

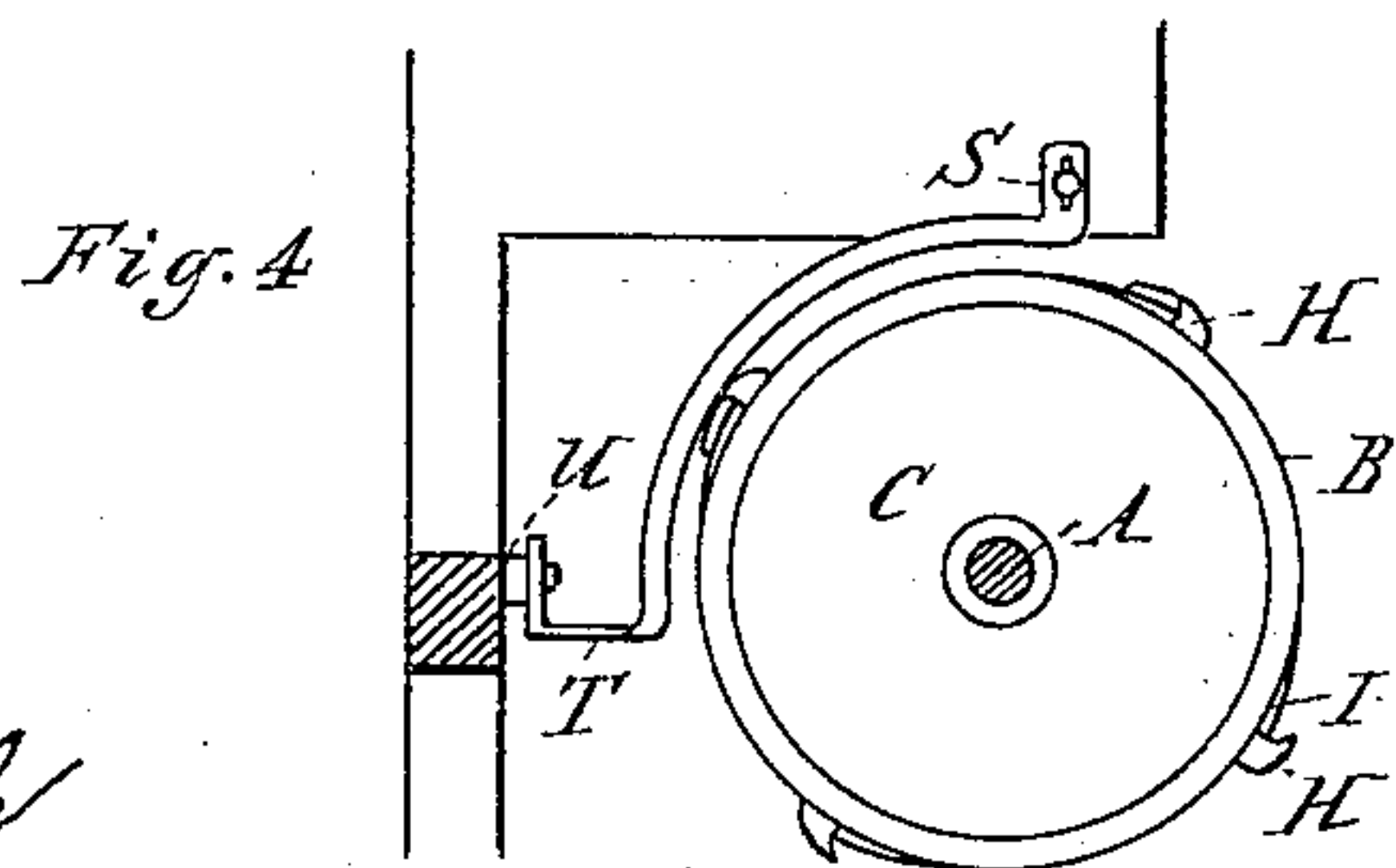
