

No. 748,135.

PATENTED DEC. 29, 1903.

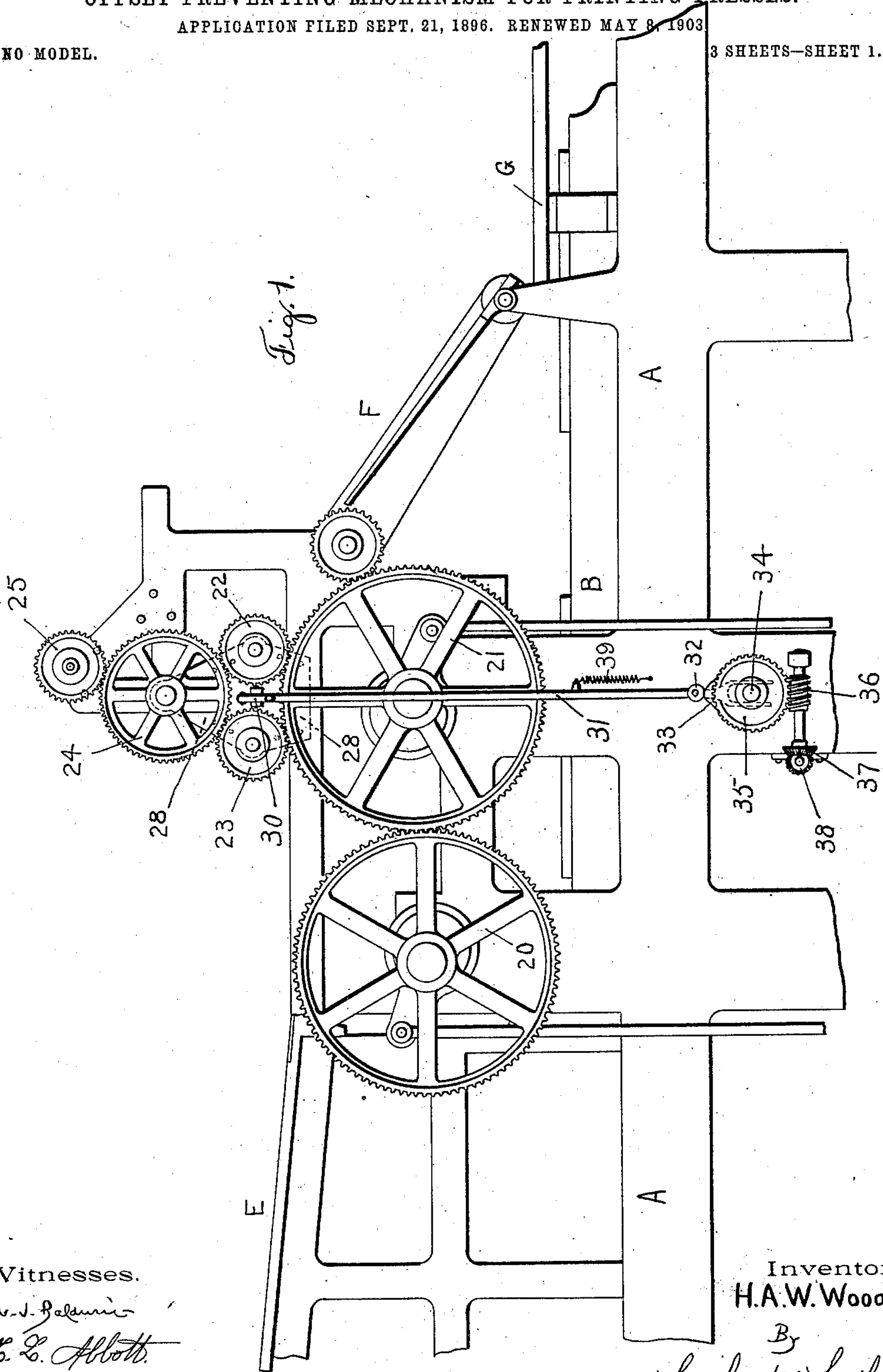
H. A. W. WOOD.

OFFSET PREVENTING MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED SEPT. 21, 1896. RENEWED MAY 8, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



No. 748,135.

PATENTED DEC. 29, 1903.

