July 5, 1927. 1,634,353

W. A. FRANTZ

IRONING MACHINE

Filed March 11, 1922

Fig. 1.

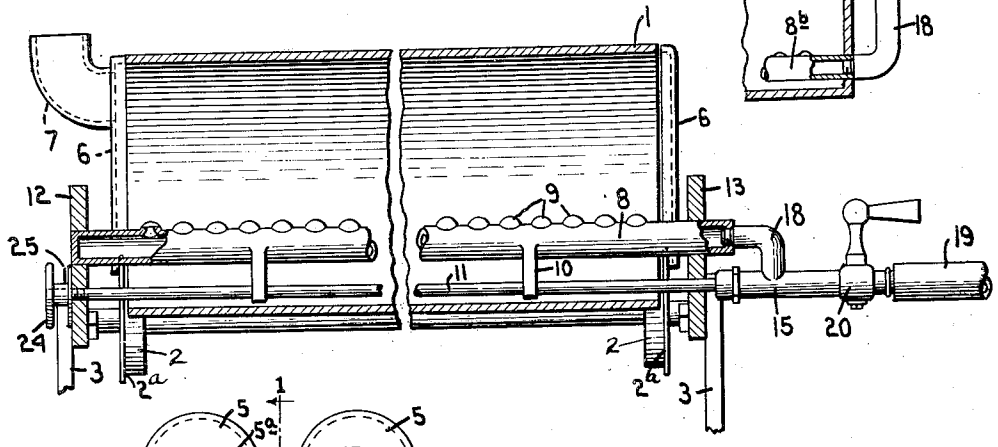


Fig. 6.

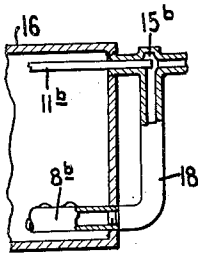


Fig. 2.

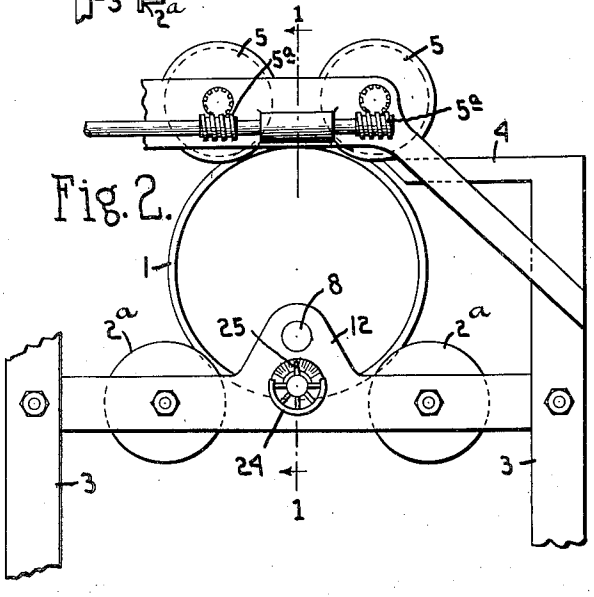


Fig. 4.

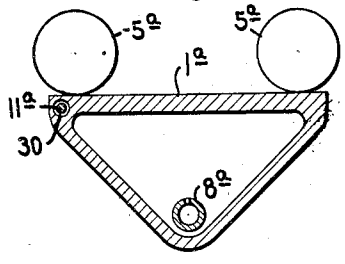


Fig. 5.

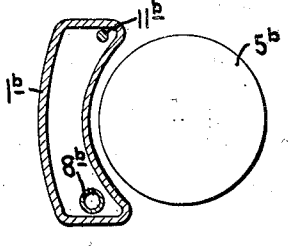
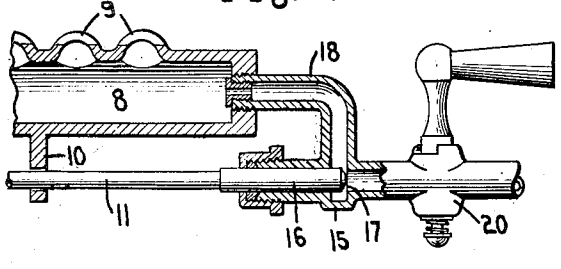


Fig. 3.



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UNITED STATES PATENT OFFICE.

WALTER A. FRANTZ, OF CLEVELAND, OHIO.

IRONING MACHINE.

Application filed March 11, 1922. Serial No. 542,885.

This invention relates to domestic ironing machines and has for its objects the provision of a new, improved and simplified design of ironer and the provision of a simple, reliable, and inexpensive thermostatic device by which the temperature can be controlled. Subsidiary objects of the invention relate to the particular features of construction whereby these results are achieved in a convenient and practical manner.

In the drawings accompanying and forming a part of this application I have shown certain physical forms in which my inventive idea can be embodied, although it will be understood that such drawings are only illustrative and not limiting upon me. Fig. 1 is a longitudinal section through an ironer shoe corresponding to the line 1—1 of Fig. 2; Fig. 2 is a left hand view of the ironer shown in Fig. 1; Fig. 3 is an enlarged sectional view of the valve shown in Fig. 1; and Figs. 4 and 5 illustrate the application of my improvements to modified forms of shoes, and Fig. 6 is a modified valve.

