Dec. 20, 1927. 1,653,280

C. HERWIG, JR., ET AL

STOVE DOOR MOUNTING

Filed Aug. 20, 1926

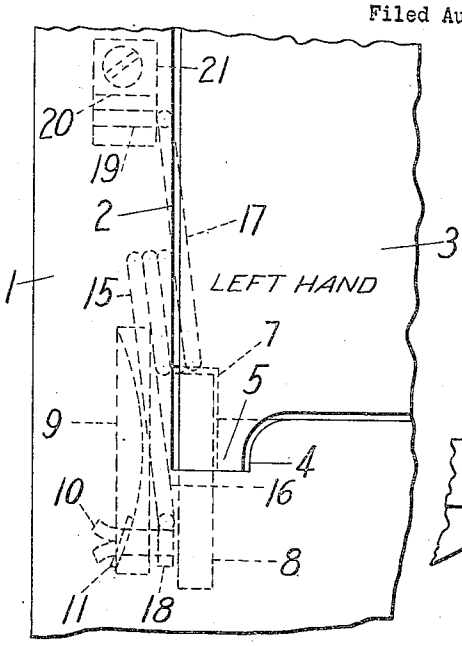


Fig. 1.

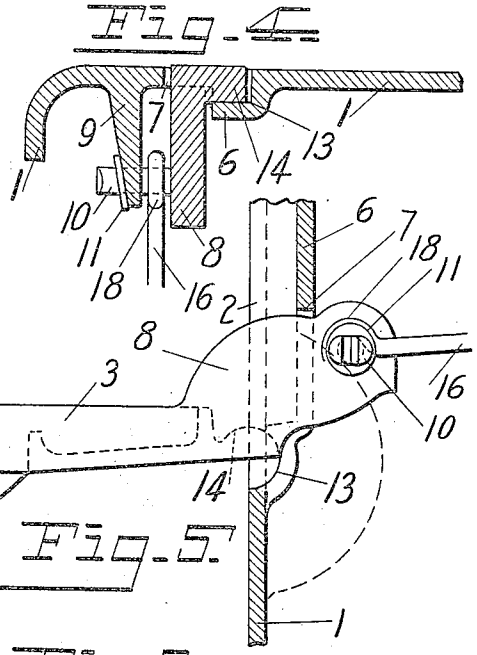


Fig. 5.

Fig. 2.

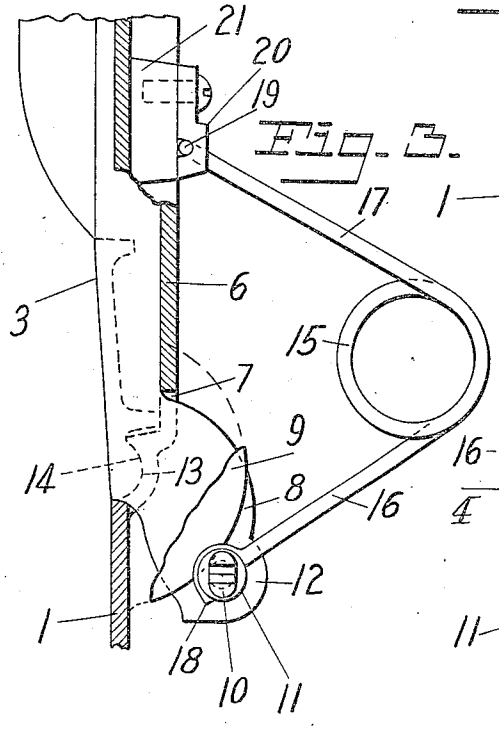
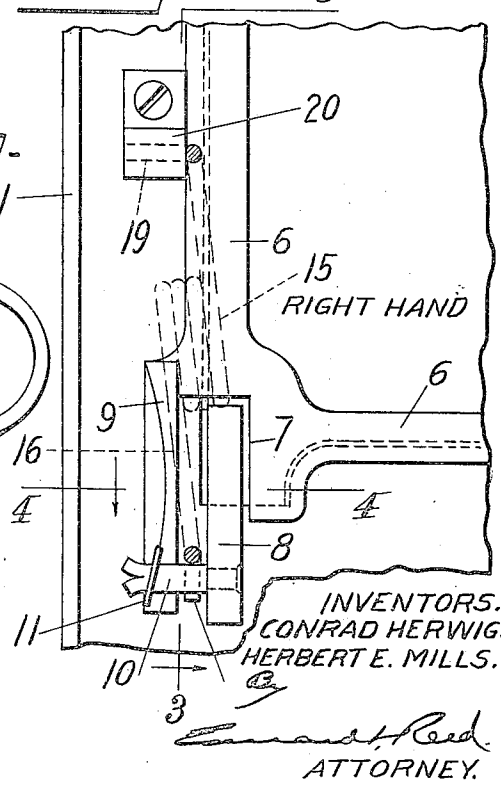


