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C. A. BARNES & A. E. CRONIN.

HOISTING SUPPORT.

APPLICATION FILED NOV. 20, 1905.

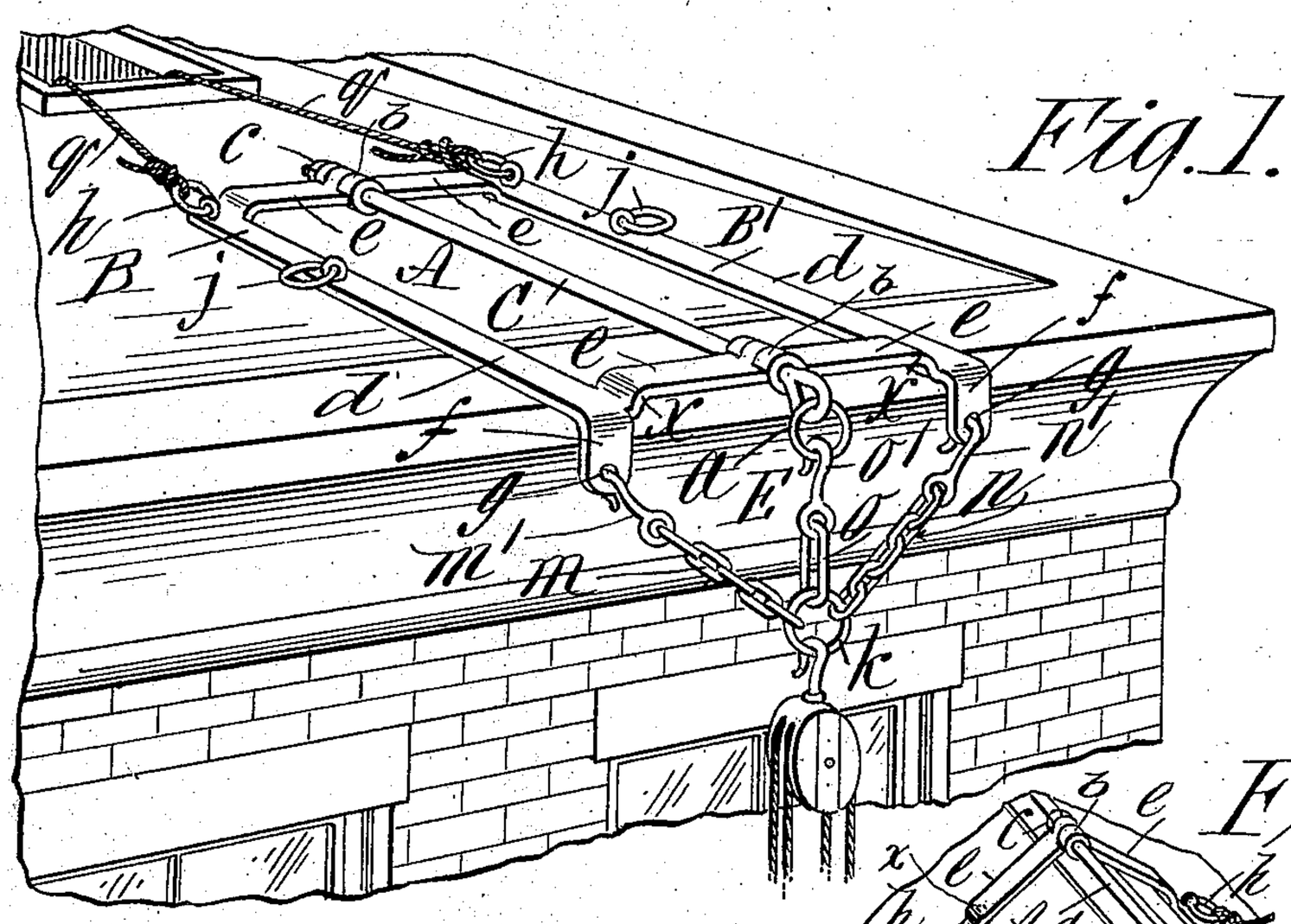

Fig. 1.