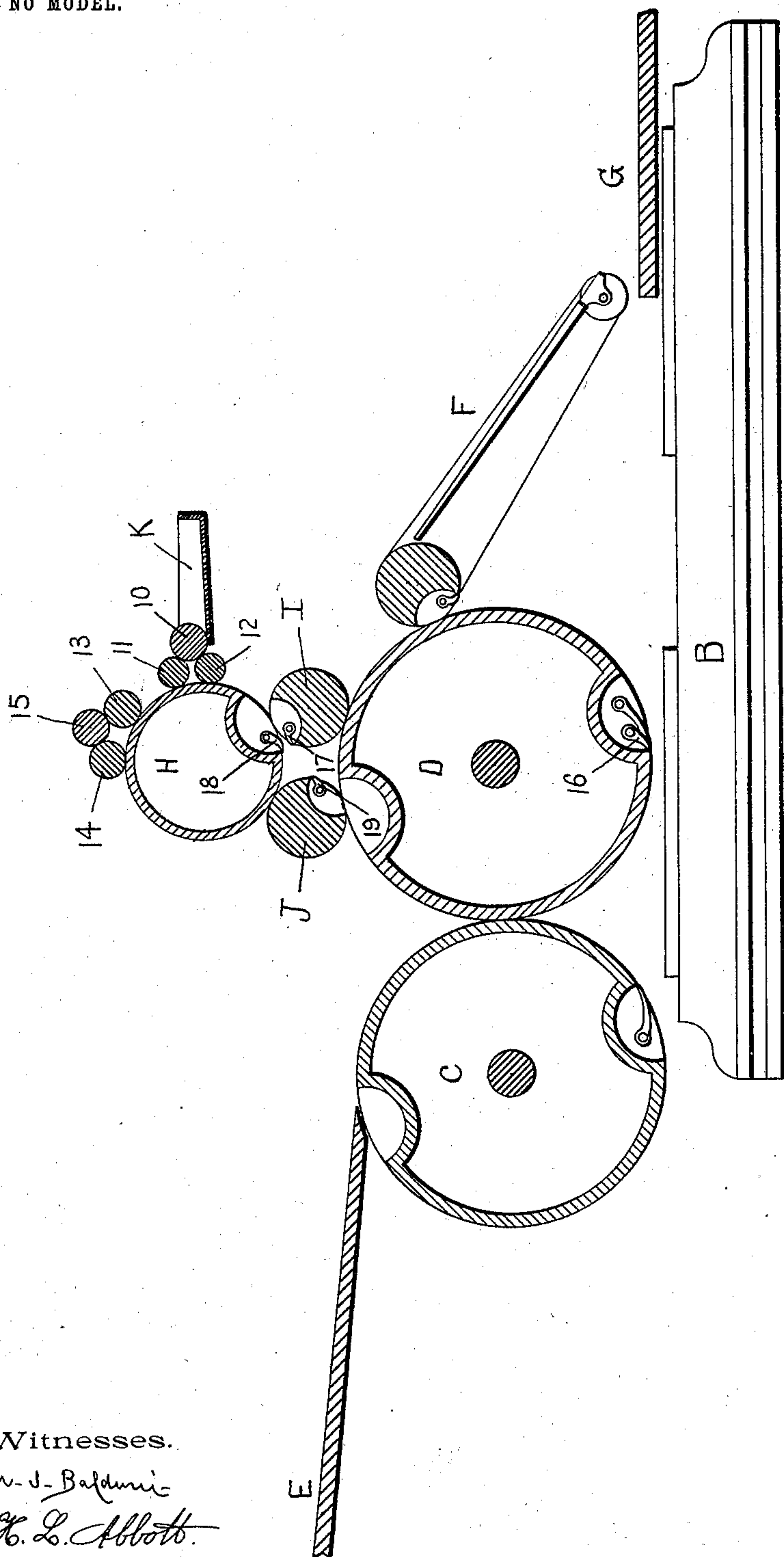
H. A. W. WOOD.

OFFSET PREVENTING MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED SEPT. 21, 1896. RENEWED MAY 8, 1903.

NO MODEL.

3 SHEETS—SHEET 2.



Witnesses.

W. J. Baldwin

H. L. Abbott

Inventor.

H. A. W. Wood.

By

Southgate & Southgate
Attorneys.

No. 748,135.

PATENTED DEC. 29, 1903.

H. A. W. WOOD.

OFFSET PREVENTING MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED SEPT. 21, 1896. RENEWED MAY 8, 1903.

NO MODEL.

