

No. 693,204.

Patented Feb. 11, 1902.

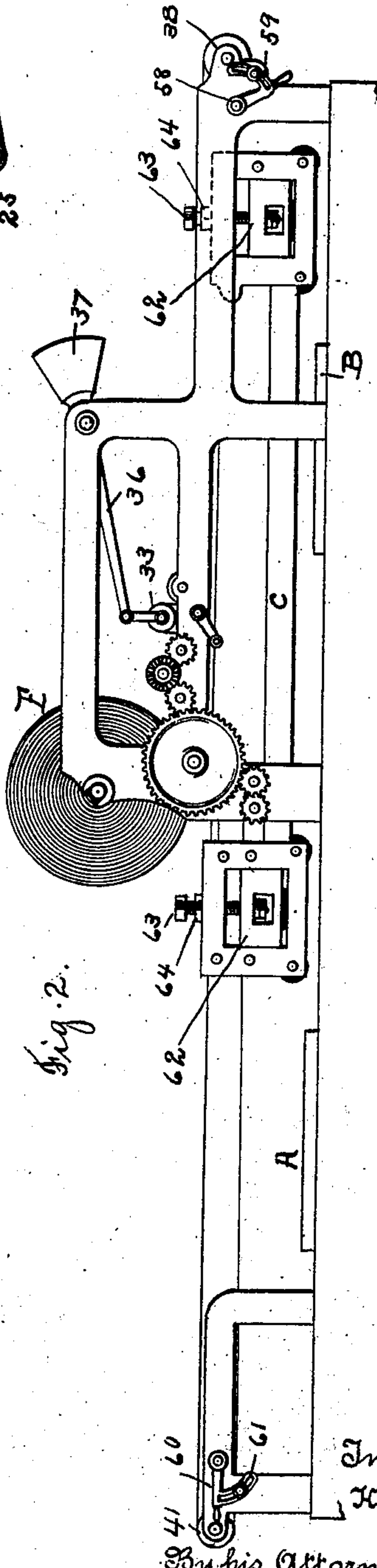
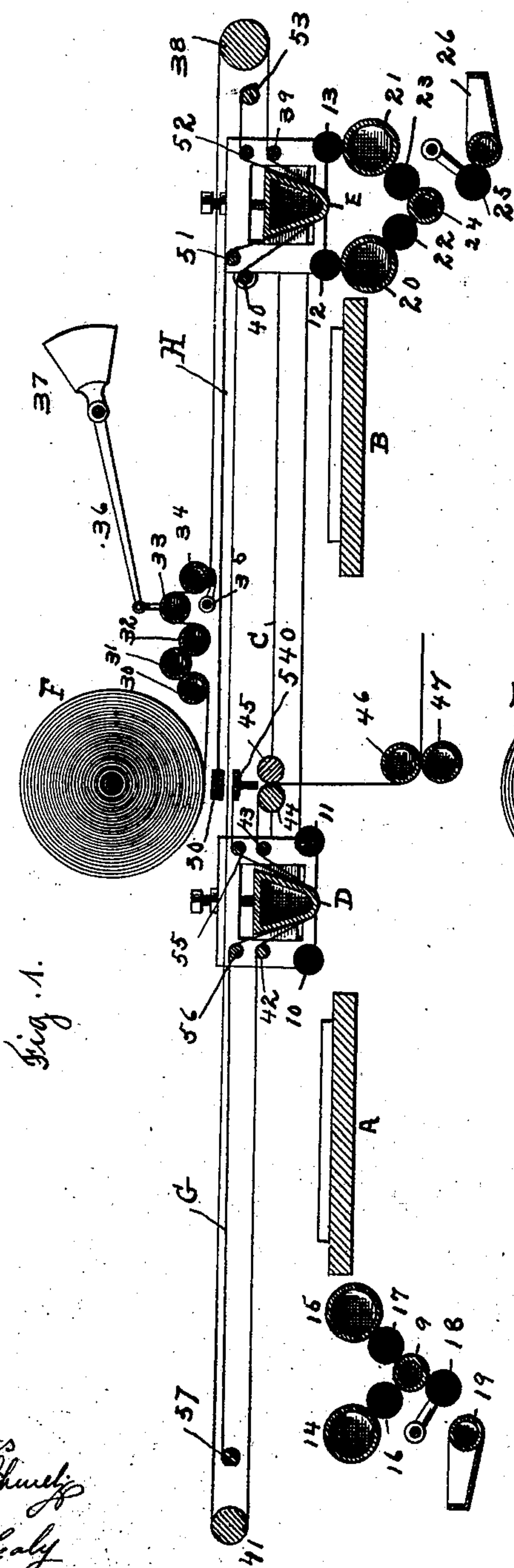
H. A. W. WOOD.