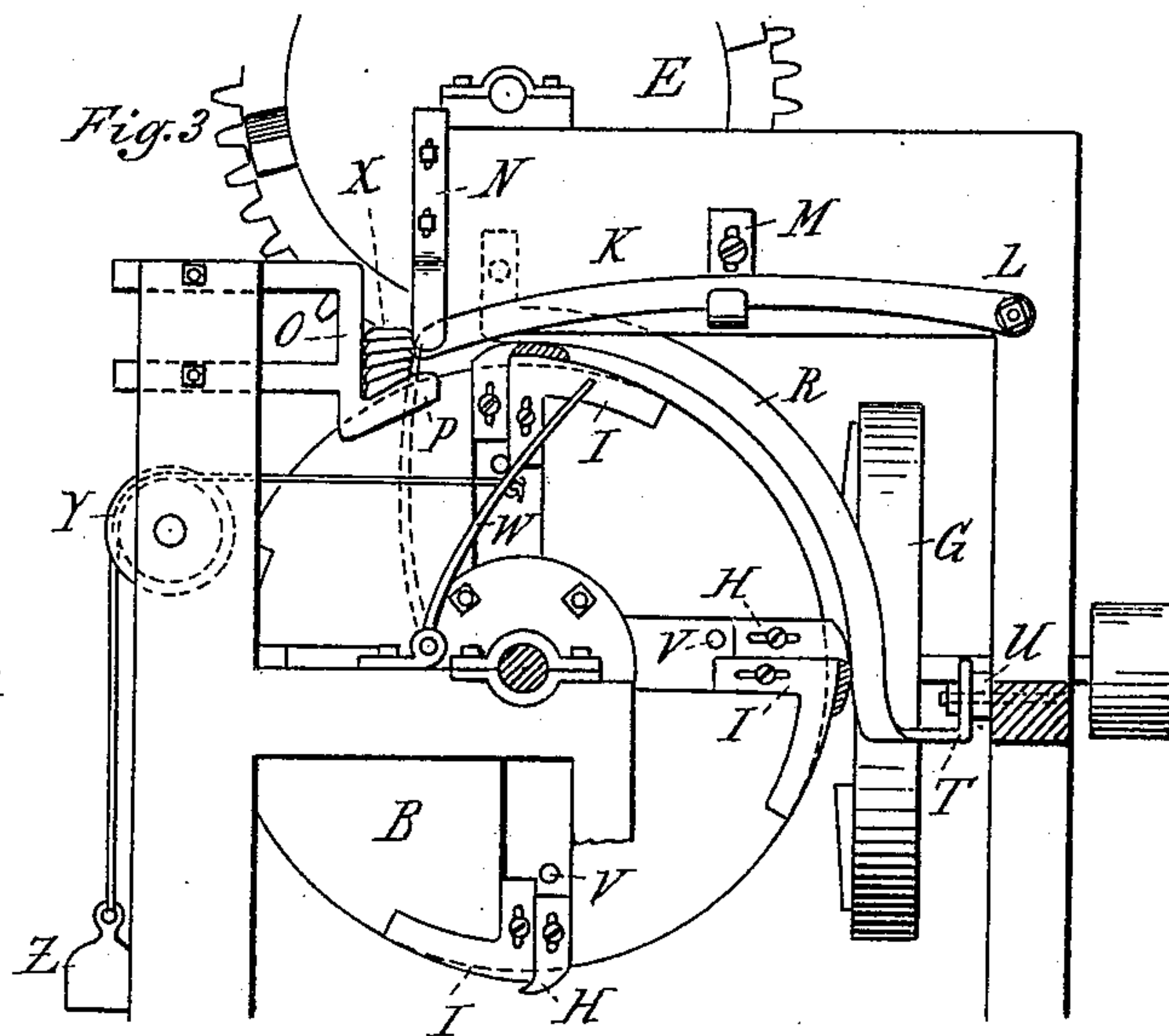
