Sept. 18, 1923. 1,468,557

G. W. CLINE

RESILIENT CUSHION FOR THE PADS OF IRONING DEVICES

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Fig. 1.

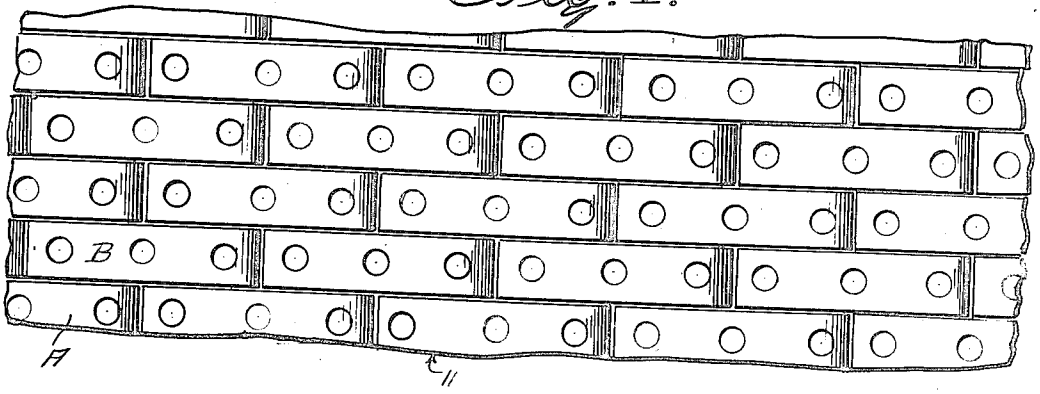


Fig. 2.

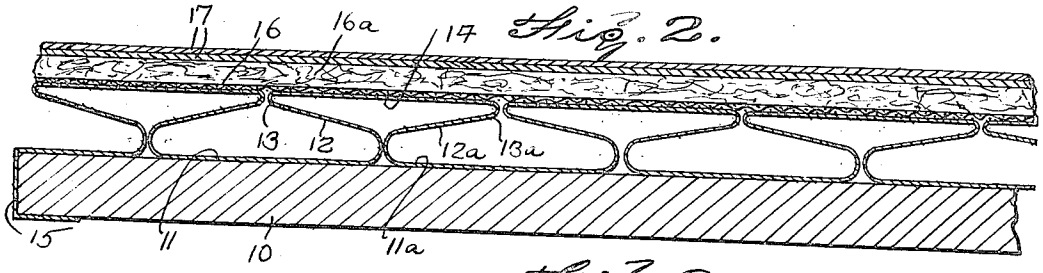


Fig. 3.

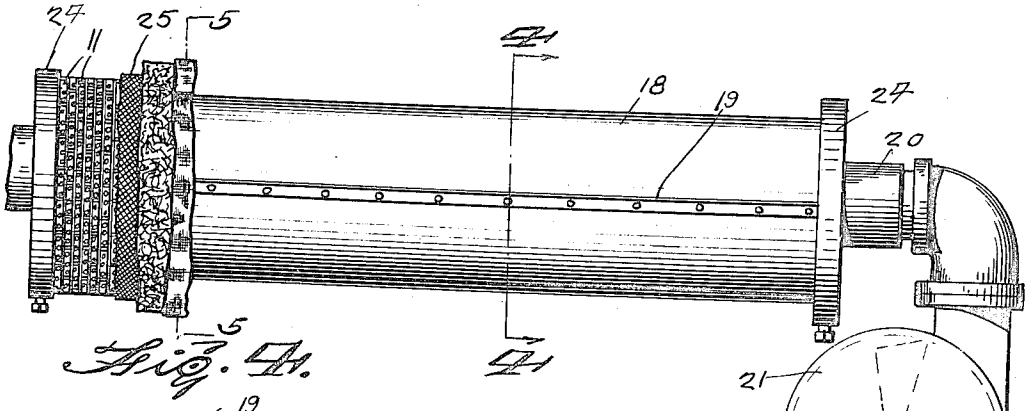
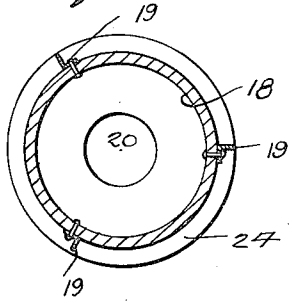


Fig. 4.



