C. VAN MIDDLESWORTH.

GRIPPER MECHANISM.

APPLICATION FILED OCT. 15, 1909.

952,285.

Patented Mar. 15, 1910.

3 SHEETS—SHEET 1.

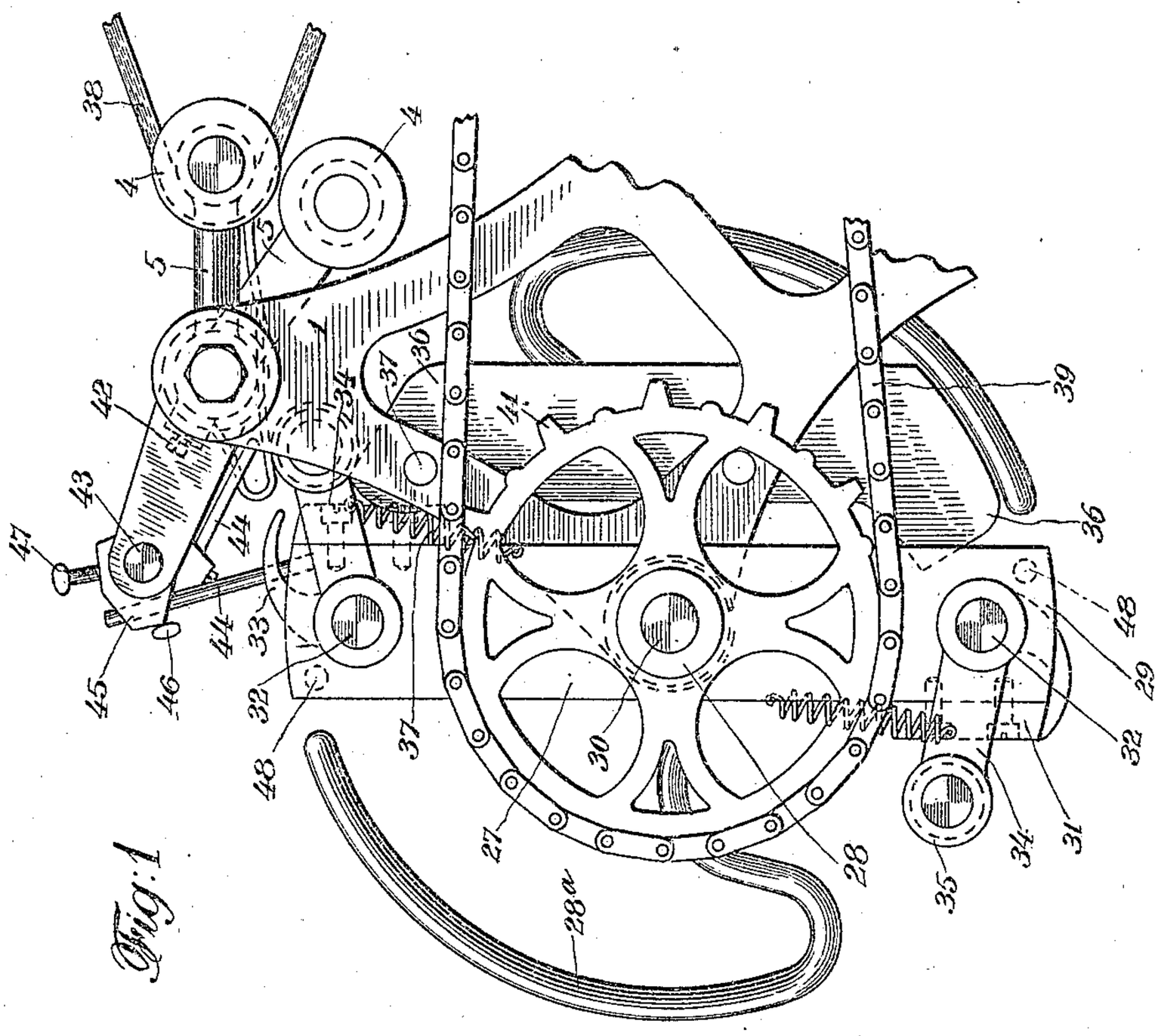

Fig. 1

Witnesses:
