W. MORAND.

Turn-Button for Stove-Doors.

No. 167,853. Patented Sept. 21, 1875.

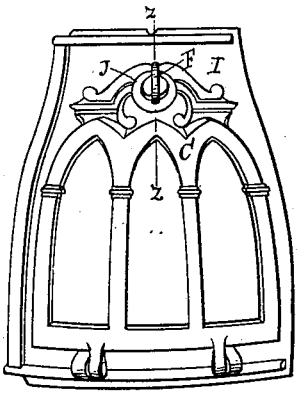

FIG. 1.

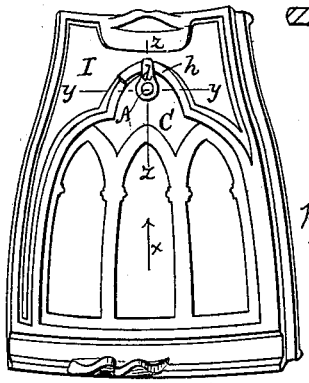

FIG. 2.

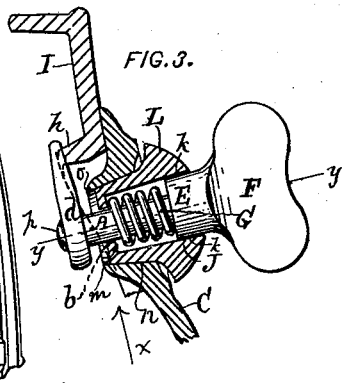

FIG. 3.

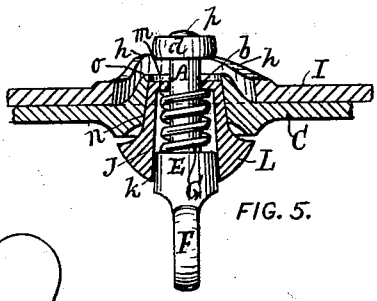

FIG. 5.

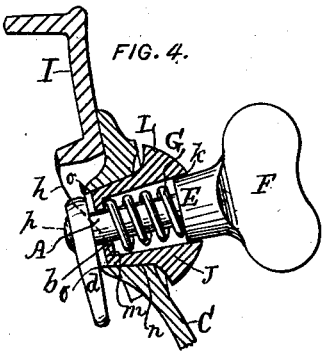

FIG. 4.

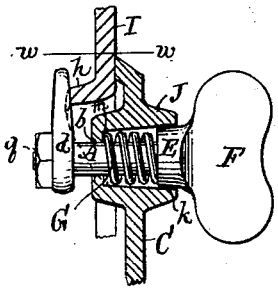

FIG. 11.

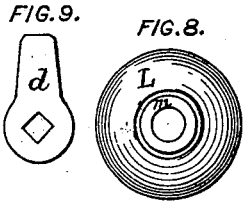

FIG. 9. FIG. 8.

FIG. 7.

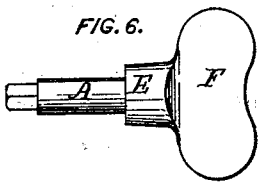

FIG. 6.

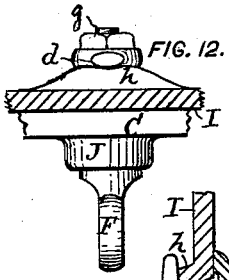

FIG. 12.

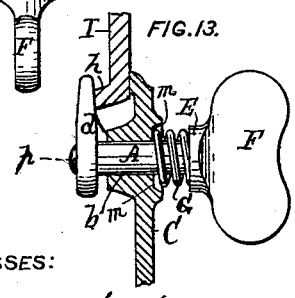

FIG. 13.

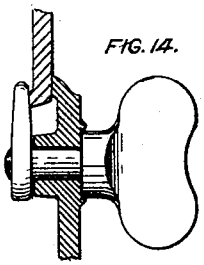

FIG. 14.

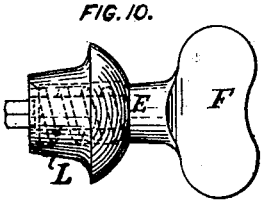

FIG. 10.

WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

WILLIAM MORAND, OF TROY, NEW YORK.

IMPROVEMENT IN TURN-BUTTONS FOR STOVE-DOORS.

Specification forming part of Letters Patent No. **167,853**, dated September 21, 1875; application filed July 6, 1875.

To all whom it may concern:

Be it known that I, WILLIAM MORAND, of the city of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Stove-Doors, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 is a view of the outside, and Fig. 2 a view of the inside, of a stove-door and its casing fastened together, and embodying this invention. Fig. 3 is a partial section of a part of the same, on a larger scale, at the line *z z;* and Fig. 4 is a like section, but with the fastening turned so as to release the door. Fig. 5 is a partial section of the same, on the same enlarged scale, at the line *y y* in Figs. 2 and 3, and viewed in the direction of the arrow *x*. Figs. 6, 7, 8, 9, and 10 are views of parts of the device shown in Figs. 3, 4, and 5. Fig. 11 is a sectional view of a part of a stove-door secured to its casing, and showing a portion of my invention in a modified form; and Fig. 12 is a plan of a part of the same below the line *w w*. Fig. 13 is a sectional view of a part of a stove-door and its casing secured together, and showing one form of a part of this invention. Fig. 14 is a sectional view of a part of a stove-door and its casing, secured together by a turn-button of the kind heretofore commonly used.

