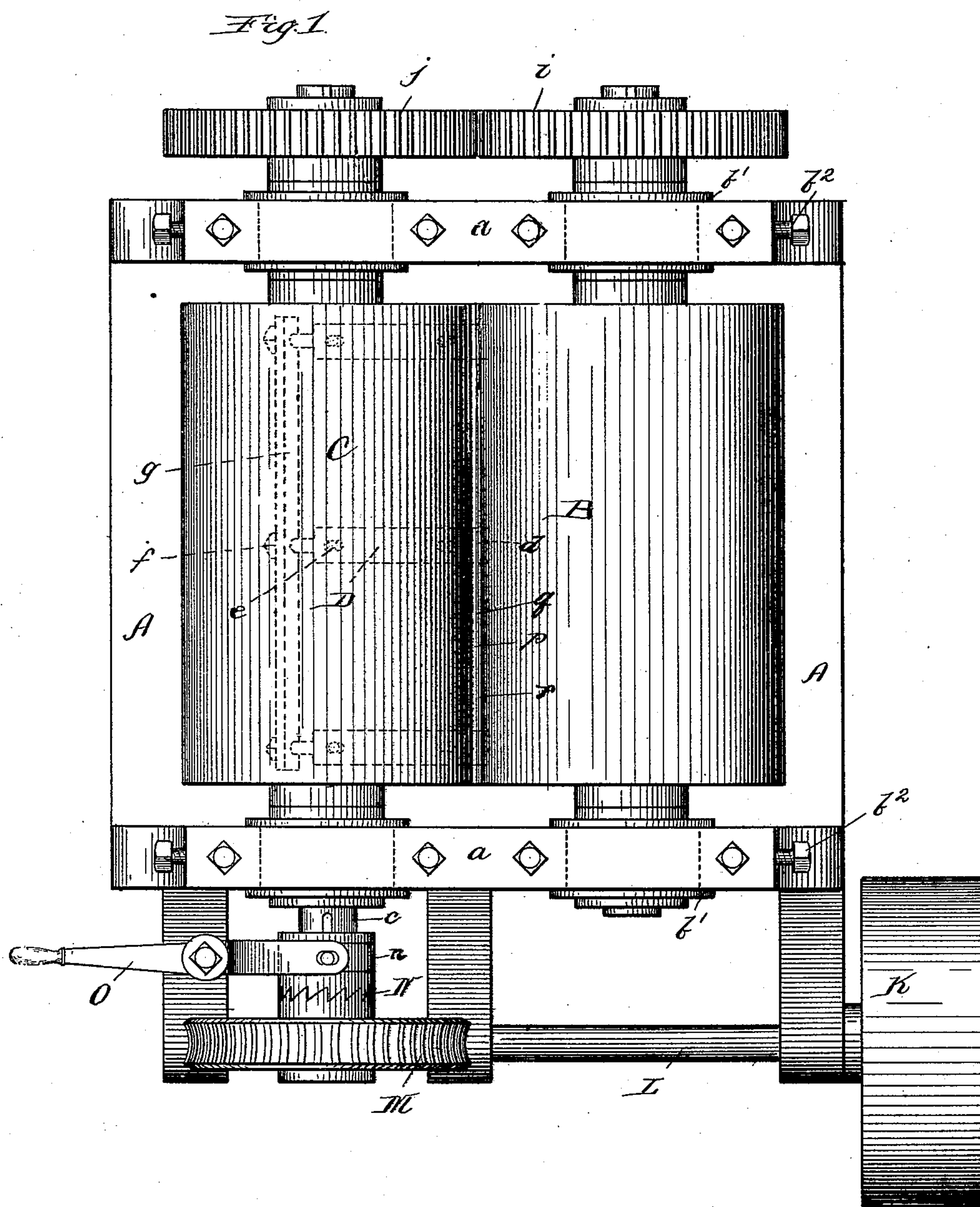


2 Sheets—Sheet 1.

No. 437,420.

Patented Sept. 30, 1890.



Inventor:

John J. Clause.

By Munday Evans & Adcock
His Attorneys.

