(No Model.)

D. W. BOSLEY.

WEATHER STRIP.

No. 390,945. Patented Oct. 9, 1888.

Fig. 1.

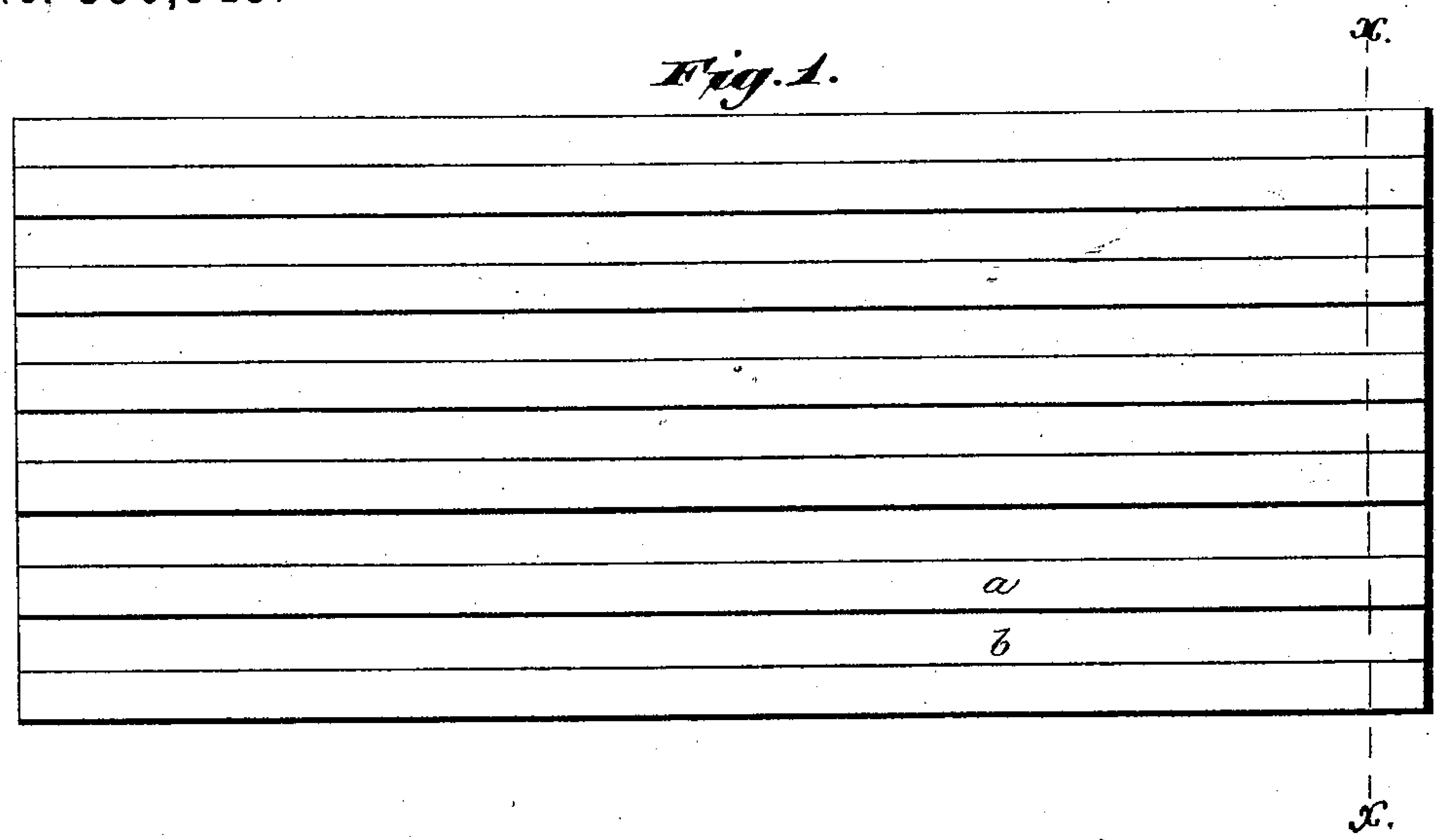

Fig. 2.

Fig. 3.

Witnesses:

Inventor:
Daniel W. Bosley.

By

Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

DANIEL W. BOSLEY, OF CHICAGO, ILLINOIS.

WEATHER-STRIP.

SPECIFICATION forming part of Letters Patent No. 390,945, dated October 9, 1888.

Application filed September 27, 1886. Serial No. 214,614. (No model.)

To all whom it may concern:

Be it known that I, DANIEL W. BOSLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Weather-Strips; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to weather-strips; and it consists in the construction and arrangement of the parts of the same, as will be fully hereinafter disclosed in the description, drawings, and claims.

Prior to my said invention and discovery weather-strips have been made in a great variety of forms, usually consisting in part of rubber and in part of wood or metal, united with a supporting rubber strip. To all such styles of weather-strip the following among other objections have been found to exist: In size and appearance they are so conspicuous as in many cases to offend the taste. They are so difficult to fit and adjust to windows and doors as to require considerable mechanical skill for their application and commonly the employment of a carpenter or other skilled mechanic to attach them. In many cases they require so much labor in their preparation and application as to make them unduly expensive. In the common use of such weather-strips composed of wood or metal, or both, combined with rubber, there is a tendency to separate the parts and render the whole structure useless. All such objections are, for all practical purposes, wholly overcome and removed by my present invention and discovery. I entirely dispense with all or any wood or metal support of my rubber weather-strip, and make the same wholly of rubber, as is below described, and illustrated by the accompanying drawings.

