

April 23, 1929.

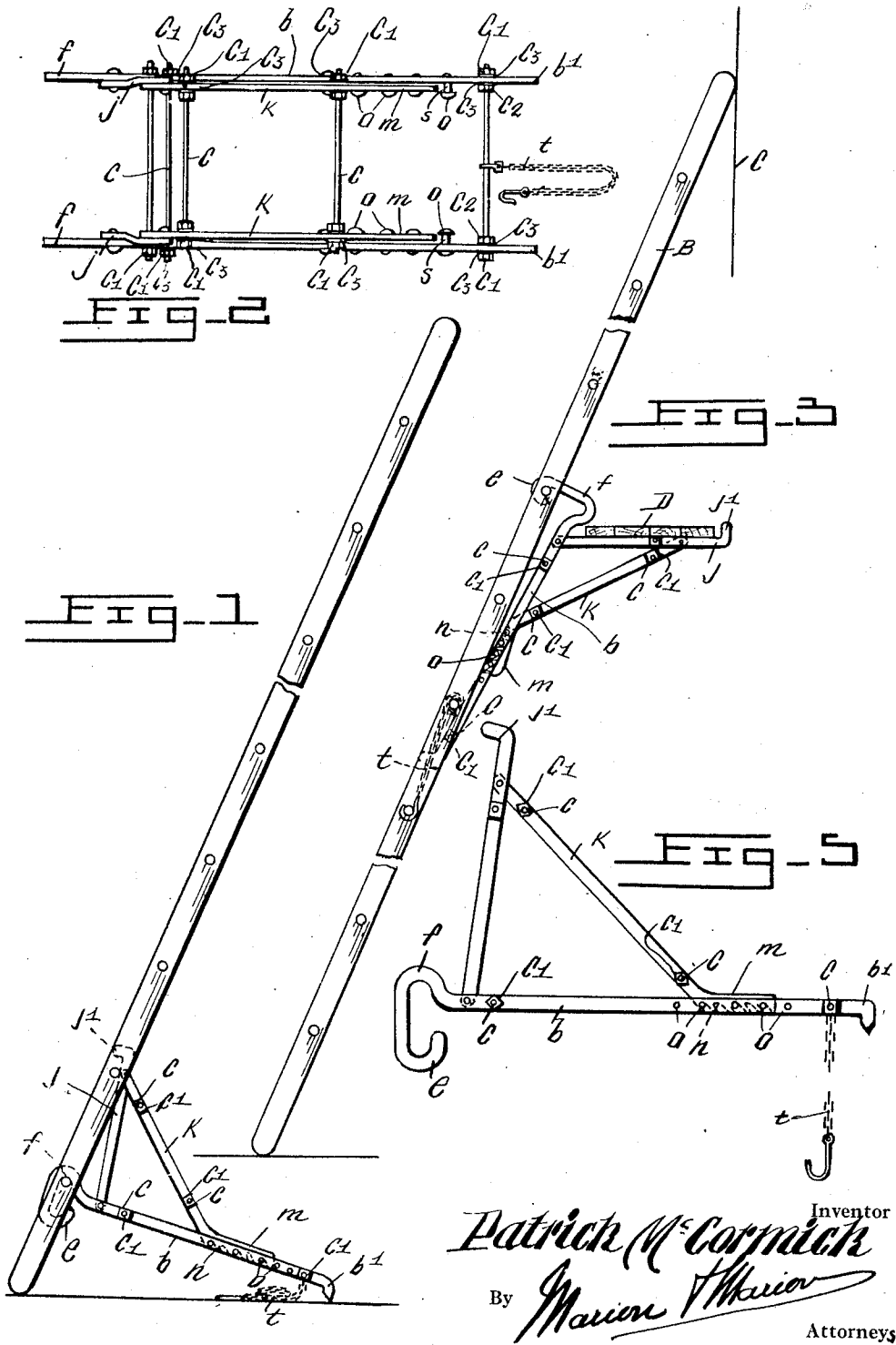
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LADDER ATTACHMENT

