(No Model.)

A. E. BROWN.

GRIPPING IMPLEMENT.

No. 366,813. Patented July 19, 1887.

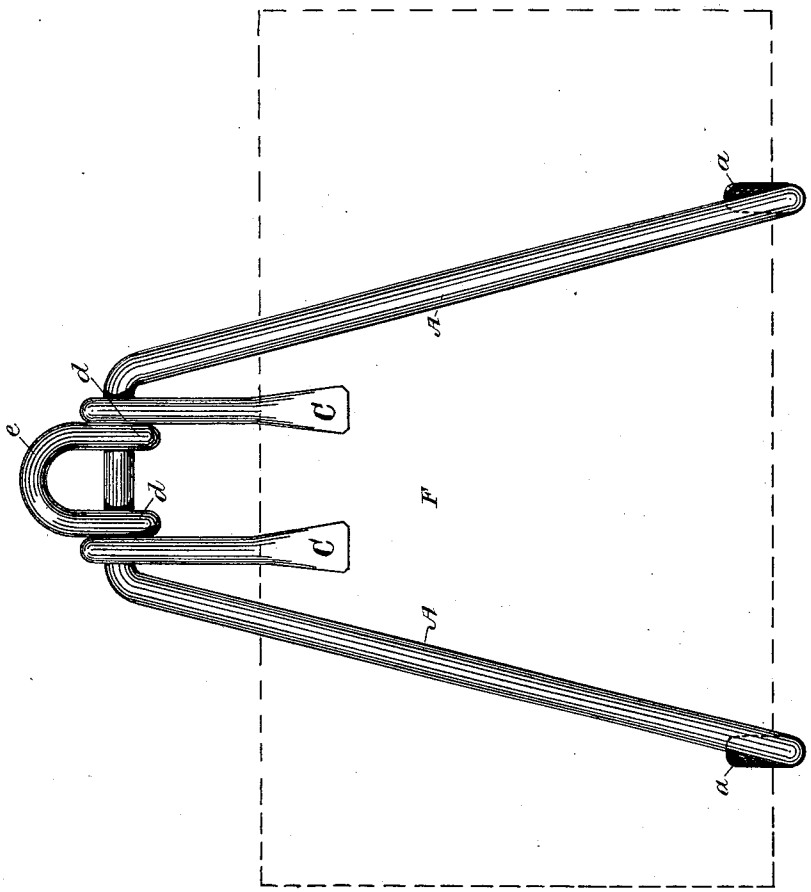


Fig. 2.

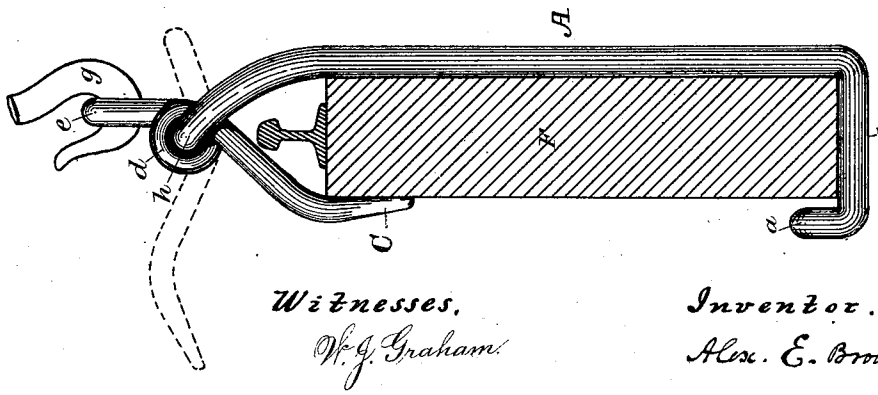


Fig. 1.

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UNITED STATES PATENT OFFICE.

ALEXANDER E. BROWN, OF CLEVELAND, OHIO.

GRIPPING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 366,813, dated July 19, 1887.

Application filed March 15, 1887. Serial No. 231,026. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER E. BROWN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Gripping Implement for Gripping and Hoisting Beams, Girders, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this application.

My invention relates to a device or contrivance to be used in connection with hoisting-machines for gripping and holding beams, girders, &c., which it may be desired to hoist, and for maintaining the material being lifted in a given position laterally during the lifting operation.

Previous to my invention grappling-irons and various forms of gripping devices have been devised and used for hoisting long timbers, iron girders, &c.; but all such devices, so far as my knowledge of them extends, have been more or less imperfect in action, and in the use of them there has been more or less liability of a slip or change of position of the article being lifted and an inability to hold the timber or girder being elevated rigidly in a lateral direction.

I have devised a very simple, strong, and efficient contrivance, designed more especially for use in connection with a portable engine-house and hoisting and conveying apparatus made the subject-matter of other applications for Letters Patent by me, but adapted for use wherever occasion arises for hoisting up long beams (of either wood or metal) that should be lifted in a horizontal position and required to be held during elevation in a given position laterally.

