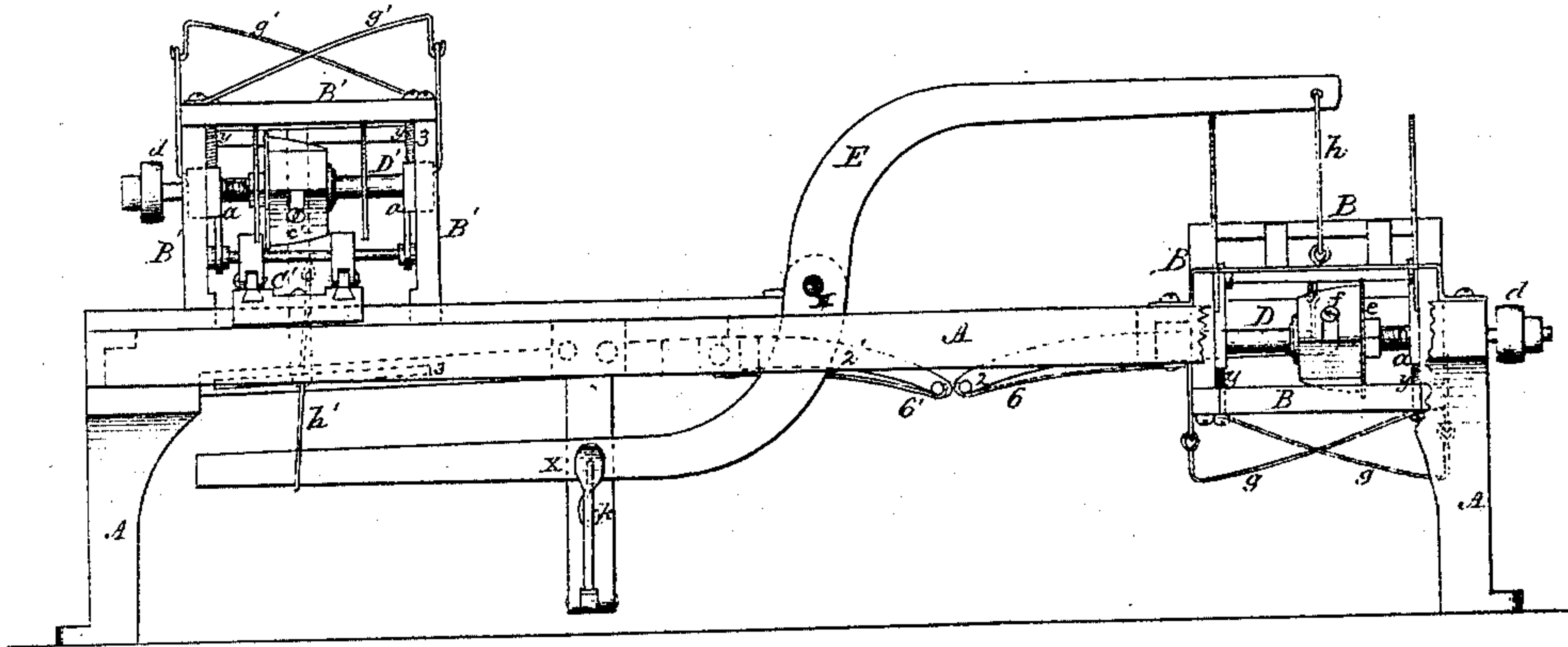
