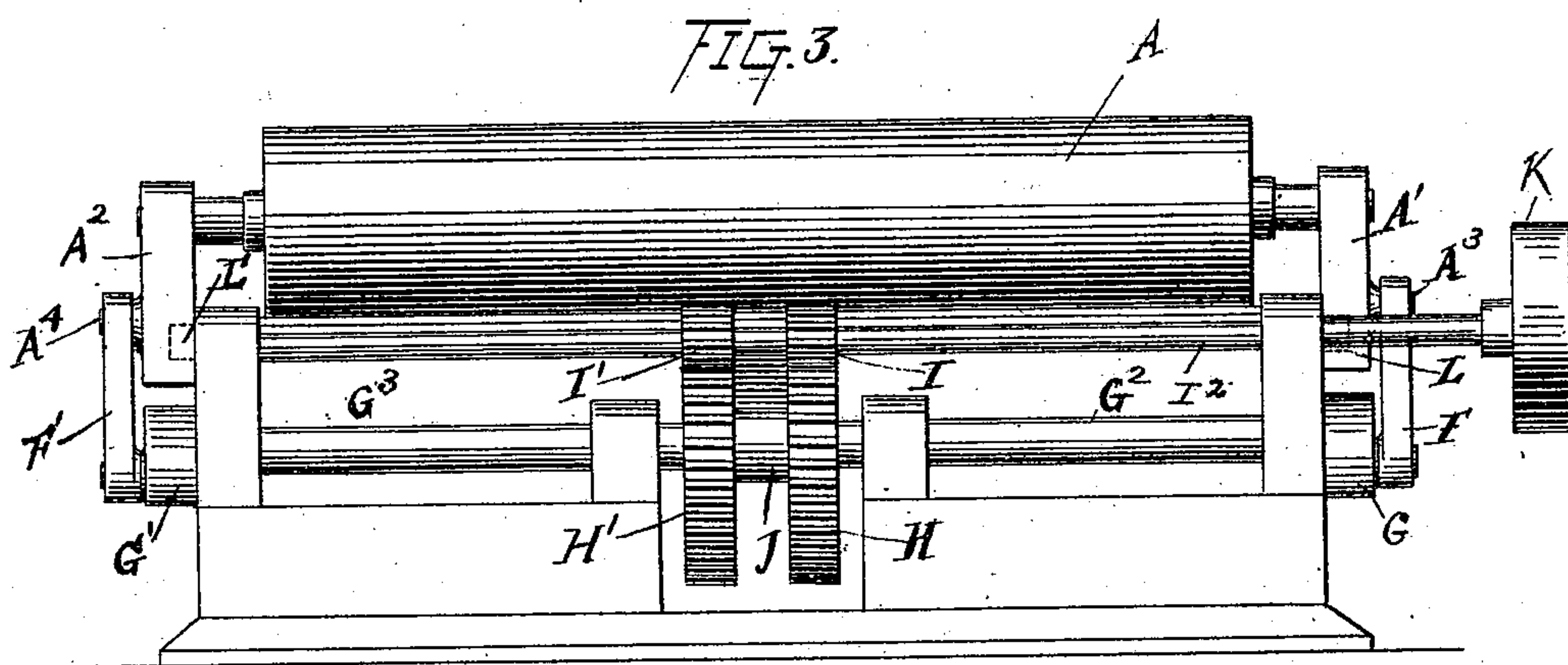
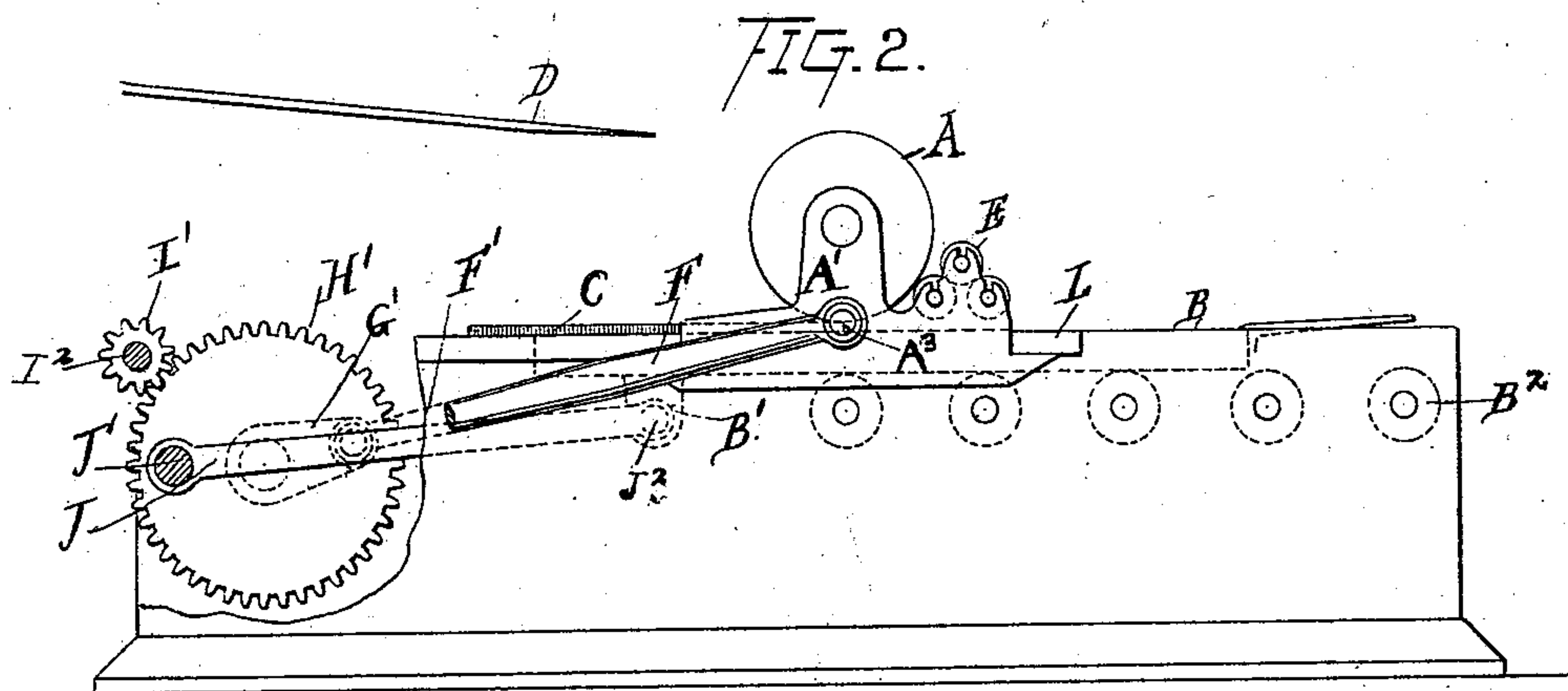