Filed June 30, 1927

2 Sheets-Sheet 1



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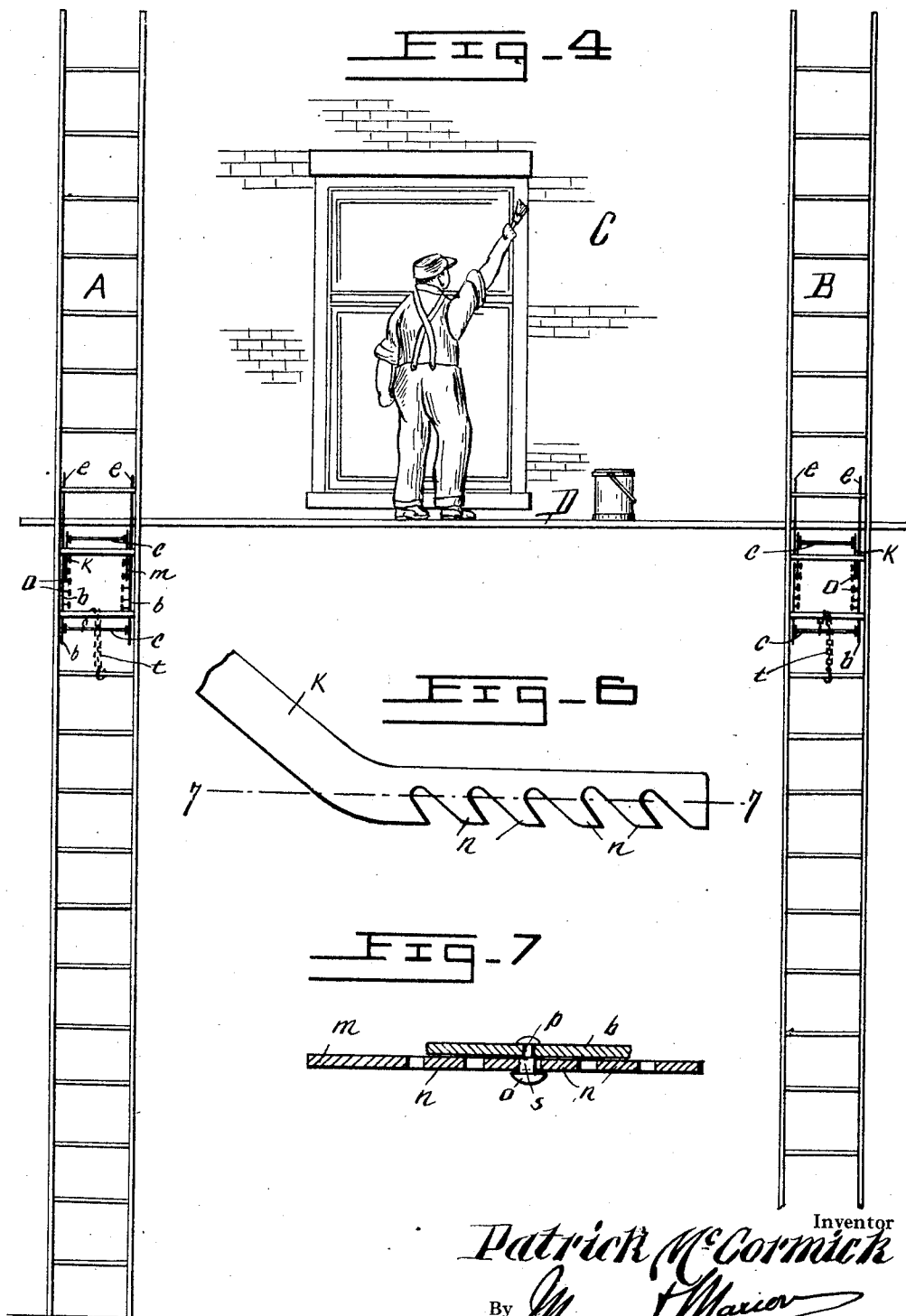
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UNITED STATES PATENT OFFICE.

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LADDER ATTACHMENT.

Application filed June 30, 1927, Serial No. 202,710, and in Canada September 3, 1926.

My invention has particular reference to the support of a ladder from the ground independently of any other support and also to the hanging of a scaffold from the upper portion of a ladder; and the object of my invention is to provide an attachment which may be employed to either support the ladder or support a scaffold on the side of the ladder near its top.

To this end my invention consists of a frame composed of metal bars and means for attaching the frame to a ladder and an adjustable device for serving the dual purpose of a brace for the ladder when the frame serves as a stand for the ladder and to act as a support for a scaffold when the frame is hung from one of the upper rungs of the ladder.

More specifically stated the invention consists of a rectangular frame having a pair of double hooks at one end and carried rigidly thereby. These hooks are preferably formed in one piece with the sides of the frame. An adjustable rectangular frame is pivoted at one end of the side bars of the main frame and has a brace also in the form of a rectangular frame pivoted at one end near the outer end of the adjustable frame and having its opposite end bent to extend angularly and substantially parallel to the main frame. This bent end of the brace has ratchet teeth for engagement with rivets projecting inwardly through the sides of the main frame.

For full comprehension, however, of my invention reference must be had to the accompanying drawings in which similar reference characters indicate the same parts and wherein:

Figure 1 is a side elevation of my ladder attachment supporting a ladder from the ground;

Figure 2 is a plan view of my ladder attachment;

Figure 3 is a side elevation of a ladder with my attachment supporting a scaffold upon it;

Figure 4 is a front elevation of the ladder and scaffold as illustrated in Figure 3;

Figure 5 is a side elevation of my improved attachment removed;

Figure 6 is a detail view of the ratchet toothed brace; and

Figure 7 is a detail horizontal sectional view on line 7-7 Figure 6 of one of the side bars in engagement with one of the ratchet toothed angular ends of one of the braces.