Figure 1 represents a top plan view of a sheet containing a series of my improved weather-strips, showing the manner in which they are formed. Fig. 2 represents a cross-section of the same on the line *x x* of Fig. 1. Fig. 3 is a sectional elevation of a modified form of the same.

In said drawings, *a* represents the thick or supporting part of the weather-strip, and *b* the thin part of the strip, which is intended to afford protection against the ingress of dust, rain, or cold.

The method of manufacture of my said new and improved weather-strip and article of manufacture is as follows, to wit: I provide a flat plate or piece of cast-iron thirty-six inches by forty-two inches in size, or of any other convenient size, which plate is truly and evenly planed on both sides. It may be of any convenient thickness. I have found five-eighths of one inch sufficient. Grooves or cavities of the desired width are then planed in the plate to the proper depth and width of the desired weather-strip. It is obvious that the depth and width of these grooves for the molding of the strip will vary according to the width and thickness of the support of the weather-strip which is desired.

It is also obvious that the spaces between said grooves will be varied in like manner to suit the desires of purchasers; but it is usually preferable to make the thin and thick parts of the strip of substantially the same width, as it is thereby rendered possible to obtain more accurate fit or adjustment of the same to the edges of windows and doors or within the grooves or angular recesses of the adjacent frame-work than would be possible were said thin and thick parts of the strip of different widths; also, their sameness of width may result in a saving of material, as the thin part may be so reduced relatively to the thick part as to merely serve to prevent the passage of dust, rain, or cold, while the thicker part, of corresponding width, will afford a firm support for the entire strip and avoid the usual tendency to separation of the parts; also, this form of weather-strip is neater in appearance than those generally employed.

Having prepared such a molding-plate as I have described, I then cause to be placed upon it a sheet of rubber not vulcanized. This sheet may be of any desired thickness, and I have found that a sheet three thirty-seconds of one inch thick is sufficient for ordinary purposes. That sheet will of course correspond in width to the mold-plate, but may be of any convenient length, as is below shown. When the sheet has been fitted to the plate, both are placed in a steam-press and the rubber is subjected to such a pressure as is necessary to fill

the grooves evenly full of the rubber, and at the same time leave a thin strip of the rubber over and upon the highest parts of the mold—that is, the parts between the grooves planed in it. The plate and rubber are left in the press until the rubber is thoroughly vulcanized and will permanently retain the form of the grooved plate. When that has been accomplished, the press is raised and the rubber drawn along for another length, and the process repeated from time to time until about fifty linear feet have been vulcanized. The vulcanized rubber sheet is then cut into strips for use, each strip having a thick part formed in a groove and a thin part connected with it, said thick and thin parts being of substantially the same width, as above described. The thick part of the strip obviously takes the place of the previous wooden, metallic, or other like support which has heretofore been used in the construction of weather-strips. The thin part of my weather-strip serves the like purposes as the corresponding strip of other manufactures of the same general nature.

Among the great advantages of my new and improved weather-strip and article of manufacture are the following: It is impossible to separate the support of the strip from the protector against the weather. Any woman or boy can fit and apply it with a pair of shears and tack-hammer and some suitable nails or tacks. Weather-strips have hitherto been made by sewing separate pieces of rubber together and by sewing rubber and cloth together, but such devices have failed to meet the needs of the public for obvious reasons.

The molding-plate may be made ornamental, so as to impress upon the weather-strip any desired figure or design. The weather-strip may also be made of any desired color to match the window-sash or the casing.

I am aware that sheets of molding formed in strips and composed in part of hard rubber and in part of soft rubber, with the strips adapted to be cut apart along the sides of the projecting hard parts, have been made by filling grooves with a plastic mass or composition of rubber and then uniting the contents of said grooves with a superposed sheet of rubber packing by the application of a sufficient degree of heat to cause one of said sheets of rubber to become hard and the other to remain soft, and I do not claim the same; but I am not aware that weather-strip sheets formed in strips and made complete from a single piece of uniformly-vulcanized rubber by a single operation have ever been made prior to my invention. My construction of weather-strip sheets and their separated strips are also cheaper, lighter, more flexible, more easily applied, and have a wider range of adaptability than those just named.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A weather-strip formed of a single piece or strip of flexible vulcanized rubber, and consisting of a thin flat web and a thicker flat rib of substantially the same width, substantially as and for the purpose described.

2. A sheet of weather-strips composed of a single sheet of flexible vulcanized rubber having a series of alternating flat ribs and intersecting webs of different thicknesses, adapted to be separated into strips by cutting the same along the sides of the ribs, substantially as described.

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

DANIEL W. BOSLEY.

Witnesses:

LYMAN M. PAINE,

WILLIAM J. SHEAHAN.