Inventor

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By Wilson E. Coleman Attorney

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Fig. 5.

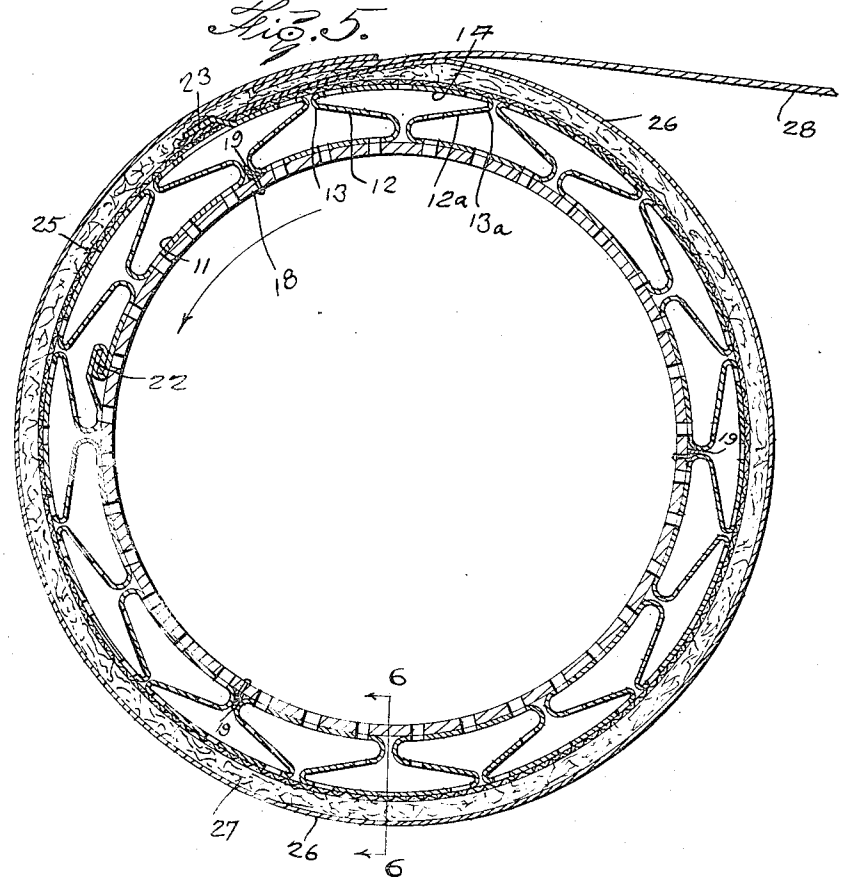


Fig. 8.

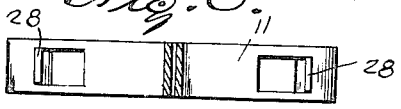


Fig. 6.

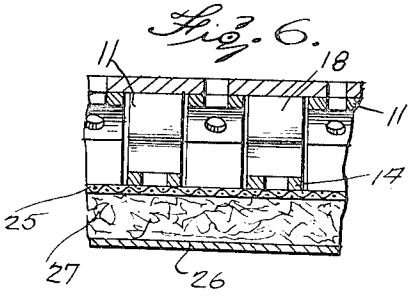
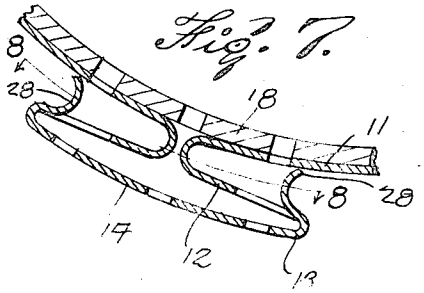


Fig. 7.



Inventor

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Patented Sept. 18, 1923. 1,468,557

UNITED STATES PATENT OFFICE.

GEORGE W. CLINE, OF LAKE CHARLES, LOUISIANA.

RESILIENT CUSHION FOR THE PADS OF IRONING DEVICES.

Application filed June 25, 1921. Serial No. 480,374.

To all whom it may concern:

Be it known that I, GEORGE W. CLINE, a citizen of the United States, residing at Lake Charles, in the parish of Calcasieu and State of Louisiana, have invented certain new and useful Improvements in Resilient Cushions for the Pads of Ironing Devices, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to ironing or pressing devices, and particularly to the pads thereof, whether these pads are applied to ironing rollers or to ironing or pressing boards.

