

J. C. McMAHON.
METAL WEATHER STRIP.
APPLICATION FILED FEB. 24, 1909.

991,526.

Patented May 9, 1911.

Fig. 1.

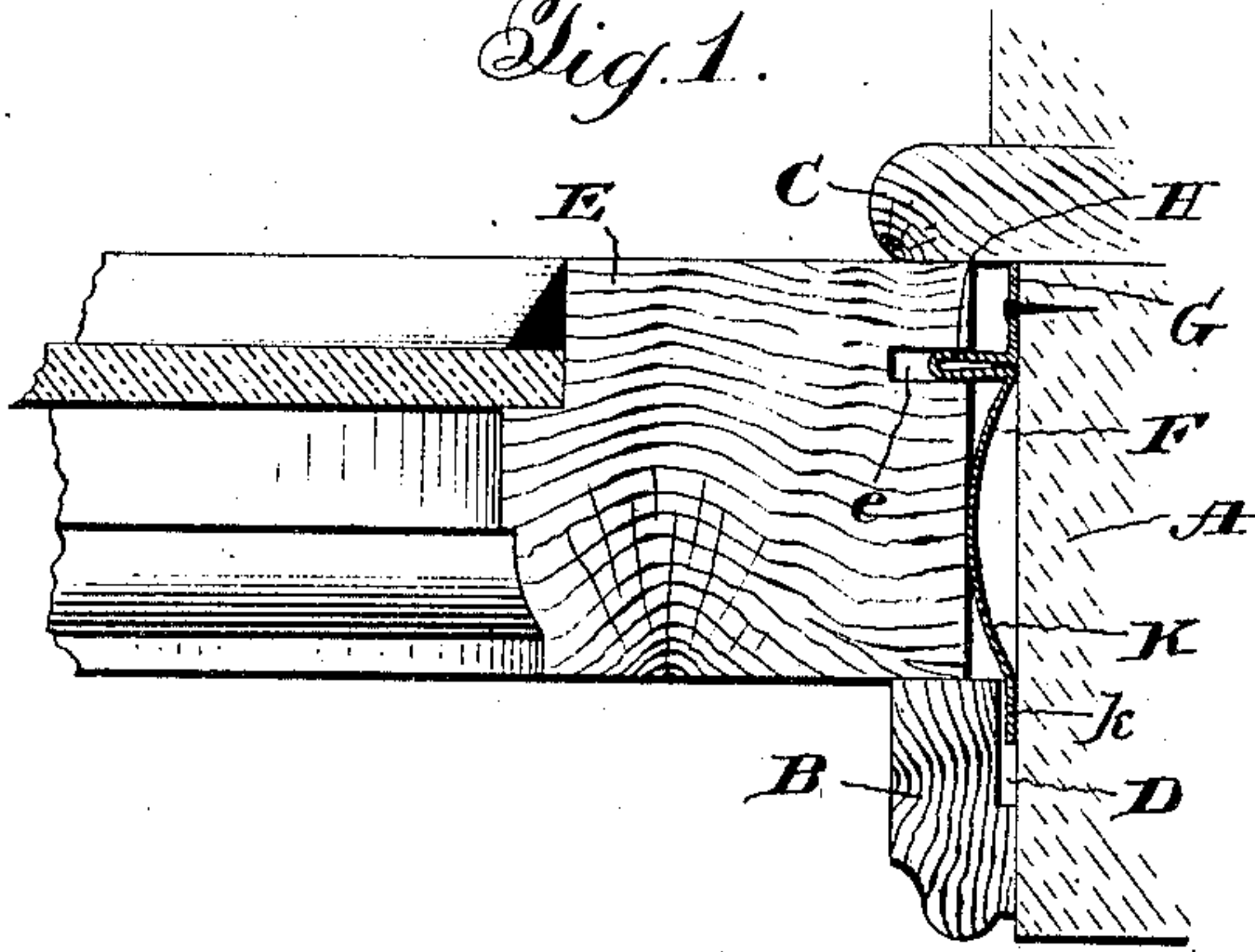


Fig. 2.

