

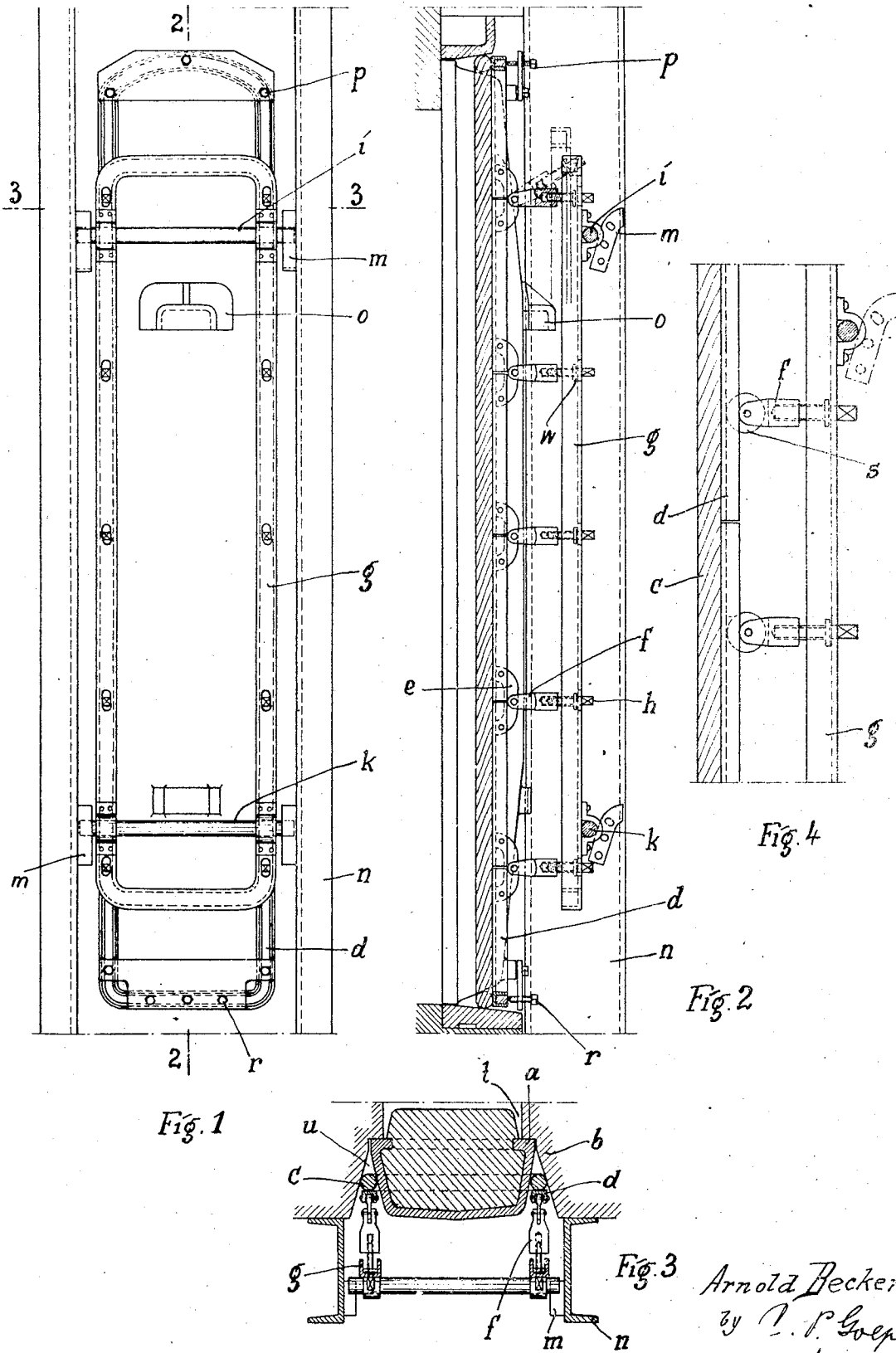
Nov. 11, 1930.

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1,780,992

COKING OVEN

Filed April 24, 1929



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UNITED STATES PATENT OFFICE

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COKING OVEN

Application filed April 24, 1929, Serial No. 357,631, and in Germany January 25, 1927.

My invention relates to improvements in coking-ovens, and more particularly in the means for placing the door and the furnace in a tight manner. In constructions now in use packing means in the form of a rope are pressed into or on the gap provided between the door and the wall of the opening of the oven, which packing means are pressed into the gap by means of a frame. The object of the improvements is to provide pressing means which are simple in operation, and with this object in view my invention consists in providing pressing means which are operated by a substantially vertical movement of the pressing member or frame. In one embodiment of the invention inclined pressing members are provided for pressing the frame towards the gap and the packing means provided therein.