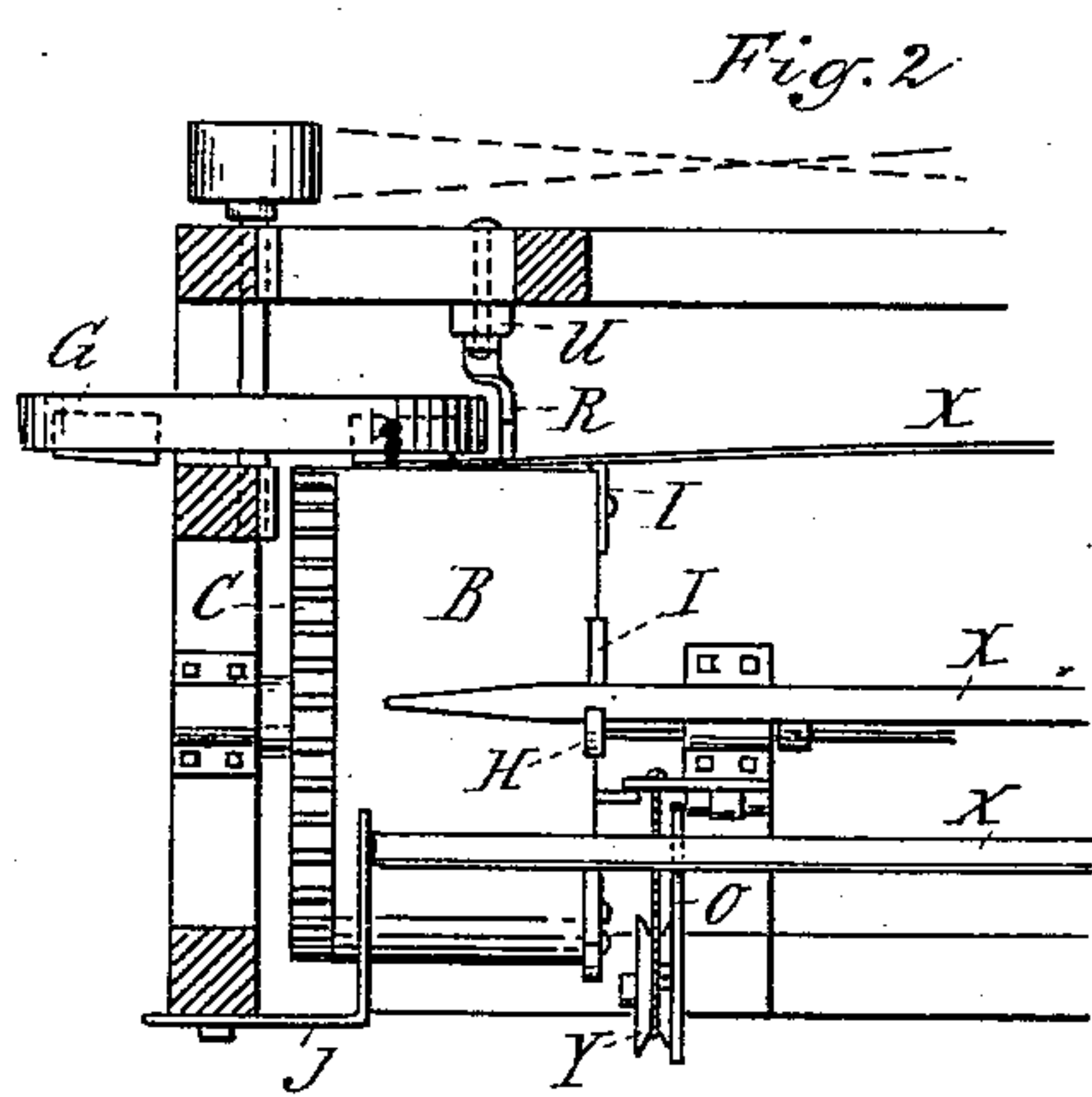
