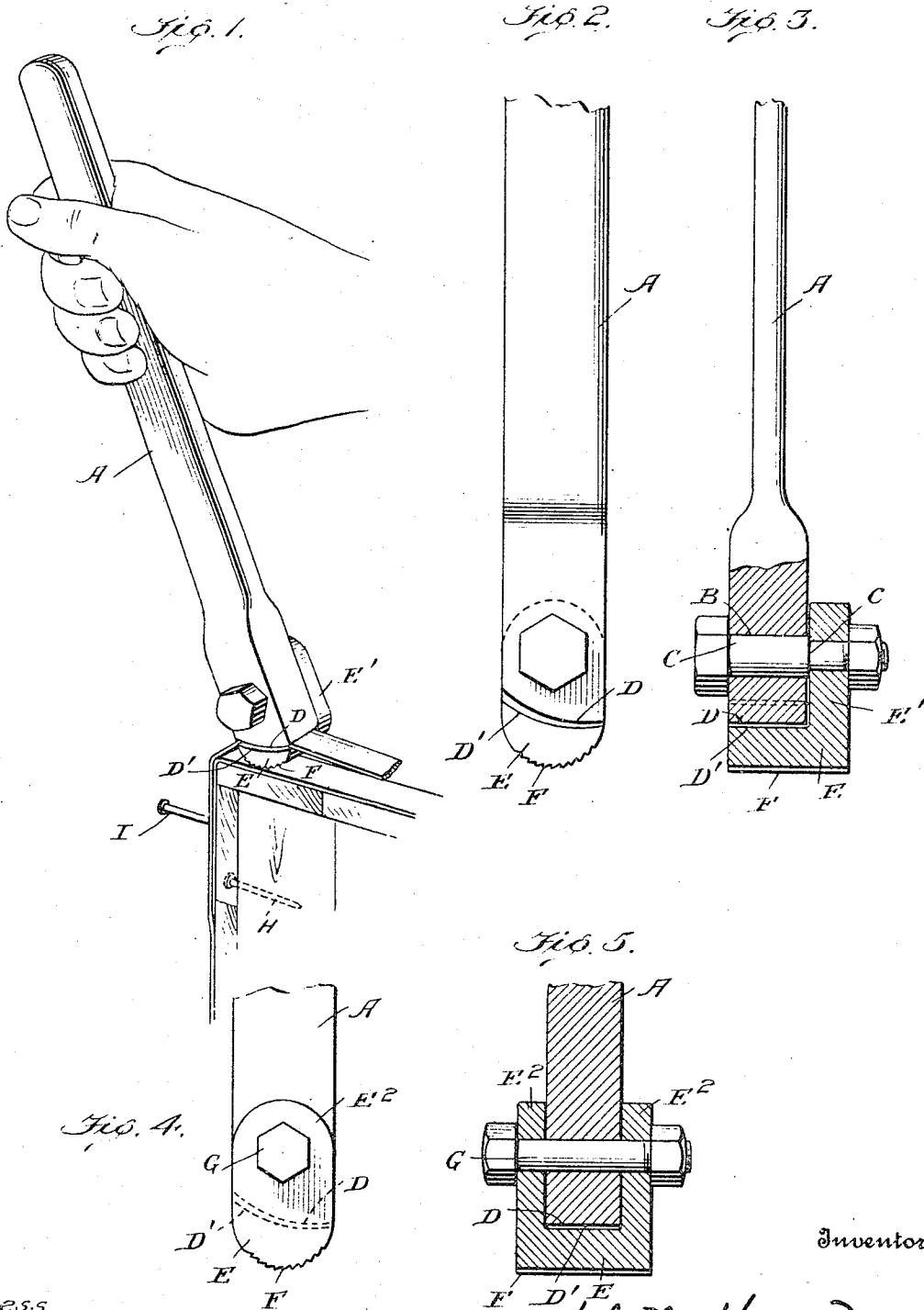


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BOX STRAP TIGHTENER.

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BOX-STRAP TIGHTENER.

1,402,232.

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To all whom it may concern:

Be it known that I, HENRY J. M. HOWARD, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Box-Strap Tighteners; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

The object of the present invention is to provide a handy appliance for use in drawing box straps tightly about a box when preparing the latter for shipment.

Various appliances have been provided heretofore for facilitating the application of metallic strapping to boxes but such devices have not appealed to the ordinary workmen nor been of such a simple and rugged nature as to adapt them for universal use. In accordance with the present invention a device is provided which, in so far as its simplicity and ruggedness are concerned, is comparable with an ordinary carpenter's hammer or hatchet, and in the production of this device only such elements are utilized as are practically incapable of destruction by rough usage. The device consists essentially of a handle portion, one end surface of which is formed into a strap gripping surface, and a fulcrum and gripping member loosely pivoted to the handle and having an internal surface complementary to the gripping surface on the handle for gripping a strap by a wedging or cam-like action, and an arcuate external fulcrum surface adapted to rest against one wall of the box when the handle is utilized as a lever for tightening the strap.