3 SHEETS—SHEET 3

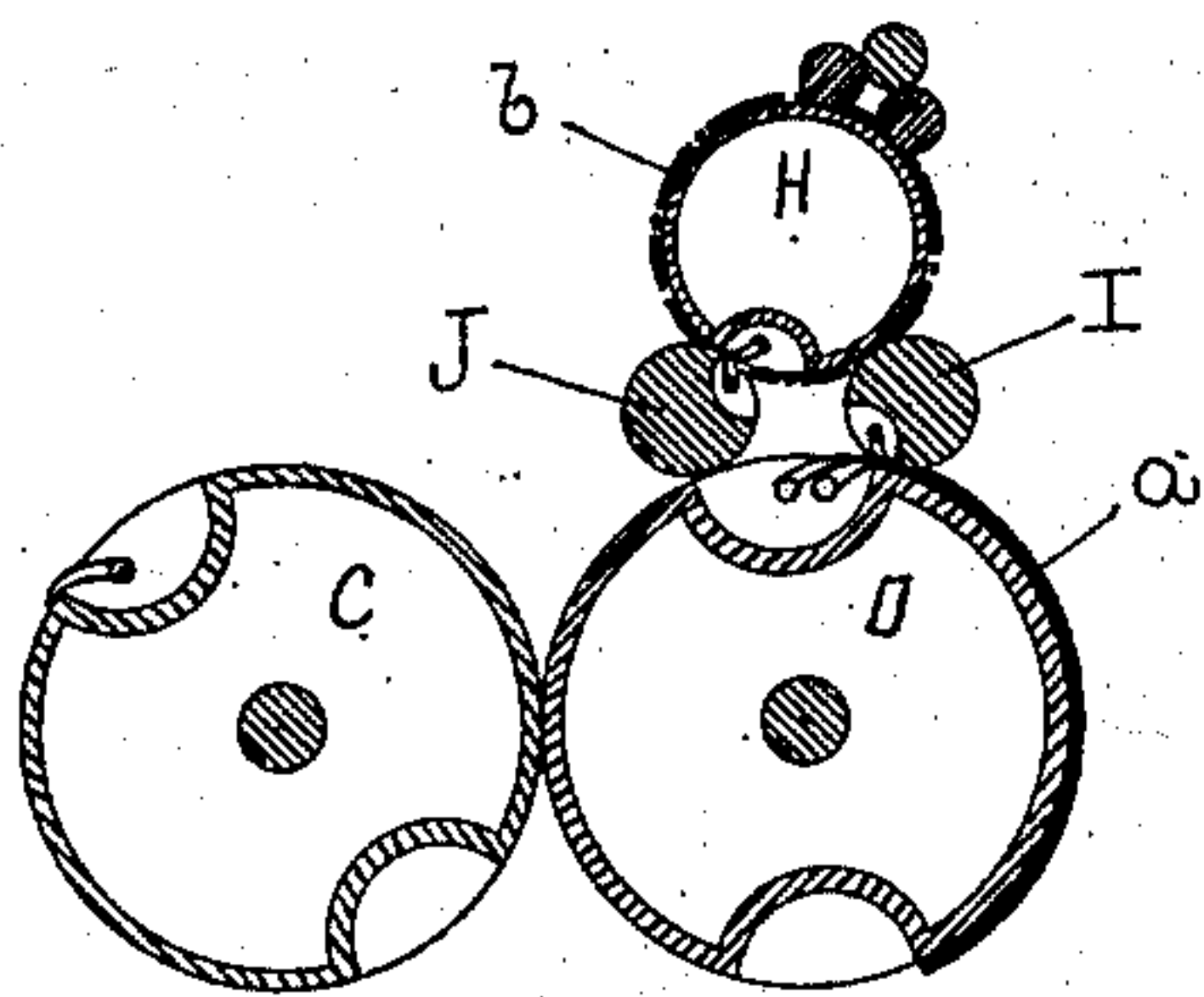


Fig. 3.

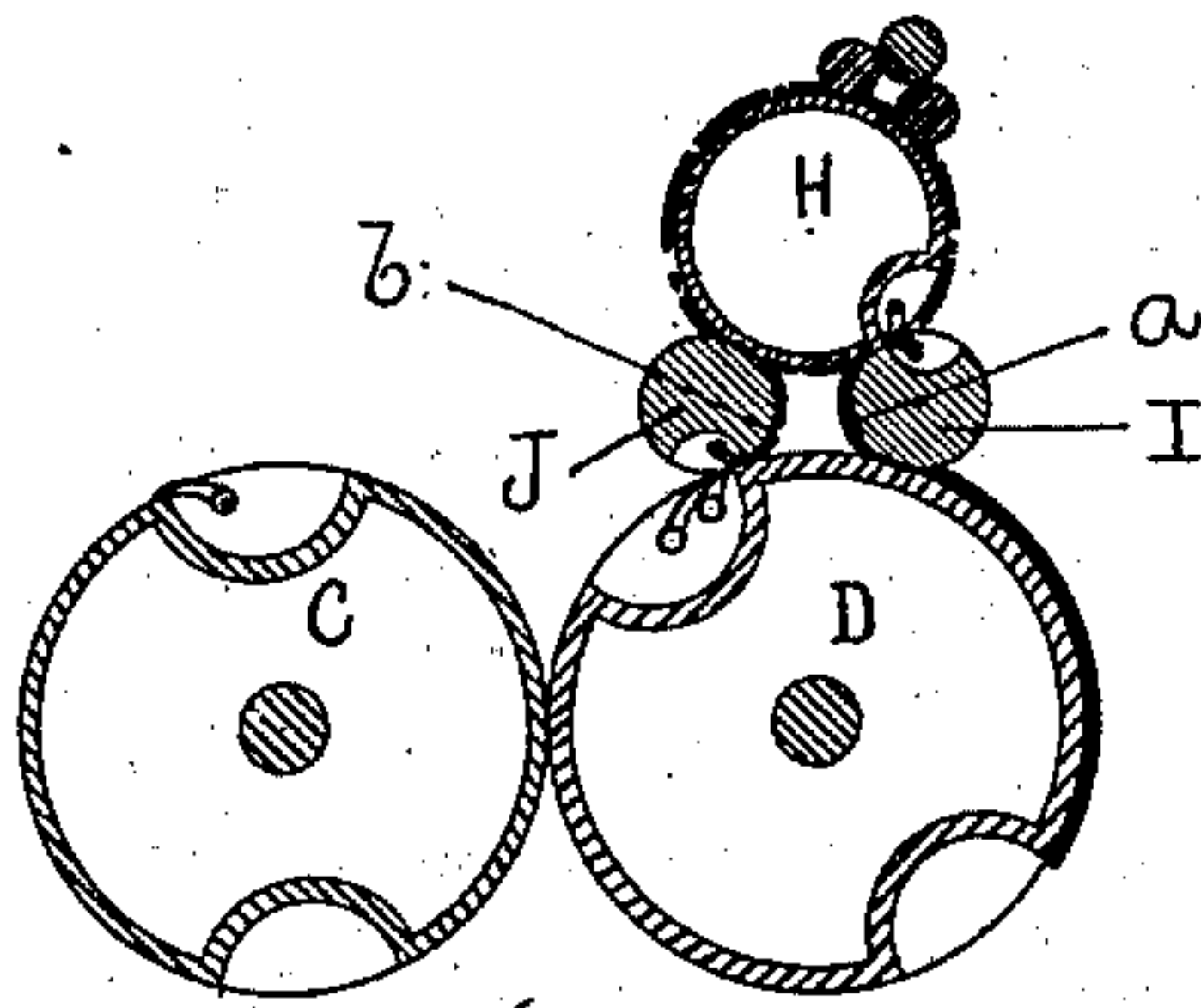


Fig. 4.