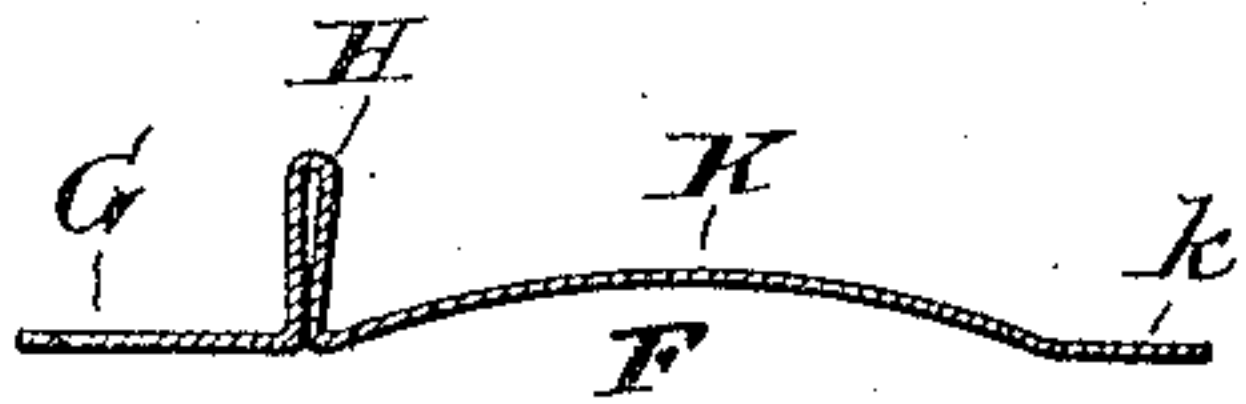


Fig. 3.

