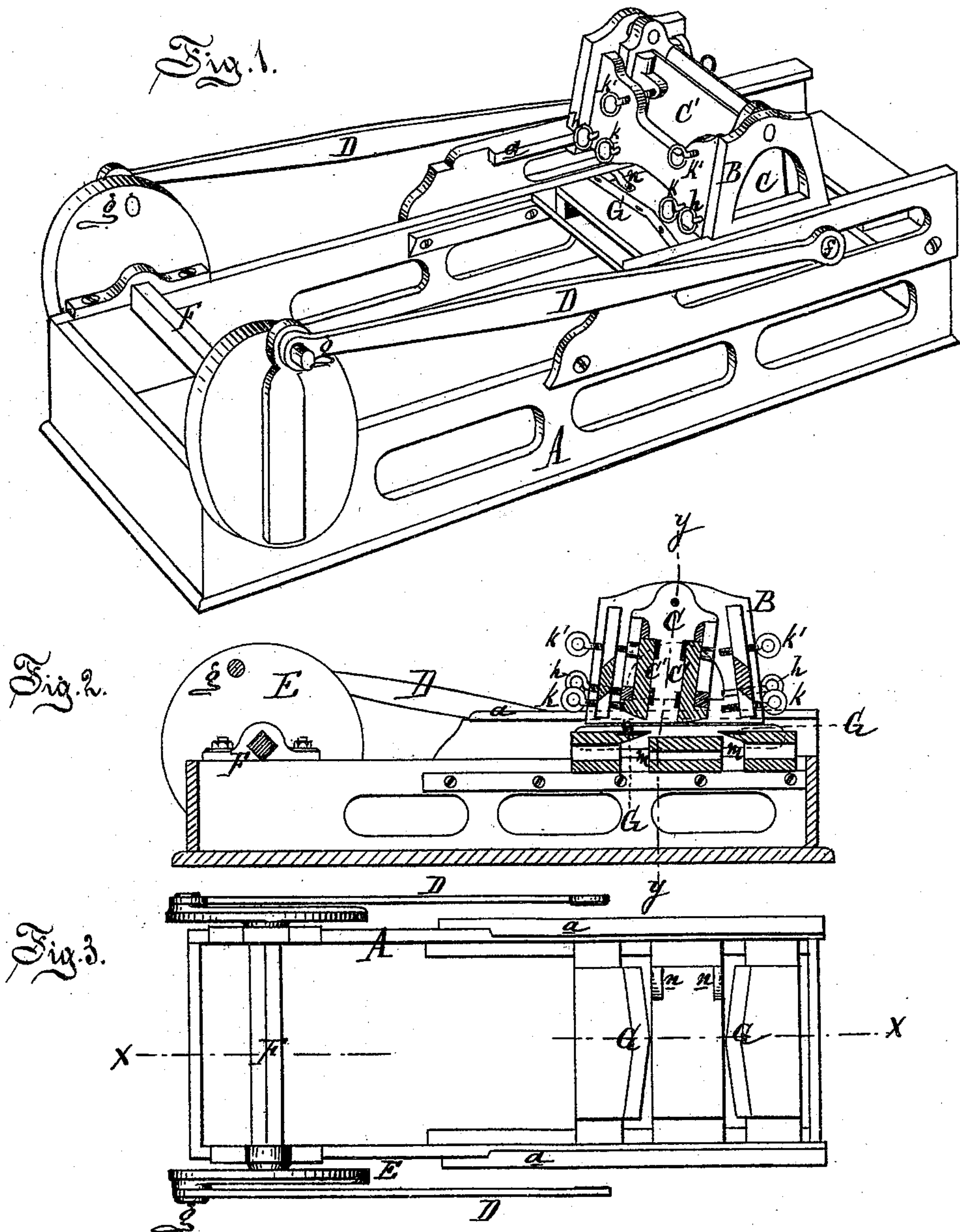


H. FOWLER.
MACHINE FOR CUTTING HOOPS.
No. 174,512. Patented March 7, 1876.



Attest:
Edward Pankel.
Charles J. Hunt

Inventor:
H. Fowler
By Atty
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Fig. 4.