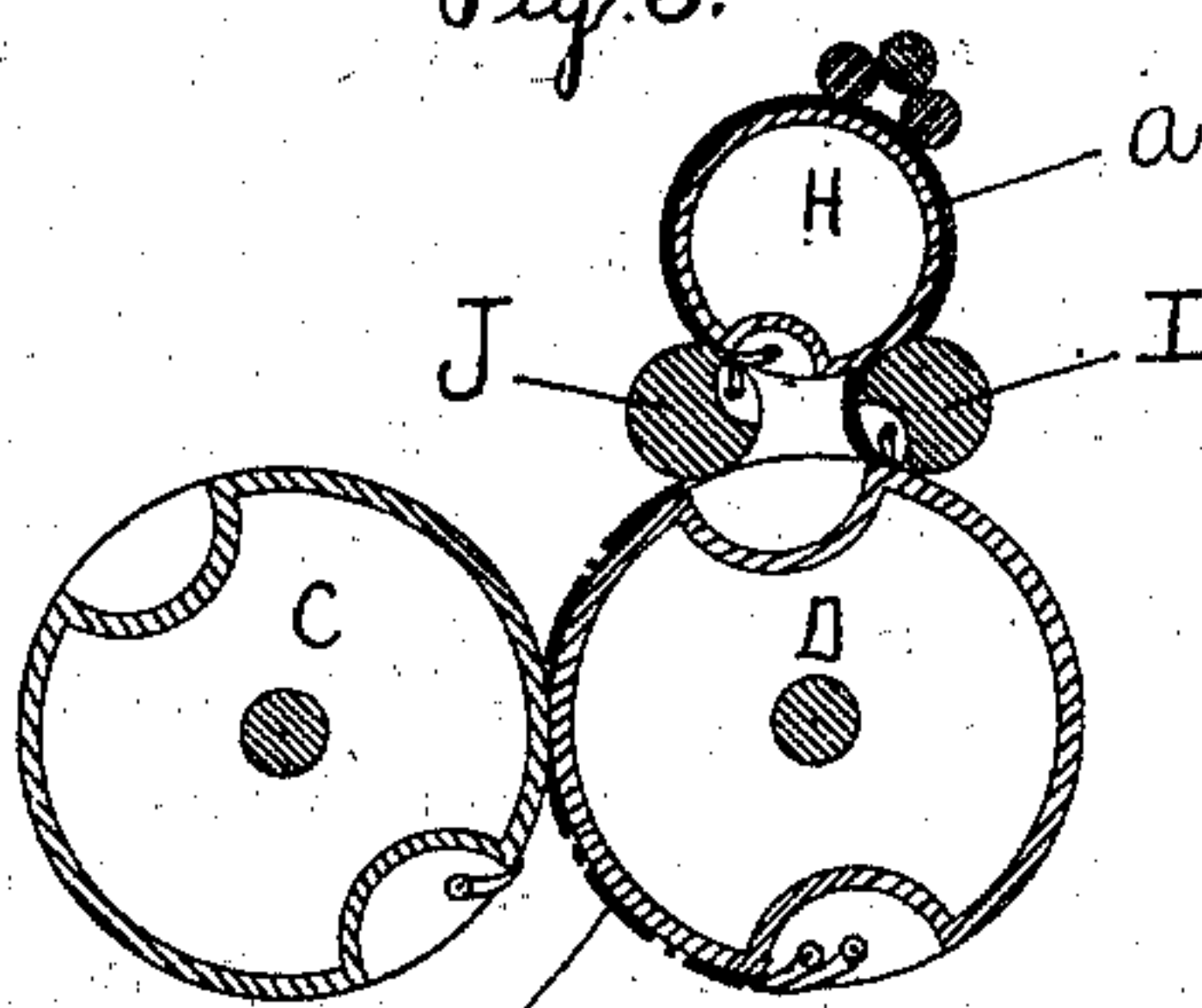


Fig. 5.

