M. A. POSSONS.

OVEN DOOR FRICTION HINGE AND STOP.

APPLICATION FILED FEB. 2, 1912.

1,067,676.

Patented July 15, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

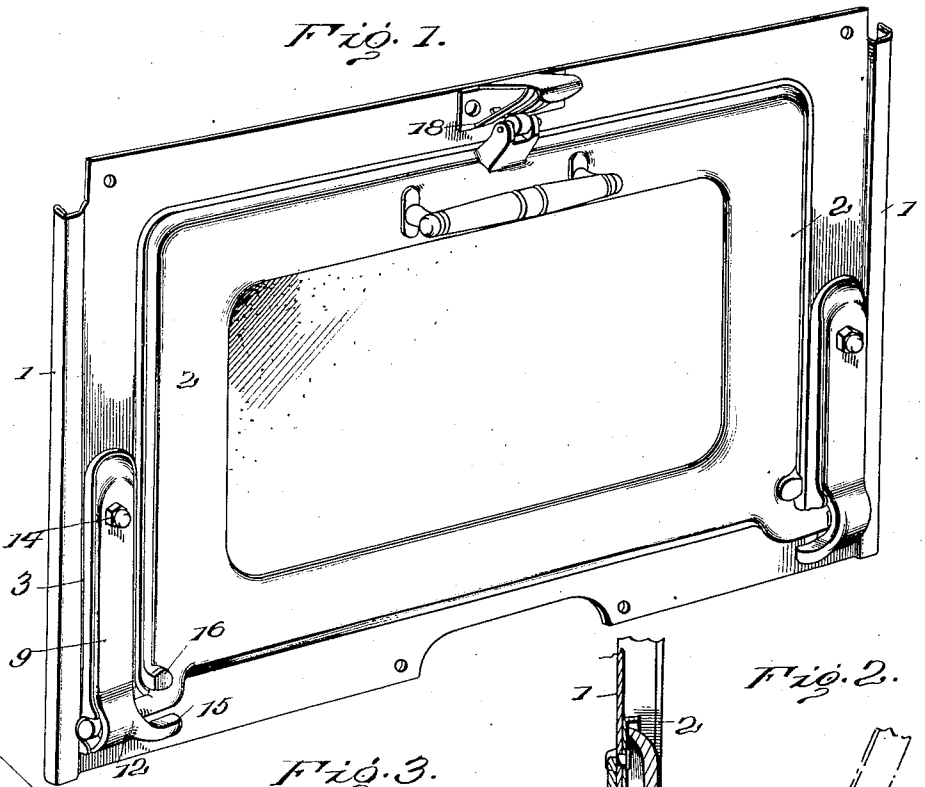


Fig. 2.

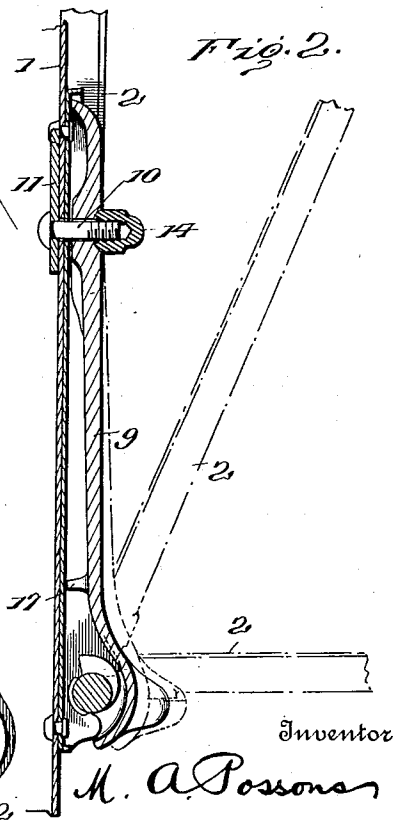
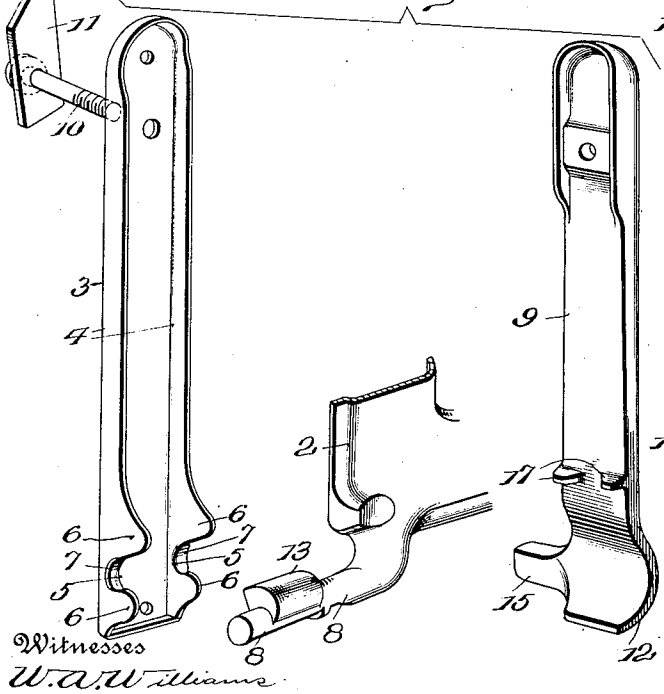