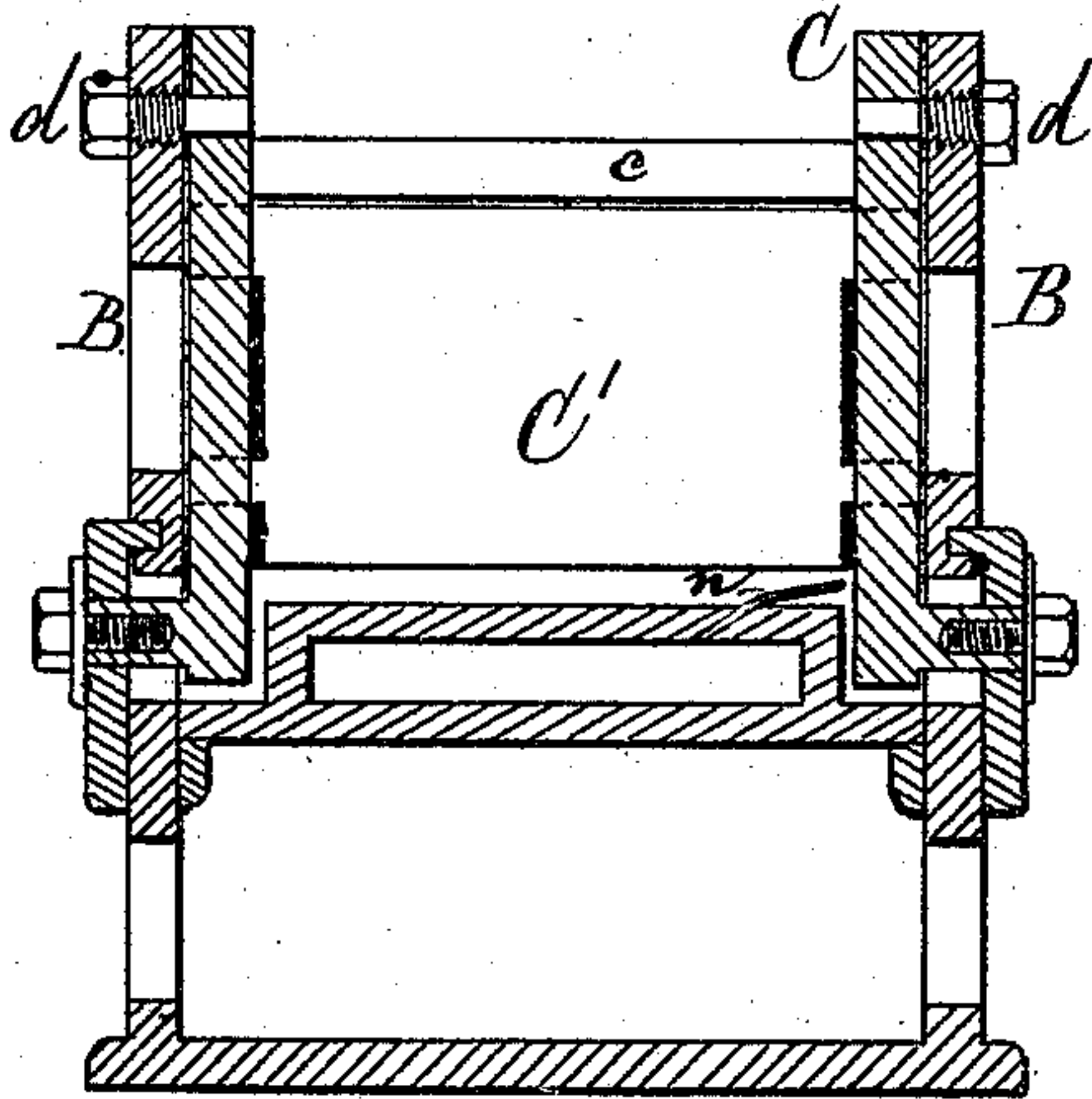


Fig. 7.