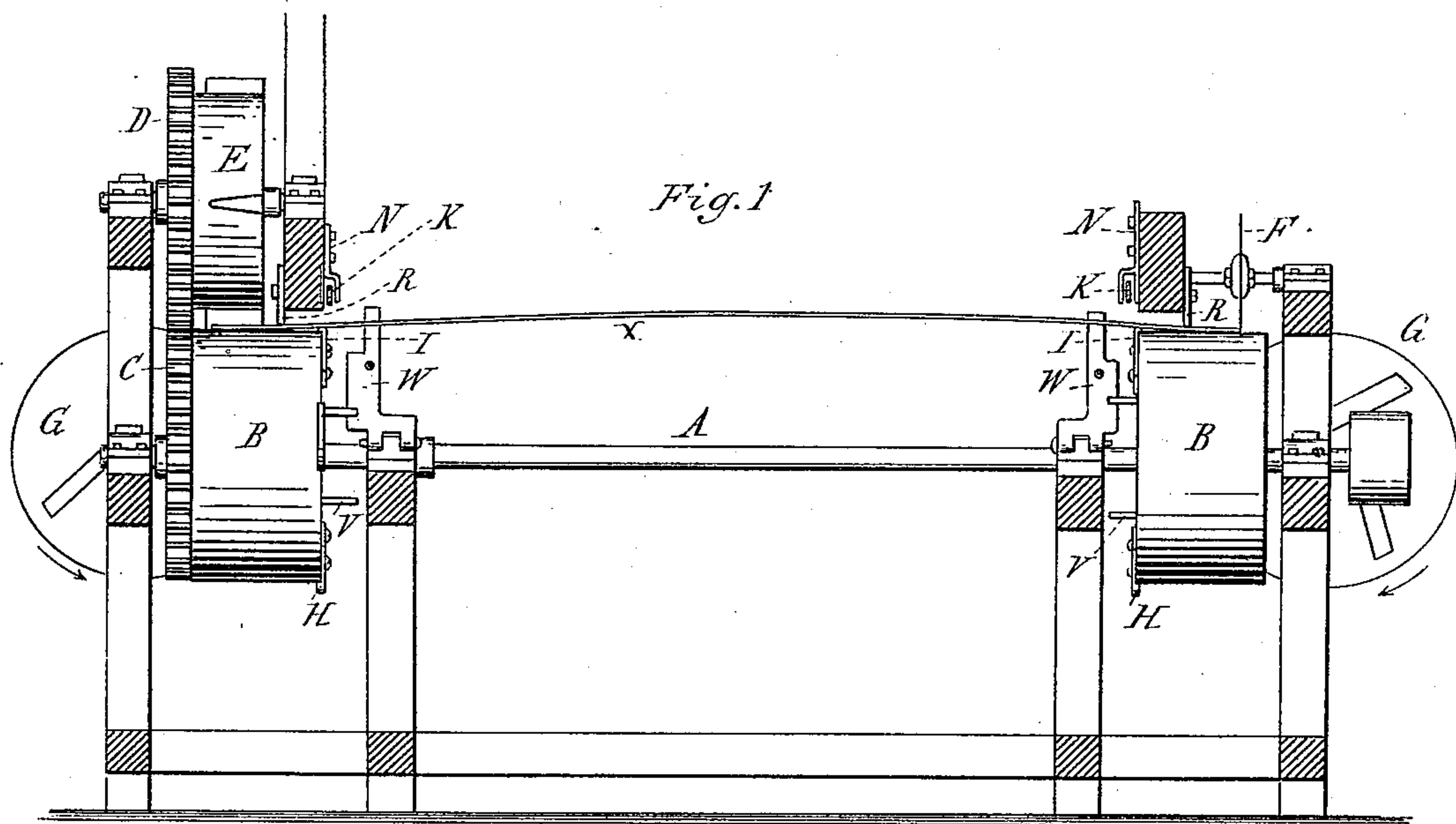
(No Model.)

