

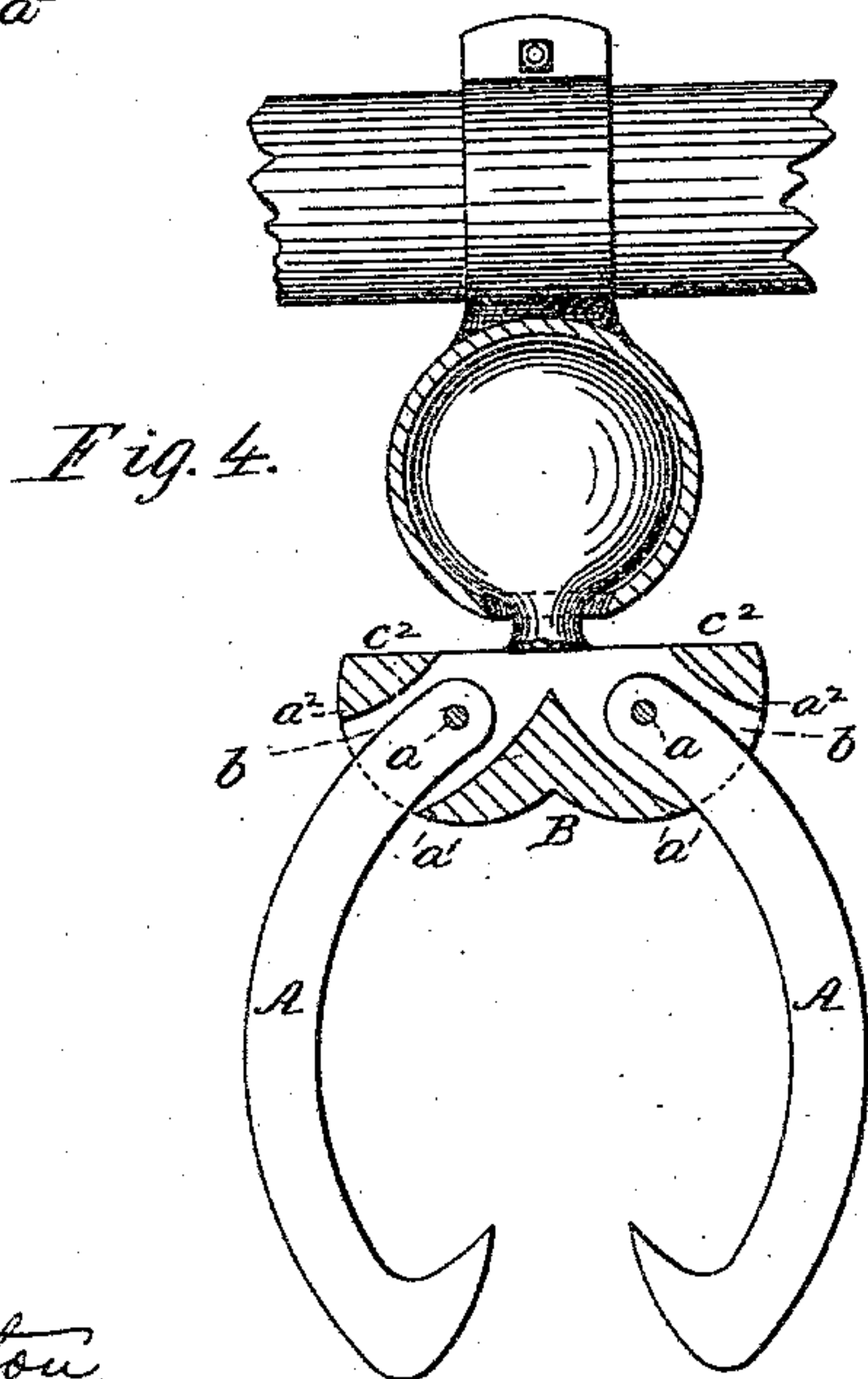
