

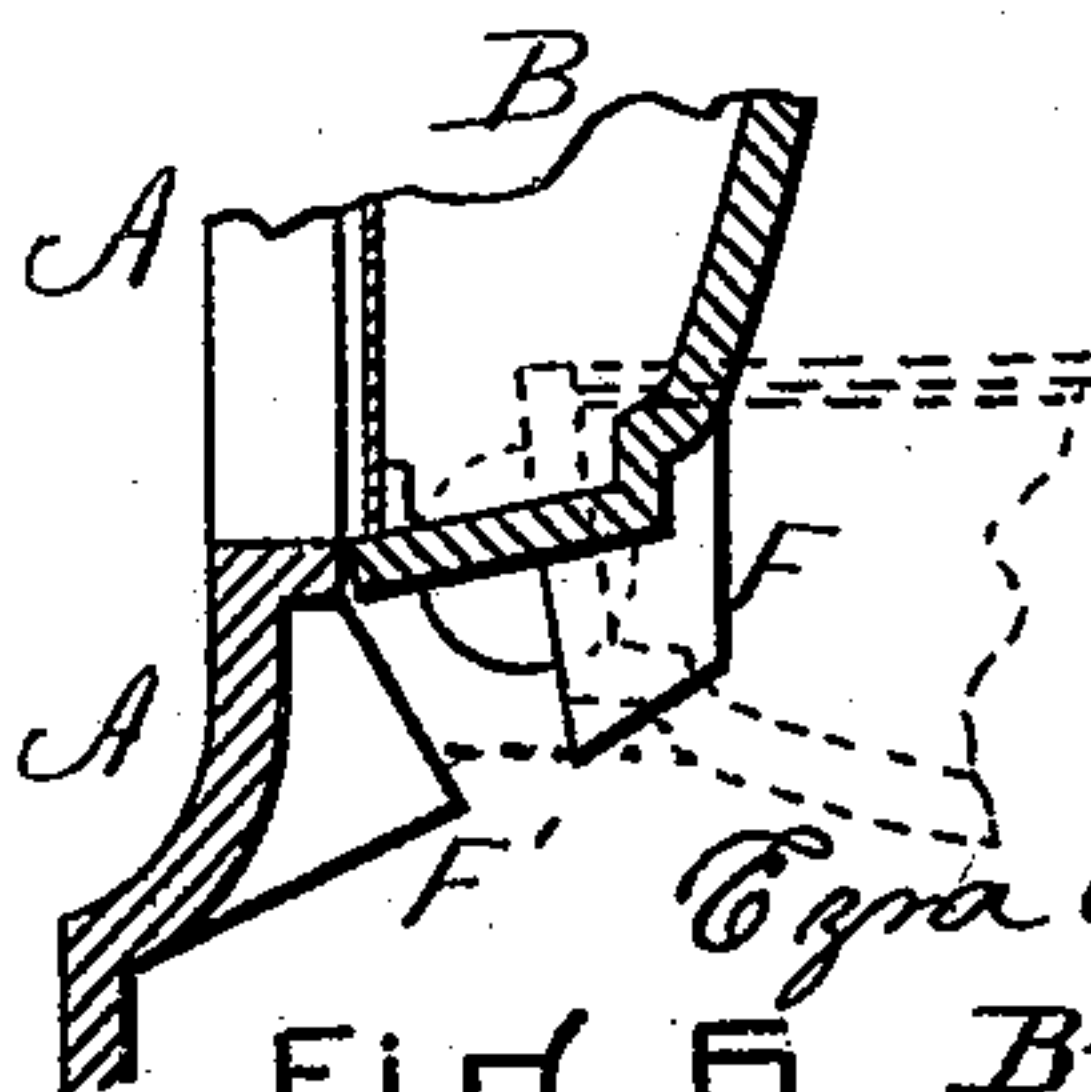
