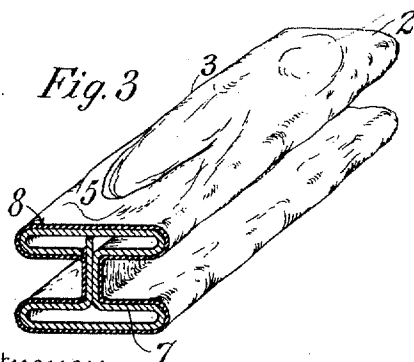
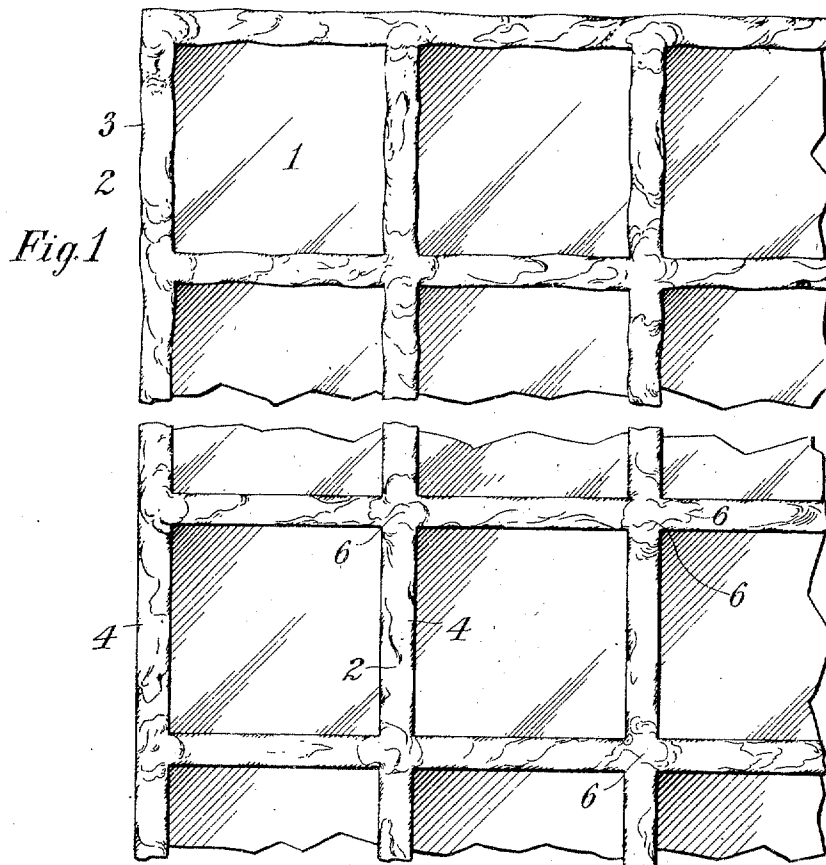


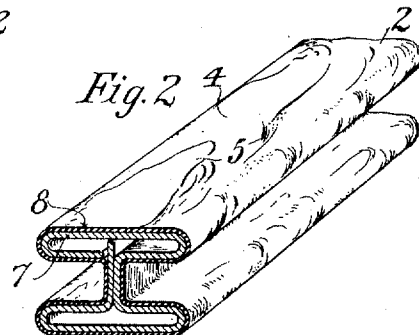
W. HENDERSON.
 WINDOW CAME.
 APPLICATION FILED JULY 23, 1899.

991,847.

Patented May 9, 1911.



Witnesses:
 J. Hart Robertson
 C. H. Whitcomb



Wm. Henderson, Inventor
 By *Alfred Stetson*, Attorney

UNITED STATES PATENT OFFICE.

WILLIAM HENDERSON, OF NEW YORK, N. Y.

WINDOW-CAME.

991,847.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed July 23, 1909. Serial No. 509,178.

To all whom it may concern:

Be it known that I, WILLIAM HENDERSON, a subject of the King of Great Britain, residing at New York, county and State of New York, have invented certain new and useful Improvements in Window-Cames, of which the following is a specification.

My invention relates to improvements in metallic glazing bars employed in leaded glass work for ornamental or stained glass windows.

It relates further to window comes or bars built up with an internal stiffening frame whose exposed surface is covered wholly or in part with a layer of metallic lead or lead simulating material.