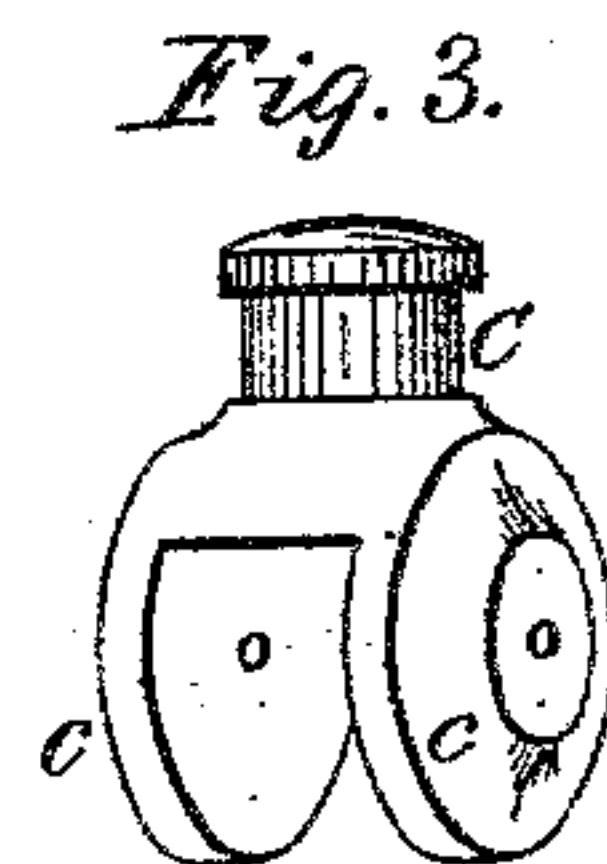
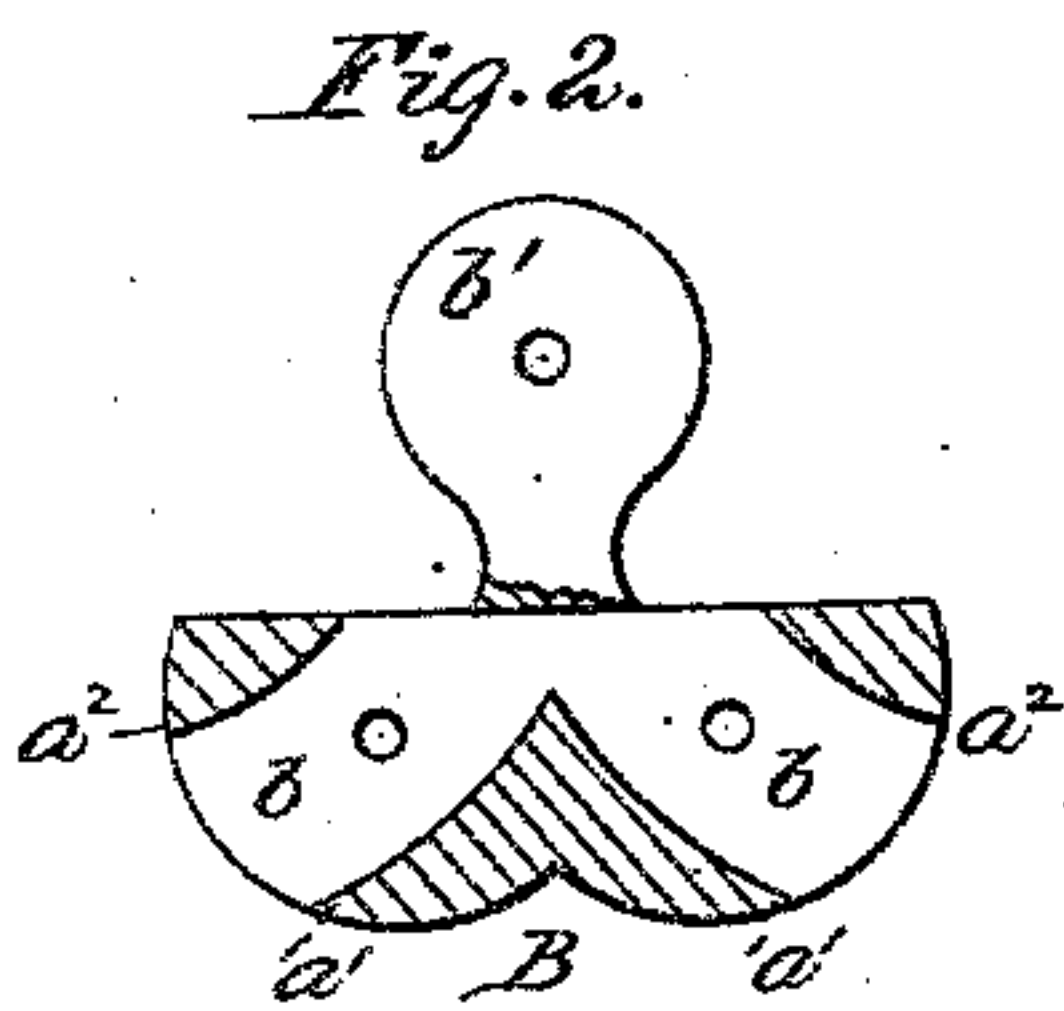