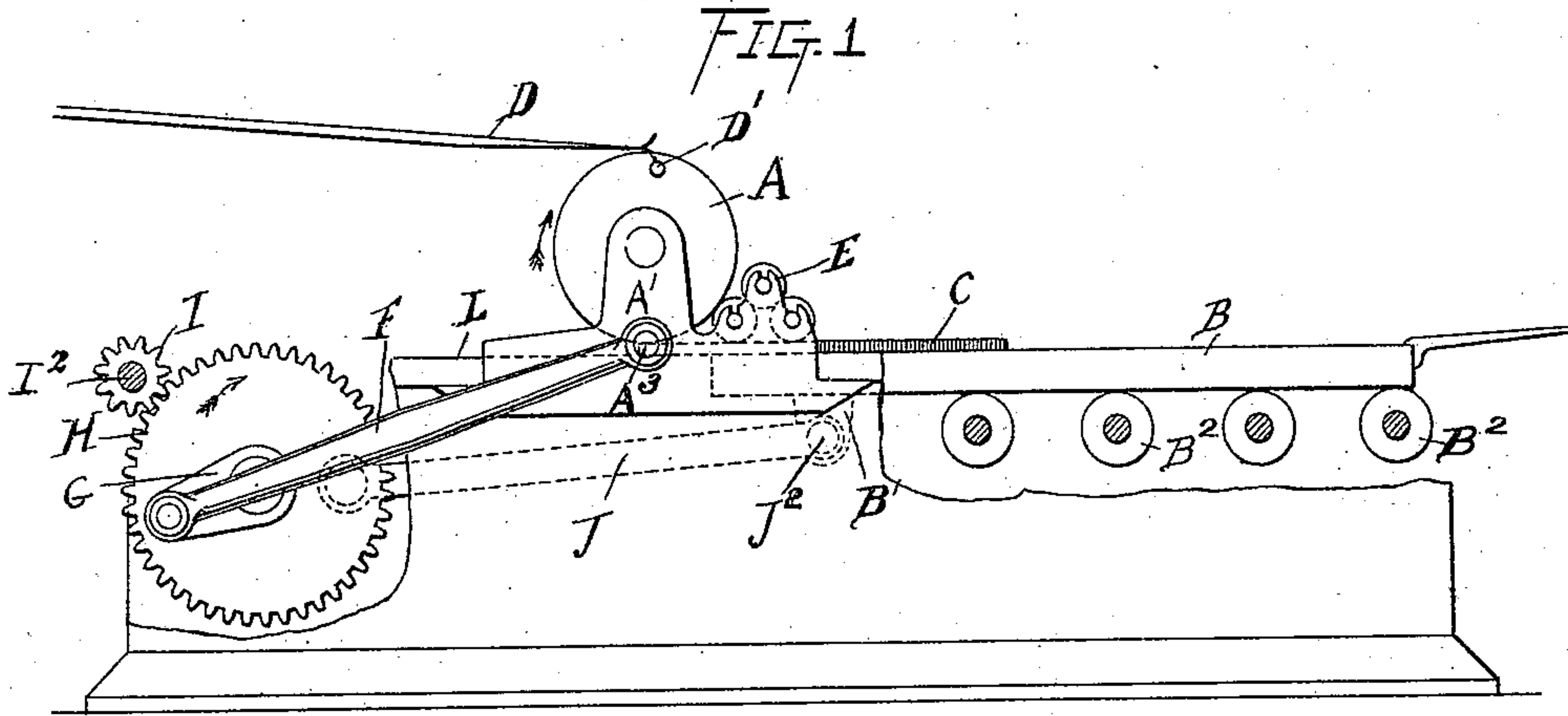