IMPRESSION MECHANISM FOR PRINTING PRESSES.

(Application filed Oct. 31, 1892. Renewed July 3, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
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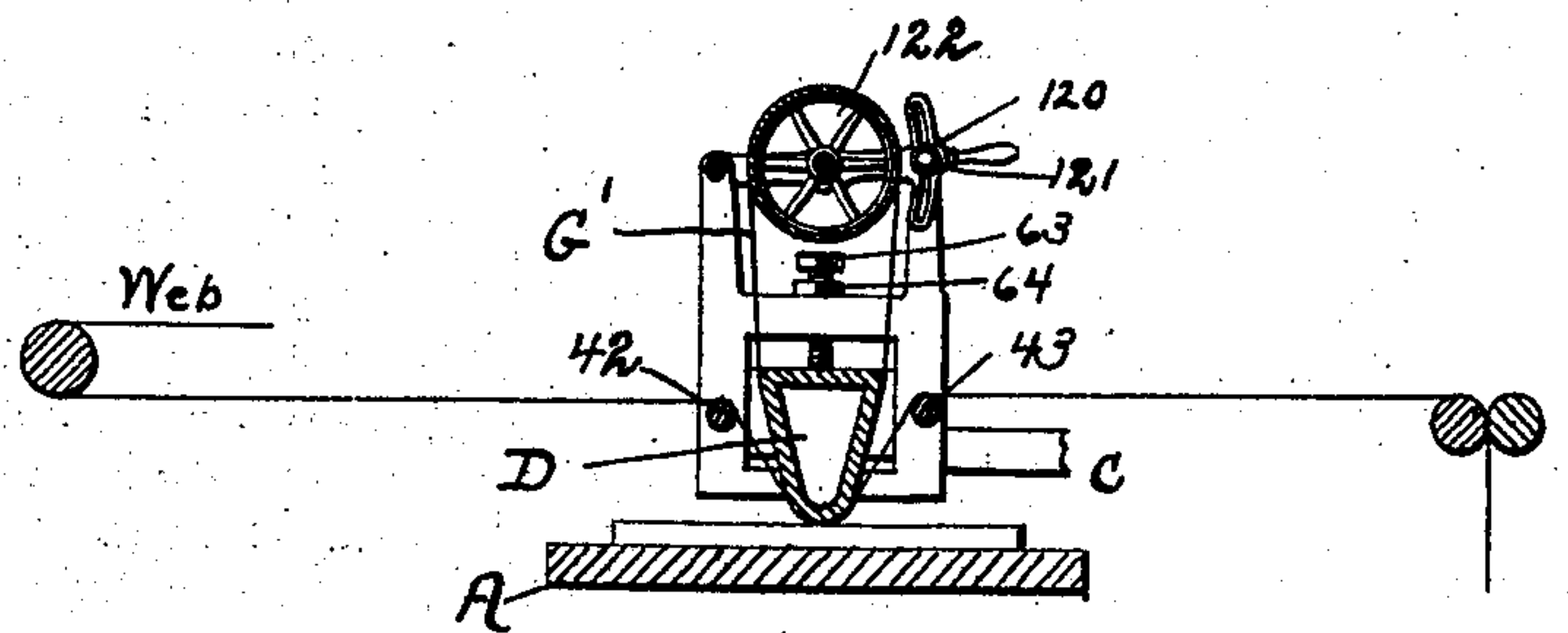
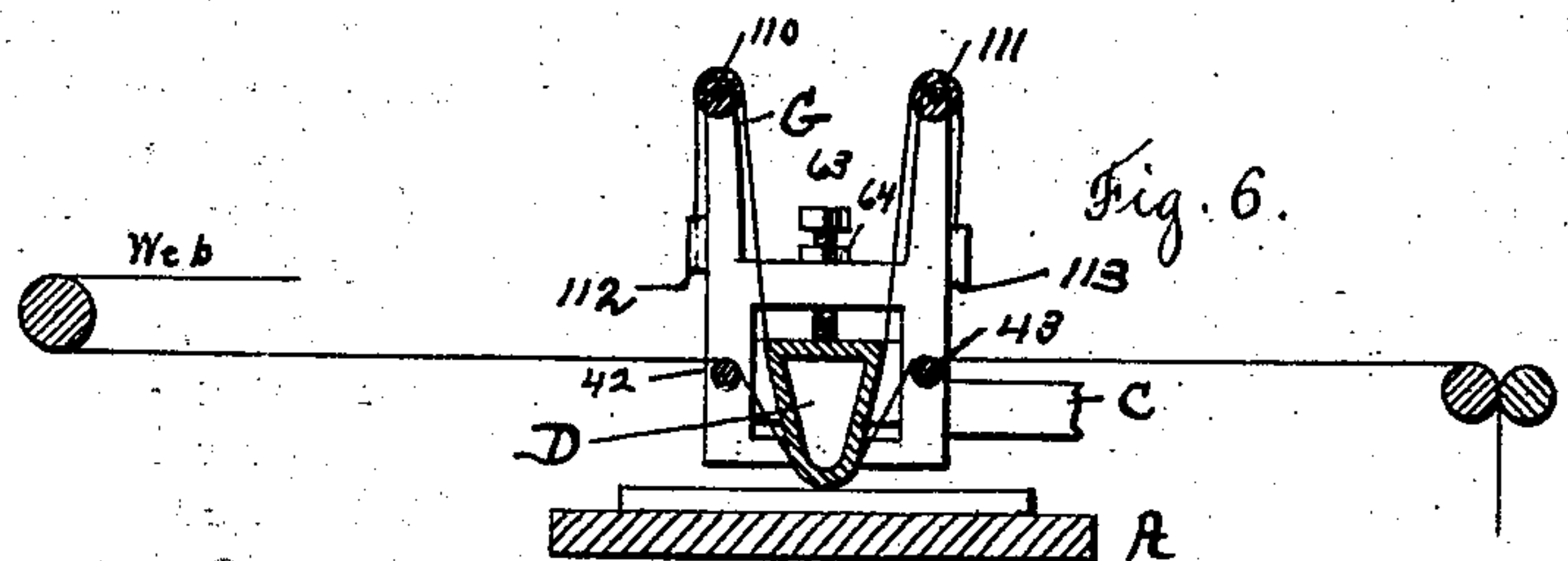
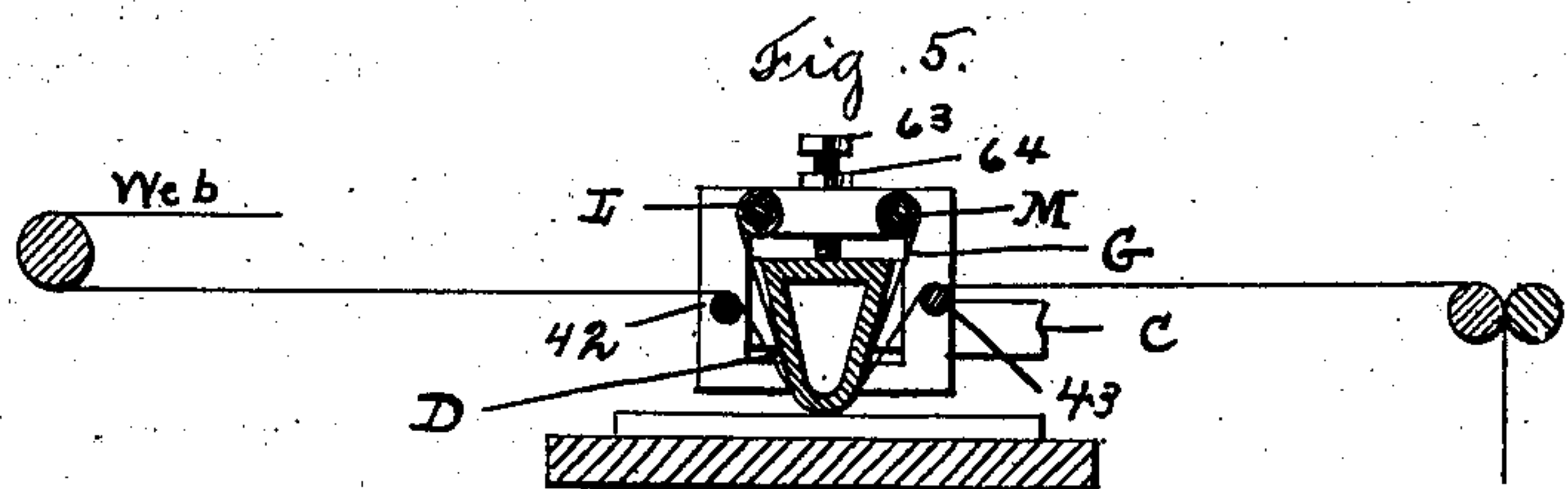