C. E. CHITTENDEN.

HOOP LAPPING AND POINTING MACHINE.

No. 250,784.

Patented Dec. 13, 1881.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES E. CHITTENDEN, OF ECORSE, MICHIGAN.

HOOP LAPPING AND POINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 250,784, dated December 13, 1881.

Application filed April 23, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. CHITTENDEN, of Ecorse, in the county of Wayne and State of Michigan, have invented a new and
5 useful Improvement in Hoop Lapping and Pointing Machines, of which the following is a specification.

Figure 1 is a side view of my invention with the frame of the machine partially cut away.
10 Fig. 2 is a top view of one end of my invention, on the line of the hoop X in Fig. 1. Fig. 3 is a view of the inner faces of pulleys B B in Fig. 1, and Fig. 4 is a view of the outer face of one of the pulleys B.

15 This invention consists in a novel combination of devices in a barrel-hoop machine, the object of which is to provide a machine in which the several parts are so connected and operated in unison that a hoop-blank is auto-
20 matically delivered to the action of the cutters and its ends simultaneously beveled and properly shaped to form a complete hoop, ready for use.

The improvements will be fully hereinafter
25 described in detail, and pointed out in the claims.

A is the main shaft of the machine, and is driven in any suitable and convenient manner.

30 B B are pulleys attached to this shaft A at opposite ends of the frame of the machine.

I I are cams or projections attached to the inner faces of pulleys B B by screw-bolts passing through slots in said cams, so that said
35 cams can be set to project slightly above the faces of pulleys B B.

H H are dogs attached to the inner faces of pulleys B B, just back of cams I I, and adjustable in the same manner as said cams.

40 E is a pulley placed above left-hand pulley B, and operated by cog-wheel C on pulley B, which gears into cog-wheel D on pulley E. On pulley E are V-shaped cutters, (shown in Fig. 1,) which cutters point the hoops as they pass over pulley B.

45 G G are pulleys or wheels, driven at a high rate of speed in opposite directions by suitable belts and pulleys. These pulleys or wheels G G carry cutters projecting from the side faces thereof next to pulleys B, which cutter-heads
50 are set on such an angle that as they pass a hoop held on pulleys B B they lap or taper the

ends of such hoop. By running these pulleys G G in opposite directions the cutter-heads have a tendency to bring a tensile strain on the hoop instead of compressing the hoop.

55

X is a hoop to be operated upon.

R R are curved guides bolted to the frame of the machine, one extending from the top of each pulley B a little more than one-fourth of the circumference of such pulley, and placed
60 so near to such pulley B that, when a hoop is caught by the dog H and carried around the pulley, guide R will bend the end of the hoop, which is held by cam I slightly above the face of pulley B, down onto the face of pulley B
65 and hold the end of the hoop firmly pressed against said pulley. At its upper end guide R is pivoted to the frame, and at its lower end the bolt T, which holds it to the frame, passes through a rubber washer or spring, u, so that
70 guide R can yield in case a hoop of unusual thickness should get into the machine.

O is a frame-work bolted to the frame, and carrying a ledge or table, P, upon which the
75 hoops to be operated upon are placed.

K is a stop, pivoted at L, and held by the adjustable stirrup M just far enough above ledge P to allow the under hoop of a pile of hoops lying on ledge P to be drawn out. The
80 end of stop K is beveled to prevent it from catching the hoop which is to be drawn out.

N is a keeper to hold stop K in position, and also serves as a guide to hold the pile of hoops X in Fig. 3 in position.

W W are vibrating arms pivoted to the frame
85 near the bearings of shaft A.

V V are pins fastened to the inner faces of pulleys B B, there being one below each dog H. As pulleys B B revolve, pins V V catch
90 vibrating arms W W and force them in the direction in which said pulleys revolve until said pins pass over the shoulders on said vibrating arms. (Shown in Fig. 1.) When arm W is released from pin V, weight Z, which is at-
95 tached to arm W by a cord passing over pulley Y, pulls arm W back and causes it to strike the pile of hoops X, thus straightening up said pile of hoops in case it has become disarranged by pulling out the lower hoop. Arm W is piv-
100 oted in such a position and is of such a length that when released from pin V it will return under the hoop held by dog H over pin V,

which has just ceased to operate arm W, as shown in Fig. 3.