In all ironing machines or devices, it is necessary to provide a bed upon which the material is placed to be ironed or provide the ironing roller or rollers beneath which the material passes with padding. This padding is usually made of horsehair, wool, or cotton, where the padding is used on ironing machines, and this padding is very liable to become packed in a relatively short time, so that sometimes within two hours after the horsehair pad has been placed upon the cylinder or roller of an ironing machine the pad will become so packed and hard that it will tend to tear off buttons, buckles, and the like on clothes, and so packed that it does not fulfill its function properly and should be removed.

The general object of my invention is the provision of an improved resilient cushion for supporting padding and the usual sheets or webs of cloth on an ironing board, bed or roller, and more particularly to provide a cushion composed of resilient, convoluted strips disposed upon the ironing board or against the roller or cylinder of an ironing machine, these strips being of such character that they may be readily made by machinery, that they may be readily put in place, and that they may be readily held in place.

A further object is to provide a resilient cushion for the purposes stated, which is composed of convoluted strips, these strips being disposed closely adjacent each other and perforated so as to permit suction to draw air through the material being ironed and through the pad and cushion, thus to a large extent drying the material and carrying off the steam and condensation as the material is being ironed.

A still further object is to provide a device of this character so constructed that the padding and the sheets or webs of textile fabric may be readily engaged with the roller of an ironing machine.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a top plan view of my improved cushion as applied to a flat surface;

Figure 2 is a longitudinal sectional view of the cushion shown in Figure 1;

Figure 3 is an elevation of an ironing roll, showing my invention applied thereto, the successive layers around the body of the roll being broken away;

Figure 4 is a section on the line 4—4 of Figure 3;

Figure 5 is an enlarged section on the line 5—5 of Figure 3;

Figure 6 is a section on the line 6—6 of Figure 5;

Figure 7 is a sectional view of a modified form of spring strip;

Figure 8 is a section on the line 8—8 of Figure 7.

Referring to these drawings, it will be seen that in Figures 1 and 2 I have illustrated an ironing board or other supporting member 10, upon which is disposed a series of metal strips 11 which may be of any desired width but which I have found in practice to be preferably made about ½″ in width. These strips are convoluted, as illustrated, that is the material of each strip is bent over upon itself, as at 12, then bent upward at a relatively sharp angle, as at 13, then extended forward parallel to the body of the strip, then bent downward and inward, as at 12^a, then extended forward, as at 11^a, and bent back upon itself again, and so on so that a plurality of relatively flat, spring supported surfaces 14 are provided, these surfaces at their ends being closely adjacent to each other.

In order that these surfaces may lie in the same plane and that the ends of these supporting surfaces shall be closely adjacent to each other, I form the sharp bend 13 at the end of the portion 12 and at the end of the portion 12^a and extend the portion 14 straight across from these sharp surfaces instead of curving the ends of the surfaces 14 around to form the portion 13 and these rounded ends merging into the portion 12. Preferably, though I do not wish to be limited to this, these strips 11

will be perforated particularly along the portion 14. I do not wish to be limited to this, however, nor to the particular shape of the perforations. I do this in order to secure passage for steam and condensation.

It will be noted from Figure 1 that one set of strips A is disposed in parallel relation to the next adjacent set of strips B and that the strips B break joints with the strips A. If these strips 11 are disposed upon the flat board 10, they may be connected to this board in any suitable manner, and I have illustrated the ends of the strips as being engaged over the edges of the board, as at 15. Obviously I do not wish to be limited to this. Preferbly resting upon the portion 14 is a sheet 16 of reticulated or foraminated metal, and resting upon this foraminated metal is padding 16ª, which may be formed of horsehair or any other suitable material, and over this padding is disposed one or more layers or thicknesses of textile fabric 17.

In Figure 3, I have shown my invention as applied to the cushioning of an ironing roller or cylinder. In ironing machines a large number of these cylinders are used, these cylinders being somewhat over 9′ in length in the ordinary ironing machine such as used in laundries. These cylinders form no part of my invention and they may be made of any suitable material, but in order to hold my improved spring cushion thereon I preferably form these cylinders 18 with the outwardly projecting ribs or flanges 19. These may be in the form of angle irons riveted or otherwise attached to the cylinders. The angle irons preferably terminate short of the ends of the cylinders and preferably there will be a plurality of these angle irons or ribs 19 disposed equi-distantly around the cylinder. Preferably the cylinders are hollow and preferably each cylinder has a hollow trunnion connecting with the interior of the cylinder, this trunnion 20 being connected to an exhaust fan 21 illustrated diagrammatically in Figure 3.