Fig. 3.



Witnesses

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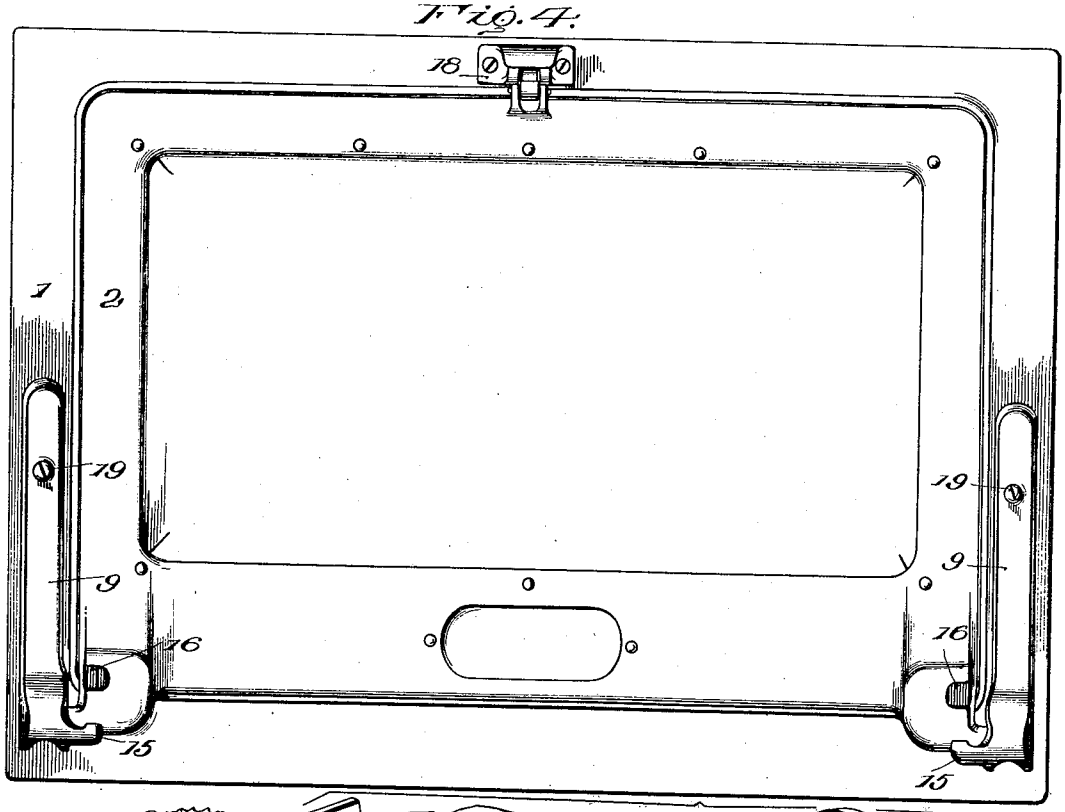
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2 SHEETS—SHEET 2.

Fig. 4.