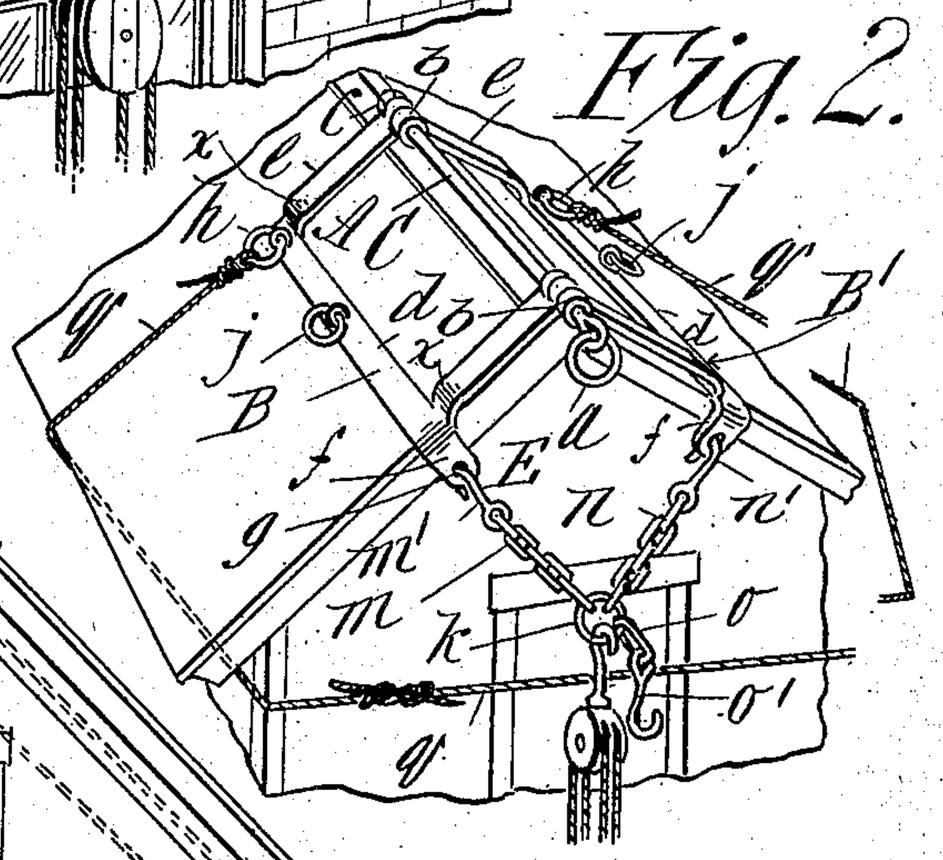

Fig. 2.