F is a circular saw or knife, which runs on pulley B, and, in connection with the cutters 5 which point the hoop, cuts the hoops to the same length.

The operation of my invention is as follows: The hoops to be lapped and pointed are placed on frame-work O and pushed over until they 10 lie in a pile on ledge P. By the revolution of the hoop-carrying pulleys B B, the cams I, which project beyond the periphery of the pulleys, will lift or raise the superposed series or pile of hoops from the table or ledge P, and in 15 this manner the lower hoop-blank is leveled, or nearly so, and its ends brought into such relation with the cams that the dogs H will simultaneously strike both ends of the lower hoop-blank and remove it, the object of such 20 mode of operation of the cams being to preserve the proper working of the machine, as otherwise, if the hoop-blanks were warped, the ends of the lower hoop might stand so much out of line that the dogs on each cylinder would 25 not strike both ends of the hoop, and therefore the operation of the machine would be disarranged; but by having the cams I lift the superposed series or pile of hoops, if one end of the lower hoop is warped out of line with 30 the other end, it will be straightened or leveled sufficiently by the cams to permit all of the dogs to accurately perform their function. As pulleys B B continue to revolve the ends of the hoop are bent down and held firmly to 35 the faces of pulleys B B by guides R R. The cutters on pulley E point one end of the hoop, and the circular saw or knife F cuts the other end to the desired length. As pulleys B B continue to revolve the ends of the hoop are 40 brought in contact with the cutter-heads in pulleys G G, and the ends of the hoop are thereby beveled. After passing the lower ends of guides R R the hoops fall from the machine. In the meantime the pile of hoops has settled 45 down on ledge P, and has been arranged and straightened by a blow from arms W, so that when the next dog H comes along it seizes another hoop, and the operation above described is repeated.

50 Pulleys B B must be placed on shaft A so that dogs H on each pulley will be opposite each other, and gear-wheels C and D and pulley E should be so adjusted that the cutters on pulley E will strike pulley B just forward of 55 dogs H, so as to point the hoops.

Pulleys B B may be made of wood or of metal.

If made of metal, they should have grooves or soft-metal faces for knife F and the cutters on pulley E to work upon.

Having thus described my invention, what 60 I claim as new, and desire to secure by Letters Patent, is—

1. A barrel-hoop machine combining in its structure the following characteristics, namely: a table for supporting the superposed hoop- 65 blanks, two revolving hoop-carrying pulleys provided with attached devices to automatically remove the hoops in successive order and carry them around in the path of the rapidly-rotating cutters which bevel the hoop ends, 70 and a pulley rapidly rotating in unison with the hoop-carrying pulleys and provided with cutters which point the end of the hoop while it is supported by the latter, substantially as described. 75

2. In a hoop lapping and pointing machine, the combination of the pulley B, having cams I, dogs H, and cog-wheel C, with the pulley E, having V-shaped cutters on the periphery thereof, and cog-wheel D, as and for the purposes 80 described.

3. In a hoop-lapping machine, the combination, with two rotating hoop-carrying pulleys having pins V, with a table for supporting a series of superposed barrel-hoops, the vibra- 85 tory arms W, thrown in one direction by the pins V, and connected with means for automatically throwing it in the reverse direction against the hoops supported by the table, substantially as and for the purpose described. 90

4. In a hoop lapping and pointing machine, the combination of pulleys B B, having dogs H and cams I, pulley E, having V-shaped cutters thereon, pulleys G G, carrying cutter- 95 heads, guides R R, knife F, vibrating arms W, and ledge P, all constructed, arranged, and operating substantially as hereinbefore described.

5. The combination, with the table or platform P, arranged to carry a superposed series 100 or pile of hoop-blanks, of the revolving pulleys B B, provided with the dogs H H, and the cams I I, arranged directly in front of the dogs, and acting to successively lift or raise the series or pile of hoop-blanks for straight- 105 ening or leveling the lower blank, substantially as and for the purposes described.

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