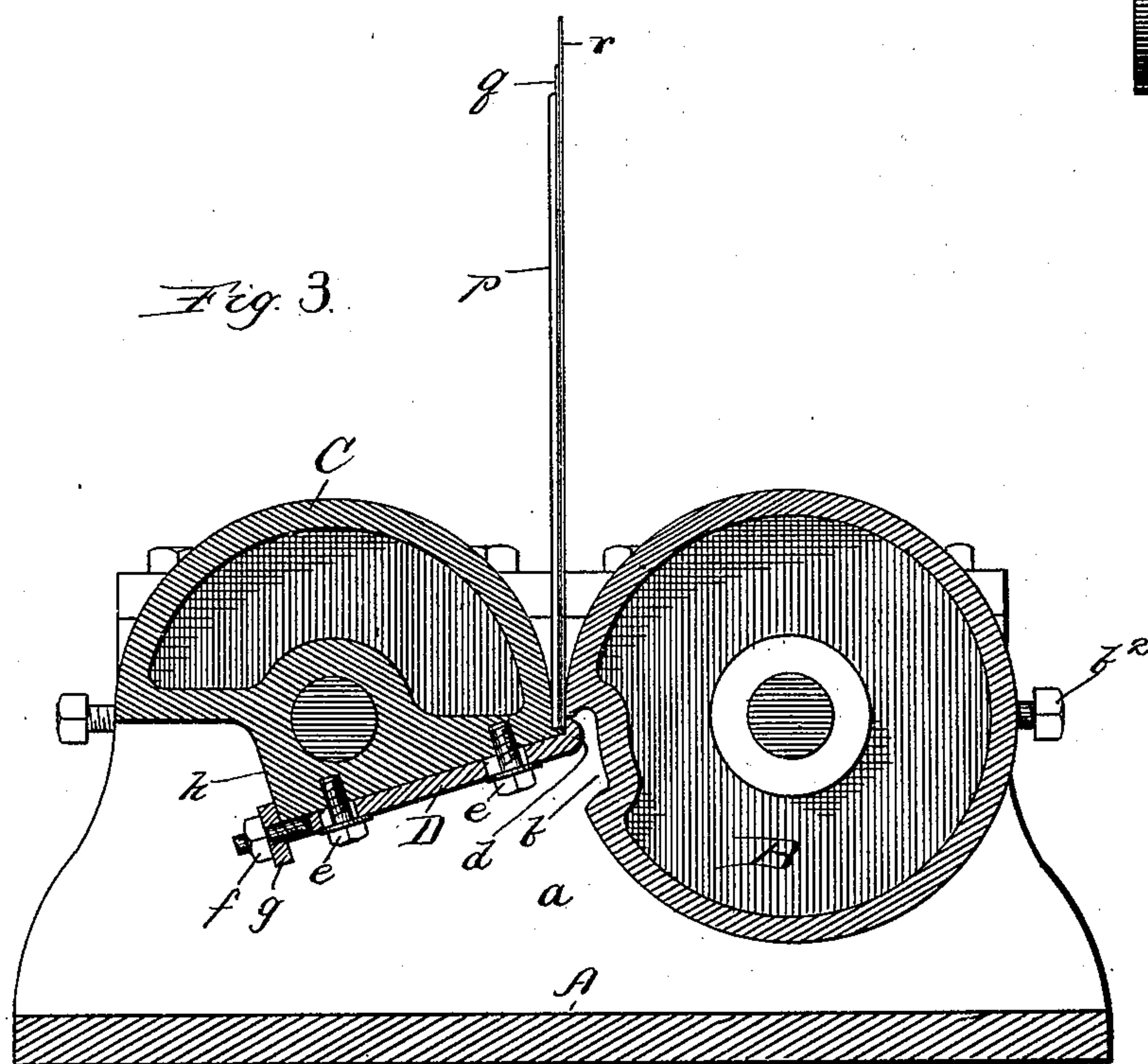