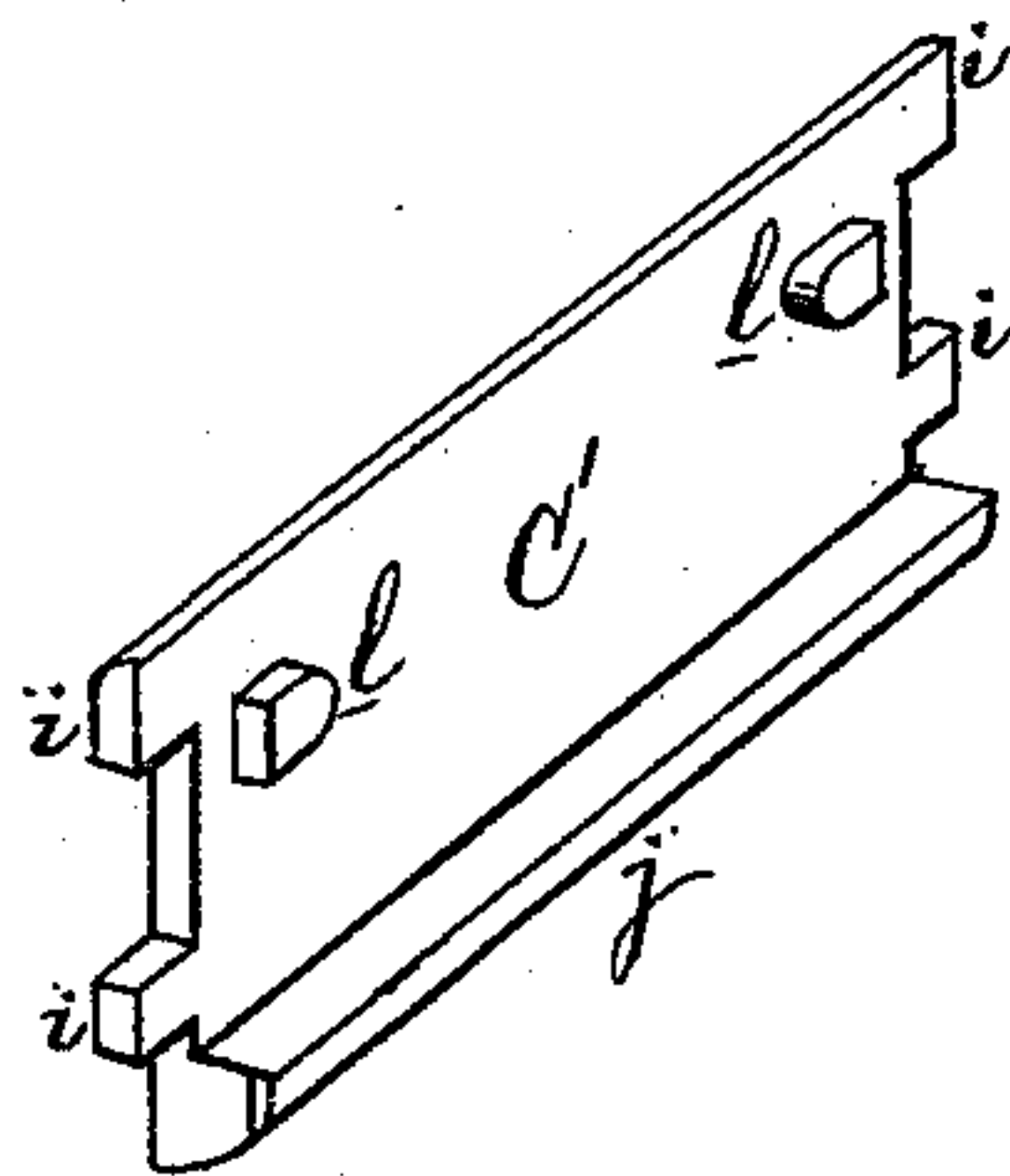


Fig. 5.

