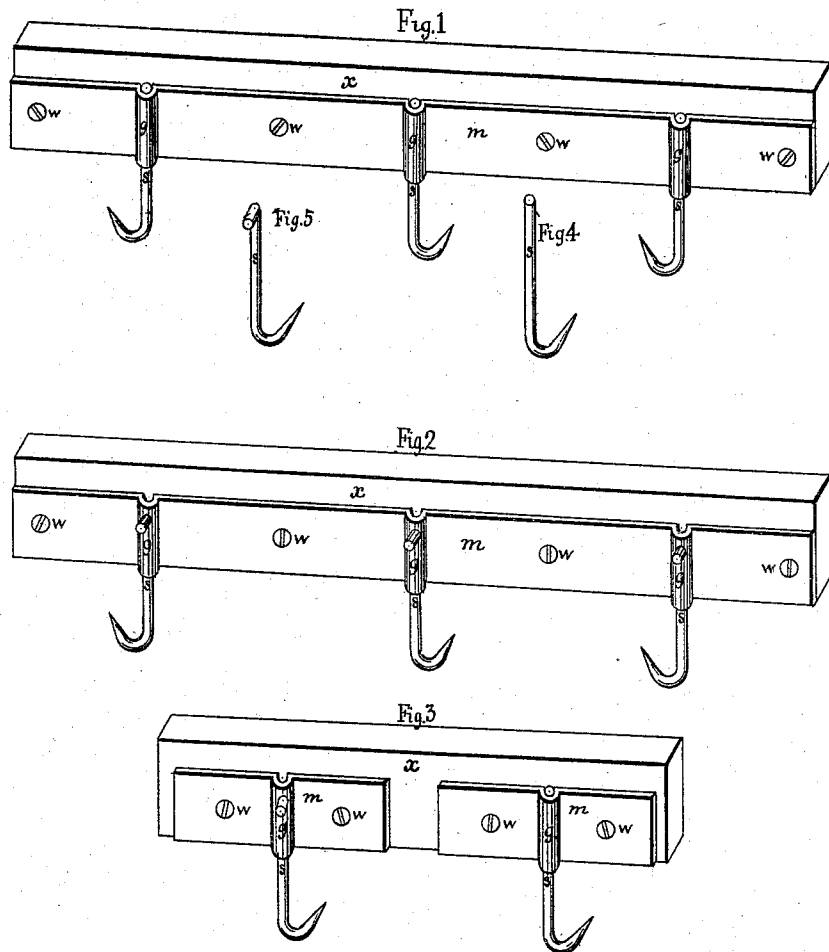


W. H. HAINES.
SUSPENSION HOOK FASTENING.

No. 177,936.

Patented May 30, 1876.



Witnesses:

Wm. S. Henson

Geo. A. Meeker

Inventor

W. H. Haines

UNITED STATES PATENT OFFICE

WILLIAM H. HAINES, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN SUSPENSION-HOOK FASTENINGS.

Specification forming part of Letters Patent No. **177,936**, dated May 30, 1876; application filed February 29, 1876.

To all whom it may concern:

Be it known that I, WILLIAM H. HAINES, of the city of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful improvements in fastening to the wooden drying-frames suspension-hooks for suspending japanned cloth and other goods which require to be suspended in drying-rooms, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to avoid the accidents and damage resulting from the weakness and inefficiency of the mode hitherto used of attaching the hooks to the wooden frames in the drying-rooms of japanned-cloth factories, which common method I will describe as follows:

The hooks ordinarily used are similar in form and size to those I now propose to use, but the upper end of the shank is longer and flattened, and bent at a right angle to the hook and to the upper part of the shank, thus forming a spike on one side, which is driven about an inch into the wooden framing. Each hook is still further fastened by two wire staples driven into the wooden bars of the drying-frame inclosing the shank, and preventing it from being moved sidewise by the strain to which it is subjected.

I have found by experience that the heat of the drying-rooms, (150° to 180° Fahrenheit,) together with the strain, causes the hooks thus attached to become loose, and sometimes they give away and let the goods fall in a crumpled heap to the floor, where, if not discovered quickly, they are liable to spontaneous combustion, &c.

My improved modes of fastening the suspension-hooks to the wooden drying-frames are by means of metallic bands of any convenient length or size, substantially as follows: I take bands of iron or other suitable metal about one inch wide and one-sixteenth inch thick, or thereabout, and four or five feet long. By means of suitable tools I form a series of transverse grooves, *g g*, Figs. 1, 2, and 3, at intervals of about four inches apart, and large enough to contain the shanks of the hooks.

In Fig. 1, the shanks *s s* are soldered fast

with common tin-soldering metal inside the transverse grooves *g g*, after which the metallic bands holding the hooks are attached by the intermediate wood-screws, or their equivalents, to the wooden drying-frames.

In Fig. 2 the shanks of the hooks are not soldered in the grooves, but about one-fourth of an inch of the upper ends of the shanks are bent at a right angle to the shank, and at right angles to the hooks, (see Figs. 2 and 5,) in such manner that when the hooks are fixed in the transverse grooves of the metallic bands, the short bent ends at the top of the shanks project through small holes punched or drilled near the upper side of the iron bands in the transverse grooves, so that when the bands are fastened by the wood-screws *s s*, or their equivalents, (common to Figs. 1, 2, and 3,) to the wooden drying-frames the shanks of the hooks are securely held from lateral motion by the grooves, and from vertical and twisting motion by the short hook-like bent ends passing through the holes in the grooves of the band near the upper side of the grooves.

Both these improved modes of fastening the hooks require them to be set with the hooks pointing alternately in opposite directions for the convenience of the workmen, and those hooks shown at Fig. 2 require the short bent ends at the top of the shanks to be bent alternately in opposite directions, forming rights and lefts.

I prefer the latter mode of fastening the hooks, (shown at Fig. 2,) as being more readily replaced when broken or damaged.

If it is considered desirable, each hook can be attached to a short piece of band-iron either by the soldering or by the bent-shank method above described, and fastened to the wooden drying-frames by two screws to each hook, as shown at Fig. 3. This mode gives great facility for replacing damaged hooks, and the further advantage of superior strength.

When I fasten the hooks to the metallic bands by soldering, it is not absolutely necessary to indent the transverse grooves into the bands, as the hooks may be soldered onto flat bands having no transverse grooves; but I prefer the grooves as being stronger.

Fig. 4 shows a hook with a straight shank,

as used for the soldering mode. *xxx* represent part of the wooden drying-frames, and *m m m* are the metal straps holding the hooks attached to them.

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

The metallic bands *m*, of any convenient length and size, having the indented transverse grooves *g*, in which the suspension-hooks *S* are soldered or otherwise firmly held, the

band and hooks thus secured together being adapted for attachment by screws or their equivalents to the wooden drying-frames of japanned-cloth factories, and other like uses, all substantially as herein shown and described, for the purpose set forth.

W. H. HAINES.

Witnesses:

WM. S. HENSON,

GEO. A. MEEKER.