Fig. 3.



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Patented Dec. 20, 1927. 1,653,280

UNITED STATES PATENT OFFICE.

CONRAD HERWIG, JR., AND HERBERT E. MILLS, OF PIQUA, OHIO, ASSIGNORS TO THE FAVORITE STOVE & RANGE COMPANY, OF PIQUA, OHIO, A CORPORATION OF OHIO.

STOVE-DOOR MOUNTING.

Application filed August 20, 1926. Serial No. 130,546.

This invention relates to door mountings and is designed more particularly for use with stove doors, such as the doors of ovens and broilers.

One object of the invention is to provide such a door mounting which will be simple in its construction; which will be inexpensive to manufacture; and which may be easily installed.

A further object of the invention is to provide such a mounting which will require no projections or housings on the outer surfaces of the stove front and door, thus permitting the use of a smooth front.

A further object of the invention is to provide a door mounting with a spring which will be of such a shape and so arranged that it will occupy but little space within the stove structure and will permit the use of a narrow stove front.

A further object of the invention is to provide, in connection with such a door mounting, a spring which will have but little movement and will, therefore have a long life.

Other objects of the invention will appear as the construction is described in detail.

In the accompanying drawings Fig. 1 is a front elevation of portions of the stove front and of the lower left hand corner of the door; Fig. 2 is a rear elevation of portions of the stove front and of the lower right hand corner of the door; Fig. 3 is a section taken on the line of 3—3 of Fig. 2 looking in the direction of the arrow; Fig. 4 is a section taken on a line 4—4 of Fig. 2 looking in the direction of the arrows; and Fig. 5 is a vertical section taken through one of the mountings and showing the door in its open position.

In these drawings we have illustrated one embodiment of our invention and have shown the same as applied to the door of an oven forming a part of a stove, and having a front 1, which is herein characterized as the stove front. This stove front is provided with an opening 2, which constitutes a door way, and which may be closed by a door 3. In the present construction the door 3 fits within the doorway and, in its closed position, rests upon the lower edge thereof. As here shown the doorway has at each lower corner thereof a downward extension or recess 4 and the door 3 has downwardly extending portions 5 which fit into these recesses. The stove front also has flanges 6 which are spaced in the rear of the front and extend inwardly beyond the respective edges of the doorway and thus form stops to limit the rearward movement of the door and against which the door rests when in its closed position. At each lower corner of the doorway the front is provided with an opening 7, which extends through the flange, and the door is provided near its lower edge with rearwardly and downwardly extending parts or arms 8 which project through the respective openings 7 to points in the rear of the stove front. Rigidly secured to the stove front near the lower corners of the doorway, and preferably cast integral with the front, are rearwardly extending guides or cams 9, the rear edges of which are curved. In the present instance these guides are substantially semi-circular in shape and the rear edges thereof are curved about an axis spaced a short distance above the lower edge of the doorway. Each of the arms 8 has near its rear end a laterally extending part, such as a stud 10, which overlies the curved edge of the adjacent guide and is arranged to ride over that guide as the door is moved toward or from its closed position. Preferably, the stud has mounted thereon a stop or washer 11 which engages the outer surface of the guide and holds the arm against lateral displacement with relation thereto. Because of the arrangement of the guide with relation to the door it will be apparent that the movement of the door toward its open position will cause the stud 10 to ride over the curved surface of the guide and thus lift the arm and the lower edge of the door to the positions shown in Fig. 5. Each arm 8 has at its rear end a projection or lug 12 which is arranged to engage the flange at the upper edge of the opening 7 and thus limit the forward movement of the door. The stove front is provided adjacent to each opening 7 with a recess 13, the forward surface of which is curved and constitutes a forwardly facing bearing surface. The door has near its lower corners parts 14, which are curved to fit within the recesses 13 and which constitute bearing members to cooperate with the bearings 13. It will be noted that the arrangement of the bearing members on the front and on the door is such as to permit of the upward movement of the bearing

members 14 of the door as the latter is moved towards its open position and the studs 10 ride upwardly over the curved surfaces of the guides.

