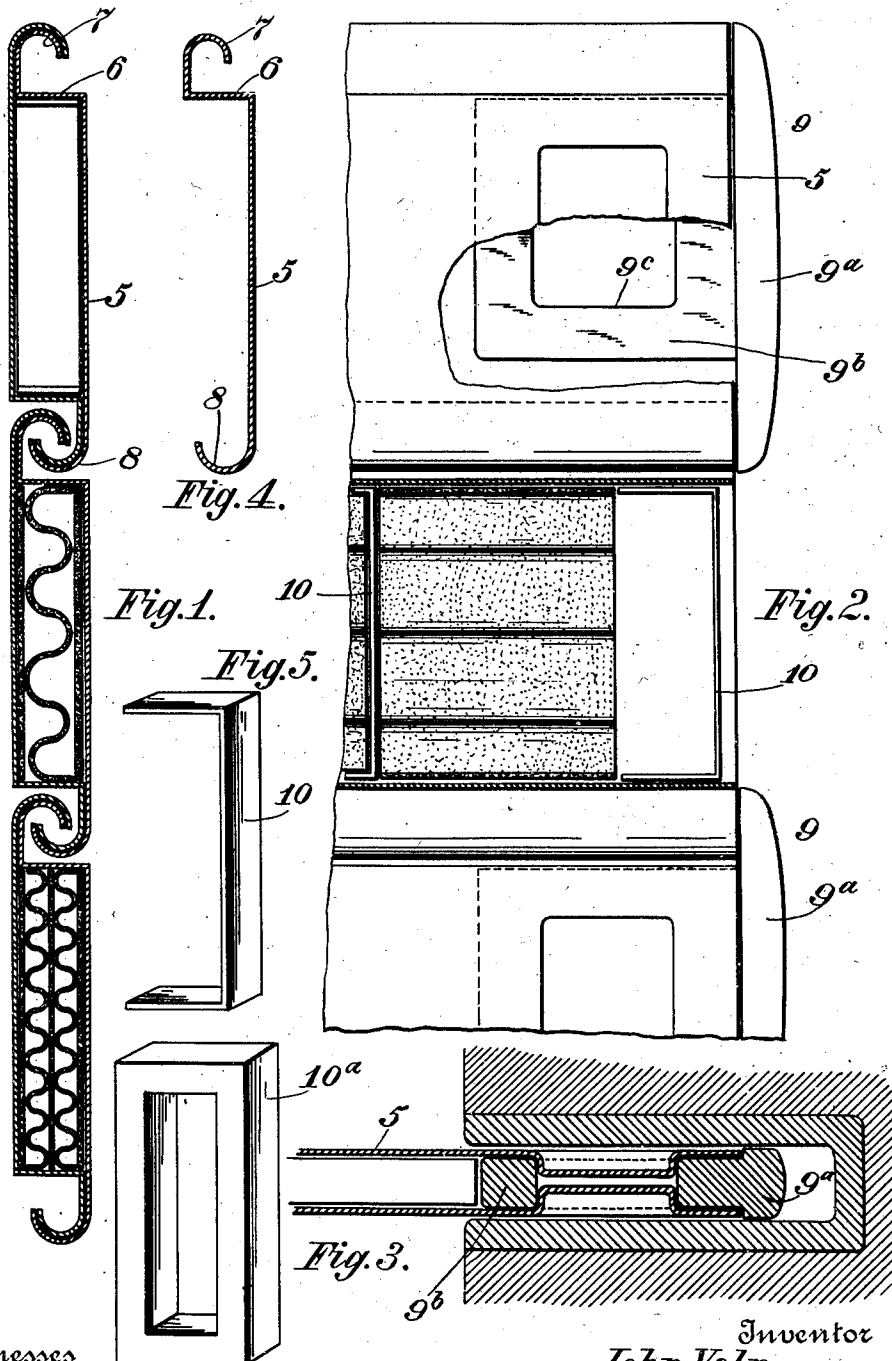


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FIRE RESISTING SHUTTER OR CURTAIN.
APPLICATION FILED MAR. 26, 1909.

1,095,152.

Patented Apr. 28, 1914.



Witnesses
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Fig. 6.

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UNITED STATES PATENT OFFICE.

JOHN VOLP, OF GROVE CITY, OHIO, ASSIGNOR TO THE KINNEAR MANUFACTURING COMPANY, OF COLUMBUS, OHIO, A CORPORATION OF WEST VIRGINIA.

FIRE-RESISTING SHUTTER OR CURTAIN.

1,095,152.

Specification of Letters Patent.

Patented Apr. 28, 1914.

Application filed March 26, 1909. Serial No. 436,014.

To all whom it may concern:

Be it known that I, JOHN VOLP, citizen of the United States, residing at Grove City, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Fire-Resisting Shutters or Curtains, of which the following is a specification.

The object of this invention is to provide an improved construction of flexible rolling shutter or curtain in which, among other advantages, there is less danger of flame passing around the vertical edges of the curtain than is the case with many of the constructions heretofore in use.

The invention is embodied in the herein shown and hereinafter described details of construction, the invention not being confined to the precise forms and proportions of the parts so shown.

In the accompanying drawings Figure 1 is a view in vertical section of three slats or sections, one of them being shown as unfilled and the two others containing fillings dissimilar in details. Fig. 2 is a view in elevation of end fractions of three slats or sections with end locks, the upper slat having a wall broken out to show the construction of the end lock. Fig. 3 is a horizontal section through the end of a section or slat and end lock showing its position in a guiding channel. Fig. 4 is a vertical section of one of the two constituent pieces of the slat body proper or shell. Fig. 5 is a perspective view of a bent sheet metal brace for insertion in the interior of the slat. Fig. 6 is a similar view of a cast metal slug for the same purpose.