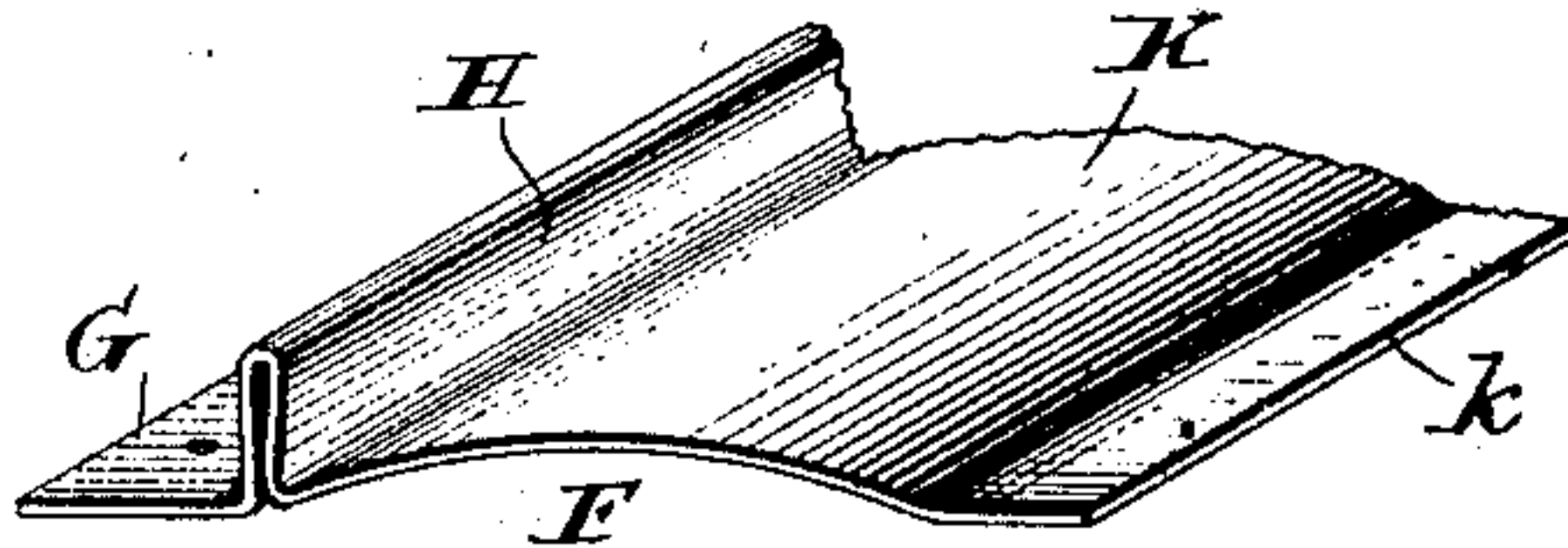
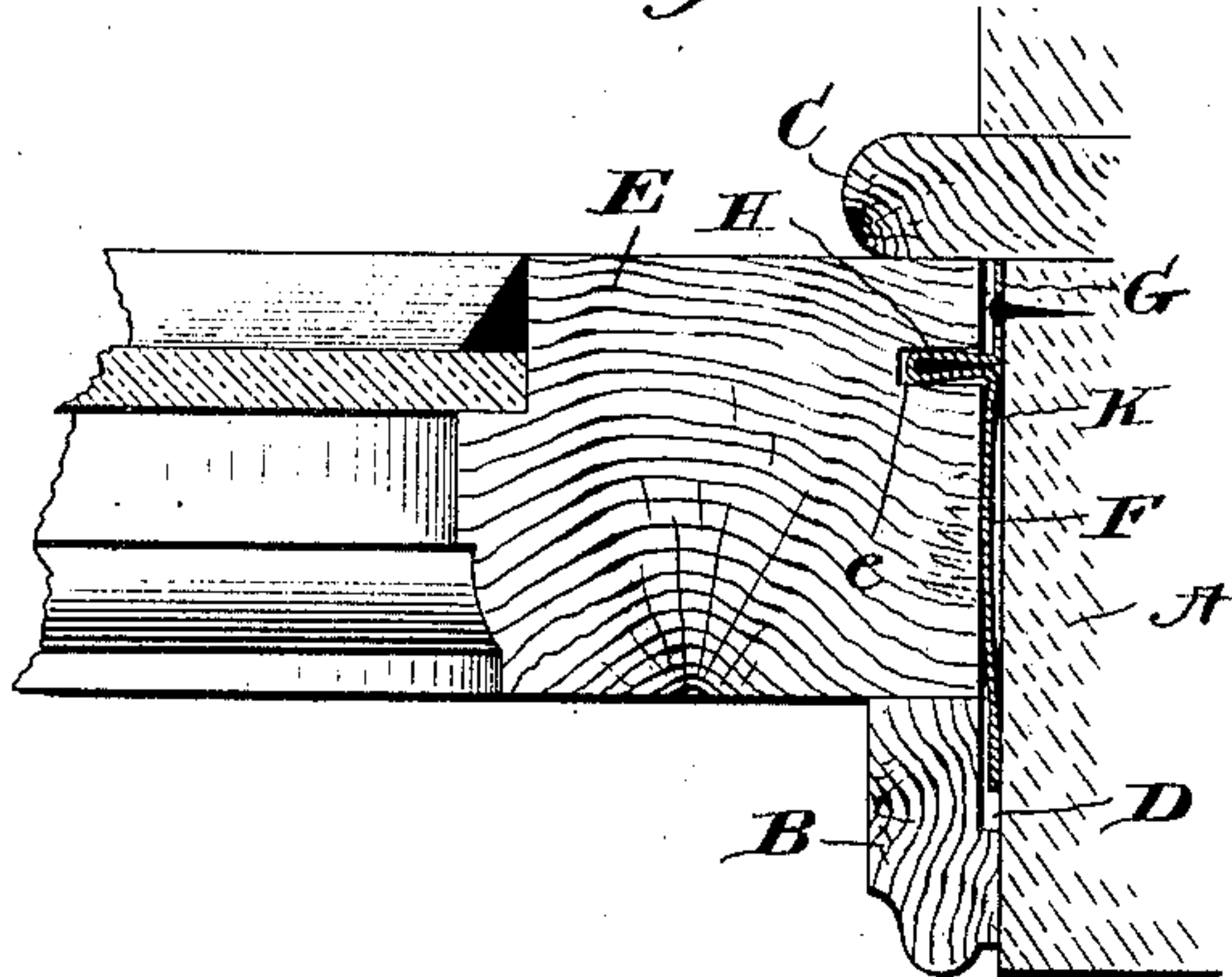