My invention may be said to consist, essentially, in a gripping and lifting device composed of a pair of supporting or sustaining hooks adapted to engage with the lowermost edge of a beam or girder and to bear against one of its sides, (at two lines or localities,) and a pair of clamping-fingers adapted to bear at two points against the opposite side of the beam, the said fingers being hinged to the upper end or portion of the said sustaining-hooks and formed or provided with a loop or eyes for the attachment of the lifting rope or chain, and operating to press (at their bearing ends) on the side or the beam with a pressure proportionate to the gravity of the latter, all as will be hereinafter more fully explained, and as will be more particularly pointed out and defined in the claim of this specification.

To enable those skilled in the art to which my invention relates to make and use the same, I will now proceed to more fully describe it, referring by letters to the accompanying drawings, which form part of this specification, and in which I have shown my invention carried out in that form which is the best now known to me, and in which I have so far successfully practiced it.

In the drawings, Figure 1 is an edge view of my improved beam-lifting device, shown by preference as gripping and lifting a track-beam, (such as used in working a portable elevated sewer-tramway invented by me and forming the subject-matter of other applications for Letters Patent,) and illustrating by dotted lines the position of the hinged clamping-fingers prior to the engagement of the tongs with the beam and before applying the hoisting-power to the cable. Fig. 2 is a front view or elevation of the devices seen at Fig. 1, but with the beam or girder drawn in dotted lines.

In the two figures the same parts will be found designated by the same letter of reference.

A is a sort of duplex supporting-strap, or, in other words, an iron bar bent or shaped so as to form two suspender-like sustaining-hooks, which, as shown, are located some distance apart on the same plane, and which are preferably placed apart in their descent from the horizontal part. Each of these supporting-hooks has a short upwardly-projecting portion at *a*, which serves to embrace the lowermost portion of the beam F laterally between itself and the lower part of one of the descending portions of the hook A.

To adapt the contrivance precisely to the kind of beams or girders to be elevated, the hook-like seats formed by the bent-up ends *a* should be just a little longer than the thickness of the beam F; but this precision of adaptation is not always essential, and therefore the form and size of seats shown will answer well for not only the sized beam seen at F, but also for thinner timbers.

C represents a pair of clamping-fingers, which preferably are formed of a single bar or rod of iron forged or otherwise bent into a shape to form also a pair of eyes, *d d*, which encircle the pintle-like portion *b* of the suspended hooks A, and a loop, *e*, to which may be conveniently attached the end of the lifting rope or chain *g*, in connection with which the contrivance shown is to be used.

In using the device shown the lower ends of the duplex suspender-hooks A are placed beneath the middle portion of the lower edge of the beam F, so that in pulling upon the hooks the beam will be seated in the hooks, as shown. The clamping-fingers *c*, which, during the placement of the hooks A relatively to the beam, as shown, had been lifted up into about the position indicated by the dotted lines at Fig. 1, are then allowed to descend against the side of the beam F, and as soon as the rope or chain *g* pulls on the loop *e* (to lift the load) the tendency of the fingers C is to press against and tightly clamp in place the beam F, and the clamping or gripping pressure of the fingers C in the side of the beam F is of course in proportion to the weight of the beam F and the consequent strain on the lifting-rope *g*. It will be seen that the hooks A, being spread well apart, will support the beam F laterally at two separate localities in one side of the beam, while at the same time the lower edge of the beam rests in two widely-separated supports; and it will also be seen that while thus supported vertically and laterally by the duplex suspender-like device A the beam is securely clamped against the said device A laterally and near its upper portion by the fingers C, that press in the beam F at the points both intermediate of the points at which the beam (at its opposite side) rests against the suspender-hooks A. It will be understood that by these means the beam F is not only securely seated vertically (near its middle) on two widely-separated supporting-points, (so that it is not liable to tip down at either end,) but it is also prevented from moving sidewise at its lower edge by the retaining devices *a*, and is furthermore forcibly clamped near its upper portion between the arm of the suspender A and the (intermediately located) gripping-fingers C.

Of course the precise forms and arrangement of the parts shown may be more or less varied without departing from the gist of my invention, which consists, essentially, in a gripping contrivance adapted to lift beams, girders, and other long articles, and constructed so that there will be afforded vertical and lateral support at different points, and so that while the beam will be thus supported it will also be securely clamped sidewise between devices that bear on opposite sides of the beam and at widely-separated points.

What I therefore claim, broadly, and desire to secure Letters Patent for, is—

The combination, with a duplex suspender device or double hook-supporter, A, of clamping-fingers C, formed or provided with means for the attachment thereto of the hoisting rope or chain, and arranged to co-operate with the upper portions of the hooks A to confine the beam or girder being lifted laterally, all substantially as hereinbefore set forth.

In witness whereof I have hereunto set my hand this 31st day of August, 1886.

ALEXANDER E. BROWN.

In presence of—

E. T. SCOVILL,

CHAS. W. KELLY.