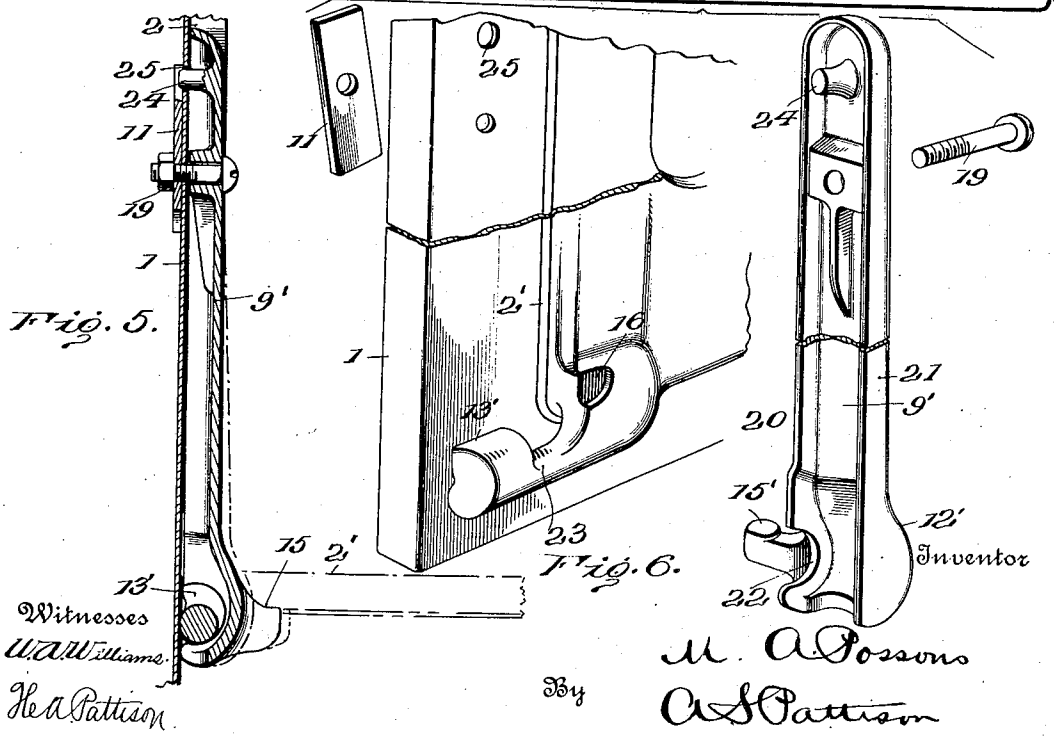


Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

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OVEN-DOOR FRICTION-HINGE AND STOP.

1,067,676. Specification of Letters Patent. Patented July 15, 1913.

Application filed February 2, 1912. Serial No. 674,992.

To all whom it may concern:

Be it known that I, MINARD A. POSSONS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Oven-Door Friction-Hinges and Stops, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in an oven door friction hinge and stop, and the object of my invention is to provide a simple and effective construction for causing friction on an oven door to hold it any angle between open and shut, and also to combine with the said friction hinge a stop for the oven door when it has been fully opened.

In the accompanying drawing: Figure 1 is a perspective view of my improved hinge and stop, showing one form thereof. Fig. 2 is an enlarged vertical central sectional view through one of the hinges and showing the door partially open, and opened in dotted lines. Fig. 3 is an enlarged perspective view of the parts comprising the hinge and stop, together with the pintle or pivot of the door, the parts being shown in separated relation. Fig. 4 is a front elevation of my improved oven door, hinge and stop, showing a slight variation in details of construction from that disclosed in Figs. 1 to 3, inclusive. Fig. 5 is an enlarged central vertical sectional view through the hinge and door pintle or pivot of Fig. 4, the door shown closed in solid lines and open in dotted lines. Fig. 6 is an enlarged perspective view of the parts of the hinge, shown in Fig. 4, the same being illustrated in separated relation.