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

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METAL WEATHER-STRIP.

991,526.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed February 24, 1900 Serial No. 479,804.

To all whom it may concern:

Be it known that I, JOSIAH C. McMAHON, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Metal Weather-Strips, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to an improvement in metal weather strips and it is embodied in the construction presently to be described and defined in the claims.

Heretofore in the art of metal weather strips it has been customary usually to construct the strip of thin strips of zinc and to bend the zinc or metal longitudinally upon itself to form a raising rib the latter entering in the groove formed in the sliding sash. In such constructions and in fact in metal weather strips of the general rib or tongue and groove type it would be necessary to form the base flange flat so as to preserve as far as possible the relative position of the walls of the sash groove and the rib of the strip. It often and in fact usually occurs that in window structures more particularly of the sliding sash type there is required considerable space between the edges of the sash and the bottom of the run way of the groove so that the sash if swollen by dampness will not stick or bind beyond the point of immovability. It is often found in window structures that the space between the sash and bottom of the guide way is very considerable and that the window has or is permitted a wide movement from left to right this has necessitated in the application of metal weather strips the placing of battens or small filling strips of wood or other material in the bottom of the groove so as to build them up properly and thereby reduce the amount of movement permitted the sash. It has been recognized that were it possible to provide a metal weather strip which would normally hold the window sash against edgewise movement as well as against transverse movement or rattling without undue binding or wedging of parts together it would be very desirable and overcome existing objections. It is the provision of a strip for acquiring this result and for avoiding the use of battens that the present invention is intended.

5 In the drawings is shown an embodiment of the invention but it is to be understood

that modifications and changes can be made without departing from the nature and principle of the invention.

Figure 1 is a cross section of a window frame and sash rail showing the invention, Fig. 2 is a sectional view of the metal weather strip, Fig. 3 is a perspective view of a section of metal weather strip embodying the invention, Fig. 4 is a view similar to Fig. 1 showing the position of the parts when the sash frame more closely fits the run way.

A designates a window frame of the usual construction having the molding B and the parting bead or strip C forming therebetween the usual run way or guide at the side of the window frame. The molding B is undercut along the base of its inner edge as at D the undercut extending well toward the center of the molding although in this particular the term center is employed arbitrarily and relates to the construction shown.

E designates one of the stiles of a sliding sash having adjacent one of its edges or between the edge and its center a groove e.

F designates the metal weather strip which is conveniently of a width to extend entirely across the run way of the window frame and project beyond the same. This strip is formed of a thin sheet having more or less resiliency such as is possessed by sheet zinc now commonly used for metal weather strips. The strip is provided with a flat base G an outstanding rib part H formed of the metal bent upon itself as is usual in this type of metal weather strip. The opposite flange K of the strip is ribless and is bowed or bent outward from the edge of the rib H the bow or bend being gradual and of considerable arch so as to carry the crown of the bend outward normally to a point adjacent the plan of the center of the rib H as shown in Fig. 1. The use of the term "ribless" in connection with the flange K is intended to indicate that such flange is not provided with any ribs or other projections which engage the window sash so that the free edge of said flange is at all times free to move laterally when the flange is subjected to pressure. The outer portion of the base flange K is bent inward and the edge thereof is projected substantially straight or parallel with the position of the securing flange G. It will be observed that the securing flange is relatively narrow while the spring or bowed flange is of considerable width. In applying this strip the edge of the securing