My attachment as before mentioned may be used as either a support for a ladder from the ground or as a support for a scaffold from one of the upper rungs of the ladder. To whichever use it may be put its construction remains the same. The main frame of the attachment consists of a pair of side bars *b* having one end turned at an angle and pointed as at *b*¹ and braced together by a pair of rods *c* protruding through holes in the side bars and having nuts *c*¹ and *c*² securing the ends of the rods to the side bars. Lock washers *c*³ preventing the displacement of the nuts. One end of each of these side bars is bent to the form of an elongated transverse hook, one end *e* of which serves to attach the frame to one of the upper rungs of a ladder when a scaffold is to be supported, and the other end *f* of the hook serves to connect the frame to the bottom rung of a ladder when the attachment is to support the ladder from the ground as shown in Figure 1. Near the hooked ends of these side bars are pivoted a pair of side bars *j* of an adjustable frame and bracing rods secure the sides of the auxiliary frame in proper relative positions, the free ends of the side bars of such auxiliary frame being bent at an angle as at *j*¹ to serve as retaining means for scaffold planks. The auxiliary frame is adjusted to different angular positions by a pair of braces *k* rigidly secured in spaced relation by bracing rods *c* similar to rod *c* above mentioned and connected to the side bar by nuts *c*¹ and lock washers *c*³ also as above described. The braces *k* are pivoted at their upper ends to the side bars *j* near the free ends of the latter, the opposite ends of the braces *k* being of angular form as at *m* to extend substantially parallel to the side bars *b* of the main frame, the lower side of the angular part *m* of the brace is formed with ratchet teeth *n*. The bars *b* having a series of preferably five rivets *o* carried thereby and extending a short distance there-through for engagement by the ratchet teeth *n* of the braces. These rivets are preferably of slightly greater length than the thickness of the ratchet toothed portion *m* of the brace and the side bar *b* against which it lies, the portion *p* of the rivet extending through the side bar *b* being of slightly less diameter than the portion *s* extending latterly from the side bar, such portion *s* having a fixed head thereon while the reduced portion is rivetted for the purpose of fastening the rivets rigidly

to the side bars and thereby provide a rigid hold for the connection of the brace to the side bar of the main frame. The frame may be folded to lie substantially flat and may be detachably connected to a ladder by a chain *t* attached to the end bracing rod *c*. By this means the hooks *e, f* may be engaged with one of the rungs of the ladder and the chain used to attach the opposite end of the frame to an adjacent rung, by giving the chain a turn around one of the rungs and the hook engaged with the next adjacent rung.

The foregoing structure provides a pair of frames pivotally connected together and means for adjustably rigidly securing them in different angular positions, thus providing an attachment which may be used either as a ladder, base or foot or as a support for a scaffold from one of the upper rungs of the ladder or from a pair of ladders.

My improved attachment is manipulated as follows:—

For use as a support for the ladder the eye *f* of the hook *e, f* is engaged with the bottom rung of the ladder as shown in Figure 1 and the frame rests with the points of its side bars engaging the ground or the floor of a building as the case may be. The braces *k* are then disconnected from the studs formed by the rivets and the adjustable frame *j* is shifted into contact with the ladder when in the position in which it is required for use, the brace *k* is then pressed down into engagement with the studs, the ladder will then be supported independently of any wall and in an upright position, and the frame presents a base or foot sufficient for the center of gravity to be within the base at whatever position on the ladder a workman may be. To use the attachment as a scaffold support the eyes of the hooks *e, f*, of each of two frames is engaged with rungs of a pair of ladders *A* and *B* leaning up against the wall

to have a sign painted upon it for instance, the wall *C* and the adjustable frame *j* is adjusted by moving the braces *k* to bring the side bars *j* to a horizontal position. Planks *D* are laid on the frames *j*, thus affording a firm foot-hold for a workman.

What I claim is as follows:—

1. A ladder attachment comprising a frame composed of side bars united in spaced relation by rods rigidly secured at their opposite ends to the side bars, an auxiliary frame pivoted to the main frame near one end thereof and the protruding ends thus produced of the main frame having formed integrally therewith transverse elongated hooks, the auxiliary frame being composed of a pair of side bars, a pair of braces pivotally connected to the side bars of the auxiliary frame near the free ends thereof and having their opposite ends bent at an angle and having their edges towards the main frame formed with ratchet teeth, the side bars of the main frame having studs for engagement by the ratchet teeth and the ends of the side bars of the main frame opposite to the auxiliary frame having angularly disposed points substantially as described.

2. A ladder attachment of the character described comprising a main frame, an auxiliary frame having one end pivotally connected with the main frame, mechanism pivotally connected with the auxiliary frame and engageable with the main frame for adjusting the auxiliary frame at various angular positions with respect to the main frame, and a pair of opposed transversely elongated hooks formed at one end of the main frame, said hooks being bent to form semi-circular rung engaging projections at each end thereof.

In witness whereof I have hereunto set my hand.

PATRICK McCORMICK.