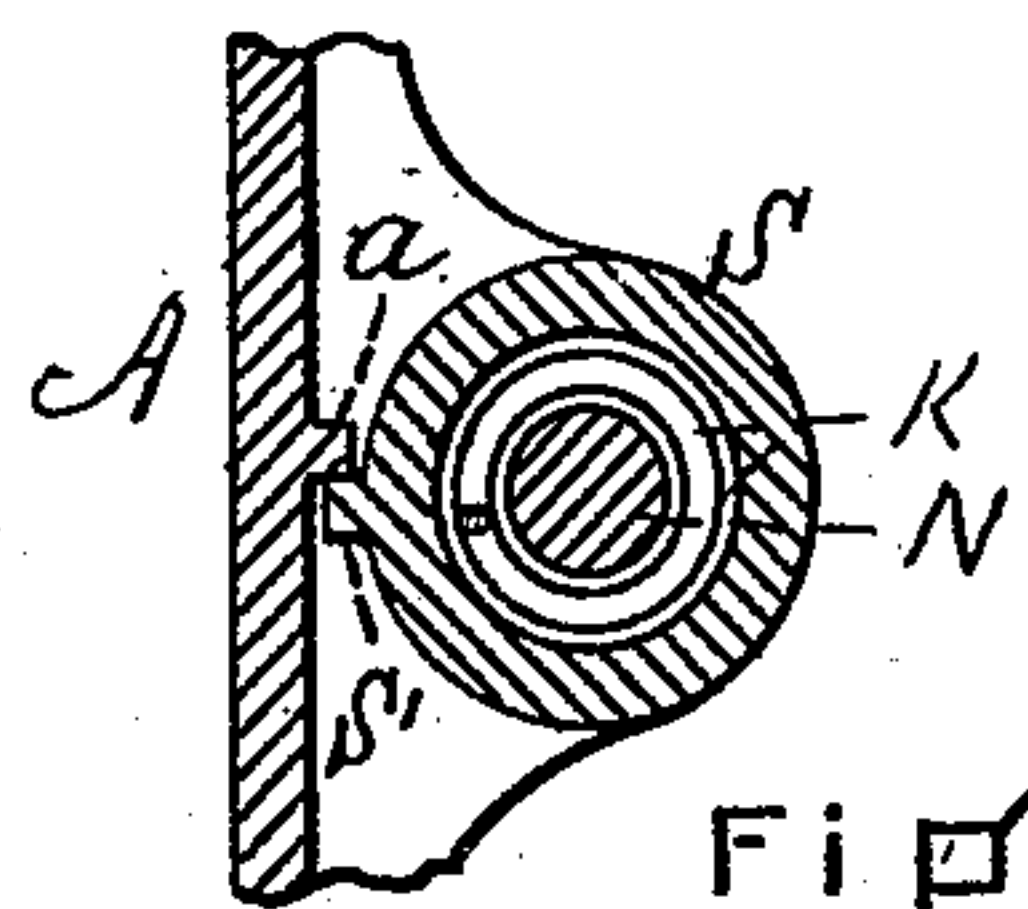