M. Merkle.
G. B. Prindle

Inventor
Charles Van Middlesworth
By his Attorneys
Prindle & Wright

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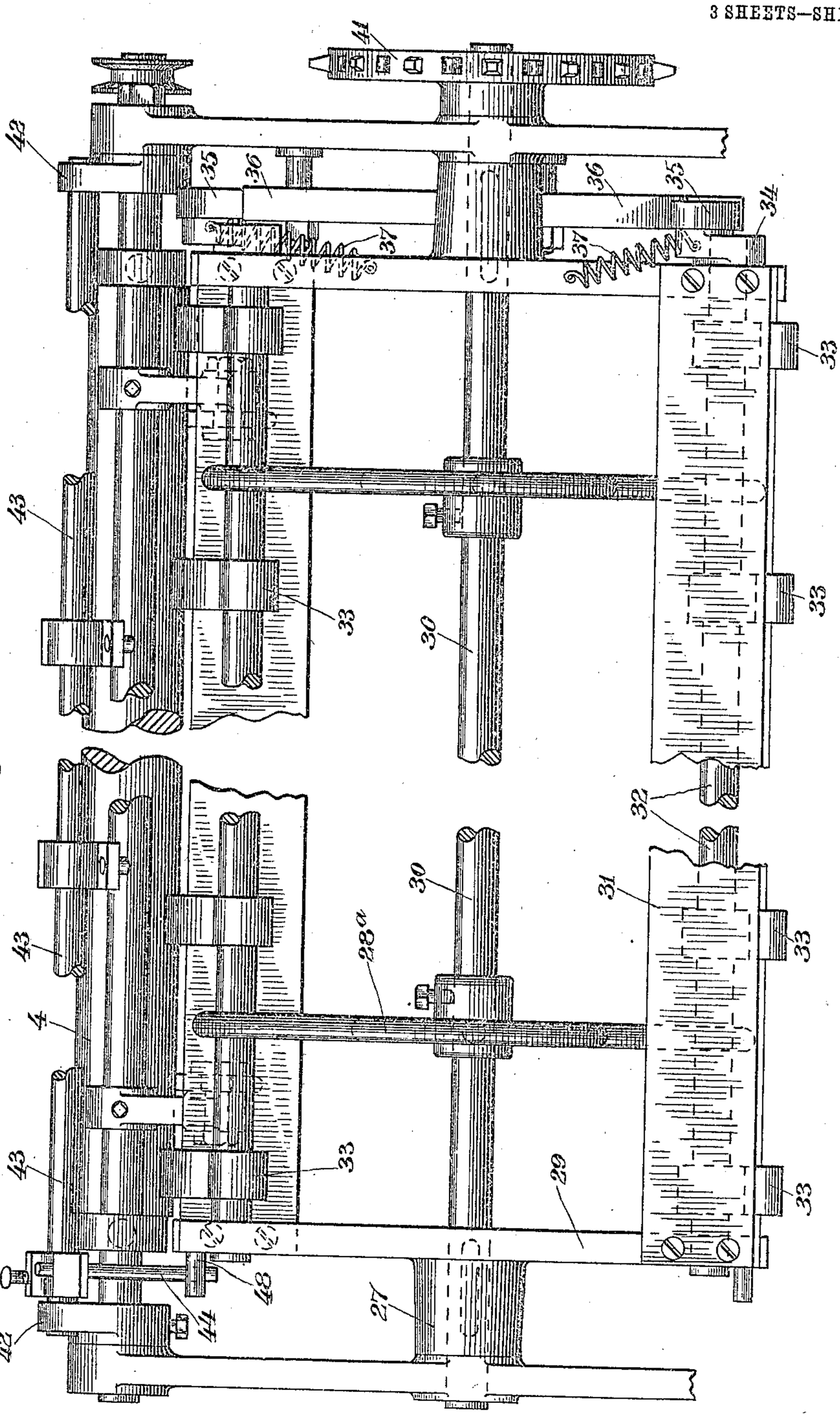

Fig. 2.