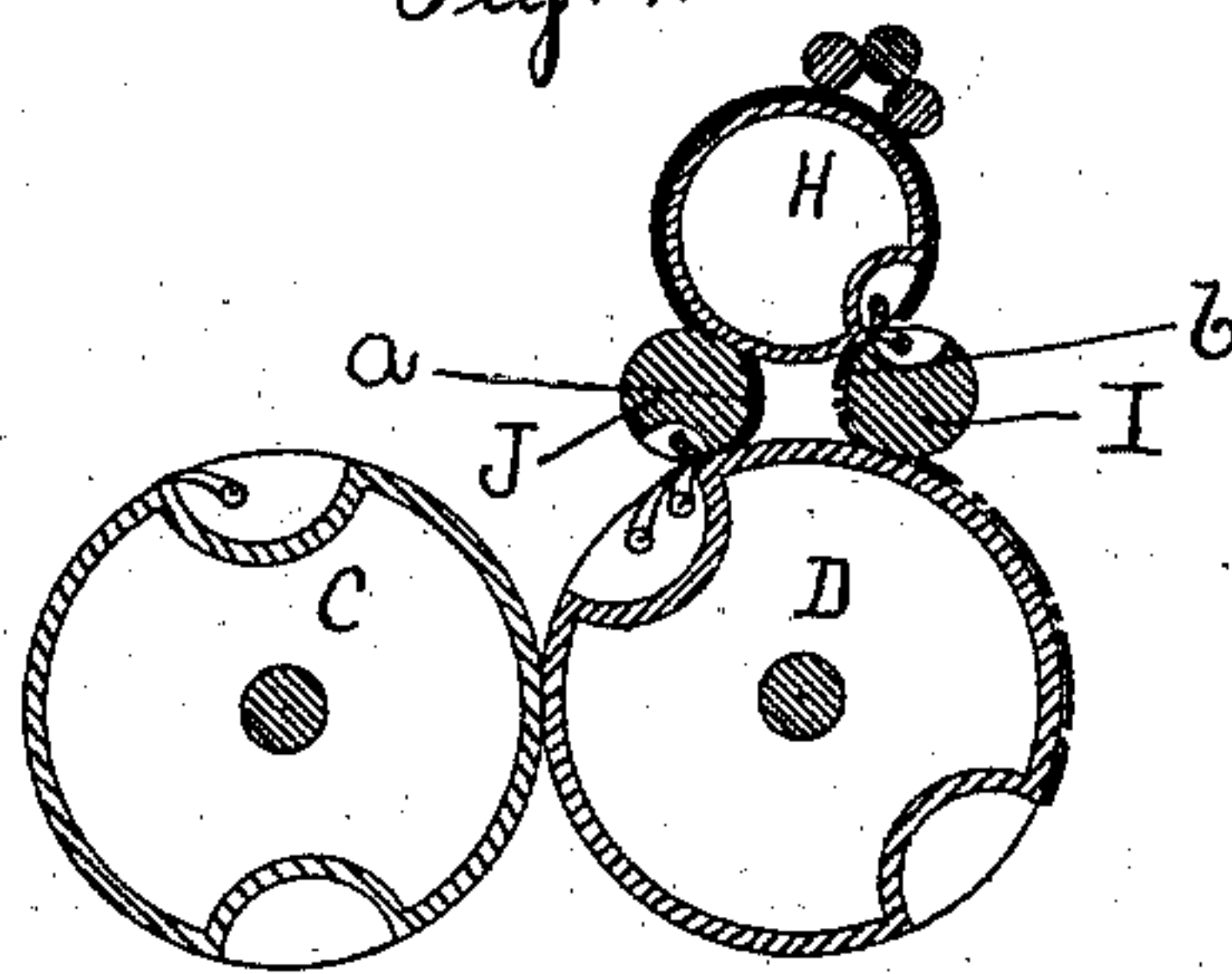


Fig. 6.