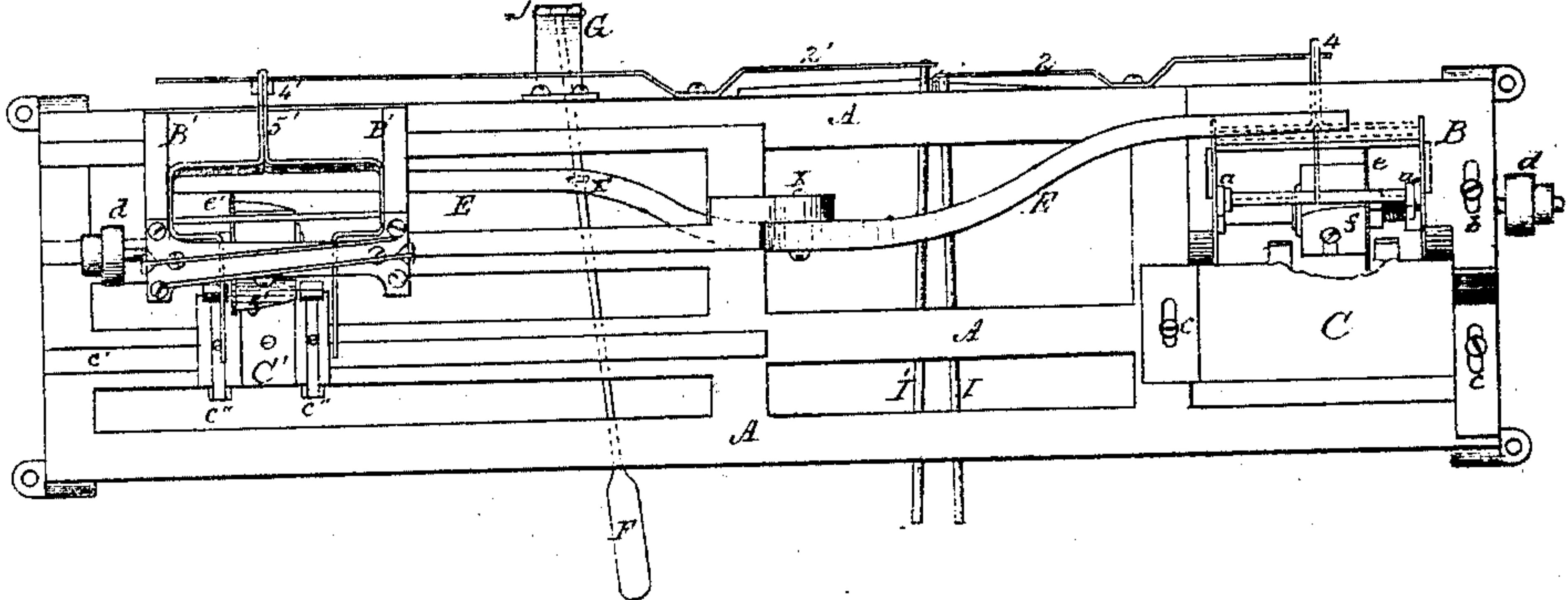