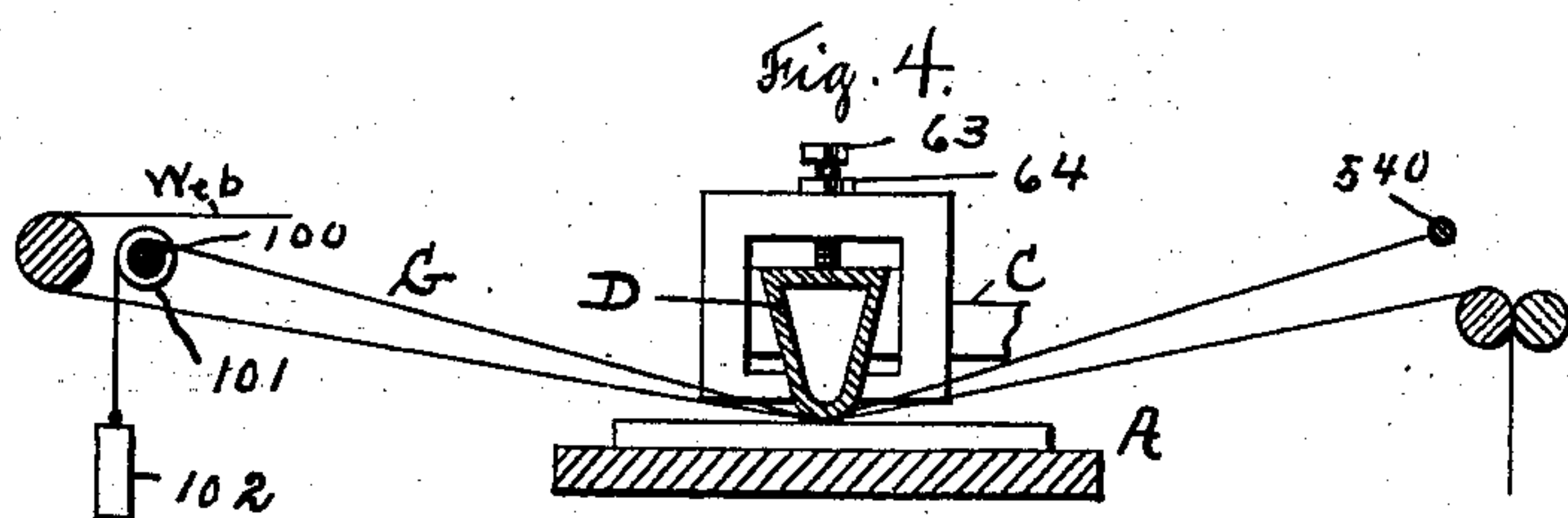
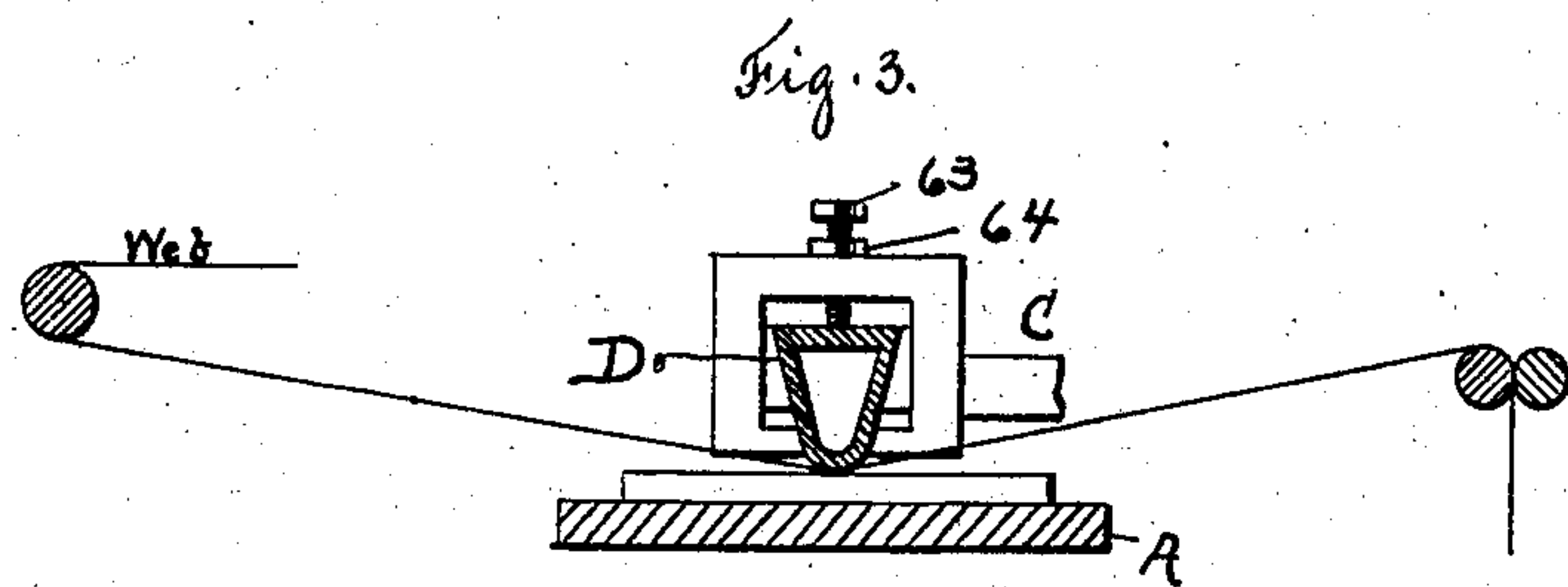
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IMPRESSION MECHANISM FOR PRINTING PRESSES.