Referring now particularly to Figs. 1 to 3, 1 is the door-frame and 2 the door. In the form of my invention illustrated in these figures, there is what may be termed a casing 3, which is provided with side-walls 4, the lower ends of which are provided with recesses 5 formed between ears 6. As here shown, a part of the wall between the ears 6 is turned outward, as shown at 7, for the purpose of forming an enlarged bearing surface for the pintle or pivot 8 of the door 2. This casing 3 receives the friction spring arm 9, and this spring arm 9 is fastened to the door-frame 1, within the casing 3, by means of a screw 10, which passes through the door-frame, friction arm 9 and casing 3. A suitable washer 11 is placed at the inner side of the door-frame to receive the strain of the head of the screw 10. The lower end 12 of the friction arm 9 is bulged outwardly, as shown, to permit the passage thereunder of the door pintle 8. As shown in Fig. 3, the door pintle is provided with a curved eccentric or cam 13, which is inclosed within the lower end of the spring arm 9. The tension of the spring arm 9 is regulated by the nut 14 on the end of the screw 10 and as the door is opened, the curved cam or eccentric 13 will engage the inner side of the flanged portion 12 of the arm 9 and tend to force the lower free end 12 of the arm 9 outward, thus creating a friction on the said cam 13. This cam 13 is of such length and shape that the door 2 is not closed by the spring action of the friction arm 9, but shaped to cause sufficient friction therebetween to support the door at any angle between the closed and open positions, whereby the door will remain at any angle between its open and closed positions in which it is placed. Another feature of the present improvement is in providing the friction arm 12 with an inwardly extending stop arm 15, which is preferably formed integral with the lower end of the arm 9, as here shown. This arm 15 extends inwardly in the path traveled by the edge of the door 2, and is located in a plane below the pintle 8 and the bearing therefor, whereby the door may be opened to, or substantially to, a horizontal position. A suitable stopping point or surface 16 is formed on opposite edges of the door 2, which strikes the stop arms 15 when the door is fully opened. The inner side of the arm 9, is here shown provided with one or more inwardly projecting lugs 17, which form a stop to limit the inward movement of the arm 9, under its spring tension.

I have described one hinge and it will, of course, be understood that this construction is duplicated at the other side of the door to which it seems unnecessary to duplicate the reference numerals.

A suitable latch 18 is provided for holding the door in its closed position.

Figs. 4 to 6 show a construction which differs from that shown in Figs. 1 to 3, in that: A. The steel case 3 is omitted and the arm 9′ secured directly to the door-frame 1 by a suitable bolt 19. B. The arm 9′ is provided with inwardly extending side

walls 20 and 21, the inner wall 20 is provided with a recess 22 to receive the pintle or pivot 23 of the door 2′ and a stop 15′. C. The pintle or pivot of the door 2′ does not extend beyond the cam 13′ and the cam is inclosed by the outside wall extending to the lower end of the arm 9′, and, D, the upper end of the arm 9′ has a projection 24, which extends into an opening 25 of the door-frame 1, which, together with the bolt 19, holds the arm 9′ in a vertical position and against any side movement. In all other respects the construction and operation of the parts is the same as that shown and described in respect to Figs. 1 to 3, and need not be repeated here.

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

1. An oven door, friction supporting spring hinge comprising a door-frame, a door having outwardly projecting pivots provided with eccentrics, spring friction arms extending upward from their pivots and secured at their upper ends to the door frame, the lower free ends of the arms placed outside of the eccentrics and adapted to be engaged thereby when the door is opened to support it at any desired angle between the closed and open positions, the lower ends of said friction spring arms having inwardly projecting stop arms in the path of the edge of the door to form stops therefor.

2. An improved oven door hinge comprising a door-frame, a door having laterally extending pivots carrying projecting curved cams, friction spring arms extending upward along the door-frame and having their upper ends secured to said frame, the lower free ends of the arms bulged outward and having pivot bearings at their inner edges for said door pivots, and inwardly extending stop arms in the path traveled by the edge of the door to form stops therefor.

3. An improved oven door hinge, comprising a door frame, a door having a laterally projecting pivot provided with a curved cam, a spring arm secured to the door-frame at its upper end and its lower free end located outside of said cam, said arm having inwardly projecting flanges, the inner flange having a door pivot recess and an inwardly projecting stop arm located in the path traveled by the edge of the door to form a stop therefor.

4. An improved oven door hinge, comprising a door-frame, a door having outwardly extending pivots provided with curved cams, of a vertical casing having at its lower end pivot bearings and spring friction arms located within the said casing, the upper ends of the spring arms secured to the door frame and their lower free ends located outside of said cams and adapted to be engaged thereby, said lower ends having inwardly projecting stop arms located in the path traveled by the edge of the door to form stops therefor.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

MINARD A. POSSONS.

Witnesses:
F. T. BATCHELOR,
E. A. SCHNEIDER.