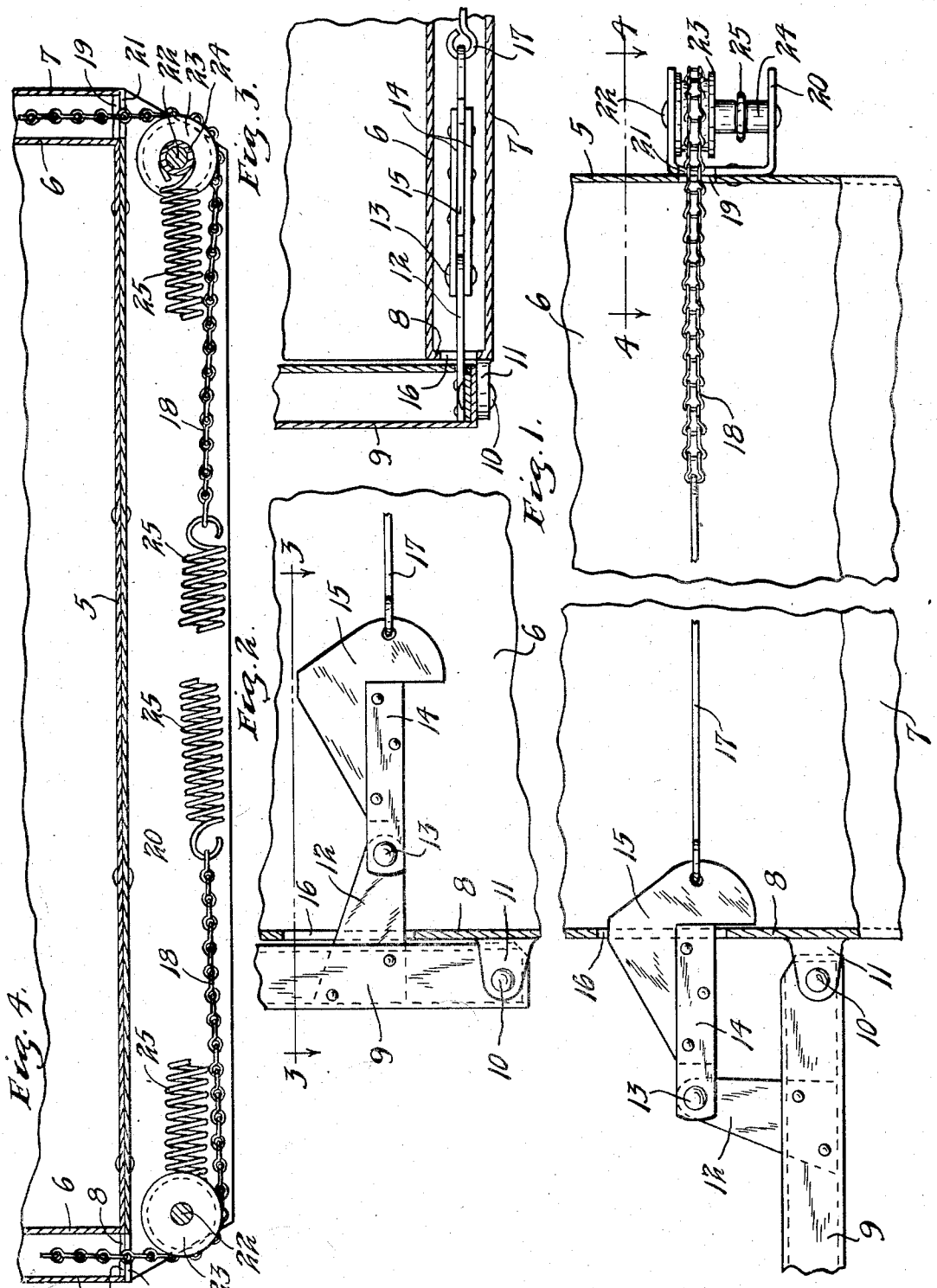
April 10, 1934. S. RASMUSSEN 1,954,182

COUNTERBALANCING DEVICE FOR OVEN DOORS

Filed June 9, 1932



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Patented Apr. 10, 1934

1,954,182

UNITED STATES PATENT OFFICE

1,954,182

COUNTERBALANCING DEVICE FOR OVEN DOORS

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Application June 9, 1932, Serial No. 616,267

1 Claim. (Cl. 126—191)

This invention relates to oven door counterbalancing means.

At the present time, the oven doors for stoves are counterbalanced extensively by use of springs. These springs are generally located within the oven or, at least, at some point where the intense heat of the oven may be conveyed to the springs. Such springs as a result of the fact that they become intensely heated, soon lose their temper or crystallize and break.

