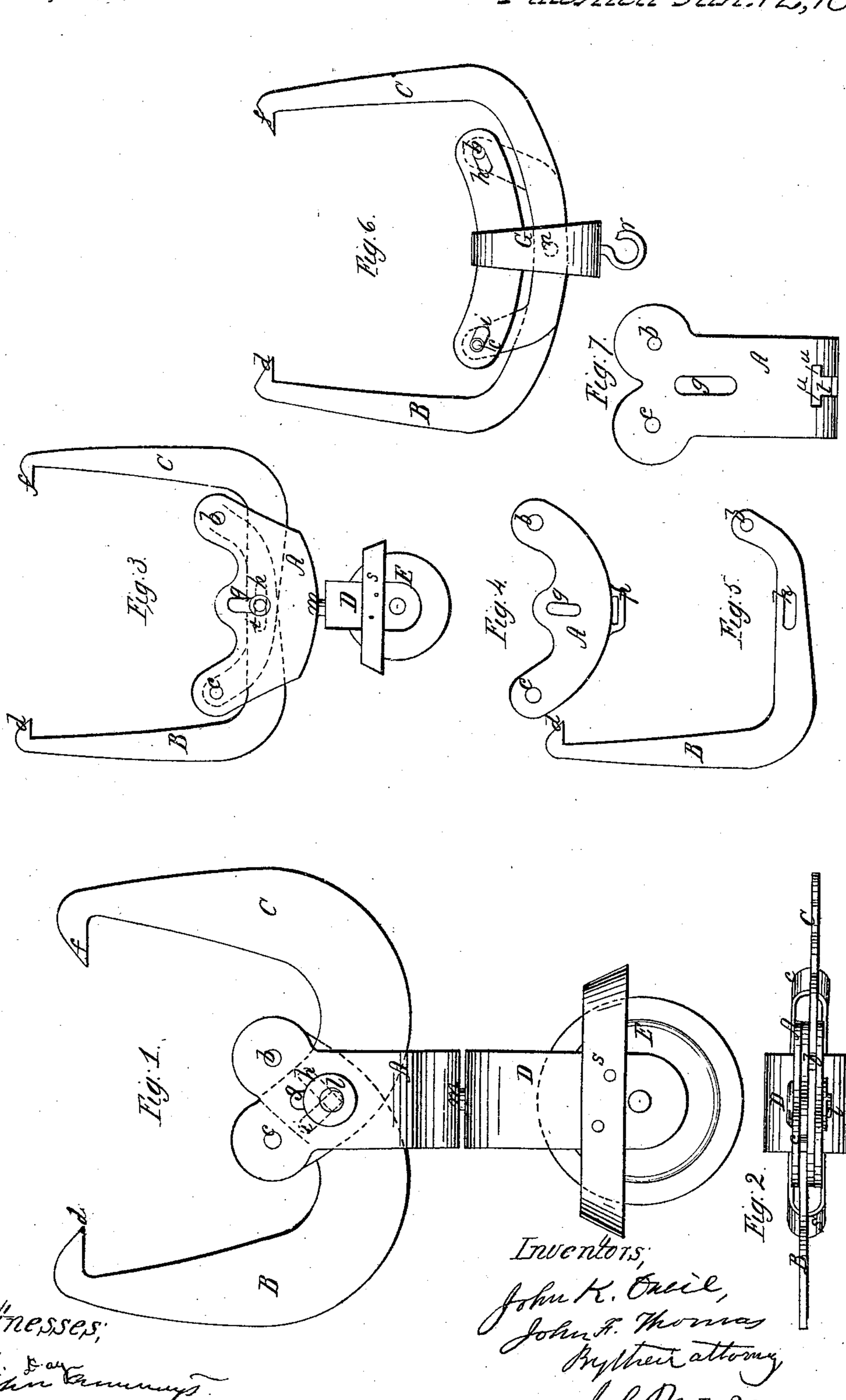
Oneil & Thomas.

Hay Fork and Grapple.

No. 85,844. Patented Jan. 12, 1869.



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United States Patent Office.

JOHN K. O'NEIL, OF KINGSTON, AND JOHN F. THOMAS, OF HERKIMER COUNTY, NEW YORK, ASSIGNORS TO JOHN K. O'NEIL.

Letters Patent No. 85,844, *dated January* 12, 1869.

HAY-FORK GRAPPLE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, JOHN K. O'NEIL, of Kingston, in the county of Ulster, and State of New York, and JOHN F. THOMAS, of Herkimer county, New York, have invented an Improved Grapple or Clutch for Suspending Pulleys for Horse Hay-Forks, and for analogous uses; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a side view of our improved grapple combined with a hoisting-pulley swivelled thereto.