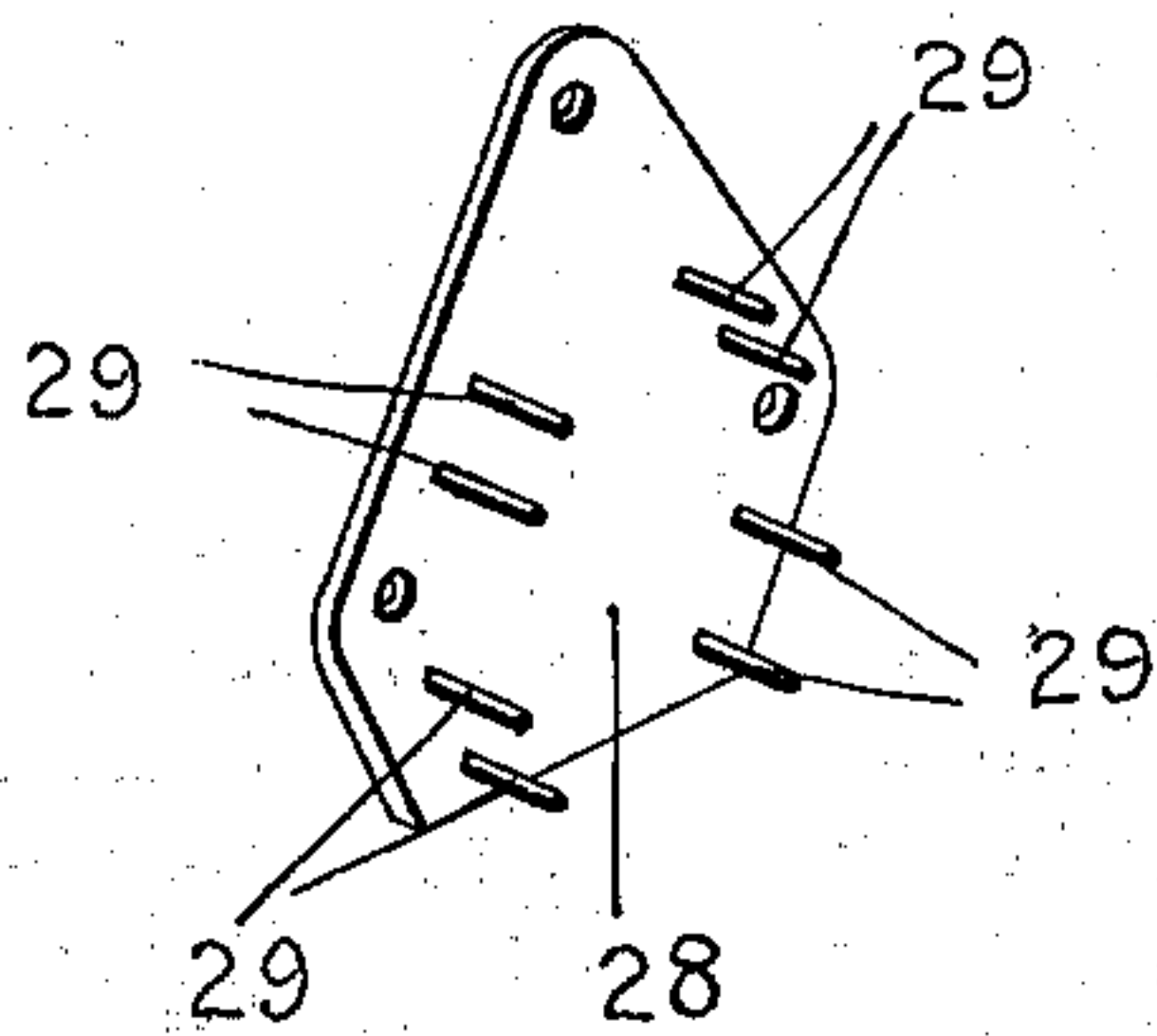


Fig. 7.

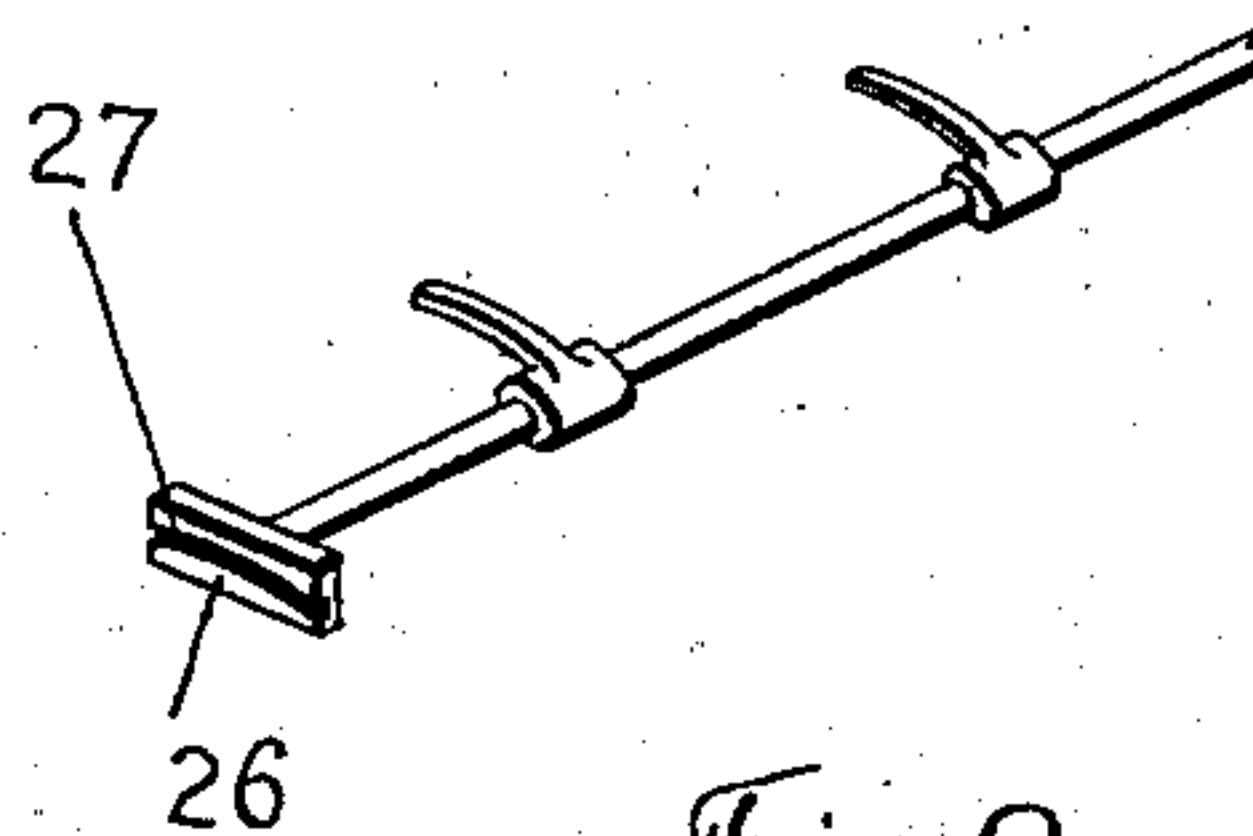


Fig. 8.

Witnesses.

W. J. Baldwin
H. L. Abbott.

Inventor.
H. A. W. Wood.

By
Southgate & Southgate
Attorneys.

UNITED STATES PATENT OFFICE.

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

OFFSET-PREVENTING MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 748,135, dated December 29, 1903.

Application filed September 21, 1896. Renewed May 8, 1903. Serial No. 156,280. (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 a new and useful Improvement in Offset-Preventing Mechanism for Printing-Presses, of which the following is a specification.

The object of my invention is to provide simple and efficient devices for preventing offset in printing-presses.

An offset-preventing device constructed according to my invention is especially applicable to the ordinary double-cylinder sheet-perfecting printing-press. In a press of this character the side of each sheet printed by the first impression-cylinder necessarily comes in contact with the second impression-cylinder when the second side of the same is printed. Ink from the freshly-printed side of the sheets will therefore be "set off," as it is called, on the surface of the second impression-cylinder, and the ink thus set off is apt to be offset onto the succeeding sheet or sheets, producing blurs or blots upon the first printed side.