It is the general object of this invention to provide a novel and improved counterbalancing device for oven doors including a spring located outside the oven so that it cannot be affected by the heat thereof.

To this end, generally stated, the invention consists in the novel parts and novel combinations of parts hereinafter defined in the claim and described in the following specification, made in connection with the accompanying drawing, wherein like reference characters refer to the same or similar parts throughout the various views, and, in which,

Fig. 1 is a vertical section taken from front to rear through an oven between inner and outer walls at one side of the oven and showing an embodiment of my invention applied to the oven, the door of the oven being open;

Fig. 2 is a similar view through the forward portion of the oven showing the door in closed position;

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2, as indicated by the arrows; and

Fig. 4 is a horizontal sectional view taken on the line 4—4 of Fig. 1, as indicated by the arrows.

Referring to the drawing, there are illustrated portions of a stove oven which include a back wall 5, inner side walls 6, outer side walls 7 spaced respectively from the inner walls, front closure plates 8 extending between and connecting the respective inner and outer side walls 6 and 7 and a door 9 for the front of the oven connected by pivots 10 to lugs 11 secured to the plates 8. Connected to side flanges of the door 9 are arms 12 connected by pivots 13 to pairs of spaced links 14, having secured thereto between the same, stops 15. The links 14, stops 15 and arms 12 are adapted to work through slots 16 formed in the front plates 8 and the stops 15 have shoulders which are adapted to abut the front plates 8 below the slots 16 when the door 9 has been downwardly swung to horizontal position about its pivots 10 and thereby limit the opening movement of the door.

Rods 17 disposed between the respective inner and outer side walls 6 and 7 have eyes at their forward ends extending through small openings in the stops 15 and these rods run rearwardly and have eyes at their rear ends connected to chains 18, which chains run through slots 19 formed in the back wall 5. Secured to the rear side of the back wall 5 and extending across the same is a channel iron supporting bracket 20 open at its rear side and having its intermediate web abutting the back wall. Slots 21 are cut in the intermediate web of this bracket in alinement with the slots 19 and the chains 18 extend through the slots 21. Mounted in and extending between the upper and lower webs of the bracket 20 adjacent the ends thereof are a pair of vertical pivot studs 22. Pivotally mounted on one of these studs 22 adjacent its upper end and pivotally mounted on the other of these studs adjacent its lower end are sheaves 23 over which the respective chains 18 run, slots 19 and 21 being so positioned as to permit the passage of the chains to the respective sheaves 25. Also mounted on one of the pivot studs 22 adjacent its lower end and mounted on the remaining pivot stud 22 adjacent its upper end are grooved spacers 24. A coiled tension spring 25 is connected at one end to the grooved spacer 24 on one of the studs 22 and it is connected at its other end to the chain 18 running over the sheave mounted on the other stud 22. Another similar spring 25 is connected at one end to the grooved spacer 24 on the last mentioned pivot stud and it is connected at its other end to the chain 18 running over the sheave 23 mounted on the opposed pivot stud.

It should be noted at this time that the two springs 25 which are broken away in Fig. 4 to more clearly show the position thereof, are located within the channel formed by the channel iron bracket 20 and are spaced rearwardly from the rear wall 5 of the oven so as to have no contact with any of the oven walls. The springs, accordingly, are located outside the oven in such a position that outside cool air not heated by the oven may freely circulate about the springs to keep the same cool when the oven is in operation. Accordingly, the springs cannot be heated to such a point that they will lose their temper or will crystallize or break.

The springs 25 that are used will be placed under such tension as to compensate for the weight of the door 9 and parts carried thereby as the door is swung downwardly from upwardly raised position. Accordingly, the door may be swung downwardly from vertical position to any angle up to 90° projecting forwardly from the

front of the stove oven and the door will retain its set position.

The device of the invention has been amply demonstrated in actual practice and has been found to be successful for the purposes intended.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departure from the scope of the present invention.

What is claimed is:—

The combination of an oven, a downwardly swinging door closing the front of the oven, stops limiting the opening movement of the door and movable as said door swings to open position into engagement with fixed parts of the oven, rods connected to said stops and running rearwardly therefrom, a channel-shaped bracket having its intermediate web secured to the outer rear side of the oven and its opposing webs horizontally disposed, sheaves mounted at the ends of said bracket between the horizontal webs thereof, chains secured to said rods and running over said sheaves respectively, said chains projecting through the rear of the oven and coiled springs disposed between the horizontal webs of said bracket, each coiled spring being connected at one end to one of said chains and being anchored at its other end.

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