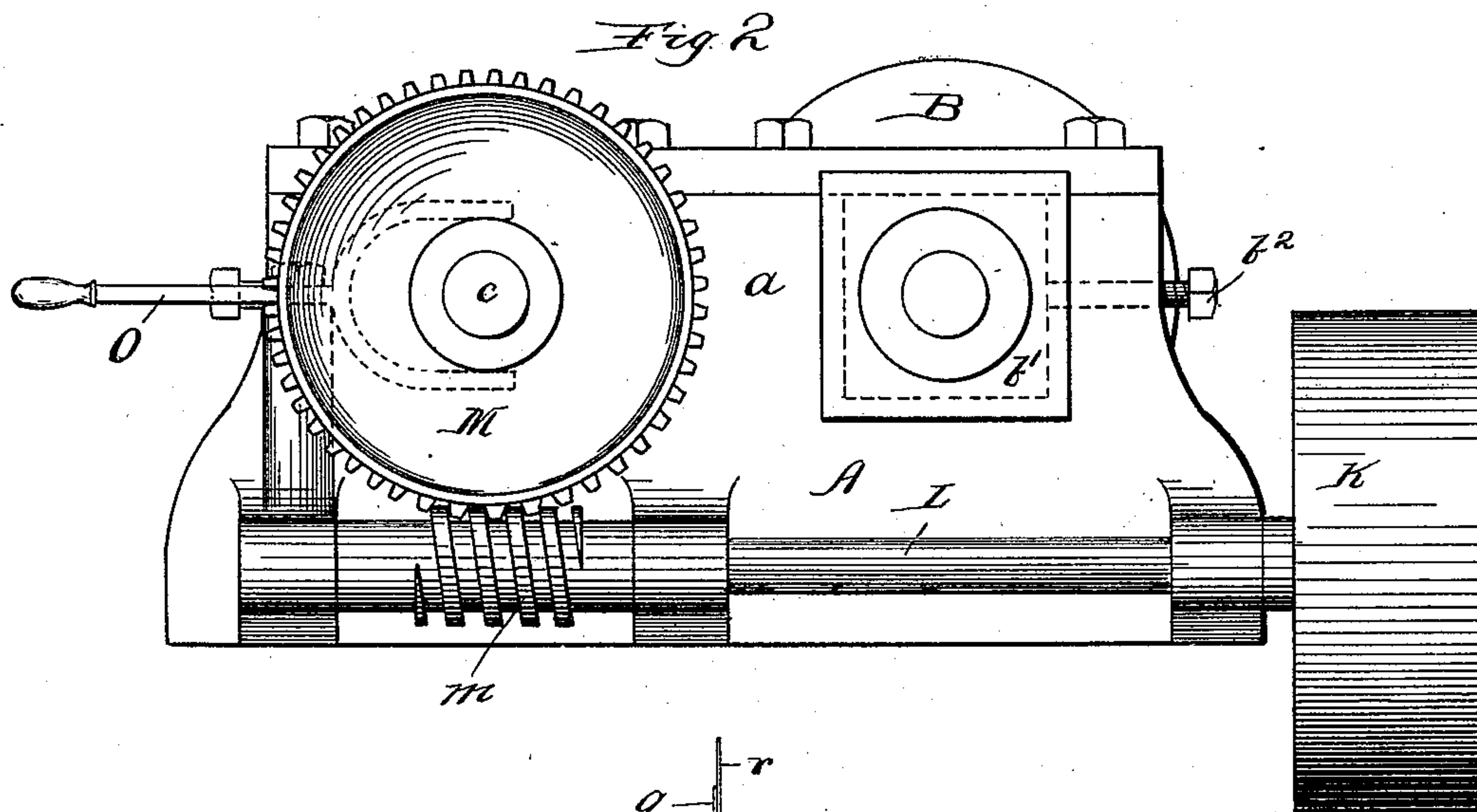
(No Model.)