Interposed between the arms 8 of the door and fixed parts of the stove structure are springs which resist the movement of the door toward its open position and tend to hold the same in its closed position. In the construction there shown each spring comprises a narrow coil 15 which is spaced some distance to the rear of the stove front at one side of the doorway. The ends of this coil extend forwardly, as shown at 16 and 17, and constitute forwardly diverging arms, by means of which the coil is connected with the stove front and door arm, respectively. The lower arm, 16, is pivotally connected with the adjacent door arm 8 near the rear end of the latter and, in the present instance, the arm 16 has a hook shaped end portion, 18, which engages over the stud 10. The upper arm 17 of the spring has a laterally extending portion or trunnion 19 which is journalled in a recess in a bearing block 20 which is rigidly but detachably secured to a lug 21 carried by the stove front. It will be apparent that when the door arm 8 moves upwardly the lower spring arm 16 will be carried therewith, thus compressing the coil 15 of the spring. Because of the pivotal connections between the spring arms and the door arms and stove front, respectively, these arms will not be flexed at points adjacent to said connections and there will be no appreciable distortion of the spring other than the compression of the coil. Consequently the spring will have but little movement and there will be little tendency for it to crystallize and break.

While we have shown one embodiment of our invention we wish it to be understood that we do not desire to be limited to the details thereof, as various modifications may occur to a person skilled in the art.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a structure of the character described, a stove front having a doorway, a door mounted near its lower edge on said front, said front and said door having bearing portions cooperating to support said door for pivotal movement into and out of a position to close said doorway, said door having a part extending rearwardly beyond said front, a yieldable device to resist the movement of said door toward its open position comprising a coiled spring arranged in the rear of said front and having an arm connected with said part of said door and having a second arm arranged above the first mentioned arm and connected with a part which is fixed with relation to said front, whereby the movement of said door toward its open position will compress said spring, and means other than said yieldable device to retain said bearing portions in cooperative relation one to the other.

2. In a structure of the character described, a stove front having a doorway, a door mounted near its lower edge on said front, said front and said door having bearing portions cooperating to support said door for pivotal movement into and out of a position to close said doorway, said door having an arm extending rearwardly beyond said front, a yieldable device to resist the movement of said door toward its open position comprising a coiled spring arranged in the rear of said front and having forwardly diverging arms arranged one above the other, one of said arms being pivotally connected with said arm of said door and the other of said spring arms being pivotally connected with a part which is fixed with relation to said front, a fixed guide arranged in the rear of said front, and a part carried by said arm and cooperating with said guide to retain said bearing portions in engagement one with the other.

3. In a structure of the character described, a stove front having a doorway and having a rearwardly extending guide near one side of said doorway, the rear edge of said guide being curved, a door mounted on said front for movement into and out of a position to close said doorway and having an arm extending rearwardly alongside of said guide, said arm having a part arranged to engage and ride over the curved edge of said guide, and a spring acting on said arm to resist the movement of said door toward its open position.

4. In a structure of the character described, a stove front having a doorway and having a rearwardly extending guide near one side of said doorway, the rear edge of said guide being curved, a door mounted on said front for movement into and out of a position to close said doorway and having an arm extending rearwardly alongside of said guide, said arm having a part to engage and ride over the curved edge of said guide, said edge of said guide being arranged to cause the lower edge of said door to be elevated as said door moves to its open position.

5. In a structure of the character described, a stove front having a doorway and having a guide extending rearwardly therefrom adjacent to the lower portion of said doorway, the rear edge of said guide being curved, a door mounted at its lower edge on said front for pivotal movement into and out of a position to close said doorway, said door having a rearwardly and downwardly extending arm adjacent to said guide, a stud extending laterally from said arm and arranged to travel on the curved edge of said

guide, and a spring comprising a coil arranged in the rear of said front and having forwardly diverging arms, one of said spring arms being connected with the arm on said door and the other of said spring arms being connected with said stove front above said door arm.