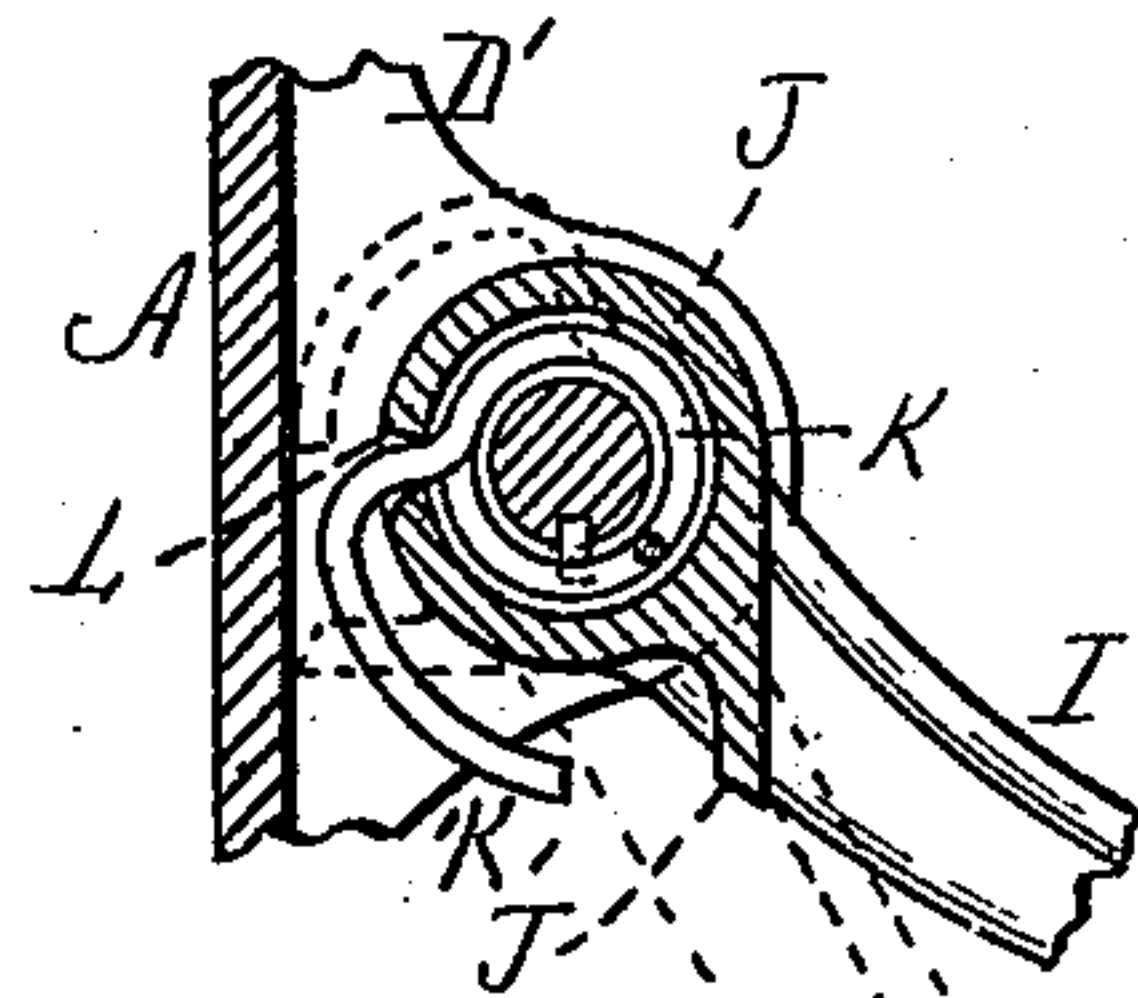
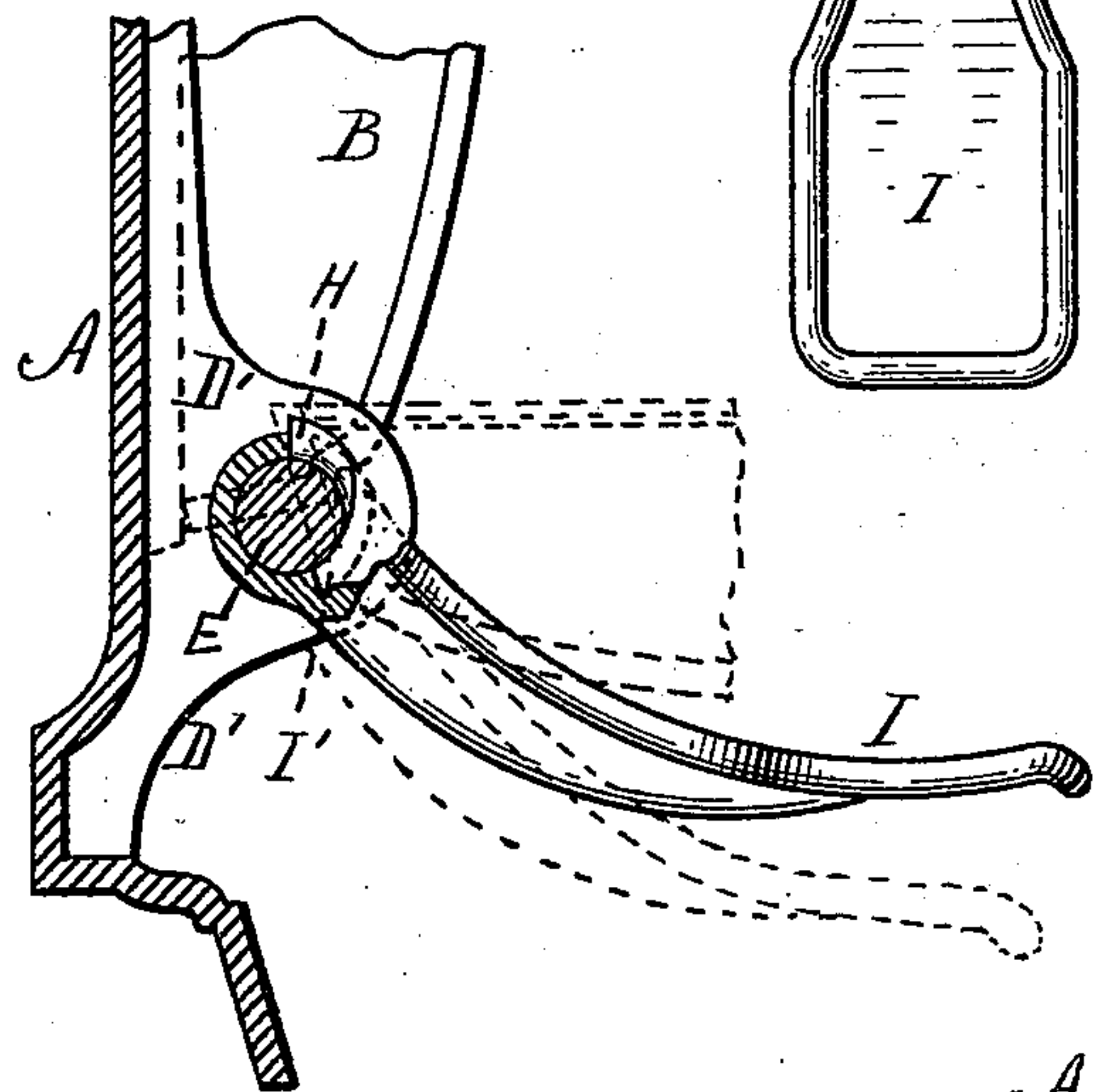