In its preferred form an offset-preventing device constructed according to my present invention is arranged to handle a plurality of offset-sheets, preferably two sheets being employed, and is provided with sheet-transferring devices and devices for rendering the offset-sheets capable of further use, which are arranged to cooperate so that one offset-sheet will be secured upon the surface of the second impression-cylinder of a printing-press while the other offset-sheet is being rendered fit for further use.

In the accompanying three sheets of drawings, Figure 1 is a partial side view of a printing-press provided with offset-preventing devices constructed according to my invention. Fig. 2 is a sectional view of the same. Figs. 3 to 6, inclusive, are diagrammatic views illustrating different relative positions of the offset-sheets; and Figs. 7 and 8 are detail views illustrating the mechanism which I prefer-

ably employ for actuating the sheet-gripping devices.

An offset-preventing device constructed according to my invention comprises means whereby at intervals of a number of rotations of an impression-cylinder an offset-sheet will be taken from the impression-cylinder and another sheet supplied thereto, the sheet thus removed being held and so manipulated that at the end of one of said intervals the same will be transferred back onto the impression-cylinder and the sheet then on the impression-cylinder removed, so that said two sheets will be alternately transferred onto and from said impression-cylinder. When the sheets are not on the impression-cylinder, the same are preferably subjected or acted upon by devices which will render the same capable of further use.

In its preferred form my offset-preventing device comprises a scrubbing-cylinder having sheet-cleaning devices cooperating therewith, two transfer-cylinders, one transfer-cylinder being arranged to strip an offset-sheet from the impression-cylinder of a printing-press and to transfer the same to the scrubbing-cylinder and the second transfer-cylinder being arranged to strip the offset-sheet from the surface of the scrubbing-cylinder and transfer the same back to the impression-cylinder. By adopting this arrangement and employing two offset-sheets on offset-sheet may be secured in place on the surface of the impression-cylinder while the second offset-sheet is being scrubbed or cleaned.

Mounted in the cylinders of my offset-preventing devices are the ordinary sheet-grippers, and said sheet-grippers are connected so that they will be actuated only when a number of sheets have been printed. By means of this construction an offset-sheet will be kept upon the impression-cylinder until it has become soiled, when it will be stripped off and cleaned, a new or clean sheet being automatically provided for replacing the offset sheet which is removed.

Referring to the drawings and in detail, A designates the ordinary side frames of a printing-press; B, the bed thereof; C, the first impression-cylinder; D, the second impression-cylinder; E, a feed-board, and F a fly-delivery mechanism for removing the printed sheets from the second impression-cylinder and depositing the same upon a delivery-table G. These parts may be of any of the ordinary or approved constructions and need not be herein described at length.

Journalled in the side frames of the press substantially over the second impression-cylinder is a cylinder H, which I term the "scrubbing-cylinder."

Coöperating with the cylinder H, I provide sheet scrubbing or cleansing devices. In their preferred construction these cleansing devices comprise a fountain K, which is arranged to deposit a supply of oil and benzene on the surface of the soiled offset side by means of the rollers 10, 11, and 12. Instead of using oil and benzene other cleansing fluids may be used.

Engaging with the scrubbing-cylinder H and preferably driven in opposition thereto are a plurality of scrubbing or cleansing rolls, as 13 and 14, which engage a common roller 15. Two transfer-cylinders I and J are arranged to coöperate with the scrubbing-cylinder H and the impression-cylinder D, the cylinder I being arranged to strip the soiled offset-sheet from the surface of the impression-cylinder D and transfer the same to the scrubbing-cylinder H, the second transfer-cylinder J being arranged to strip the cleansed offset-sheet from the surface of the scrubbing-cylinder H and transfer the same back to the surface of the cylinder D.

Mounted in the impression-cylinder D in addition to the usual grippers for the printed sheet are a set of grippers 16 for engaging the offset-sheets.

The transfer-cylinder I, the scrubbing-cylinder H, and the second transfer-cylinder J are provided with sets of grippers 17, 18, and 19, respectively.

The gearing for driving the parts may be arranged in any preferred or desired manner. As shown most clearly in Fig. 1, 20 and 21 designate the ordinary gears, carried by the impression-cylinders C and D.

The transfer-cylinders I and J are provided with gears 22 and 23, which mesh with and are driven from the gear 21 of the impression-cylinder D.

The scrubbing-cylinder H is provided with a gear 24, which meshes with and is driven from the gears 22 and 23.

The oil-depositing rollers 11 and 12 are preferably driven by their friction against the scrubbing-cylinder; but, if desired, they may be positively driven in any desired manner.

Secured upon the end of a shaft of the roller

15 is a gear 25, which meshes with and is driven from the gear 24.

The scrubbing-rollers 13 and 14 are preferably frictionally driven from the roller 15; but, if desired, these rollers may be positively geared together.