Like letters refer to like parts in the different figures.

In the turn-button heretofore often used on stove-doors, and shown in Fig. 14, a round stem extends through, and turns in, a socket through the door, and has a hand-piece and collar fast on the stem on the outer side of the door, and a finger fast on the stem on the inner side of the door, and arranged to engage with, and be disengaged from, an inclined bearing on the casing of the door, so as to thereby fasten and unfasten the door on the inside by turning the stem by its hand-piece on the outside. In such cases the collar end of the hand-piece bears directly and rigidly against the outer side of the door, and the button-finger is rigid on the stem, so that it is very difficult to fit the same to the door and to the finger-bearing on the door-casing, and so that the device turns hard in fastening the door, and will not hold the door tightly closed whenever the parts are not very accurately fitted together, or become much worn; and, by reason of the direct bearing of the hand-piece collar against the door, the hand-piece is liable to be highly heated, so as to burn the hand of a person taking hold of it in fastening and unfastening the door.

To overcome or lessen the aforesaid defects is the primary object of this invention; and I accomplish that object by having the stem A extend through, and formed so as to turn and slide endwise within, the socket *b* through the door C, and with the finger D fast on the stem on the inner side of the door, and the collar E and hand-piece F fast on the stem outside and away from the door, and with a spring, G, surrounding the stem, and compressed between and against the door and the collar on the stem, and the whole constructed and arranged so that very little care or accuracy is required in fitting the parts together, and so that, by reason of the yielding of the spring G, and the endwise movability of the stem A, the latter can be easily turned so as to engage the finger D with any suitable inclined part or bearing *h* on the door-casing I, and so that the reaction of the compressed spring G will then keep the door tightly closed, but will still permit the stem A to be easily turned, so as to release the finger D from the bearing *h*, and so that the spring G shall also constantly isolate the collar E and hand-piece F from the door C, and thereby effectually lessen the heating of the hand-piece.

Fig. 13 shows the spring G exposed to view, and unconfined on its outer sides, and with the stem A supported wholly by the one socket *b* near one end of the stem, so that the spring G, when formed of ordinary rough steel wire, as usual, would present an unsightly appearance in connection with the usually polished and plated hand-piece F, and the stem A would be liable to wabble unless the socket *b* should be made longer than is desirable.

To overcome those defects is the object of a part of my invention; and I accomplish that object by means of the shield-piece or socket J, which extends outward from the door, and incloses the spring G laterally, and forms a

lateral socket-bearing at *k* for the collar E of the stem A, so that the latter may be supported by the two bearings, *b* and *k*, one at each end of the spring.

In Fig. 11 the part J is shown in one and the same piece with the body of the door C, so that the sockets *b* and *k* must be of the same material as the door-body, and so that the part J cannot be polished and electroplated, as is very desirable, without manipulating or involving the whole door-body to a greater or less degree, and so that in turning the stem A either the inner end of the spring G must turn against its end-bearing *m*, or the collar E must turn upon the outer end of the spring, and thereby produce friction, and somewhat affect the strength or action of the spring by torsion of the latter.

To overcome those defects is the principal object of a further part of this invention, which I attain by making the shield-socket J, socket *b*, and bearing *m*, for the inner end of the spring G, all in one separate thimble-piece, L, and fitted into, but not quite through, the socket *n* in the door-body, and retained, so that it may turn therein, by the reaction of the compressed spring G in connection with the stem A, and its finger D bearing against the inner rim *o* of the socket *n*, as shown in Fig. 4, or against the bearing *h* of the door-casing, as represented in Figs. 2, 3, and 5.

In Figs. 6, 7, 8, and 9 the finger D, thimble L, spring G, and stem A, with its collar E and hand-piece F, are shown separate from each other.

In Fig. 10 the stem is inserted in the spring in the thimble L ready to be inserted in the socket *n* in the door-body, and after such insertion the finger D is to be fastened to the inner part of the stem A by riveting down the end of the latter, as indicated at *p* in Figs. 3, 4, 5, and 13, or by a screw and nut, as represented at *q* in Figs. 11 and 12, or by any other suitable means.

What I claim as my invention is—

1. In combination with a stove-door having the socket *b* therein, and door-casing having the button-bearing *h* thereon, the turning and endwise-moving stem A, with its button-finger D, collar E, hand-piece F, and spring G, all arranged to operate as shown and described.

2. In combination with a door having the socket *b*, and door-casing having the finger-bearing *h*, the turning and sliding stem A, with its finger D, collar E, and hand-piece F, the spring G and the shield-socket J, all arranged together substantially as shown and specified.

3. In combination with a door having the socket *b* in a turning thimble, L, Fig. 3, in the socket *n* in the door, the stem A, with its finger D, collar E, and hand-piece F, and the spring G, surrounded with the collar by the thimble, and all arranged to operate as shown and described.

WILLIAM MORAND.

Witnesses:
JOHN F. RAFFERTY,
AUSTIN F. PARK.