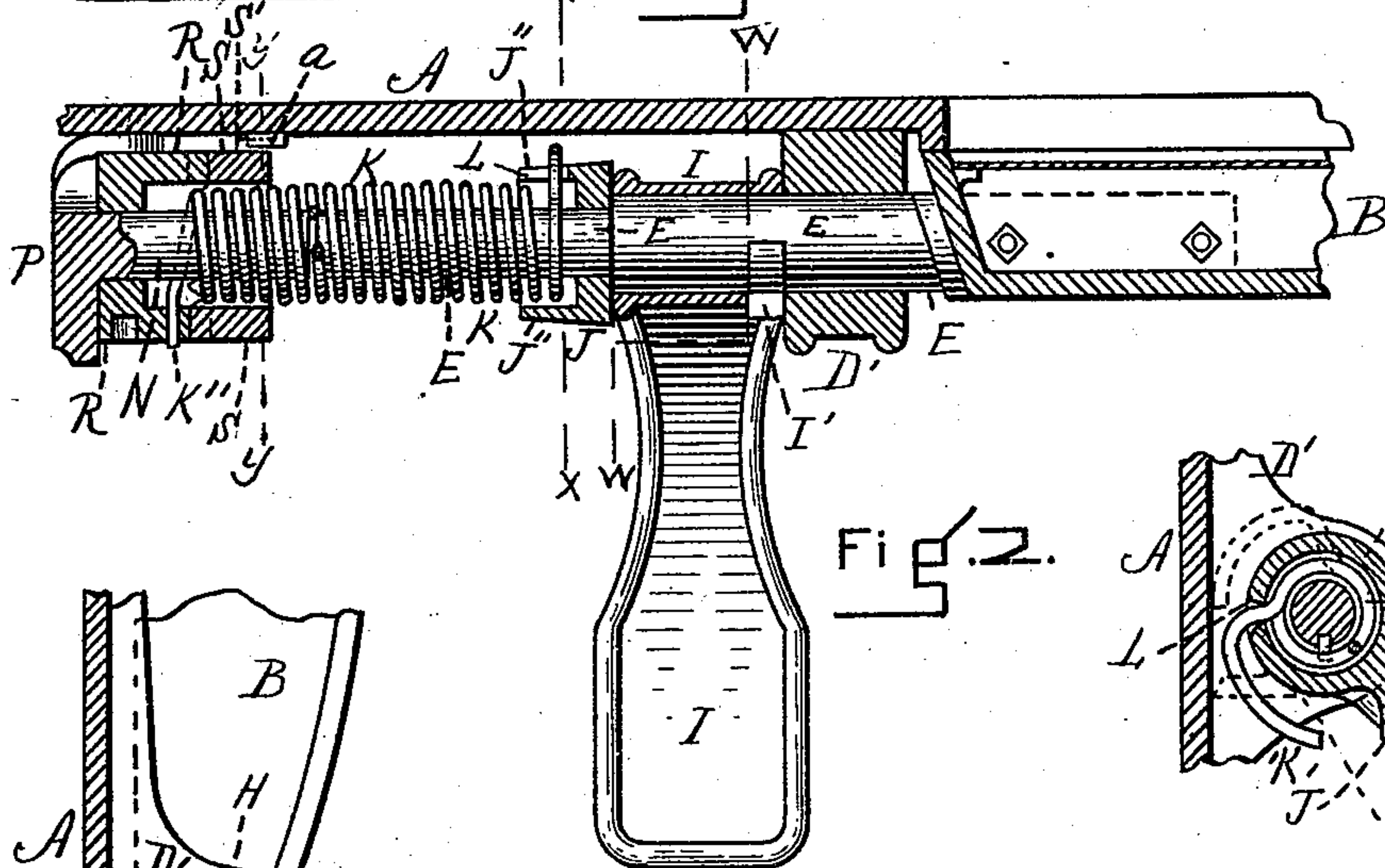
