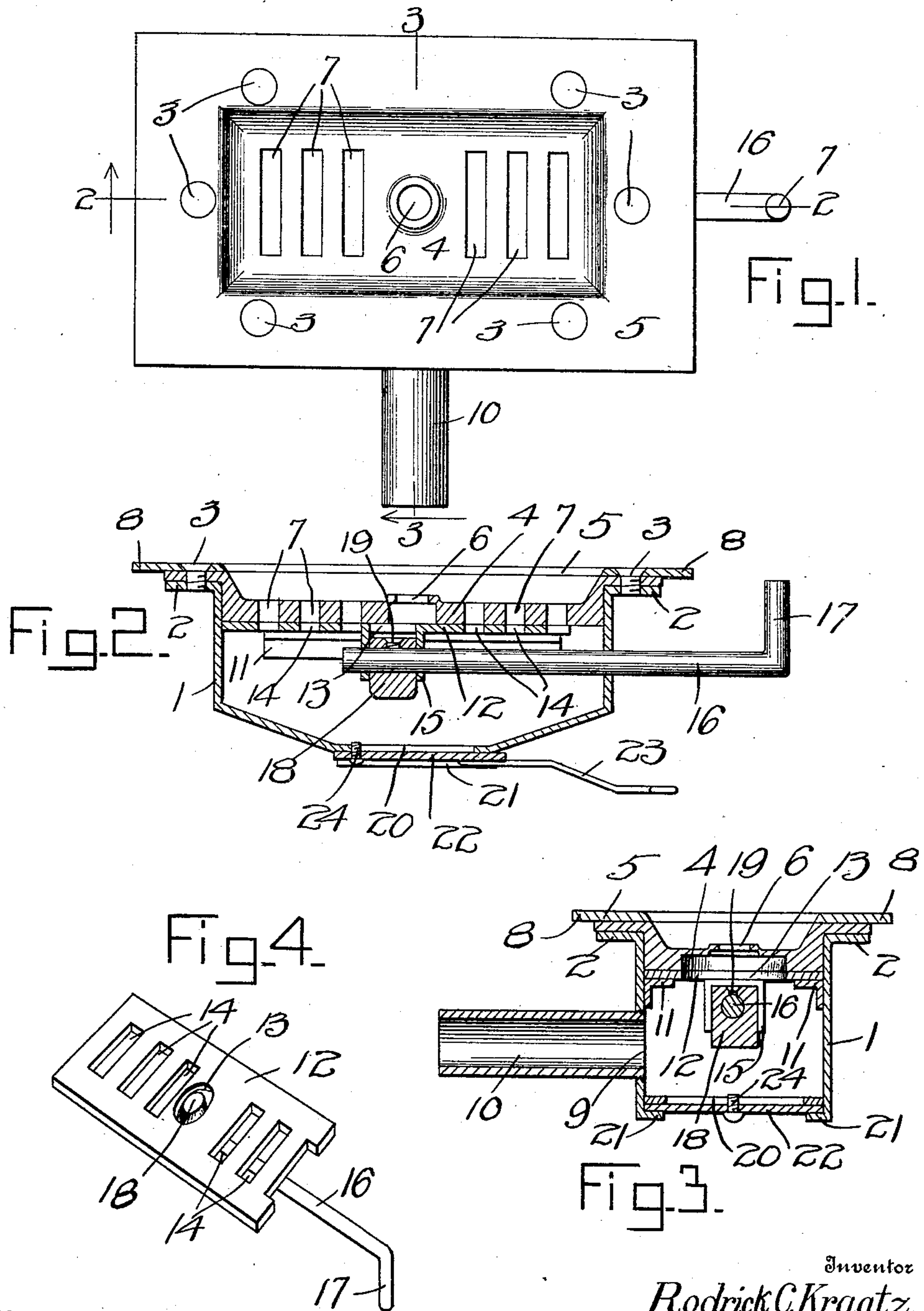


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 TWYER IRON.
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912,314.

Patented Feb. 16, 1909.



Witnesses

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UNITED STATES PATENT OFFICE.

RODRICK C. KRAATZ, OF CARBONDALE, ILLINOIS.

TWYER-IRON.

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To all whom it may concern:

Be it known that I, RODRICK C. KRAATZ, a citizen of the United States, residing at Carbondale, in the county of Jackson and State of Illinois, have invented a new and useful Twyer-Iron; and I do hereby 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.

This invention relates to twyers for blacksmiths' forges and for other similar and analogous uses; and it has for its object to provide a device of this class of simple and improved construction in which the amount of air supplied to the fire shall be capable of perfect regulation as well as the direction or tendency of the draft or blast; in which the draft may be concentrated at a central point; and in which the parts comprising the device shall be conveniently accessible.

Further objects of the invention are to simplify and improve the construction and operation of this class of devices.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described and particularly pointed out in the claims.