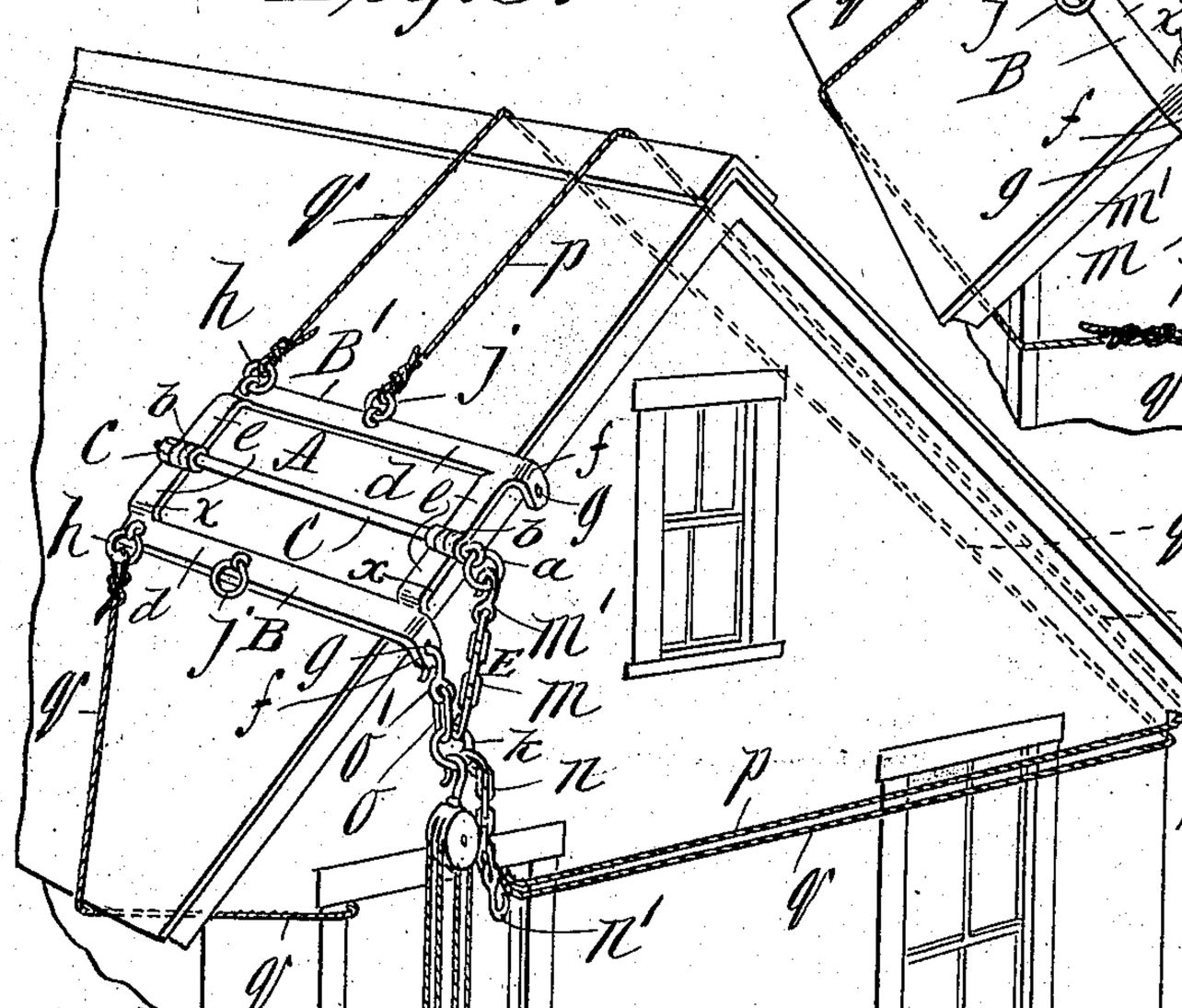

Fig. 3.

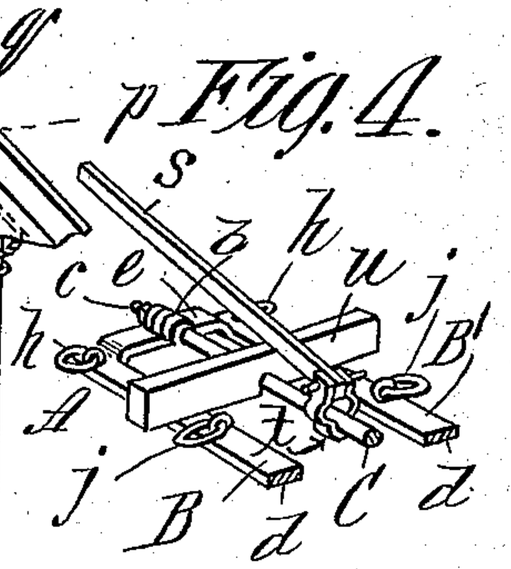

Fig. 4.

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UNITED STATES PATENT OFFICE.

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HOISTING-SUPPORT.

No. 815,254. Specification of Letters Patent. Patented March 13, 1906.

Application filed November 20, 1905. Serial No. 288,103.

To all whom it may concern:

Be it known that we, CHARLES A. BARNES and ALEXANDER E. CRONIN, citizens of the United States of America, and residents of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Hoisting-Supports, of which the following is a full, clear, and exact description.

This invention relates to hoisting devices, and more particularly to portable apparatuses, such as used by truckmen and piano and safe movers for providing a safe and quickly-arranged means on the roofs of buildings for the attachment and support of suitable hoisting-tackle.

The principal object of the invention is to provide a simple and strong device of the above-described class of hoisting-frames or "roof-irons," as they are sometimes called, which combines in one construction a hoisting-frame equally efficient and available on flat roofs or on the ridge or sloping portion of gable-roofs.

Another object of the invention is to provide a safe and reliable means for quickly adjusting and securing the hoisting-frame on whatever form of roof it is used.