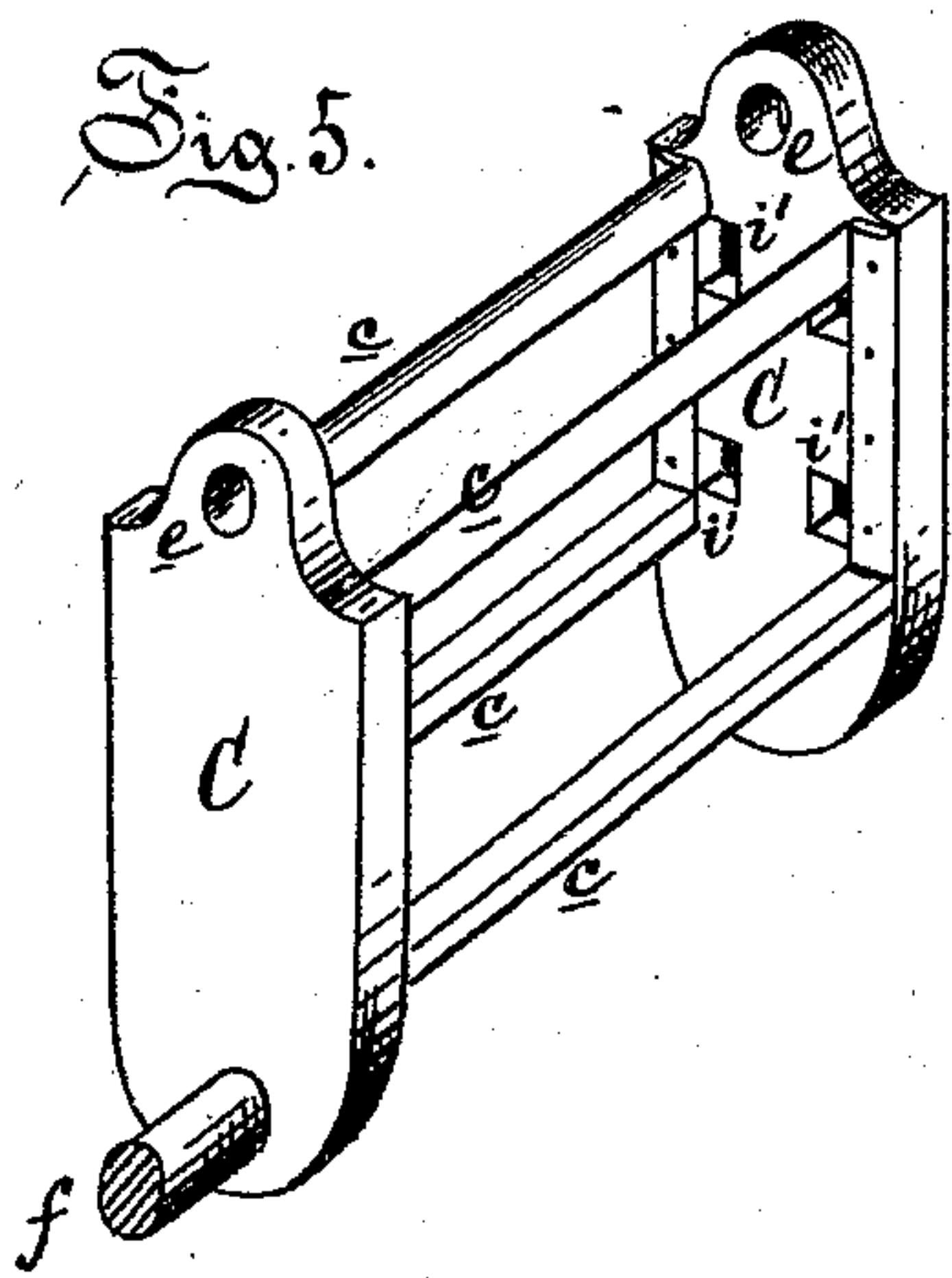
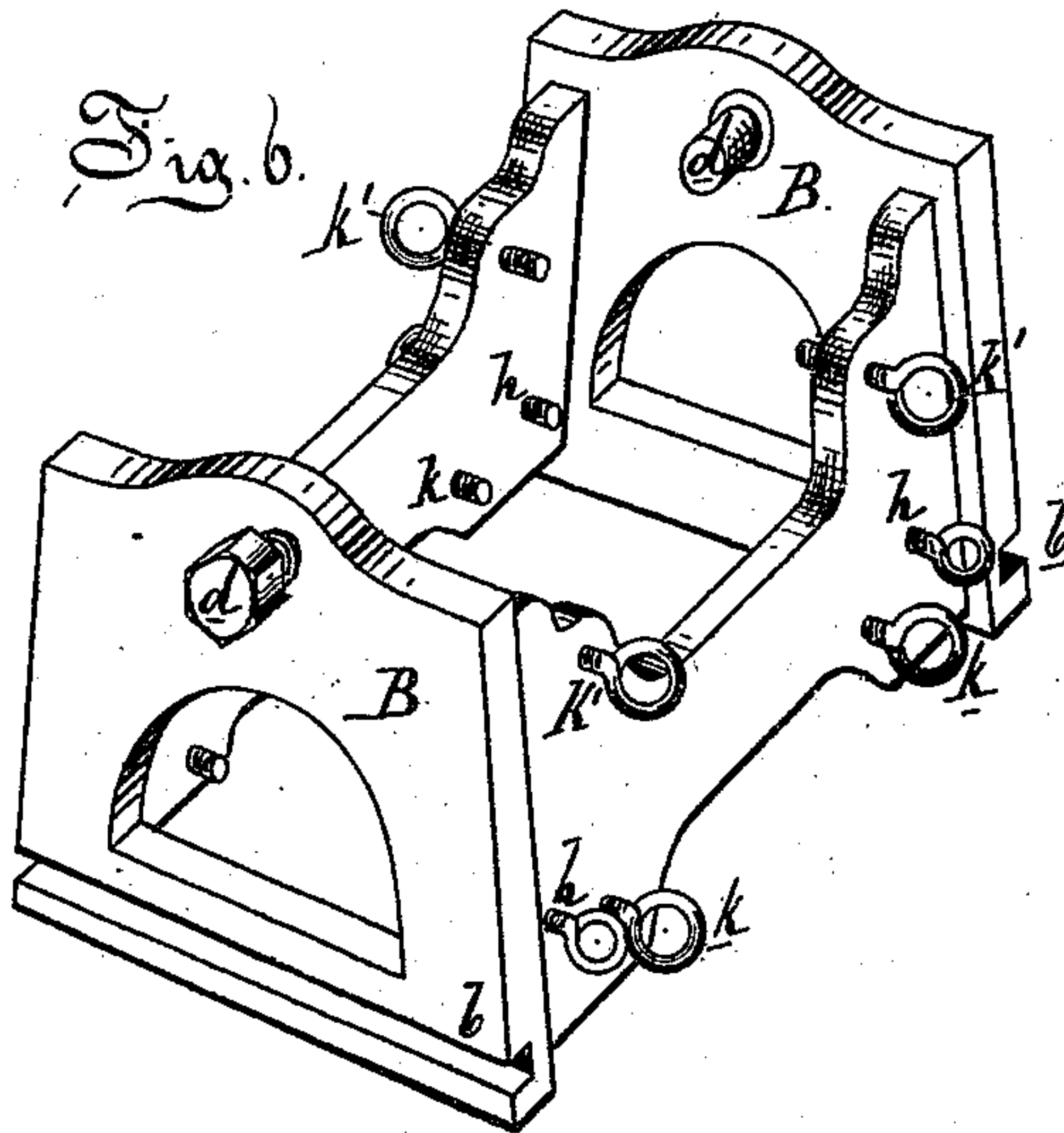