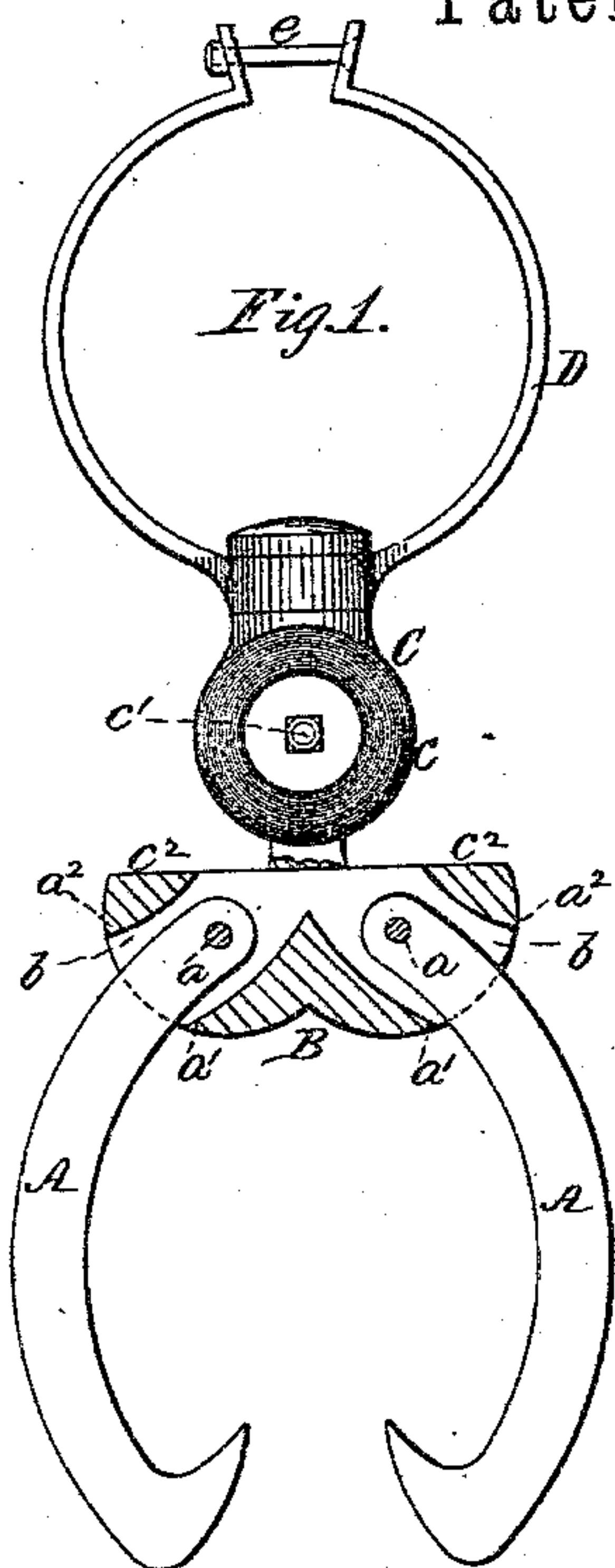
(No Model.)