(Application filed Oct. 31, 1892. Renewed July 3, 1901.)

(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

HENRY A. WISE WOOD, OF NEW YORK, N. Y., ASSIGNOR TO THE CAMPBELL PRINTING PRESS & MANUFACTURING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

IMPRESSION MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 693,204, dated February 11, 1902.

Application filed October 31, 1892. Renewed July 3, 1901. Serial No. 67,015. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. WISE WOOD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Printing-Machines, of which the following is a specification.

The aim of this invention is to produce a new and improved mechanism especially adapted for printing-presses in which the impression member is adapted to move relatively to the forms; and to this end the invention consists of the device described and claimed in this specification and illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of enough of a printing-press to illustrate the application of my improvement thereto. Fig. 2 is a side elevation thereof, and Figs. 3 to 7, inclusive, are sectional elevations illustrating modifications of my impression mechanism.

It is well known in printing-presses which have reciprocating or moving impression-cylinders that a cylinder may be used to reciprocate over the form and to present the paper to be printed to the form, the paper on the web to be printed (if a web is used) remaining stationary during this action, whereby the contact between the impression-cylinder and the form (through the paper) will be theoretically an element of the cylinder. It is also well known in printing-presses of another class that the paper or web may be flatly pressed against the form, as in the well-known type of platen-press. In this last class of press, as the pressure of the impression member is distributed over a large surface, the pressure is not nearly as much per square inch as in the form of press where a reciprocating cylinder is used. It is desired in some forms of presses to arrange an impression member somewhat intermediate between these two, and to this end I have discovered that by moving an impression member relatively to the form and not rotating the same, as is the case with the reciprocating cylinder, a peculiar printing contact can be obtained, which peculiar contact cannot be obtained by either form of press before described. In some cases, as on thin webs, it is

not desirable to let this impression member bear directly on the web or material to be printed, and therefore I interpose between the impression member and the web a "blanket," which is adapted to prevent the impression member from rubbing on the web.