(No Model.)

H. A. W. WOOD.
PRINTING MACHINE.

No. 551,198.

Patented Dec. 10, 1895.



Witnesses
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Francis P. Reilly.

Inventor
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UNITED STATES PATENT OFFICE.

HENRY A. WISE WOOD, OF NEW YORK, N. Y., ASSIGNOR TO THE CAMPBELL PRINTING PRESS AND MANUFACTURING COMPANY, OF SAME PLACE.

PRINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 551,198, dated December 10, 1895.

Application filed July 1, 1891. Serial No. 398,128. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. WISE WOOD, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Printing-Machines, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to provide a machine of simple construction that will print from flat forms at a higher rate of speed than has been heretofore attainable.

The invention will first be described in detail, and then particularly set forth in the claims.

In the accompanying drawings, Figure 1 shows the machine in side elevation, part of the main frames of the machine being broken away in order to more clearly exhibit the several parts. Fig. 2 is a view similar to Fig. 1, part of the main frames and also part of the cylinder-operating mechanism being omitted in order to more clearly show the bed-driving mechanism. Fig. 3 shows the machine in rear end elevation.

In said figures the several parts are respectively indicated by reference-letters, as follows:

The letter A indicates an impression-cylinder journaled at its ends in slides or sliding bearings A' A², supported and reciprocating upon longitudinal flanges L L' on the side frames of the machine. Connected to said slides by wrist-pins A³ A⁴ are connecting-rods F F', the other ends of said rods being connected to cranks G G', secured to the outer ends of shafts G' G''. Said shafts carry upon their inner ends gear-wheels H H', respectively, united by a common crank-pin J'.