For the purpose of explaining the invention two examples embodying the same have been shown in the accompanying drawing in which the same reference characters have been used in all the views to indicate corresponding parts. In said drawing,

Fig. 1, is an elevation showing the oven, one of the doors, and the means for pressing the packing medium into position,

Fig. 2, is a sectional elevation taken on the line 2—2 of Fig. 1,

Fig. 3, is a sectional plan view taken on the line 3—3 of Fig. 1, and

Fig. 4, is a partial sectional elevation similar to the one illustrated in Fig. 2 and showing a modification.

For closing the openings *t* of the coking-chambers of the oven doors *a* are provided, and the openings and the doors are provided with bevelled side walls thus providing a gap *u* around the door. In the said gap there is a packing medium preferably in the form of a rope *c*, which packing medium is held within the gap by means of a rectangular frame made in several sections *d*. The sections *d* are connected by links *e* with blocks *f* connected with an annular frame *g* by means of bolts *h*, screwing in the blocks and passed through holes of the frame, the bolts being provided with collars *w* bearing on the inner face of the frame *g*. Thus, when

forcing the frame *g* inwardly the pressure is transmitted by the blocks *f* and the links *e* to the frame sections *d*, so that the packing rope *c* is pressed tightly into the gap *u*. The pressure of the individual frame sections *d* can be regulated by screwing the bolts *h* inwardly or outwardly. To the frame *g* two transverse bars *i* and *k* are secured which are adapted for engagement with abutment members *m* fixed to channel irons *n* and having bevelled inner faces.

The door *a* is preferably provided with a pocket *o* adapted to be engaged by a claw of an apparatus for placing the door in position and removing the same from the opening of the oven. Preferably the said apparatus is provided with means for operating the frame *g* and loosening the packing rope and pressing the same in position. For example, when placing the door in position for closing the chamber of the oven, the arm of the apparatus engaging the door *a* holds the frame *g* in elevated position until the door has been set in position, and when lowering the said arm the frame *g* is likewise moved downwardly. Thus the bars *i* and *k* slide on the bevelled abutments *m* thus forcing the frame *d* inwardly and pressing the rope *c* into position. If desired the pressure may be increased by the said arm of the door lifting apparatus or another device pressing the frame *g* downwardly. For pressing the upper and lower curved parts of the packing rope into the gap separate screws *p* and *r* may be provided which are adapted to be operated by hand.

In the modification shown in Fig. 4 the blocks *f* carried by the frame *g* are provided at their inner ends with rollers *s* bearing on the frame members *d* or directly on the packing rope *c*.

I claim:

1. A coke-oven door structure comprising a door frame and door having opposing walls forming an inwardly narrowing gap around the door, a packing medium disposed in the gap around the door, a sectional frame composed of sections engaging the packing medium, a main frame spaced from the sectional frame, cross members between the main

frame and sections of the sectional frame, supported by the main frame to press the sections individually and simultaneously and through them to locally adjust upon the packing medium the pressure exerted by the main frame, cam-guide abutments on the door frame, rods supporting the main frame and having portions slidably supported by said abutments to direct and force the main frame to a position in which the packing medium will be forced inwardly into the gap and tightly against the opposing walls.

2. A coke-oven door structure comprising a door frame and door having opposing walls forming an inwardly narrowing gap around the door, a packing medium disposed in the gap around the door, a sectional frame composed of sections and engaging the packing medium, a main frame spaced from the sectional frame, cross members between the main frame and sections of the sectional frame, arranged to press the sections individually and simultaneously and through them to locally adjust upon the packing medium the pressure of the main frame, said cross members including screws supported by the main frame, blocks with which the screws have screw-threaded engagement, links connecting the blocks with the sections, and means for moving the main frame to a position in which the sections will force the packing medium inwardly into the gap and tightly against the opposing walls.

3. In a coke-oven door structure, consisting of a door frame and a door of the kind wherein an inwardly tapering gap surrounds the door and a packing medium is disposed in the gap, a movable frame and means under the control of the movable frame for pressing the packing medium into the gap, said means comprising pressure sections for the packing medium, spaced from the main frame, links connecting the ends of the sections, blocks connected to the links, and screw members engaged in openings in the main frame and having screw-threaded engagement with said blocks.

In testimony whereof I hereunto affix my signature.

ARNOLD BECKERS.