*A. Cutter,*  
*Hoop Machine.*  
*No. 108114.      Patented Oct. 11. 1870.*

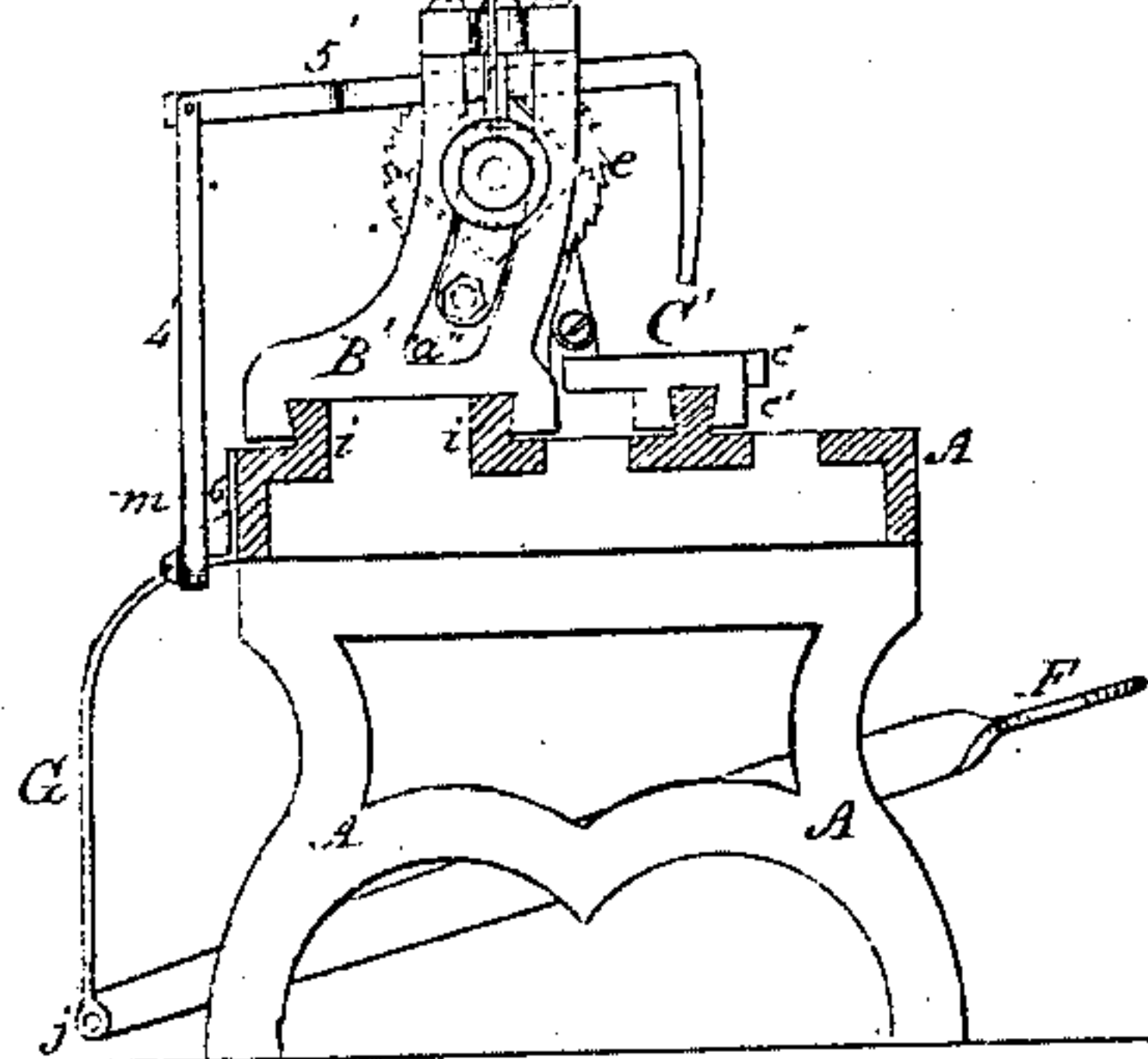
*Fig. 1.*



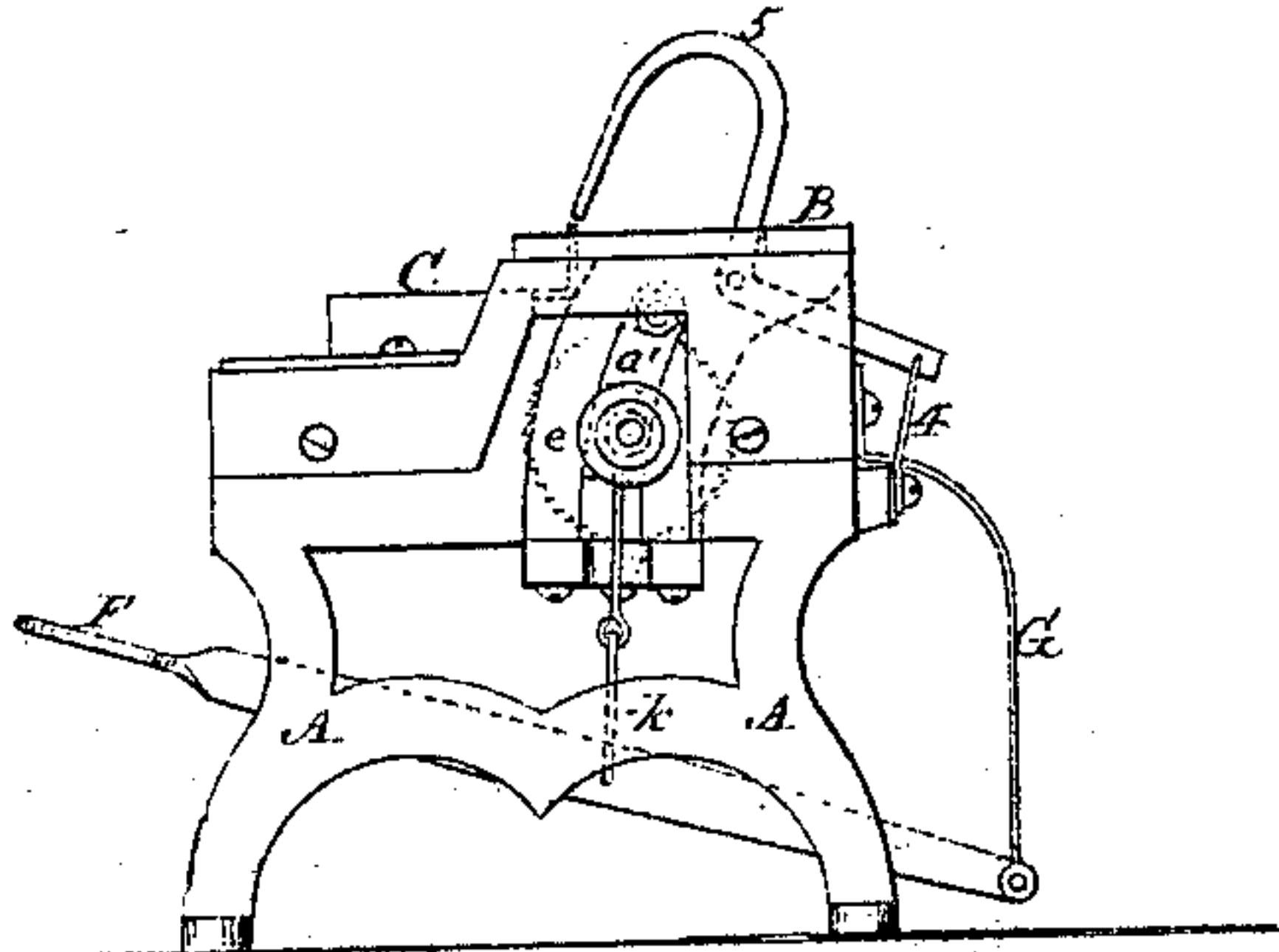
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# United States Patent Office.

AMOS CUTTER, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 108,114, dated October 11, 1870.

## IMPROVEMENT IN MACHINES FOR CUTTING LOCKS IN HOOPS.

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

I, AMOS CUTTER, of Boston, in the county of Suffolk, in the State of Massachusetts, have invented certain Improvements in Machines for Cutting the Locks in Barrel-Hoops, of which the following is a specification.

My invention consists in the construction of a machine, in which the locks are simultaneously cut at both ends of the hoop.

It also consists in the arrangement of the operating devices, that hoops of different sizes and lengths can be clamped, and locks cut therein.

In the drawing—

A represents the supporting-frame.

B and B', the head-blocks that contain the revolving cutter-heads, that cut the locks in the hoop, in each of which are inclined curved slots, and in these curved slots the frame of the cutter-heads freely slides.

C and C' are the adjustable tables, upon which the hoop is placed and clamped, while the locks are cut therein.

D and D' are the revolving shafts, upon which are the cutter-heads that cut the locks, and are revolved by pulleys *d*.

*a* and *a'* are the sliding frames that contain the shafts D and D' and cutter-heads, and are constructed to slide in the inclined curved slots *a'* and *a''* in the head-blocks, and are regulated by the temper-screws *z*.

*e* and *e'* are the revolving saws, that cut the shoulder of the locks, and

*f* and *f'* are the revolving inclined-edged cutters, that cut out the lock after the shoulder is sawed.

E is a long bent lever, placed longitudinally with the machine, pivoted at *x* to a lug on frame A, and so bent as that one end comes above the frame A, and the other end extends along on the under side of said frame A.