Fig. 6.



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UNITED STATES PATENT OFFICE

HENRY FOWLER, OF DETROIT, MICHIGAN.

IMPROVEMENT IN MACHINES FOR CUTTING HOOPS.

Specification forming part of Letters Patent No. 174,512, dated March 7, 1876; application filed August 27, 1875.

To whom it may concern:

Be it known that I, HENRY FOWLER, of Detroit, in the county of Wayne and State of Michigan, have invented an Improvement in Machines for Cutting Hoops, of which the following is a specification:

The nature of my invention relates to certain improvements in hoop-machines of that class wherein a beveled hoop is cut from the lower edge of a bolt at each vibration thereof over a stationary knife or knives, and is more especially designed as an improvement upon the machine for which Letters Patent of the United States were granted to me on July 13, 1875.

The object of the present invention is to so construct the machine as that it will cut each hoop beveled on both sides, and at the same time to slope one end for making a lapped hoop.

The invention consists in a cradle sliding in ways or guides on a bed-frame, and in which cradle is hung a vibrating bolt-holder, to which a reciprocatory movement is imparted. In the cradle set-screws are inserted, which limit the vibration of the bolt-holder, and, in combination therewith, two loose sides in the bolt-holder, between which the bolt is inserted, and the former sides are adjusted thereto by set-screws tapped through the cradle, to impinge upon the loose sides; also, in the arrangement of the cutting-knives with relation to the said bolt-holder; also, in the combination therewith of a knife for beveling one end of each hoop before it is cut from the bolt.