A still further important object of the invention is the provision of the interchangeable chain connections to which the hoisting-tackle is hooked, by means of which an equal and sustaining strain is brought on the proper portions of the hoisting-frame on whichever type of roof the said frame is used.

The invention consists in the combination and arrangement of devices and in the construction of certain of the parts, all substantially as hereinafter fully described, and set forth in the claims.

In the drawings, Figure 1 is a perspective view of the hoisting-frame as used upon a flat roof. Fig. 2 is a perspective view of the manner of using the same frame upon the ridge portion of a gable-roof, and Fig. 3 is a perspective view of the hoisting-frame as secured in hoisting position upon the sloping gable end portion of a gable-roof and below the ridge thereof. Fig. 4 is a perspective view illustrating a further feature hereinafter referred to.

In the drawings, A represents the rectangular frame portion of the hoisting-frame and consists in two side frames B and B′, which are connected together by the hinges *b b*, the pintle of these hinges being a stout bar C, which passing through the said hinge portions is secured in its position therein by the nut *c* at what will be called the "rear" end of the hoisting-frame and by a ring-eye *a* at the front or hoisting end.

The side frames B and B′, which are identical in construction, consist of the lengthwise-extending flat side bars *d*, and have formed at or adjacent each end thereof and projecting at right angles therefrom the short end bars *e*. These end bars *e* at their junction with the side bars *d* are slightly bent upwardly, as clearly shown in Fig. 1 at *x*, to compensate for the thickness of the hinge portion, which is a part of the bars *e;* otherwise the side bars *d* would not engage the roof-surface in a flat position, as is desirable. At the front end of the roof-frame A the side bars *d* are extended beyond the junction-point of the front end bars *e* and are bent downwardly, as shown at *f*, and are each provided with a perforation or hole *g* for the attachment of tackle-supporting chains E. The side bars *d*, adjacent the rear end thereof, are provided with fastening-rings *h* and *j*, the function of which will be later described.

The previously-referred-to tackle-supporting chains E comprise a stout ring *k*, to which the hoisting-tackle of any suitable type may be attached, usually by hooking the upper block of a fall and tackle thereto, as illustrated in the drawings. The intermediate connection of this ring *k* with the bent end portions *f* of the hoisting-frame A is by means of three separate and divergent chains, which are linked to the ring *k*. Two of these chains *m* and *n* are of equal length and consist of several links terminally provided with hooks *m′* and *n′*, respectively adapted to engage the holes *g* in the side-bar ears *f* when the hoisting-frame A is used on a flat roof, as in Fig. 1, or on the ridge portion of a gable-roof, as in Fig. 2. When the chains E are adjusted for use on a flat roof, as in Fig. 1, there is a tendency of the downward strain on the divergent chain parts *m* and *n* to draw the side-bar ears *f* toward each other, causing a buckling up of the hinged central portion of the frame. To resist this tendency, a short chain *o*, which, as shown in the drawings, may consist of but one long link *o* and a hook *o′* is connected to the ring *k* between the chains *m*

and *n* by its link *o* and to the ring *a* of the hoisting-frame by its hook *o'*, whereby a portion of the strain brought thereon coming onto the central or hinged portion thereof prevents raising of the frame from a level engagement with the roof. Any tendency of the rear end of the hoisting-frame to raise upward from the roof or to be drawn forwardly from its proper position is prevented by the ropes *q*, which are attached to the rings *h* of the hoisting-frame by one end, the other ends being taken to a skylight, chimney, or other suitable place of fastening on the roof. In case the most available place for adjusting the hoisting-frame on a gable-roofed house is the ridge portion thereof the short link and chain *o o'* is unhooked from its engagement with the ring *a*, and the side frames B and B' are then permitted to buckle at their hinge-joint, as shown in Fig. 2. The strain on the hoisting-frame at this time comes entirely on the ears *f f*, which causes the angularly-adjusted frames B and B' to tightly engage the ridge portion of the roof. Any tendency of the rear end of the hoisting-frame to rise upwardly away from its contact with the roof is prevented by the ropes *q*, which in this case are best secured by taking the free ends thereof downwardly on either side of the roof to the eaves and from thence across the gable end of the house and there knotting their end together, as shown in Fig. 2. If the most available place for adjusting the hoisting-frame is on the sloping portion of a gable-roof, to one side of the ridge thereof, an equal and correct draft or strain on the hoisting-frame is best secured by an adjustment of the chain F, as shown in Fig. 3, which is by attaching the short chain *o* to the lower positioned side-bar ear *f* and by attaching one of the chains *m* or *n* to the central ring *a* of the hoisting-frame. In this manner of using the hoisting-frame the rope *q* is used in a manner similar to that shown in Fig. 2, and a second rope connection *p* may be advantageously used, as shown in Fig. 3, and is attached to ring *j* of the side frame portion B' for the support of the forward portion of the hoisting-frame.