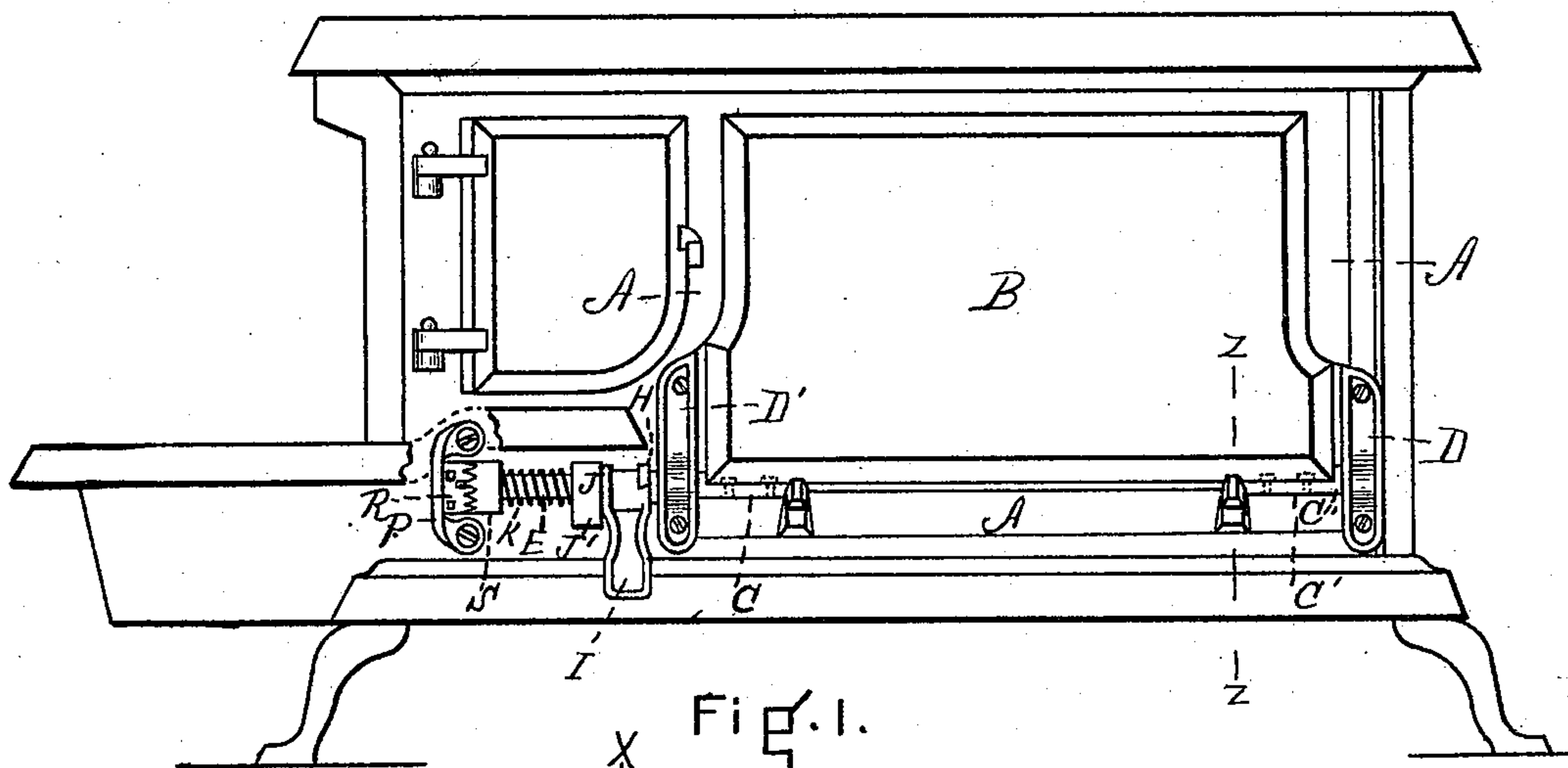
(No Model.)