Witnesses:
M. Merkle.
G. B. Prindle

Inventor
Charles Van Middlesworth
By his Attorneys
Prindle & Knight

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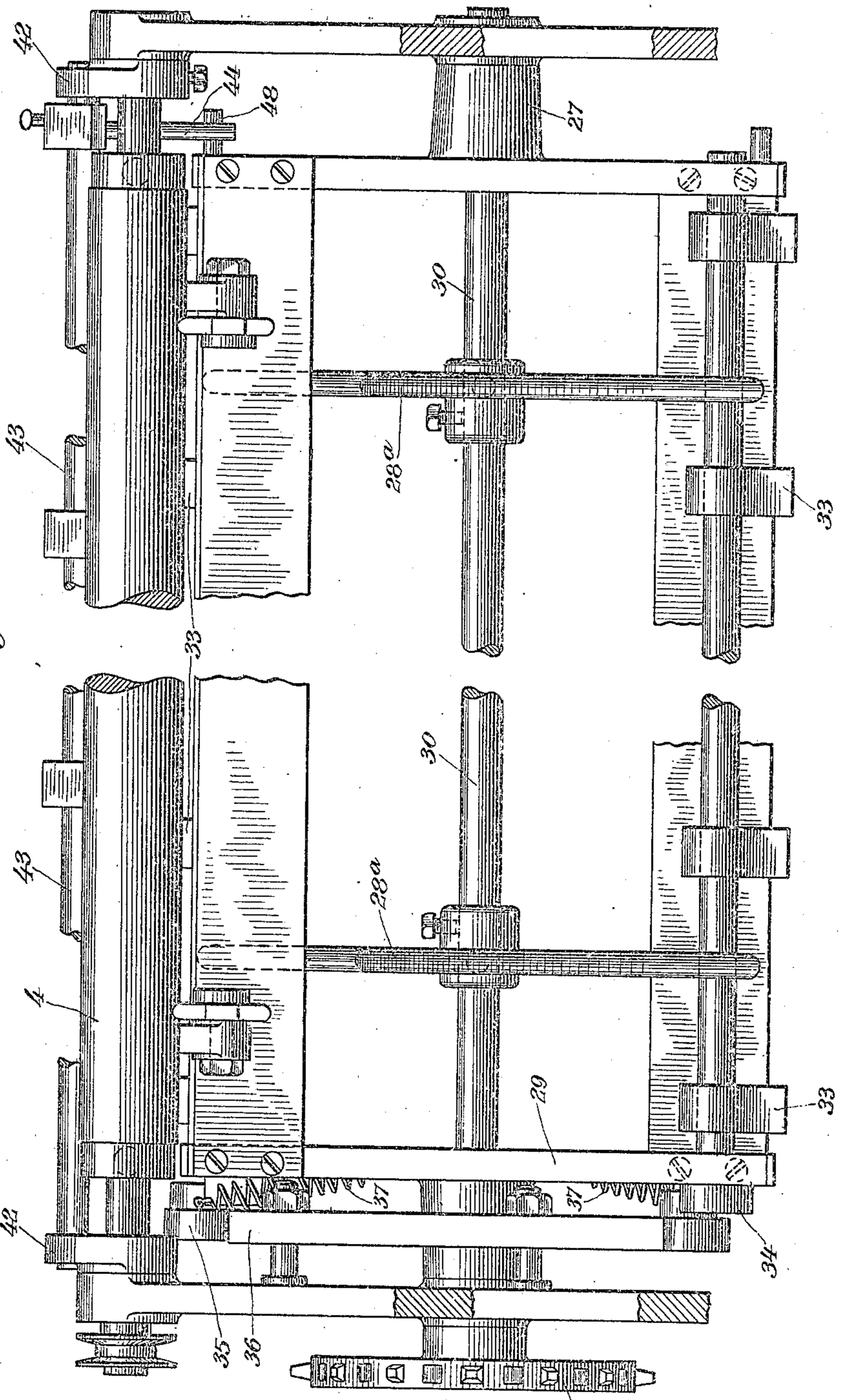

Fig. 3

Witnesses:

M. Meikle

G B Prindle

Inventor

Charles Van Middlesworth

By his Attorneys

Prindle & Albright

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C

UNITED STATES PATENT OFFICE.

CHARLES VAN MIDDLESWORTH, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE VAN DYCK GRAVURE COMPANY, OF NEW YORK, N. Y.

GRIPPER MECHANISM.

952,285. Specification of Letters Patent. Patented Mar. 15, 1910.

Original application filed November 23, 1908, Serial No. 464,093. Divided and this application filed October 15, 1909. Serial No. 522,751.

To all whom it may concern:

Be it known that I, CHARLES VAN MIDDLESWORTH, of Brooklyn, in the county of Kings, and in the State of New York, have invented a certain new and useful Improvement in Gripper Mechanisms, (Case B,) and do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to an improvement in gripping mechanisms for printing presses, and especially to means for directing the end of a sheet of paper or traveling web of paper invariably into the open jaws of the grippers.

This application is a division of my application now Patent No. 935,339, granted September 28th, 1909, for printing press attachments.

In the accompanying drawings Figure 1 is a side elevation of said mechanism; Fig. 2 is an end elevation of the same; and Fig. 3 is a plan view thereof.