In the drawings—Figure 1 is a top plan view of a twyer constructed in accordance with the invention. Fig. 2 is a vertical longitudinal sectional view taken on the plane indicated by line 2—2, in Fig. 1. Fig. 3 is a vertical transverse sectional view taken on the plane indicated by line 3—3, in Fig. 1. Fig. 4 is a perspective detail view of the draft regulating slide showing the clinker breaking attachment.

Corresponding parts in the several figures are denoted by like characters of reference.

The improved twyer comprises a box or casing 1, preferably of approximately rectangular shape and provided at its upper edge with laterally extending ears or lugs 2, which are perforated for the passage of fastening members, such as screws or bolts 3, by means of which a grate 4 and a top plate or frame 5 are secured in position upon said box or casing. The grate 4 is concave or dished in its upper side and it is provided with a central draft aperture 6, and with transverse slots 7, at the opposite sides of

said central aperture; the top plate or frame 5 extends laterally beyond the grate so as to form flanges 8, by means of which the twyer may be supported upon the brickwork or other component structure of the forge to which it is applied. The box or casing 1 is provided with an opening 9 in one side having a tubular extension 10, adapted to be connected with the fan, bellows or other means for supplying the necessary air to support combustion.

The sides of the box or casing 1 is provided with interiorly disposed longitudinal flanges 11 supporting a slide 12, provided with a central aperture 13 and slots 14 coinciding with the aperture and slots in the grate-bar for the purpose of regulating the draft; the slots 14 in the slide 12 being so disposed that the latter may be adjusted to partially or completely obstruct the slots in the grate, but the aperture 13 is of such dimensions that the central aperture in the grate will not at any time be wholly obstructed. The slide 12 is provided with downward extending lugs 15 affording bearings for a rock-shaft 16, one end of which projects through an aperture in one end of the box or casing 1, and is provided with a handle 17 whereby it may be rotated. Suitably secured upon the rock-shaft 16, intermediate the lugs 15 is a block 18, said block being preferably secured in position by means of a set-screw 19 inserted through a threaded aperture in said block and bearing against the rock-shaft 16. This block, which is mounted in registry with the aperture 13 in the slide and which, by rotating the rock-shaft, may be partially projected through said aperture, as well as partially through the central aperture 5 in the grate, constitutes a clinker breaker, the use and advantages of which will be readily understood; it being well-known that clinkers are apt to accumulate in the central draft aperture of the twyer and to clog or choke such aperture from which they may not readily be removed by means ordinarily at command. By the present improvement it will be seen that by simply rotating the rock-shaft one or more times, any clinkers obstructing the central draft apertures will be crushed and reduced to fragments, which will drop into the twyer box or casing and from which they may be readily discharged. The rock-shaft 16, moreover constitutes a handle by

means of which the draft regulating slide 12 may be very conveniently adjusted and manipulated.

5 The bottom of the box or casing 1, has an opening 20, and flanges or cleats 21 adjacent to said opening serve to support a sliding cover 22, having a handle 23 and a stop member 24, the latter being in the nature of
10 a set-screw inserted in the sliding cover to limit the movement of the latter and to prevent its being accidentally withdrawn from the supporting cleats or flanges. It will be seen that by properly manipulating the slide or cover 22, ashes or clinkers may be very
15 readily discharged from the twyer box or casing.

From the foregoing description taken in connection with the drawings hereto annexed, the operation and advantages of this
20 invention will be readily understood by those skilled in the art to which it appertains. The construction is simple and inexpensive, and the device will be found to be thoroughly efficient for the purposes for which
25 it is provided.

Having thus described the invention, what is claimed is:

1. In a twyer, a box or casing having a laterally extending tube constituting an air
30 inlet, a grate and a top frame supported upon and connected with the casing, said grate being provided with a central aperture and with transverse slots at opposite sides of said aperture, a slide supported in the
35 casing and having a central aperture and transverse slots corresponding with those in the grate, said slide being also provided with downward extending lugs, a rock-shaft sup-

ported for rotation in said lugs, extending through one end of the casing and provided with a handle, and a block secured upon the rock shaft intermediate the supporting lugs and capable of being partially projected through the apertures in the slide and grate. 40

2. In a twyer, a box or casing, having an opening in the bottom thereof and a laterally extending tube constituting a draft inlet, a grate and a top frame supported upon and connected with the casing, said grate being provided with a central aperture and with transverse slots at opposite sides of said aperture, a longitudinally movable slide supported in the casing below and adjacent to the grate and having a central aperture and transverse slots corresponding with the aperture and the slots in the grate, said slide being provided with downwardly extending lugs, a rock-shaft supported in said lugs and extending through one end of the casing, a block secured upon the rock-shaft intermediate the lugs and constituting a combined clinker breaker and means for securing the rock-shaft in its bearings, a slide supported adjacent to the opening in the bottom of the casing and having a handle whereby it may be manipulated, and a stop-member extending through said slide to limit the movement of the latter. 50 55 60 65

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 70

RODRICK C. KRAATZ.

Witnesses:

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