E. A. MASON.

OVEN DOOR FOR COOKING STOVES, RANGES, &c.

No. 501,571.

Patented July 18, 1893.



WITNESSES

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FIG. 6. By his Atty.

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UNITED STATES PATENT OFFICE.

EZRA A. MASON, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO THE DIGHTON FURNACE COMPANY, OF MASSACHUSETTS.

OVEN-DOOR FOR COOKING STOVES, RANGES, &c.

SPECIFICATION forming part of Letters Patent No. 501,571, dated July 18, 1893.

Application filed April 25, 1893. Serial No. 471,781. (No model.)

To all whom it may concern:

Be it known that I, EZRA A. MASON, a citizen of the United States, residing at Taunton, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Oven-Doors for Cooking Stoves, Ranges, &c., of which the following is a specification.

This invention relates to the construction and operation of oven doors belonging to that class in which the doors swing vertically and are opened and closed by means of a pedal termed in the trade a "kicker," so arranged that the fall of the door is eased when the door is swung down or opened, and the rise of the door is aided when it is lifted or closed; and my invention consists in the novel construction and arrangement of parts hereinafter described, whereby the device is rendered more exactly adjustable, and its operation of the door, by means of the kicker, more perfect, easy and noiseless, without danger of the device becoming inoperative or getting out of repair.

The nature of the device is fully described below, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a cooking-stove whose oven door is operated by means of my invention. Fig. 2 is an enlarged view, mostly in horizontal section, of my device. Fig. 3 is an enlarged vertical section on line *w*, Fig. 2. Fig. 4 is a vertical section on line *x*, Fig. 2. Fig. 5 is a vertical section on line *y*, Fig. 2. Fig. 6 is a vertical section on line *z*, Fig. 1.