Figure 1, Sheet 1, is a perspective view. Fig. 2 is a longitudinal section at *x x*, Fig. 3. Fig. 3 is a plan of the bed-plate and its knives. Fig. 4, Sheet 2, is a cross-section at *y y*. Fig. 5 is a perspective view of the bolt-holder with its sides removed. Fig. 7 is a similar view of a loose side detached from the bolt-holder. Fig. 6 is a perspective view of the cradle.

In the drawing, A represents a bed-frame, having guides *a* at each side, upon which a cradle, B, reciprocates, it having a groove, *b*, at the lower part of each end to embrace a guide, *a*, and the ends are connected by side girts. C is a bolt-holder, composed of two end pieces or heads, connected at each side by two girt-bars, *c*. The bolt-holder is suspended

from the top of the cradle by two trunnion-bolts, *d*, one of which is tapped through each end of said cradle, and enters a bearing, *e*, in the top of each head or end of the bolt-holder, at the bottom of which there is a wrist, *f*, to which is strapped one end of a connecting-rod, D, strapped to a wrist, *g*, on a crank, E, at each end of a shaft, F, transversely journaled in bearings at the back end of the bed-frame, by the rotation of which the bolt-holder is first vibrated, and then, acting against the side of the cradle, the latter is reciprocated. The vibration of the bolt-holder is regulated or limited by two set-screws, *h h*, tapped through the lower sides of the cradle, against which screws the ends of said holder strike, and thus push the cradle along. C' are two loose sides, having studs *i* upon each end, which are received in sockets *i'* in each head of the holder, in which they have some lateral play. There is a rib, *j*, along the lower outer edge of each side, which projects out underneath the lower girt-bar *c*. Two set-screws, *k*, are tapped through the lower part of each girt of the cradle, to impinge upon the rib, *j*, of each loose side. Two other set-screws, *k'*, are tapped through it above, to bear upon blocks *l*, of wood, but preferably of rubber or other elastic material on the upper part of each loose side. The set-screws *k k'* are to adjust the loose sides to the thickness of the bolts that are received between them, and to hold the said bolts while the hoops are being cut off, and the elastic blocks *l* are intended to yield a little to the small inequalities in thickness which are frequently met with.

The set-screws *h*, by regulating the oscillation of the bolt-holder, govern the bevel of the hoops cut.

The hoops are cut from the lower edge of the bolt by two knives, G G, bolted to a raised portion of the bed-plate, each over a throat, *m*, therein, the cutting-edges of the knives facing each other, as shown. As the cradle and holder reciprocate the bolt drops upon that portion of the bed-plate which lies between the knives, and from the angular inclination of the holder presents the side of the bolt toward the knife to which it is advancing, and causes the latter to slice off a hoop, that is beveled when cut, the thin edge being cut

first. When the holder and cradle reciprocate in the opposite direction the bolt is inclined in the other direction, and thus enables the other knife to cut off a beveled hoop, cutting the thin edge first, which is less liable to break or snap in cutting than where the thick edge is cut first, the cut hoops passing down through the throats *m*. The loose sides, coming down close to the knives, hold the bolt firmly until entirely cut up into hoops, thereby avoiding a considerable waste of material.

To save one handling in the manufacture of lapped hoops—that is, a hoop where the ends are sloped or beveled where they overlap each other, and are secured by nails or staples instead of the side locks cut in them—I provide two short knives, *n*, which I secure to the edges of one end of that part of the bed-plate which is intermediate or between the principal knives. The knife *n*, at each side, is slanted up from the edge of the bed-plate, and

shears off a bevel strip from the bottom of the bolt just before it is presented to the larger knife.

What I claim as my invention is—

1. In a hoop-cutting machine, the combination, with the loose adjustable sides *C'* of the bolt-holder, of the set-screws *k k'*, passing through the sides of the reciprocating cradle, and operating substantially as described and shown.

2. In a hoop-cutting machine, the combination of the reciprocating cradle, oscillating bolt-holder, stationary knives *G*, and knives *n*, adapted to cut a beveled hoop and slope or bevel the ends of the same in one operation, substantially as described and shown.

HENRY FOWLER.

Witnesses:

H. F. EBERTS,

CHAS. J. HUNT.