In Fig. 4 is shown a lever *s* arranged at the rear end portion of the frame A the same being by shackle *t* pivotally connected to the hinge rod or bar C and has a fulcrum bearing on a cross-bar *u*, which extends across the frame and in bearing on the side members B B'. An extra man or boy by maintaining a downward pressure on the rearwardly-extended lever will easily and effectually maintain the frame in its proper position during the use of the device without the necessity of making the hitches or anchorages by rope, as shown in Fig. 1.

We claim—

1. In a hoisting-support a frame adapted for immovable maintenance on a roof-top and to have an end portion thereof overhang the roof and provided at such overhanging portion with chains or like connections secured to opposite points of said frame and converging downwardly and connected and affording, at such point of connection, support for a tackle.

2. In a hoisting-support, a frame having means for anchorage on a roof-top and provided with downwardly-extended lugs, chains or like connections secured to said lugs, and converging downwardly and connected, and affording at such point a connection-support for a tackle.

3. In a hoisting-support a frame adapted for immovable maintenance on a roof-top and to have an end portion thereof overhang the roof, and provided at such overhanging part with connection members, hook-ended chains detachably engaged in said connection members and downwardly convergent, and a ring connecting the approached ends of said chains.

4. In a hoisting-support a frame adapted for immovable maintenance on a roof-top and to have an end portion thereof overhang the roof, and provided at such overhanging portion with connection members *f f* arranged in opposition and also with an intermediate ring or eye, hook-ended chains detachably engaged with said connection members and downwardly convergent, a ring *k* connecting the approached ends of said chains, and a chain-like or flexible connection also engaged with said ring and having a hook for detachable engagement with the aforesaid intermediate eye of the frame.

5. A frame adapted for immovable maintenance on a roof, formed with opposite side sections hinge-connected, whereby such frame may be adapted to rest on flat or angular roofs, and having tackle-supporting means at its end portion which is adapted to overhang the roof.

6. In a hoisting-support a frame adapted to rest on a roof-top and having an endwise portion adapted to overhang the roof, and provided with depending tackle-supporting appliances, and said frame provided at its rear end portion with ring-eyes to enable connections thereat of anchoring ropes or cables.

7. In a hoisting-support a frame adapted for an immovable rest on a roof-top and having an endwise portion adapted to overhang the roof, and provided with depending tackle-supporting appliances, and said frame provided at one or both of its side portions with attachment members for making connection therewith of anchoring-ropes.

8. In a hoisting-support a frame adapted for an immovable rest on a roof-top and having an endwise portion adapted to overhang the roof, and provided with depending tackle-supporting appliances, and said frame provided at its rear end portion with ring-eyes,

and provided at its side portions with ring-eyes, for the purposes explained.

9. A hoist-supporting frame adapted for an immovable rest upon a roof-top and to endwise overhang the same, and formed with an intermediate longitudinal hinge comprising a pintle or rod C, the forward end of which extends beyond the forward end of the hinged frame, and is constructed with an eye, and said frame having at its overhanging forward end depending appliances for supporting a tackle and a further supporting and reinforcing link and hook connection adapted to detachably engage the eye-formed end of said hinge-rod.

10. A frame, adapted to rest on a roof-top, and having a forwardly-endwise overhanging portion provided with hoist-supporting appliances, and said frame having at its rear portion a lever pivotally engaged therewith and rearwardly extending, and means for affording a fulcrum-bearing for said lever rearward of its pivotal engagement with the frame.

Signed by us at Springfield, Massachusetts, in presence of two subscribing witnesses.

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