Referring now to the drawings and in detail, it will be seen that in the first sheet I have shown my invention as applied to a perfecting form of web-printing press, although the same may be applied and used in a machine in which the web is only printed on one side, as hereinafter described, or in a machine in which the web is twice printed on the same side.

In detail, A and B represent two form-beds, upon which the forms may be placed in the usual manner well known in printing-presses. C represents a reciprocating carriage, which is supposed to be reciprocated over said form-beds by any suitable means—as, for example, that shown in Patent No. 376,053, granted January 3, 1888. The carriage C is mounted in the frame in any desired manner so that the same will be constrained to move in a line parallel with the bed. Mounted in this carriage C are suitable blocks 62, and the blocks 62 carry the impression members D and E, as shown. These impression members consist, preferably, as specifically shown, of pieces of metal which are nicely finished, and the parts of the same that press the paper into contact with the forms may be made to present as large or small a surface as desired to the types, whereby the paper can dwell longer or shorter on the types, as desired. The parts 62 are adjustable by means of bolts 63, passing through the carriage, as shown, and may be rigidly held in their adjusted positions by means of check-nuts 64.

A roll of paper, as F, is mounted above the press, and the web from this roll is led between the feeding-rollers 30, 31, and 32, which may be constantly driven, if so desired, to slowly unwind the web from the roll, then around the looping-roller 33, which is mounted in the arms 36, and which roller 33 always has a tendency to rise by means of weights 37 on the arms 36. From the looping-roller 33 the web passes around the roll 34, which

may have a coacting brake 35, if so desired, to nip and hold the web stationary during the impression, then around the roll 38, mounted at the end of the press around the guides 39 and 40, carried by the carriage, and between these guides the web passes around the impression member E, as shown, and thus between the impression member and the bed. From the roll 40 the web passes across the press to the roll 41, around the same, then around the guide 42, mounted in the carriage, around the impression member D or between this impression member and its bed, around the guide 43, down between the rollers 44 and 45 to the delivery-rollers 46 and 47, which may be intermittently driven, if so desired, to intermittently eject the printed web from the press, which action takes place when the impression members are off the form-bed in either direction. This feeding and delivery mechanism and the arrangement of the press is believed to be well understood and the action of the feeding and delivery devices is such that when the impression members are off the form-beds in either direction a printed portion of the web will be delivered and a fresh portion fed in and pulled between the impression members and the beds, so that when the impression members make their next movement they can print upon the web.

At each side of the impression member D is a form-roller, as 10 and 11, and similar form-rollers 12 and 13 are mounted on each side of the impression member E. The form-rollers 10 and 11 get their supply of ink when the reciprocating carriage is at its left-hand extreme from the drum-rollers 14 and 15, which are supplied with ink by the composition rollers 16 and 17, vibrating roller 9, and ductor-roller 18 from the fountain 19. The form-rollers 12 and 13 get their supply of ink, when the carriage is at its right-hand extreme, from the drum-cylinders 20 and 21 and are supplied with ink by the composition rollers 22 and 23, vibrating distributor 24, and ductor-roller 25 from the fountain 26.

It will be seen that in this machine a sheet will be perfected for each movement of the impression members in either direction, the feeding and delivering mechanism of the web being well understood.

In most cases it is not desirable to have the rigid impression member bear directly on the web, as considerable friction would then take place between the web and the impression member, and to prevent this I may interpose a blanket between the impression member and the web. In the particular device under consideration a blanket G is held at a stationary point, as 540, then led around the guide 55 on the carriage between the impression member D and the web to be printed, then around the guide 56, also on the carriage, to a roll 57, to which it is secured. On the end of this roll 57 is mounted a sweep 60, which has an adjustable arm which may be secured by a bolt, as shown, and thus any

desired degree of tension may be imparted to the blanket G. A similar blanket H is interposed between the impression member E and the web. This blanket H is held at a stationary point, as 50, then passes around a guide, as 51, carried by the carriage between the impression member and the web to be printed, around guide 52, and is then secured to the roll 53, which roll 53 has fastened on the end of the same a sweep 58, which has an arm 59, whereby any desired degree of tension can be given to the blanket H. It will be seen that when blankets are used they will run around the impression member and will prevent any friction between the impression member and the web.