To the end of lever E, that is, above the frame, is a connecting-link, *h*, which connects the lever with the top of the frame *a* in head-stock B, and to that end of the lever that is below or underneath the frame, there is a sliding link that connects the lever to under side of frame *a'*.

F is a foot-treadle, hinged at *j* to bracket G, that is fast to frame A, and drops down to the proper distance below the frame. At point *x'* the treadle F is connected to lever E by link *k*.

*g g* and *g' g'* are springs that are attached to frames *a*, and operate to restore the frames *a* and *a'* to their normal condition, when the foot-treadle is released.

I and I' are foot or hand-levers that act upon pivoted levers 2 and 2', which levers are connected to bent clamps 5 and 5' by links 4 and 4'.

Head-block B is adjusted laterally, and so as to have it in line by means of set-screw and slot *b*, and table C is also adjusted toward or from the cutters by means of set-screws in slots *c*.

Head-block B' is adjusted longitudinally, to give the proper length of hoop upon ways *i i* on frame A, and is held in place by holding-screw *m*.

Table C' is adjusted longitudinally on way *c'* on frame A, and laterally by the slides *c'' c''* in table C, and table C and slides *c'' c''* are held in place by set-screws, as seen in fig. 2.

In order to allow of head-block B' to be adjusted longitudinally, and not interfere with the hoop-clamping device, a slot, 3, is made longitudinally in lever 2', so that the link connection 4' can freely slide in said slots, and be no hindrance to the adjustment of head-block B', and the link that connects frame *a* in head-block B' slides freely on lever E.

### Operation.

The head-blocks and cutter-heads are first adjusted to the length at which the locks are to be cut apart; then the tables adjusted at the proper distance from the cutters. A hoop is then placed on tables, one end resting against the raised part of frame A, at the end of table C, when the hand is placed upon treadle-levers I and I', which causes the bent clamps 5 and 5' to firmly clamp the hoop upon the tables and against the back rests thereof, the cutter-heads in frames *a* and *a'* being in motion by a belt passing around pulleys *d* on shafts D and D'. The foot of the operator is placed upon treadle F and pressed down, which acts to raise the frame *a*, with its cutter-head and cutters *e* and *f* in the curved slots of the head-block B, and, at the same time, depresses the frame *a* and cutters *e'* and *f'* in head-block B', which brings the revolving cutters against the hoop on the tables in such manner that the locks are cleanly cut out at both ends of the hoop, and in such form as to exactly fit, when bent and brought together in the form of a hoop.

The operator's foot is released from treadle F, when the retracting springs *g g* and *g' g'* operate to carry or force the cutter-heads out of the way. When the levers I and I' are released, springs 6 and 6' force the bent clamps from the finished hoop, when the hoop can be removed, and another to be acted upon put in as before.

This machine will cut the locks upon blank hoops as fast as they can be put in and taken out of the machine, as it is but an instant of time in doing its work. It is compact, requiring but little room, is easily operated and effective, doing the work of many hand-machines in a given time, and, at the same time, the work is better done, and no possible chance to spoil any of the hoops in cutting the locks.

Having thus described my invention,

What I desire to claim, and secure by Letters Patent, is—

1. The foot-treadle F and bent lever E, in combination with the two frames *a* sliding in head-blocks B and B', and having the revolving cutters *e* and *e'* and

*f* and *f'*, constructed and operating substantially as described.

2. The transversely adjustable head-block B, having the revolving cutters *e* and *f* in a frame sliding in curved slots, in combination with the laterally-adjustable table C, constructed in the manner described.

3. The longitudinally-adjustable table C', having the transversely-adjustable part *e'' e''*, in combination with the longitudinally-adjustable head-stock B', having the revolving cutters *e'* and *f'* in a frame sliding in curved slots therein, in the manner described.

4. The levers I and I', pivoted levers 2 and 2', in combination with the bent clamps 5 and 5', when constructed and arranged to operate substantially as described.

5. The hoop-lock cutting-machine herein described, when the parts are constructed, arranged, and combined to operate together in the manner set forth.

AMOS CUTTER.

Witnesses:

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