In the drawings 1 is a side frame located at each side of the machine for supporting the various parts thereof. Sheets of paper delivered from any suitable mechanism are fed into guide-rollers 4 supported upon stationary arms 5 at the top of the machine. The sheets of paper after being fed through the rollers 4 are received by gripping mechanisms carried upon a rotary frame 27 journaled at 28 to the side frames 1.

The rotary frame comprises a plurality of S-shaped arms 28ª, the outer turns of which are curved in a circular direction concentric with the journals 28 of the frame. The rotary frame 27 further comprises two end members 29 situated upon the transverse shaft 30 which carries the frame 27, which end members 29 are secured together by longitudinal bars 31 extending from one end of the frame 27 to the other and situated on opposite sides of the end members 29. Near the ends of the end members 29 I have located two shafts 32 which are movably carried in said members. The shafts 32 carry a plurality of gripper fingers 33, the ends of which extend over the edges of the longitudinal bars 31. To each of the shafts 32 I also attach lever arms 34 carrying in their ends rollers 35 which are designed to run over the surface of a stationary cam 36 attached to the side frame 1. The rollers 35 are maintained in contact with the cam 36 through the action of springs 37 attached at one end of the lever arms 34 and at the other end to the end members 29. When the rollers 35 are in contact with the cam 36 the gripper fingers 33 are raised so as to be in the position to receive a sheet of paper. When, however, the rollers 35 have passed beyond the cam 36 the fingers 33 are adapted to be seated upon the longitudinal bars 31 so as to firmly grip the sheet of paper. The said rollers 4 are driven by a belt 38 from any suitable source of power.

Attached to the shaft 30 there is a sprocket 41 which is connected by a chain 39 to any suitable source of power for the purpose of driving the rotary frame 27.

In order to insure that the paper will be received between the opening fingers 33 and against the longitudinal bar 31 coöperating therewith, I provide an automatic mechanism for projecting the edge of the sheet of paper into the teeth of the grippers. The same portion of the frames 1 which carries the stationary arms 5, also supports at each side of the device an additional stationary arm 42, said arm 42 carrying therein a movable shaft 43, which shaft carries a series of fingers 44. These fingers 44 are supported within brackets 45, in which they may be adjusted by the movement of screws 46. The brackets 45 are also adjustable upon the shaft 43 by means of screws 47 passing through the bodies of the brackets. The finger 44 which is nearest to one end of the shaft 43 is projected into the path of movement of a pin 48 carried upon each end of one of the end members 29. The remaining fingers 44 are set at a different angle, as shown in Fig. 1, so that when the first mentioned finger 44 is moved by contact with the finger 48, the remaining fingers 44 are caused to project the free edge of the paper into the jaws of the grippers.

In the operation of the device a strip of paper is fed into the machine between the rollers 4. The sheets of paper after passing through the rollers 4, are grasped by the grippers 33, and having been carried around with the rotary frame 27, are deposited in the usual manner beneath the rotary frame 27, whence they are removed in any desired way. It will be observed that whenever the rollers 35 are in contact with the cam 36 the grippers will be in their open

position. That is to say, when a roller 35 strikes the lower portion of the cam 36, the gripper arm 33 connected therewith is raised so as to release the sheet of paper, and when the same roller reaches the upper portion of the cam 36, the finger 33 attached thereto is raised in a similar manner to receive a new sheet of paper. As each set of grippers reaches the place where the free edge of a sheet of paper is to be grasped, the pin 48 adjacent thereto comes into contact with one of the fingers 44 so as to move the remaining fingers 44 downwardly and project the sheet of paper into the jaws of the grippers. If it were not for the provision of some mechanism of this character, the sheets of paper would not be always fed into the open jaws of the grippers.

While I have described my invention above in detail, I wish it to be understood that I consider my invention to be a broad one and capable of many changes and adaptations without departing from the spirit thereof.

I claim:—

1. In a device of the character described, a rotary frame, grippers carried by the same, an abutment also carried by the frame, means for directing the paper into the jaws of the grippers, comprising a set of movable fingers, and an operating lever connected to said fingers and adapted to coöperate with the abutment to move the same.

2. In a device of the character described, a rotary frame, grippers carried by the same, an abutment also carried by the frame, means for directing the paper into the jaws of the grippers, comprising a set of reciprocable fingers, and an operating lever connected to said fingers and adapted to cooperate with the abutment to move the same.

In testimony that I claim the foregoing I have hereunto set my hand.

CHARLES VAN MIDDLESWORTH.

Witnesses:
GEORGE B. PRINDLE,
A. NEWCOMB.