Disposed around the exterior of the cylinder 18 are a plurality of the strips 11 previously referred to, these strips being convoluted, as previously described, and disposed so that adjacent strips break joints with each other. The flanges 19 extend up between the convolutions of the strips and hold the strips from circumferential movement upon the cylinder or roll 18. Each strip is placed around the roll and the ends of the strips are joined in any suitable manner, as by folding the ends of the strips over to form coacting hooks 22. The strips are preferably formed precisely as heretofore described and are preferably perforated, but at one point one of the faces 14 is formed with an outwardly and rearwardly extending prong 23 which forms a means whereby the cloths are engaged with the cushion so as to permit the cloths and padding to be wrapped around the spring cushion. As before remarked, the strips are placed against each other side by side until the entire length of the roll 18 is covered, except at the extremities of the roll, and then collars 24 are disposed upon the ends of the roll and clamped in place, as by set screws or any other suitable means, these collars preventing the strips from coming off the roll and holding them firmly in place. Over the exterior of the strips is preferably disposed a sheet of wire gauze or foraminated metal, designated 25. Over this is disposed a pad of cotton, wool or horsehair or like material and over this in turn is wrapped one or more thicknesses of cloth. The foraminated sheet of metal may be held in place in any suitable manner, as by engagement with the prongs 23, and these prongs 23 form the means whereby a sheet of cotton cloth or other suitable material, designated 26, is engaged with the roller. After this sheet has been wrapped around a portion of the periphery of the roll, the edge of the padding 27 is inserted beneath the selvage edge of the sheet and the wrapping is continued, and then a third sheet 28 is engaged beneath the sheet 26 and wrapped several times around the roller.

This is the ordinary and usual way of putting on the padding and sheet or cloths and does not form any part of my invention. Inasmuch as the roll constantly rotates in one direction, the sheets and padding are held perfectly close and tight to the roll. I do not wish to be limited to the use of a hollow roll, but by providing a hollow roll and providing an exhaust fan 21 withdrawing air from the interior of the roll, the steam created by the contact of the heated ironing cylinders with the dampened cloths is withdrawn through the perforations in the convolutions of the metallic cushion and into the interior of the roll and so out, it being understood that this roll under these circumstances will be perforated to permit the passage of the steam. Of course, it is obvious that if no exhaust means are used the steam will pass inward into the spaces between the spring cushion and the face of the roll and will escape laterally.

As before remarked, the padding ordinarily used on ironing machines and on clothes pressing machines or ironing boards is very liable to get closely packed and hard, but by the provision of a resilient spring cushion of this character this hard packing of the material is prevented and as a consequence the packing will last a very much longer time than it ordinarily would, with a consequent great saving. Furthermore, inasmuch as the padding will not get hard and as the cushion yields to inequalities, it is

obvious that the ironing machine will not be so hard on clothes and will not be so liable to tear off buttons, buckles or snap fasteners. My spring cushion is readily applied and readily removed at any time desired and the individual spring strips may be readily removed or replaced if one of them should become injured without the necessity of discarding the entire spring cushion.

By forming the strips as described, a practically continuous surface is provided over the periphery of the ironing roller or over the periphery of an ironing board or pressing board, and this is further secured by the provision of the foraminated metal plate or wire gauze disposed over the exterior face of the spring cushion. Inasmuch as padding is expensive, a considerable saving, amounting to about $500 in a large laundry, is effected by the use of the resilient spring cushion.

In Figure 7, I illustrate a slight modification in the spring cushion which consists in forming the outer longitudinally extending elements of the spring cushion with inwardly extending portions 28 struck up from the strip, these inwardly extending portions supporting the ends of the outer longitudinally extending portions of the cushion against the inner longitudinally extending portions of the cushion so as to prevent any tendency of the extremities of the outer portions 14 to be forced inward unduly.