The slat body proper is in the form of a tube made up of two pieces of sheet metal of equal length and having a cross section like that shown in Fig. 4. In said view 5 designates the side wall, 6 an edge wall bent from one edge of the side wall to stand at right angles to the side wall and 7 a hook forming member bent from the outer edge of the edge wall 6. 8 designates a hook forming member bent from the other edge of the side wall 5. The shape thus described can be conveniently and expeditiously manufactured by passing the flat blank strip through suitable die rollers. The hook forming edge or member 8 is formed on a larger arc than that of the member so that by inverting one strip with reference to another

and placing them properly endwise together they can be slid together and thereby be locked from lateral separation and form a tube with a rectangular bore, as will be clearly understood by an inspection of Fig. 1.

In the form of tubular construction shown, the vertical sides present plane surfaces and the hook members 7 and 8 are constructed to lie within the planes of these surfaces. In a curtain made up of this form of slats, there are no channels formed between the guiding groove and the curtain through which the flame can pass from one side of the curtain to the other.

9 designates the end lock. The primary function of this lock is to prevent the longitudinal movement of the slats on each other in the curtain, but in the present instance it is so constructed that, by its peculiar connection with the constituent pieces or sides of the slat, it prevents those constituent pieces from longitudinal movement with reference to each other and therefore in conjunction with the interlocking hook-forming portions of those sections binds the said sides or pieces together. The said end lock comprises a head portion 9^a and a flat shank portion 9^b having a perforation 9^c. The head portion 9^a is made large enough, when in place in a slat, to extend at its end beyond the hooks of the slats joined to it, and the shank 9^b is made of a size to enter the hollow end of the slat and be secured thereby by pressing the metal of the sides 5 down into the perforation 9^c, as clearly depicted in Fig. 3.

The hollow slats can be provided with a filling of any suitable character. In the middle slat Fig. 1 the filling consists of two flat strips of asbestos, one lying next to each of the inner sides of the slat and a single strip of corrugated asbestos lying between the first mentioned strips. The middle strip of asbestos is of sufficient depth in its corrugations to hold the flat strips against the inner sides of the strips. In the lowermost slat Fig. 1 the filling is the same as that in the middle slat except that in the place of the single intermediate corrugated strip there are two corrugated strips of smaller depth of corrugation separated by an intermediate flat strip. These fillings do not add greatly to the weight of the curtain or shutter, prevent rapid radiation of heat and

somewhat brace the faces of the slat against collapsing when subjected to great heat. The walls of the slats can be thoroughly braced by providing at suitable intervals 5 suitable devices for this purpose. In Figs. 1 and 5 the said bracing device consists of a piece of sheet metal bent to U-form as seen at 10 and made of dimensions to closely fit within the cavity of the slat. The bracing 10 devices can be located at intervals and between sections of the filling. In Fig. 6 the bracing device 10^a somewhat resembles a chain link except that it is rectangular. In this form it can be of cast metal and num- 15 bers of them can be located in the same way as described with reference to the U-shaped sheet metal brace. In either case these braces prevent crushing or deforming the slat when rolled on each other or by other 20 forces when the shutter or curtain is hanging.

It will be understood, of course, that the shutter or curtain when made up can be hung upon a suitable roller as is the common 25 practice with rolling or flexible shutters or curtains of this type.

The perforation of the shank of the end lock is not necessarily a through perforation.

What I claim is:

30 1. A slat for the construction of flexible shutters or curtains comprising a tubular body portion having oppositely arranged hook members projecting from its edge walls, said slat being formed of two identi- 35 cally shaped sheet metal strips, each strip embodying a side and edge wall of the tubular body and oppositely arranged hook portions having different radial dimensions projecting from each wall, said strips being 40 placed together in reverse relation to form the tubular body portion with the hook members at the adjacent ends fitted one within the other.

45 2. A slat for the construction of flexible shutters or curtains consisting of a pair of identically formed sheet metal strips, each strip comprising a side wall, an edge wall bent from one edge of the side wall, a hook

forming member bent from the outer edge 50 of said edge wall, and a hook forming member bent from the other edge of the side wall in a direction opposite the first mentioned hook, said hook members and walls being so constructed that in reversing the strips the hook members at adjacent ends are 55 adapted slidably to fit one within the other with said side and edge walls forming a tubular body portion.

3. A slat for the construction of flexible shutters or curtains consisting of a pair of 60 identically formed sheet metal strips, each strip comprising a side wall, an edge wall bent from one edge of the side wall, a hook forming member bent from the outer edge of said edge wall and a hook forming 65 member bent from the other edge of the side wall in a direction opposite the first mentioned hook, said hook members and walls being so constructed that in reversing the strips the hook members at ad- 70 jacent ends are adapted slidably to fit one within the other with said side and edge walls forming a tubular body portion, said hook members lying within the vertical 75 planes of the sides of the slat.

4. A slat for the construction of flexible shutters or curtains consisting of a pair of identically formed sheet metal strips each strip comprising a side wall 5, an edge wall 6 bent from one edge of the side wall at 80 right angles to said side wall, a hook forming member 7 bent from the outer edge of said edge wall, and a hook forming member 8 of greater arc than the hook member 7 bent from the other edge of the side wall in a 85 direction opposite that of hook 7, said hook members and walls being so constructed that in reversing the strips the hook members are adapted slidably to fit one within the 90 other with said walls forming a tubular body portion, said hook members lying within the vertical planes of the sides of the slat.

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Witnesses:

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