flange G is conveniently placed against the parting bead C and there secured by tacks or brads in the usual manner. The flat edge $\frac{1}{2}$ of the bowed flange K is fitted in the undercut portion D to the molding B and this undercut portion or groove is of sufficient width to permit the movement of the said edge $\frac{1}{2}$ without engaging the rear wall of the undercut or groove, a sufficient distance to permit the full compression of the bowed or curved part of the flexible or spring rib K, as shown in Fig. 4 of the drawing, thereby permitting the sash member to expand or move slightly without binding or wedging the sash in the run way.

By the above described construction it will be observed that the compressing movement of the spring flange does not disturb the position of the rib H in the groove in the window sash and that by completely straightening out the spring flange the rib will not be shifted laterally owing to its position and owing to the curvature of the spring flange. In use the spring flange is sufficiently bowed and positioned to normally engage with the edge of the sash and so on both sides of the window so that the sash is prevented from moving edgewise unless considerable pressure is employed to overcome the pressure of the spring K. It will also be observed that the strip is so made that it will automatically adjust itself to the spacing between the sash and the bottom of the runway and will permit as above stated the free swelling of the sash without causing a binding action. This spring contact also serves as an auxiliary barrier to prevent the ingress of air, dirt, etc.

It is obvious that in applying the strip it can be reversed so that the edge or securing flange will be adjacent the molding and the undercut portion formed in the parting bead as is well understood in this art.

I am of course aware that metal weather strips have heretofore been constructed of spring metal having thereon projecting parts entering a groove but in such construction there has always been a variation in the position of the projecting part relative to the walls of the groove as the strip is depressed into the runway. I am also aware that it has been heretofore suggested to form a metal weather strip of bowed members or flanges without the groove entering the part or member. By the formation of strip thus described the use of battens is avoided to a very large extent the unnecessary space between the sash and frame being occupied by the spring flanges.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

1. A metal weather strip formed from a single piece of sheet metal and comprising a sealing rib adapted for engagement with a cooperating grooved member, a flat attaching flange projecting from one side of the base of said rib, and a relatively wide, gradually arched spring flange projecting from the opposite side of the base of the rib.

2. A metal weather strip formed from a single piece of sheet metal and comprising a sealing rib adapted for engagement with a cooperating grooved member, a flat attaching flange projecting from one side of the base of the sealing rib, a relatively wide gradually arched spring flange projecting outwardly from the opposite side of the base of the sealing rib and having its free edge returned to the plane of the attaching flange of the strip.

3. The combination with a window frame having a runway formed with a groove leading from the side thereof and a sliding sash having a rib receiving groove, of a metal weather strip having at one edge an attaching flange secured at one side of the center of the run way, an outwardly extending rib entering the groove of the sash and the outwardly bowed yielding flange extending from the rib and having its free edge bent rearwardly and extending into said groove of the runway, the free edge of said flange being free to move laterally when pressure is applied to the bowed portion thereof.

4. The combination with a window frame and a sliding sash of a metal weather strip interposed between the same consisting of an attaching flange, a rib extending outwardly from the edge of the flange and an outwardly extending yielding base flange opposite said attaching flange, the free edge of said yielding flange being free to move laterally.

5. In combination with a guideway and a window sash adapted to slide therein, a weather strip secured to one of said members and provided with a rigid sealing rib adapted to engage a groove in the other of said members, said strip being provided with an arched spring flange extending from the base of the rib and projecting outwardly therefrom, the free edge of said flange resting upon the supporting member for the strip and being free to move laterally thereon.

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

JOSIAH C. McMAHON.

Witnesses:

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G. WILLIAM JONES, Jr.