In Fig. 3 I have shown the simplest form of my device, no blanket being used and the impression member simply "ironing" or pressing the web onto the form.

In Fig. 4 I have shown a blanket G as interposed between the impression member and the web to be printed, and this blanket may be held at a stationary point, as 540, and may be secured to a roll 100. On the ends of this roll 100 may be mounted suitable pulleys 101, around which may be wound bands, to which are connected weights 102, whereby the blanket will be kept at an even tension throughout its entire length.

In Fig. 5 the web is shown as passing around the guides 42 and 43 on the carriage and the blanket G is shown as wound up around two spring-rollers L and M, whereby the blanket will be taken up on one side and paid out on the other as the impression member moves, as is readily understood.

In Fig. 6 the blanket G is shown as passing around two rollers 110 and 111, carried by the carriage, and as having secured to the ends thereof weights 112 and 113, whereby as the carriage reciprocates the blanket will run between the bed and the impression member to relieve the friction.

In Fig. 7 I have shown a continuous blanket G', that is led around the impression member and then is carried around a suitable drum or wheel 122, which is mounted in arms 120, which may be adjusted up and down, as shown, and secured by means of bolts, as 121. In this last modification it will be seen that as the impression member reciprocates back and forth the blanket G will relieve the friction between the impression-surface and the web. The contact-surface between the impression member and the form (through the paper) may be made of any desired width, whereby the line of impingement may be made greater or less. Thus the pressure instead of coming on a line, as is the case when a cylinder is used, may be made to come on a considerable surface, and hence the printing will not have to be so instantaneous, whereby the paper will dwell longer on the type.

Many other ways may be devised for arranging the blanket besides those shown without departing from the scope of my in-

vention, and by the term "blanket" I mean to cover any material that may be entered between the material to be printed and the impression member to lessen friction.

5 As before stated, my invention can be applied either to a single machine—that is, to a machine in which the web is printed on one side—or to a double machine, in which the web is printed on both sides, or my device
10 may be applied to a machine in which the web is printed more than once upon one or more of its sides. Also it will be readily understood that my device can be applied and used in connection with a machine in which
15 sheets are printed, the sheets being led through the machine by means of suitable tapes or leading devices, whereby they form substantially a web. Also it will be seen that my device may be applied to a machine in
20 which the web is not led directly around the impression member, but which is led between the impression member and the form-bed in other manners—as, for instance, laterally over the form-bed.

25 By the word "types" as used in this specification I mean any printing-surface from which an impression may be made.

I am aware that in certain forms of printing a reciprocating form is passed beneath a
30 stationary impression member or "scraper," as it is sometimes called, and the paper or material to be printed pressed upon the form by means of this scraper through a suitable plate, as of zinc, and I therefore do not claim,
35 broadly, the scraper as a novel implement in printing.

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

40 1. In a web-printing press, the combination of a stationary form-bed, a traveling carriage, a non-rotative impression member arranged to make one impression on both its forward and backward movements over the bed, a

web-manipulating mechanism, and a blanket 45 interposed between the impression member and the web to be printed, said blanket being mounted to move around the impression member in one direction while the carriage is traveling forward, and to move around the im- 50 pression member in the opposite direction when the carriage is moving backward.

2. In a printing-press, the combination of two stationary form-beds, a traveling carriage, a non-rotative impression member mounted 55 in the carriage for each of said beds, said impression members being arranged to take an impression with both their forward and backward movements, and a blanket arranged to move around an impression member in one 60 direction when the carriage is moving forward, and around said impression member in the opposite direction when the carriage is moving backward.

3. In a web-printing press, the combination 65 of a stationary form-bed, a traveling carriage, a non-rotative impression member mounted therein and arranged to make an impression on both its forward and backward movements, guides for directing a web down to and up 70 from said impression member, a blanket, guides for directing the blanket down to and up from an impression member, and means for supporting the blanket at its ends beyond the range of movement of the impression mem- 75 ber, so that the blanket will move around the surface of the impression member in one direction when the carriage is moving forward, and around the surface of the impression member in the opposite direction when the 80 carriage is moving backward.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

H. A. WISE WOOD.

Witnesses:

LOUIS W. SOUTHGATE,
HENRY M. LOVE.