6. In a structure of the character described, a stove front having a doorway, having a forwardly facing curved bearing surface near the lower edge of said doorway and having a guide adjacent to said bearing surface, a door mounted on said front for pivotal movement into and out of position to close said doorway, said door having a part engaging said curved bearing surfaces and also having a rearwardly extending arm adjacent to said part, said arm having a part cooperating with said guide, and a spring arranged in the rear of said front at one side of said doorway and connected with the arm of said door and with said front at a point above said arm.

7. In a structure of the character described, a stove front having a doorway, having a forwardly facing curved bearing surface near the lower edge of said doorway and having a guide adjacent to said bearing surface, a door mounted on said front for pivotal movement into and out of position to close said doorway, said doorway having a part engaging said curved bearing surface and also having a rearwardly extending arm adjacent to said part, said arm having a part to cooperate with said guide and having another part forming a stop to engage said front and limit the forward movement of said door, and a spring arranged in the rear of said front and connected at one end with the arm of said door and connected at its other end with said front at a point above said arm.

8. In a structure of the character described, a stove front having a doorway provided with forwardly facing open bearings, a door loosely mounted near its lower edge on said front for pivotal movement into and out of a position to close said doorway and having parts seated in said bearings, said door having an arm extending rearwardly beyond said front, a spring connected with said arm and with a part fixed with relation to said front and arranged to resist the movement of said door to its open position, and cooperating parts carried by said front and said arm to hold said parts of said door in said bearings.

9. In a structure of the character described, a stove front having an opening to form a doorway, and having flanges extending inwardly from the edges of said doorway and spaced to the rear of said front, a door having means for mounting the same near its lower edge for pivotal movement into and out of said opening, said front having an opening extending through the flanges near the lower corners of said doorway and said door having arms extending rearwardly from the lower portions thereof through said openings, said front and said door arm having parts separate from the means for pivotally mounting said door and which cooperate to prevent the forward movement of the lower edge of said door, and springs arranged in the rear of said front at the respective sides of said doorway and each connected with the adjacent door arm and with said front at a point above said door arm.

10. In a structure of the character described, a stove front having an opening to form a doorway, said opening having near the lower corners thereof downward extensions forming recesses, a door mounted near its lower edge on said stove front for pivotal movement and having portions which fit within said recesses when said door is in its closed position, said door having arms extending rearwardly from said downwardly extending portions thereof, guides extending rearwardly from said stove front adjacent to the respective arms, said guides and said arms having cooperating parts to hold the lower portion of said door against forward movement, and springs arranged in the rear of said stove front adjacent to the respective sides of said doorway and each connected at one end with the adjacent arm of said door and at its other end with said front at a point above said arm.

11. In a structure of the character described, a stove having a doorway and having a rearwardly extending guide near one side of said doorway, the rear edge of said guide being curved, a door mounted on said front for pivotal movement into and out of a position to close said doorway and having an arm extending rearwardly alongside of said guide, said arm having a part to engage said guide to prevent the forward movement of the lower portion of said door and also having a part to engage said front to limit the pivotal movement of said door, and a spring arranged in the rear of said front at one side of said doorway and connected at one end with said arm of said door and at its other end with said front at a point above said arm.

12. In a structure of the character described, a stove front having a doorway, having a forwardly facing curved bearing surface near the lower edge of said doorway, and having a guide extending rearwardly therefrom adjacent to said bearing surface, the rear edge of said guide being curved about a horizontal axis, a door mounted on said front for pivotal movement into and out of a position to close said doorway, said door having a part to engage said curved bearing surface and also having an arm ex-

tending rearwardly alongside of said guide, a stud carried by said arm and extending across the curved edge of said guide, and a spring comprising a coil arranged in the rear of said front at one side of said doorway and having forwardly diverging arms, one of said arms being pivotally connected with said stud, the other of said arms having a laterally extending portion, and a bearing on said front in which the laterally extending portion of the last mentioned arm is journalled.

In testimony whereof, we affix our signatures hereto.

CONRAD HERWIG, JR.
HERBERT E. MILLS.