2 Sheets—Sheet 2.

J. J. CLAUSE.
ELECTROTYPE PLATE BENDING MACHINE.

No. 437,420.

Patented Sept. 30, 1890.



Witnesses:
Geo. C. Curtis
H. W. Munday

Inventor:
John J. Clause
By Munday, Evans & Adcock
His Attorneys.

UNITED STATES PATENT OFFICE.

JOHN J. CLAUSE, OF CHICAGO, ILLINOIS.

ELECTROTYPE-PLATE-BENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 437,420, dated September 30, 1890.

Application filed May 12, 1890. Serial No. 351,455. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. CLAUSE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Electrototype-Plate-Bending Machines, of which the following is a specification.

This invention relates to an improved machine for bending electrototype, stereotype, and other printing plates into curved form to adapt them to be used in cylinder-presses.

I employ in this invention two opposing rolls, to one of which the edge of the plate to be bent is secured, so that such edge will be compelled to move in the arc of a circle with the roll to which it is secured, the bending being due to the pressure of the opposing roll, while the plate-carrying roll is rotated through a partial revolution. One of these rolls is driven by power communicated to it, whenever desired, by means of a clutch, and both rolls are geared together so that they may move in unison.

The nature of this invention will be better understood from the accompanying drawings and description thereof given below.

In the drawings, Figure 1 is a plan view, Fig. 2 is a side elevation, and Fig. 3 is a vertical section, of my bending-machine.

In said drawings, A represents a suitable bed having uprights *a* at either end, in which are journaled the bending-rolls. One of these rolls B is plain-surfaced except at one point in its periphery, where it is recessed longitudinally, as at *b*. This roll is mounted in horizontal movable bearings, its boxes *b'* being adjustable by means of the set-screws *b''*. The roll C is a half or partial roll only, and to its non-circular or flat side is attached the clamping device by which the plates are secured at their edges. This clamping device preferably consists of two or more clips or bars D, having hooks *d* formed upon their operating ends. They are secured to the roll by bolts *e* passing through elongated slots in the clips, and they are drawn so as to firmly clamp the edge of the plate by means of the nuts *f* upon their threaded ends, such ends passing through the bar *g*, which extends lon-

gitudinally of the roll and bears against the surface *h* formed upon the rolls. These clips are readily loosened, so as to release the plate and also readily tightened thereon.

The rolls B and C are geared together by the gears *i j*, so as to rotate at a uniform speed. Power is communicated to the roll C from the pulley K, which is belted to a motor device, and the shaft L of said pulley, by means of the worm *m* on said shaft L, meshing with the worm-gear M, loose upon the shaft *c* of roll C, and the clutch N, one part of which is keyed to said shaft *c* and the other part of which is rigid with said worm-gear M. A clutch-lever O, connected to the part N by a collar *n*, serves to throw the parts of this clutch into and out of engagement. A slow motion being imparted by the worm and gear, I am enabled by means of this clutch to stop the roll as soon as the rotation has proceeded far enough to complete the operation and to resume the motion for either complete or partial revolutions whenever desired.

The rolls B and C are adjusted at such a distance apart as will permit the passage between them of the plate which is shown at *p*, the protecting layer of paper, (shown at *q*), and the flexible metal plate *r*. My machine is extremely simple and may be made of such strength as will prevent all danger of breakage and insure long and continued usefulness. The recess *b* in the face of the roll B registers with and gives room for the hooked ends of the clips D when said hooked ends in the rotation of the rolls, come opposite said roll B.

I claim—

1. The machine for bending stereotype-plates, &c., consisting of roll B, recessed at *b*, and roll C, carrying clips for holding the plate, said rolls being both mounted in unyielding bearings and being both positively driven, and said recess being located and otherwise adapted to give room to the clips and allow the rolls to complete their revolution, substantially as set forth.

2. The machine for bending stereotype-plates, &c., consisting of full roll B, recessed at *b*, and half-roll C, carrying clips for holding the plates, said recess registering with

the clips and permitting a complete revolution by the rolls, and said clips being movably secured to the flat side of said roll C, substantially as set forth.

- 5 3. The combination, with roll B, of half-roll C and clips D, the latter movably secured to the flat side of roll C by bolts e,

passing through slots in the clips, and means for drawing the clips so they will grip the plate tightly, substantially as specified.

JOHN J. CLAUSE.

Witnesses:

H. M. MUNDAY,
EMMA HACK.