It relates particularly to the class of metallic window bars of the kind set forth in my U. S. Patent No. 497,543, of May 16th, 1893, in which is described a hard sheet-metal bar having marginal heads, with a seat or recess between said heads to receive and hold the glass panes.

The object of my invention is to produce an ornamental and artistic window came, which, while preserving all the beautiful effects of the antique leaded glass, shall have sufficient strength to permit of the use of panes of glass of any desired size and weight, and to resist distortion from wind pressure and gravity.

A further object of my invention is to furnish a leaded glass came of reasonable size and weight, thereby assuring the fine lines necessary for windows built up of small glass panes. In other words, I produce a came strong enough to use with large heavy panes, and yet so delicately lined as to be capable of employment in windows built up of small panes, without the leaded comes being too large for the glass portion, thereby marring the desired effect from the artistic standpoint.

Another and important object of my invention is to produce a composite lead or lead imitating came, which shall be durable, easily, rapidly and economically manufactured, and capable of being installed without the necessity for such skilled labor as has hitherto been the case in high grade glass glazing.

My invention is designed to restore to architecture the antique leaded glass windows, which on account of their artistic effect are so much admired, but which having been hitherto fashioned slowly and labo-

riously by hand, are seldom seen in modern structures, on account of the time and expense involved.

The ancient method of making leaded glass comes was to cast the lead into an H-shape, and then to reduce the casting to the required size and weight by means of hand tools. This manipulation gave the great charm to leaded glass, and the effect was heightened by a certain artistic irregularity of outline that the ancient lead glazier impressed upon the comes, which artistic leaded effect I easily and cheaply reproduce. The old method was slow and costly, the comes too weak, and the finished article too weighty and bulky for modern use. To meet modern requirements as to weight and size, the lead mill and the hydraulic press were introduced, but at the expense of the effect so desirable and at a sacrifice of durability and strength.

By my invention the old leaded glass effect is restored, strength and durability are added, the cost very materially reduced, and the weight adapted to modern requirements.

In the accompanying drawings:—Figure 1 shows portions of a window built up with my improved comes, the upper part showing irregular, the lower, practically straight outlines; Fig. 2 is a perspective view, with end section of a straight edged came provided with the leaden coating, and Fig. 3 is a similar view of a like came having artistically irregular outlines.

Referring to the drawings:—1 is the glass pane inclosed by the came 2, bounded by irregular lines 3, or by practically straight lines 4. To further increase the artistic antique effect, the surface of the composite came 2 is roughened by heat or chemical action to produce the irregular surface 5, and lumps of solder 6, or the like, are added at the junctions of the comes.

To carry out my invention, I form a sheet-metal H-shaped came, 7, preferably (for reasons of strength and economy in manipulation) of one piece substantially as set forth in my U. S. Patent No. 497,543, of May 16, 1893. To the stiff sheet-metal came thus provided, I apply by dipping, heat, brazing, or chemical action, an external coating 8, of lead or lead imitating material, to the outlines of which I can give irregular or substantially straight form, and the surface of which may be artistically roughened as before set forth.

I do not desire to limit myself to the use of a one-piece came, the essential feature being the H-shape, the light, strong sheet-metal foundation and the lead or lead imitating layer covering the entire surface of the came, or only the portion exposed to view. The external coating may be lead, tin, zinc, or alloys thereof, or any lead simulating metal.

10 I do not herein desire to claim a metal came having an irregular outline, that forming the subject matter of an application filed simultaneously herewith, Serial No. 509,179.

15 Having thus fully described and illustrated my invention, what I claim, is:—

1. A sheet-metal came whose exposed surface is covered with lead or lead imitating metal.

20 2. A sheet-metal came having an external layer of metallic lead artificially roughened, as and for the purpose set forth.

3. A came for leaded glass windows having an H-shaped internal structure to which is externally applied a layer of lead artificially roughened and whose irregularities are increased at the junctions of the comes by added amounts of deposited metal. 25

4. A sheet-metal H-shaped came whose exposed surface is covered with lead or lead simulating metal.

5. An H-shaped, one-piece sheet-metal came whose external surface is covered with a layer of lead or lead simulating metal. 30

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this 22d day of July 1909. 35

WILLIAM HENDERSON.

Witnesses:

A. STETSON,

ALFRED R. ANDERSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