Figure 2, a top view of the same.

Figure 3, a side view of a modified form of the grapple.

Figures 4 and 5, detached views of parts of the grapple, of modified construction or form.

Figure 6, a side view of the grapple, otherwise modified in construction.

Figure 7, a view of one part of the grapple, showing a modified construction of the same.

Like letters designate corresponding parts in all the figures.

Our improved grapple is designed for readily securing hoisting-pulleys or hooks to rafters and other timbers of barns, stables, and stackers, in such a manner that they can be quickly detached, and transferred to different positions.

It is self-attaching, and retains its hold automatically, with increased force as the weight raised increases.

It consists of three main parts, a connecting-stock or bar, A, and two grappling-claws or prongs, B C.

To the stock A, the claws B C are pivoted respectively at *b* and *c*, and the block or case D of the pulley E is swivelled thereto at *m*.

The claws are peculiarly arranged in relation to the stock and to each other. Each one is pivoted at some distance to one side of the centre of the stock, the most distant from its own position. Thus the pivot *b* of the claw B is on the side of the stock next to the claw C, and the pivot *c* of the claw C is next to the claw B.

The claws cross each other in the stock, or outside thereof, substantially as represented, and where the crossing takes place, a vertical slot or slots, *g*, are formed in the stock, and longitudinal slots *h i* respectively in the claws B C.

A bolt, *k*, extends through all three of these slots, thus confining the parts in the relative positions desired, while the length of the slots allows sufficient movement of the claws to enable their hooks or spurs *d f* to move in and out toward and from each other, so as to fasten upon any thickness of rafter or other support which may ordinarily occur.

The pivots *b c* are not only situated outside of the centre of the stock, as shown, but above the point of crossing, or where the bolt *l* passes through.

When a weight draws down upon the stock A, the effect is to bear upon the pivot-ends of the claws, while the bolt *l* acts as a fulcrum to both, thereby making levers of both claws, and forcing the hooks or spurs *d* and *f* toward each other, and hence forcibly grappling any support situated between them; and the force of this grappling increases with the weight supported by the pulley, also with the eccentricity of the pivots *b c*, as in fig. 3.

It is also self-acting, since the sustaining-force is the weight of the grapple and pulley, added to the weight raised, and it is only necessary to place one hook or spur against the support, to cause the grapple to automatically seize it. On relieving the weight, the grapple is at once separated from the support, and may be removed to another place.

Instead of swivelling the pulley to the grapple, as in figs. 1 and 3, there may be an eye at the bottom of the stock, as at *p*, fig. 4, for hooking the pulley or hoisting-apparatus thereto, or a band or link may extend up over and around the stock, as at G, fig. 6.

In figs. 1, 2, and 3, the stock A is represented as double, or folded over, so as to enclose the claws between its sides; but it may consist of a single flat piece of metal, with the claws pivoted outside, either both on one side, or one on each side, as indicated in figs. 4 and 6.

The modification in fig. 6, shows the two claws pivoted together in the centre, as at *n*, and two bolts, *b* and *c*, attached respectively to the heels or inner ends thereof, to play in slots *h* and *i*, in the ends or extremities of the stock. By this arrangement the claws become levers of a different order from those in figs. 1 and 3.

The pulley may ordinarily have a swivel, *m*, permanently secured in the stock of the grapple, but when it may be desirable to remove the pulley from the grapple, we provide therefor by means of the device shown in fig. 7, or its equivalent.

The swivel-pin is inserted in a slot, *t*, its head passing through the side notches *u u*, and when inserted, the head sinks below said notches upon the bottom of the stock A, and prevents the pin from coming out, unless it is raised purposely, so as to bring the head again to the said notches.

With slight changes in construction, the principle of this invention is applicable to the prongs of horse hay-forks.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The grapple or clutch, having its claws B C pivoted to a connecting-bar, A, at separate points *b c* outside of the central line of suspension, and crossing each other, to grapple on the other side of the said central line, substantially as and for the purpose herein set forth.

2. Also, a grapple having its claws B C pivoted both

to each other at their crossing, and to the connecting-bar A at separate points, substantially as herein specified.

3. Also, the slots *h i* in the claws B C, for the purpose specified.

4. Also, the slot *t*, with side notches *u u*, for attaching the pulley to and from the grapple or clutch, substantially as specified.

The above specification of our improved suspending-grapple or clutch, signed by us this 3d day of October, 1868.

JOHN K. O'NEIL.
JOHN F. THOMAS.

Witnesses to JOHN K. O'NEIL's signature:
HOWARD CHIPP,
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Witnesses to JOHN F. THOMAS's signature:
W. W. THOMAS,
L. S. WARNER.