A. SANFORD.

GRAPPLE.

No. 283,422.

Patented Aug. 21, 1883.



Witnesses:
W. C. Johnston.
Fred B. Church

Inventor:
Albert Sanford
by
Melville Church

his Attorney.

UNITED STATES PATENT OFFICE.

ALBERT SANFORD, OF OSHKOSH, WISCONSIN.

GRAPPLE.

SPECIFICATION forming part of Letters Patent No. 283,422, dated August 21, 1883.

Application filed July 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALBERT SANFORD, of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain
5 new and useful Improvements in Grapples; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying draw-
10 ings, forming part of this specification, and to the figures and letters of reference marked thereon.

My invention consists of an improved grapple for handling timber, constructed and adapted for operation as hereinafter fully de-
15 scribed and claimed.

Referring to the accompanying drawings, Figure 1 represents an elevation of a grapple constructed in accordance with my invention, a portion of the casting to which the hooks
20 are pivoted being removed to better illustrate the manner of pivoting the hooks and the construction and arrangement of the stops which co-operate with the hooks to limit their move-
25 ments. Fig. 2 is a detached view of a casting to which the hooks are pivoted; Fig. 3, a detached view of the part which connects the aforesaid casting to the band or ring of the grapple. Fig. 4 is a view of a modified form
30 of the grapple.

Similar letters of reference in the several figures indicate the same parts.

The hooks are represented by the letters A, the casting to which the hooks are pivoted by B, the bar which connects the casting to
35 the band or ring by C, and the band or ring by D.

The casting B is provided with two slots or recesses, *b b*, arranged at an angle to each other, within which are pivoted the upper
40 ends of the hooks by means of pins *a a*. The lower walls of the said slots constitute stops or shoulders, as seen at *a' a'*, to limit the approach of the points of the hook toward each other, so as to prevent them from striking and
45 injuring each other, while the upper walls of said slots also form stops at *a² a²* to prevent the hooks from opening beyond the point needed to accommodate as large a piece of
50 timber as the length of the hooks will clasp. Said casting is further provided with an up-

per projecting eye, *b'*, which is adapted to work freely between the ears or lugs *c c* of the connecting-bar C, being held therein by means of a pivot-bolt, *c'*, as shown in Fig. 1. The upper end of the bar C is united to the band
55 or ring D by a swivel-connection, as shown.

If the grapple is to be used on a bar carried by hand, the band D is preferably divided and provided with a clamping-screw, *e*, as shown in Fig. 1, so as to enable it to receive such
60 bar, and be tightly clamped in position thereon; but when the grapple is intended for use upon an ordinary fall the split band may be displaced by a solid ring for the accommoda-
65 tion of the hook of the block. The jointing of the casting to the bar C and the connection of the latter to the band or ring by a swivel-connection gives a universality of movement
70 to the grapple, and renders it possible to grasp with the hooks a piece of timber, in whatever position it may be.

Another mode of effecting the universal-joint connection between the hook-supporting casting and the lifting band or ring is illus-
75 trated in Fig. 4, and consists in forming a ball or spherical projection upon the casting, and a socket for such ball to work in upon the carrying band or ring, the same result being
80 accomplished by this arrangement as by that shown in Fig. 1.

The construction and arrangement of the hooks is such that they open automatically when they strike a piece of timber, and close
85 and hook into the timber as soon as raised, and all this without the necessity of any adjustment by hand.

The construction of the casting with the stops on each side of the hooks, while enabling the hooks to hang with their points directly
90 opposite, prevents said points from passing each other and becoming jammed, so as to interfere with their automatic spreading and closing when acting upon the timber. The upper stops, *c² c²*, also prevent the hooks from
95 striking the bar and the hands that are holding the bar.

The whole device is of simple construction, and after practical tests has been found to save a great deal of time and labor in the handling
100 of timber.

I claim as my invention—

1. The combination, with the hooks, of the casting having the inclined slots or recesses in which the hooks are pivoted, and formed with
5 shoulders or stops a' a' and a^2 a^2 for limiting the movement of the hooks, substantially as described.

2. The combination of the hooks, the casting having the slots or recesses in which the
10 hooks are pivoted, and formed with the limiting stops or shoulders, as described, with the carrying band or ring, and a universal-joint connection between the casting and said band or ring, substantially as described.

3. The combination of the hooks, the casting to which the hooks are pivoted, provided
15 with the projecting eye at the top, the connecting-bar having the lugs, between which said eye is pivoted, and the band or ring to which said connecting-bar is swiveled, the whole
20 constructed and arranged substantially as described, and for the purpose specified.

ALBERT SANFORD.

Witnesses:

E. T. ELLSWORTH,
G. H. GILE.