Describing by reference characters the parts shown in these drawings, 1 represents the shoe or smoothing member of an ironing machine. In Figs. 1 and 2 it consists of a cylindrical metal drum suitably supported for rotation about its own axis as by being laid on rollers 2, 2, journaled to the frame 3, said rollers having flanges 2^a—2^a at their further ends by which the drum is positioned in the machine. The frame also supports a feeding board 4 and one or more padded rolls 5, 5 rotated slowly in the same direction by any suitable means such as the spiral gears 5^a, 5^a, thus rotating the drum by friction. The ends of the drum are preferably closed or obstructed by nonrotatable shields 6, 6, one or more of which may be provided with a flue connection 7 to carry off the fumes, when gas is the heating agent used.

Carried by the frame and projecting into the drum is the heating element, here shown as a gas burner although an electric-resistance element can equally well be employed. When a gas burner is employed it is preferably made of an iron casting 8, either extending in a single piece from end to end or made in sections fastened together. At its upper side this burner has gas slots or tips 9, either formed directly therein or in some refractory substance set therein. Projecting from the burner in some other direction, as downward, are a plurality of brackets 10, 10 having aligned openings therein through which projects the rod (either solid or hollow) 11, made of some substance having a different coefficient of thermal expansion from the burner; for example aluminum or an alloy thereof. One end of this rod is adjustably secured to an end piece 12 to which the burner is rigidly secured; the other end of the rod (and preferably of the burner also) projects loosely through another end piece 13 also carried by the frame at the opposite end of the shoe. Secured to the burner is a valve casing 15 having therein a slidable valve member 16 adapted to control a seat or port 17 and connected to the rod 11. One side of said valve communicates with the burner by means of the conduit 18 and the other with a gas supply pipe 19, a shut-off cock 20 being interposed somewhere in the system preferably by being built into one branch of the valve 15. I have shown the conduit 18 offset from and parallel to the valve member 16 so that when secured into the end of the burner the valve member comes in line with the brackets 10. The rate of regulation depends upon the relative coefficient of expansion of the rod 11 and burner 8, and the relative shape of the member 16 and its seat or port. Proper tapering of this valve member or port or both will change the regulation rate as is well understood in fluid distribution.

In the present embodiment the adjustable attachment between the rod 11 and frame member 12, is effected by screwing the rod into the frame, the rod being provided with a handwheel 24 by which it can be set and a pointer 25 cooperating with a graduated scale to enable its movement to be gauged.

In Fig. 4 the shoe takes the form of a stationary, flat topped, metal chest 1^a having a gas burner 8^a therein and a couple of padded rolls 5^a, 5^a thereabove. In this case I have shown the thermostatic rod 11^a housed in a cavity 30 specially prepared therefor adjacent to the ironing surface. In Fig. 5 the shoe takes the form of a concave metal chest 1^b supported at the side of the padded roll 5^b, and having a gas burner 8^b therein. In this case the thermostatic bar 11^b is located in the upper tip of the shoe, as close as possible to the ironing surface and as far as possible from the flame. In both these modifications the thermostatic valve 15^b is

attached to the shoe as shown in Fig. 6 so that the relative expansion between the same and the rod may control the heating medium, this being impossible in case the shoe moves as illustrated in Figs. 1 and 2.

It is necessary that the rod be kept out of direct contact with the flame (or other heating medium) and close to the ironing surface. This is effected in Figs. 1 and 2 by supporting it close to the wall of the drum but below (or at one side of) the burner, so that as the drum revolves its hot surface will move closely past the same. In Fig. 4 this is effected by providing a separate cavity for the rod and in Fig. 5 by locating the rod around the bulge from the burner. It will be understood, however, that the structures herein shown are merely illustrative specimens and that I do not limit myself to these details of construction or arrangement in any way except as specifically recited in my claims.

Having thus described my invention what I claim is:

1. In an ironing machine, in combination, a frame, a pair of laterally spaced supporting rollers at each end thereof journaled upon parallel horizontal axes, an open ended smooth surfaced cylindrical metal drum resting on said rollers, a padded roller located above said drum and adapted to make frictional contact therewith, means for rotating said padded roller, and a fluid fuel burner carried by the frame and projecting into said drum.

2. In an ironing machine, a frame, a pair of laterally spaced supporting rollers at each end thereof journaled upon parallel horizontal axes, a revoluble cylindrical metal drum resting on said rollers, a padded roll contacting with the top of said drum, a gas burner carried by said frame and projecting into said drum, and end shrouds for said drum carried by said frame and projecting near the drum wall, one at least of said end-shrouds having an outlet flue.

3. In an ironing machine, in combination, a frame, a pair of laterally spaced supporting rollers at each end thereof journaled upon parallel horizontal axes, said rollers having flanges at their edges which are nearest the ends of the frame, an open ended smooth surfaced cylindrical metal drum resting on said rollers, the length of said drum being such as to enable it to fit between said flanges, means for rotating said drum, and a fluid fuel burner carried by said frame and projecting into said drum.

In testimony whereof, I hereunto affix my signature.

WALTER A. FRANTZ.