The letter B indicates a reciprocating bed running upon rollers or wheels of stationary axes B'' and carrying the type-form C. Inking-rollers E are mounted upon the sliding bearings or carriages A' A². Formed upon or secured to the center of the under side of the bed B is a bracket B'. Connected to said bracket by a pin J² is one end of a connecting-rod J, the other end of said rod being connected to the gear-wheels H H' by the pin J'. Said gear-wheels are driven by the pinions I I', mounted upon the main

power-shaft of the machine I², said shaft being driven by means of power imparted to the belt-pulley K thereon.

The letter D indicates a feed-board from which the sheets to be printed may be fed to the cylinder A. Said cylinder is geared to the bed B in the ordinary manner by gearing not necessary to be shown, consisting of a rack or racks on the bed and a spur gear or gears on the ends of the cylinder, said gears and racks meshing together in the usual manner of rack and pinion. A rod D' is provided, running in a slot longitudinally with the axis of the cylinder, upon which rod gripper-fingers of the usual sort are carried.

The operation of the machine is as follows: The cylinder A being in the position indicated in Fig. 1, the cranks being on their centers, a sheet is fed to the grippers upon the rod D'. At the same instant that the cranks move from their "centers" or extreme end positions the cylinder A revolves and at the same time, being moved horizontally by the cranks G G' and rods F F', moves toward the form-bed B. This member being operated upon in like manner by the gears H H' and rod J moves toward the cylinder. The two meet and pass, Fig. 2, the cylinder at the same time revolving as it reciprocates, and after the various cranks have passed their centers said cylinder and bed return to their original position, as shown in Fig. 1.

The advantages of the machine herein described are as follows: The driving mechanism for the carriers, which consists of two crank-wheels and pitmen, which connect to the carriers, is arranged on the exterior of the side frame. The driving mechanism for the reciprocating bed, which consists of one or more cranks connected by pitmen to the bed, is arranged between the frames and is oppositely disposed—that is, set oppositely to its center of rotation, relatively to the exterior cranks, which reciprocate the carriers. This arrangement of driving mechanism will impart a very smooth and even movement to the bed and cylinder and will move the same in opposite directions. This disposition of the driving mechanisms, one exterior and the other interior of the frames, will greatly equalize the strains put upon the moving parts,

and will absorb power evenly, whereby the machine may be run without jar at a high rate of speed. Any suitable delivery device may be used to remove the printed sheet from the impression-cylinder, and any cylinder-lifting mechanism so arranged that the cylinder will make one movement out of impression or out of printing-contact with the form. Many such devices are well known in the art, and may be used as desired.

The details of the gearing herein described may be varied by a skilled mechanic and applied to other forms of press wherein the beds and cylinders reciprocate in opposition without departing from the scope of my invention, as expressed in the claims, and I do not wish to be limited to specific details of construction; but

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

1. The combination in a printing machine of the side frames, an impression cylinder and a form bed, a crank driving mechanism for said cylinder arranged outside of said frames and a crank driving mechanism for said bed arranged between said side frames, said driving mechanisms being set to reciprocate the bed and cylinder in opposite directions, substantially as described.

2. In a printing machine, the combination of the following named elements, an impression cylinder and form bed reciprocating in

opposite directions, and means for driving said bed and cylinder, consisting of carriers for said cylinders, gear wheels H, H' carrying crank mechanism connected to the bed as by pitman J, and cranks G G' connected to the carriers by pitmen as F, F', substantially as described.

3. In a printing machine, the combination of side frames, carriers mounted to reciprocate on said side frames, an impression cylinder mounted in said carriers, a form bed mounted between said side frames, and means for reciprocating said cylinder and form bed in opposition, consisting of crank-wheels arranged exterior to said frames, pitmen connecting said crank-wheels to said carriers, and a crank mechanism arranged between said side frames connected to said bed and set in opposition to the cylinder driving mechanism, substantially as described.

4. In a printing machine, the combination of a reciprocating form bed, a traveling impression cylinder moving over the same, and driving gearing provided with oppositely disposed cranks, suitably connected to the form bed and impression cylinder for moving them in opposite directions, substantially as described.

HENRY A. WISE WOOD.

Witnesses:

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