Similar letters of reference indicate corresponding parts.

In the different figures, the device is represented in full lines in the position assumed when the oven door is raised or closed, and in broken lines in the position assumed when the oven door is dropped.

A represents the wall of the stove.

B is the oven door to whose lowest edge are bolted bars C C', the bar C' extending into a trunnion or pivot C'' journaled in the bracket D, and the bar C being made integral with the shaft E having its bearings in the bracket D', both said brackets D and D' being secured to the wall of the stove. The

under edge of the oven door B is provided with projections F, which, when the door is dropped, rest against the stops F' on the stove A, see Figs. 1 and 6, so that the oven door cannot drop below a horizontal position.

The shaft E is provided near the bracket D' with a rigid engaging tooth H (Figs. 1 and 3) which extends into a slot or recess I' in the hub of the pedal or kicker I, loose on said shaft, Figs. 1, 2, and 3.

J is a collar fast on the shaft E (which is reduced in diameter at that point) next the hub of the kicker I. This collar has preferably a downward extension J', the object of which is to cover the end of a spiral spring K, which is secured or caught in said collar by means of a slot or hole L in the flange J'' of said collar. See Figs. 1, 2, and 4. This spring extends and coils around the shaft E, and extends from it to and around a coincidentally placed stud N extending horizontally from a bracket P secured to the stove as shown. The end K'' of the spring K extends into engagement with the sleeve R loose on the stud N, by means of a slot or perforation therein, said sleeve being provided on its inner face with teeth by means of which it is engaged by another sleeve S having corresponding teeth, and the two constitute a clutch. By rotating the portion S of the clutch, the portion R is rotated and the tension of the spring K increased or diminished, according to the weight of the oven door. The clutch is held by means of the projection S' which bears against the stop *a* extending from the wall A behind the portion S of the clutch. See Figs. 1, 2, and 5.

In operation, to drop the oven door the kicker I is pressed down by the foot, and the shoulder constituting one end of its notch I' engages the tooth H, partially rotating the shaft E, and by means of the bar C extending from, and integral with said shaft, swinging the door on its hinges. As soon as the door begins to fall, the spring K, which is becoming meanwhile contracted by the rotation of the collar J with the shaft E, tends to counterbalance the door sufficiently to ease its fall so that it swings down gently into a horizontal position, and is held by the rests F', the position of said door and kicker being

shown in broken lines in Figs. 3, 4, and 6. To raise the door, the foot is applied to the under side of the kicker I, and the shoulder constituting the opposite end of the slot I' engages the tooth H and rotates the shaft E in the reverse direction, returning the door to a vertical position with very slight effort, owing to the help afforded by the spring K. A mere touch is sufficient either to raise or lower the door. It will be noticed, on reference to Fig. 2, that the end K' of the spring K is bent into such a shape that it strikes the wall of the stove just before the door reaches a horizontal position. This eases the fall at the last instant and is supplemental to the spring itself.

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

1. In combination, the vertically swinging door B and actuating shaft E the latter provided with the engaging tooth H, the kicker or pedal I loose on said shaft and provided with the notch I' for the said tooth, the collar J fast on said shaft, the stud N secured to

the stove and extending toward said shaft, the clutch R S engaged by the stove by means of projections on said clutch and stove, and the spring K having its opposite ends secured to said clutch and collar and surrounding said shaft and stud, substantially as set forth.

2. In combination, the vertically swinging door B and actuating shaft E the latter provided with the engaging tooth H, the kicker or pedal I loose on said shaft and provided with a notch I' for the said tooth, the collar J fast on said shaft, the stud N secured to the stove and extending toward said shaft, a clutch engaged by the stove, and the spring K having its opposite ends secured to said clutch and collar and with its end K' formed into the shape shown, whereby said end by bearing against the stove just before the door reaches its lowest point, eases the blow of the same on its rests, substantially as described.

EZRA A. MASON.

Witnesses:

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