The four sets of grippers 16, 17, and 18 for handling the offset-sheets are preferably arranged to act only after a plurality of sheets have been printed by the press. Each of these sets of grippers is secured upon a rock-shaft in the ordinary manner, which is provided at its end with a cam 26, having a slot or groove 27 formed therein, as most clearly illustrated in Fig. 8. A movable carriage 28 is mounted inside of the framework of the press and is provided with a plurality of projecting pins 29, which may be brought into position to actuate the grippers. The carriage 28 will be shifted into operative position by means of a bell-crank lever 30, connected to a link 31, having a roller 32 journaled thereon in position to be operated by a cam 33. The cam 33 is preferably geared to turn once for every twenty sheets printed on the press. As shown, the cam 33 is secured upon a shaft 34, having a worm-wheel 35 secured thereon which is driven by means of a worm 36. The worm 36 is driven by means of bevel-gears 37 and 38, the bevel-gear 38 being secured upon a cross-shaft which may be driven in any desired or preferred manner from the ordinary parts of the printing-press. The carriage 28 is normally held in its retracted or inoperative position by means of a spring 39, connected to the link 31.

The operation of my offset-preventing mechanism is most clearly illustrated in the diagrammatic views shown in Figs. 3 to 6, inclusive. As shown in Fig. 3, one offset-sheet *a*, shown in heavy lines, is being stripped from the surface of the impression-cylinder D by the first transfer-cylinder *i*, while a second offset sheet *b* is being stripped from the scrubbing-cylinder H by the second transfer-cylinder J. In Fig. 4 the soiled offset-sheet *a* is being transferred to the surface of the scrubbing-cylinder H and the second offset sheet is being transferred to the impression-cylinder D. The soiled offset-sheet will be retained upon the scrubbing-cylinder H while a number of sheets are being printed by the press, and the soiled offset-sheet has time to be thoroughly cleaned. As shown in Fig. 5, the offset-sheet *a* has passed nearly onto the surface of the scrubbing-cylinder H and the offset-sheet *b* has passed substantially onto the surface of the second impression-cylinder B. In Fig. 6 the offset-sheet *a* is being transferred back to the impression-cylinder D while the offset-sheet *b* is being transferred to the scrubbing-cylinder.

I am aware that many changes may be made in offset-preventing devices by those who are skilled in the art and that certain parts of

my invention can be used in different locations and in connection with different forms of printing-presses without departing from the scope of my invention as expressed in the claims. I do not wish, therefore, to be limited to the constructions which I have shown and described; but

What I claim, and desire to secure by Letters Patent of the United States, is—

10 1. In a device of the class described, the combination of an impression-cylinder, means for supplying an offset-sheet to said cylinder, and removing another offset-sheet from said cylinder, and then, at an interval of a number
15 of impressions, transferring the sheet previously removed back to the impression-cylinder, and removing the sheet then on the impression-cylinder.

2. In a device of the class described, the combination of an impression-cylinder of a printing-press, means for automatically supplying said cylinder with an offset-sheet and removing an offset-sheet therefrom, and, at an interval of a number of impressions, re-
25 moving the sheet thus supplied to the impression-cylinder, and restoring the sheet previously on the impression-cylinder, and means for making said offset-sheets capable of further use while removed from the im-
30 pression-cylinder.

3. In a device of the class described, the combination of an impression-cylinder of a printing-press, a cylinder as H, and means for automatically transferring two offset-sheets
35 back and forth between said impression-cylinder and said cylinder H at intervals of a number of impressions.

4. In a device of the class described, the combination of an impression-cylinder of a printing-press, a cylinder as H, means for automatically transferring two offset-sheets
40 back and forth between said impression-cylinder and said cylinder H at intervals of a number of impressions, and means for rendering the offset-sheets capable of further use while on the cylinder H.

5. In a device of the class described, the combination of an impression-cylinder of a printing-press, devices for rendering offset-
50 sheets capable of further use, and means for automatically transferring offset-sheets back and forth between the impression-cylinder and said devices.

6. The combination of an impression-cylinder of a printing-press, cleaning devices 55 and sheet-transferring devices arranged so that one offset-sheet will be secured upon the surface of the impression-cylinder while a second offset-sheet is being cleaned.

7. The combination in a perfecting printing-press of the two impression-cylinders, a cylinder as H arranged in connection with the second of said impression-cylinders, cleaning devices coöperating with said cylinder H, and devices for transferring offset-sheets back 65 and forth between said second impression-cylinder and said cylinder H.

8. In a device of the class described, the combination of an impression-cylinder of a printing-press, a scrubbing-cylinder and two 70 transfer-cylinders, one being arranged to strip a soiled offset-sheet from the impression-cylinder and to transfer the same to the scrubbing-cylinder, and the second being arranged to strip an offset-sheet from the scrubbing-
75 cylinder and to transfer the same to the impression-cylinder.

9. The combination of an impression-cylinder of a printing-press, sheet-cleaning devices and transfer devices arranged so that 80 one offset-sheet will be secured upon the impression-cylinder while a second offset-sheet is being cleaned, and means for operating the transfer devices only when a number of sheets have been printed. 85

10. The combination of an impression-cylinder of a printing-press, a scrubbing-cylinder, cleaning devices coöperating with said scrubbing-cylinder, transfer-cylinders, grippers mounted in the impression-cylinder, the scrubbing-cylinder and the transfer-cylinders, a movable carriage having projecting pins for actuating said grippers, and means for bringing said carriage into operative position when a number of sheets have been 95 printed, said parts being arranged to coöperate so that one offset-sheet will be secured upon the impression-cylinder while a second offset-sheet is being cleaned.

In testimony whereof I have hereunto set 100 my hand in the presence of two subscribing witnesses.

H. A. WISE WOOD.

Witnesses:

HENRY W. COZZENS, Jr.,
LOUISE PECKHAM.