It will be seen that my construction provides a plurality of longitudinally spaced, resilient supporting members, the supporting members of one series being staggered with relation to the supporting members of the next adjacent series, and further I provide a cushion formed of strips of spring metal, each strip being bent to provide successive longitudinal base portions and successive longitudinally extending outer portions 14 disposed in spaced relation outward of the base portions and connected thereto by the portions 13, the reentrant bends given to the portions 13 causing the outer portions 14 to be resiliently supported. It will also be noted, of course, that the padding of hair, felt, cotton, or wool and the sheets of textile fabric used in conjunction with the padding constitutes a padding extending exteriorly to the ironing device.

I claim:—

1. An ironing cushion including a plurality of spring strips disposed side by side, each strip being formed with relatively flattened, elongated convolutions.

2. An ironing cushion including a plurality of spring strips disposed side by side, each strip being formed with relatively flattened, elongated convolutions, each strip being independent of any other strip, the convolutions of each strip being disposed in staggered relation to the convolutions of adjacent strips.

3. An ironing cushion including a plurality of spring strips disposed side by side, each strip being bent to provide successive longitudinal base portions and successive longitudinally extending outer portions disposed in spaced relation outward of the base portions and resiliently connected thereto.

4. An ironing cushion including a plurality of spring strips disposed side by side, each strip being bent to provide successive longitudinal base portions and successive longitudinally extending outer portions disposed in spaced relation outward of the base portions and resiliently connected thereto, each outer longitudinal portion at its ends being disposed closely adjacent to the ends of adjacent longitudinal portions.

5. The combination with an ironing roll, of a cushion therefor comprising a plurality of spring strips disposed side by side circumferentially around said roll, each strip being bent to provide successive longitudinal base portions lying against the surface of the roll and successive longitudinally extending portions disposed in spaced relation outward of the base portions and resiliently connected thereto, and means on the roll engaging the series of strips and preventing circumferential movement of the strips.

6. The combination with an ironing roll, of a cushion therefor comprising a plurality of spring strips disposed side by side circumferentially around said roll, each strip being bent to provide successive longitudinal base portions lying against the surface of the roll and successive longitudinally extending portions disposed in spaced relation outward of the base portions and resiliently connected thereto, one of the outer longitudinally extending portions of each strip having an outwardly and circumferentially extending prong, means on the roll engaging the series of strips and preventing circumferential movement of the strips, a sheet of foraminated metal surrounding the series of strips and resting against the outer longitudinal portions thereof, and padding operatively engaged with said prongs on the strips and surrounding the foraminated metal.

7. The combination with an ironing roll, of a cushion therefor comprising a series of resilient, metal strips extending circumferentially around the roll, each strip being bent to form successive longitudinal portions lying against the roll and successive longitudinally extending outer portions disposed in spaced relation outward of the base portion and in staggered relation thereto, the ends of the outer portions being connected to the ends of the base portions by integral resilient portions, clamping collars mounted upon the extremities of the roll and

holding said strips side by side upon the roll and preventing movement of the strips longitudinally of the roll, and flanges on the roll extending outward between certain of the longitudinal base portions of the strips and preventing circumferential movement of the strips.

8. The combination with a hollow ironing roll having perforations and means for causing a suction through said roll, of a cushion surrounding the roll composed of a series of spring strips disposed side by side, each strip being bent to provide successive longitudinally extending base portions lying against the roll and successive longitudinally extending outer portions disposed in spaced relation outward of the base portions, there being integral, resilient portions connecting the base and outer portions, said strips being perforated and being disposed side by side, a sheet of foraminated metal mounted upon and resting against the outer portions of the strips, and padding surrounding the sheet metal.

9. As an article of manufacture, a spring cushion unit for ironing machines comprising a strip of metal bent to produce longitudinal base portions and successive longitudinal outer portions, the outer portions being alternated to the base portions and having staggered relation thereto, the outer portions and the base portions being connected by integral, resilient portions and the extremities of the strip being formed with interengaging hooks, one of said outer longitudinal portions being formed with a prong.

10. A laundry cushion having a plurality of parallel series of longitudinally extending, resilient supporting members, the supporting members of one series being staggered with relation to the members of the next adjacent series.

11. A laundry cushion comprising a plurality of parallel series of longitudinally spaced, bowed, resilient supporting members, the supporting members of one series being staggered with relation to the members of the next adjacent series.

In testimony whereof I hereunto affix my signature.

GEORGE W. CLINE.