Referring to the accompanying drawings,—

Figure 1 is a perspective view illustrating a strap tightener embodying the present invention and showing a preferred manner of utilizing it in tightening a strap around a box.

Fig. 2 is a side elevation of one form of device with the handle partly broken away.

Fig. 3 is an edge elevation, but with the lower end of the handle and fulcrum member in section.

Figs. 4 and 5 are views corresponding to Figs. 2 and 3, but illustrating a slightly different form of the device in so far as the gripping and fulcrum member is concerned.

The device consists of a handle member A having in proximity to one end a pivot center preferably formed by a bearing B for a transverse pivot or bolt C to be presently described. The end wall of the handle member which constitutes the strap gripping surface is preferably curved and eccentric to the pivot center indicated at D.

The gripping and fulcrum member E which is pivotally mounted on the pivot or bolt C is provided with an inner gripping surface D' complementary to the surface D and an outer arcuate fulcrum surface which is preferably roughened or provided with projections as indicated at F.

As a convenient means of pivotally mounting the gripping and fulcrum member E on the handle, it is provided with an arm E' as indicated in Fig. 1 or with parallel arms E² as indicated in Figs. 4 and 5 through which arm or arms the pivot or bolt C of Figs. 1, 2 and 3, or G of Figs. 4 and 5, is adapted to pass.

Wherever a single arm is employed, as shown in Figs. 1, 2 and 3, it is preferred that the pivot bolt should be provided with a shoulder c against which the arm may be clamped by the head or nut of the pivot bolt in order to prevent any binding of the fulcrum member against the handle, inasmuch as it is quite desirable that this gripping fulcrum member should swing freely when not performing its gripping functions.

The eccentricity of the gripping surfaces with respect to the pivotal center is preferably such that there will be no binding or sticking of the parts should they be moved into contact with no box strap between them, and when this relation is established it is found that even though the box strap may be gripped very tightly, nevertheless when the strain on the box strap is relieved by moving the handle reversely the parts will readily free themselves so that the box strap may be easily released.

In the use of the device, it is preferred that one end of the strap should be fastened to the box as indicated, for example, by the nail H shown in dotted lines in Fig. 1, the strap being then passed around the box and the free end lapped over the end which was previously secured. Thereupon the tightener device is applied to this free end, in the obvious manner, and preferably at a point in proximity to one corner of the box. A

backward rotation of the handle with the fulcrum surface F resting against the wall of the box in proximity to the corner enables the device to be used as a lever which will draw the strap tightly about the box, as clearly indicated in Fig. 1, and while held in this position a securing nail I is preferably driven through the strap so as to penetrate the overlapping portions thereof to form an effective fastening means. The tightener may now be removed and the extreme end of the strap cut off or tacked down in any suitable way and additional nails may be driven through the strap at any desired points.

The device is one of extreme simplicity and of such a rugged nature that its destruction is practically impossible with all ordinary rough usage. Furthermore, its construction is such that its use is obvious and hence it may be placed in the hands of ordinary workmen without the necessity of educating them to produce effective and economical results.

What is claimed is:

1. A box-strap tightener, comprising a handle having a pivot center in proximity to one end and an end strap gripping surface eccentric to said center and a gripping and fulcrum member pivotally connected with the handle at said center and having an inner strap gripping surface complementary to the gripping surface on the handle, said handle and fulcrum member being adapted to grip the free end of a strap between them and stretch said strap upon rotation of the handle, and an outer curved fulcrum surface

for co-operation with the wall of the box in drawing the strap tight.

2. A box-strap tightener, comprising a handle having a pivot center in proximity to one end and an end strap gripping surface eccentric to said center and a gripping and fulcrum member pivotally connected with the handle at said center and having an inner strap gripping surface complementary to the gripping surface on the handle, said handle and fulcrum member being adapted to grip the free end of a strap between them and stretch said strap upon rotation of the handle, and an outer curved fulcrum surface having projections thereon for co-operation with the wall of the box in rotation of the handle to draw the strap tight.

3. A box-strap tightener, comprising a handle having a pivot bearing therethrough in proximity to one end and a strap gripping surface eccentric to said pivot bearing and forming the end wall of the handle, a gripping and fulcrum member having an inner strap gripping surface complementary to the gripping surface on the handle, said handle and fulcrum member being adapted to grip the free end of a strap between them and stretch said strap upon rotation of the handle, and an outer arcuate fulcrum surface for co-operation with the wall of the box in rotating the handle to draw the strap tight, said gripping and fulcrum member having an arm extending parallel with the handle, and a pivot pin extending through said arm and through the bearing in the handle.

HENRY J. M. HOWARD.