

(No Model.)

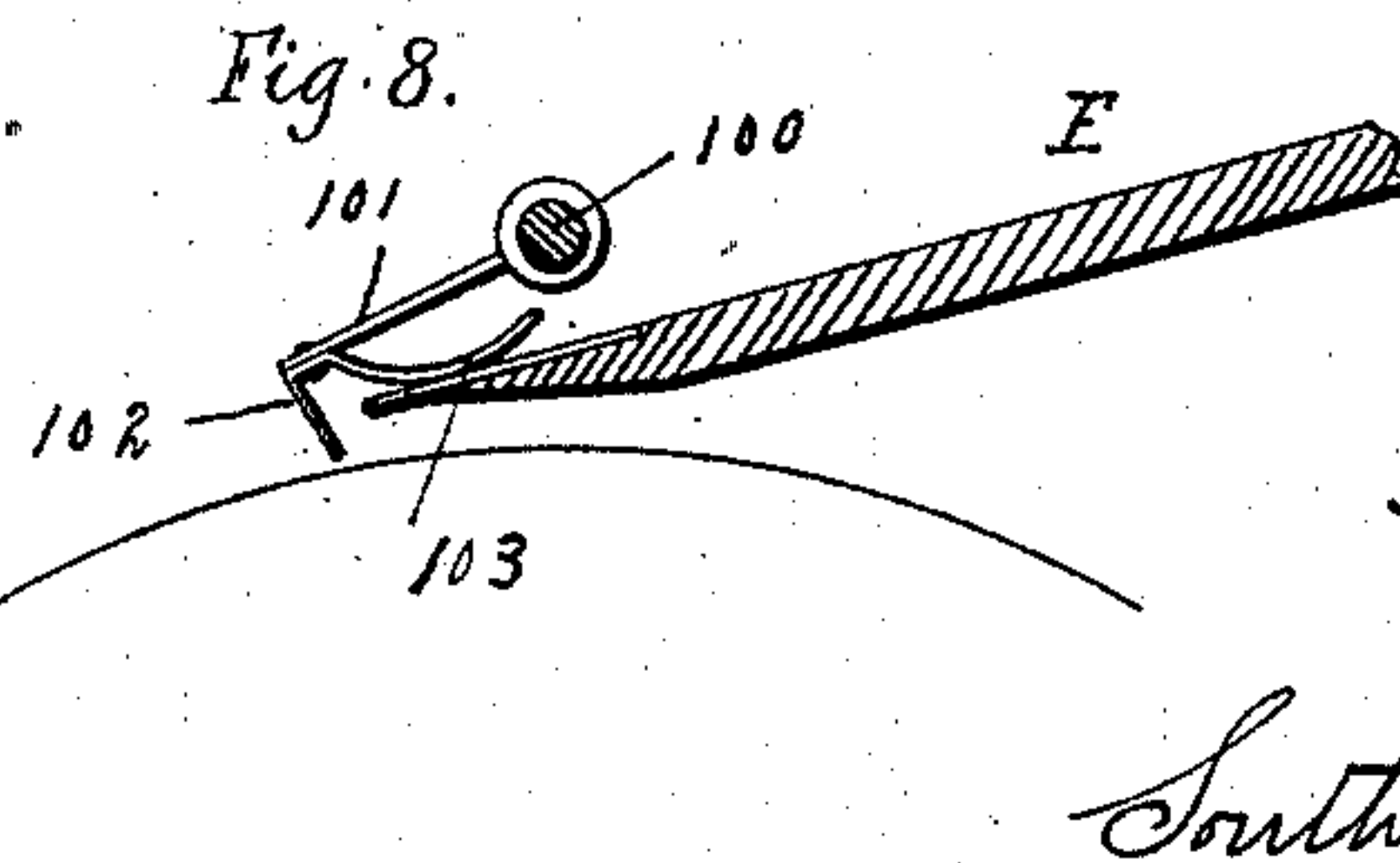
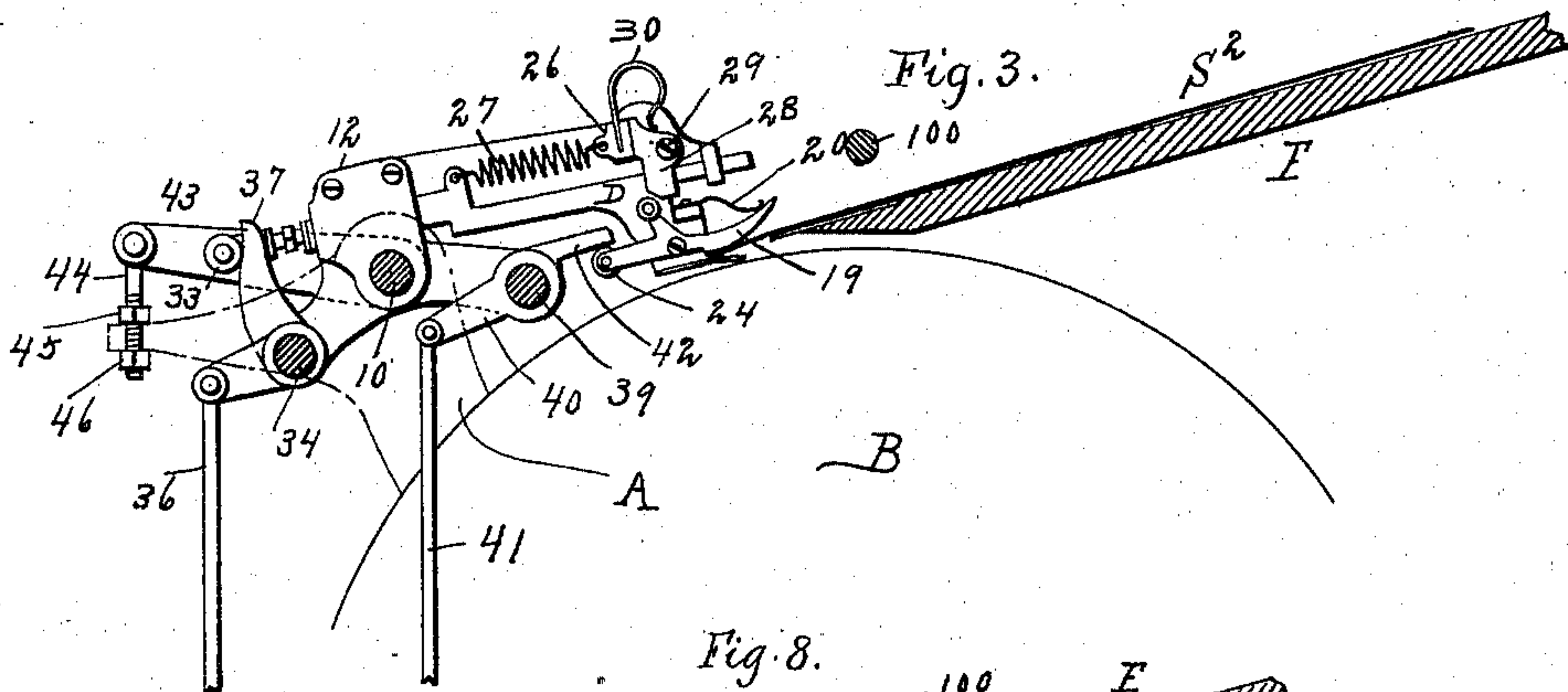
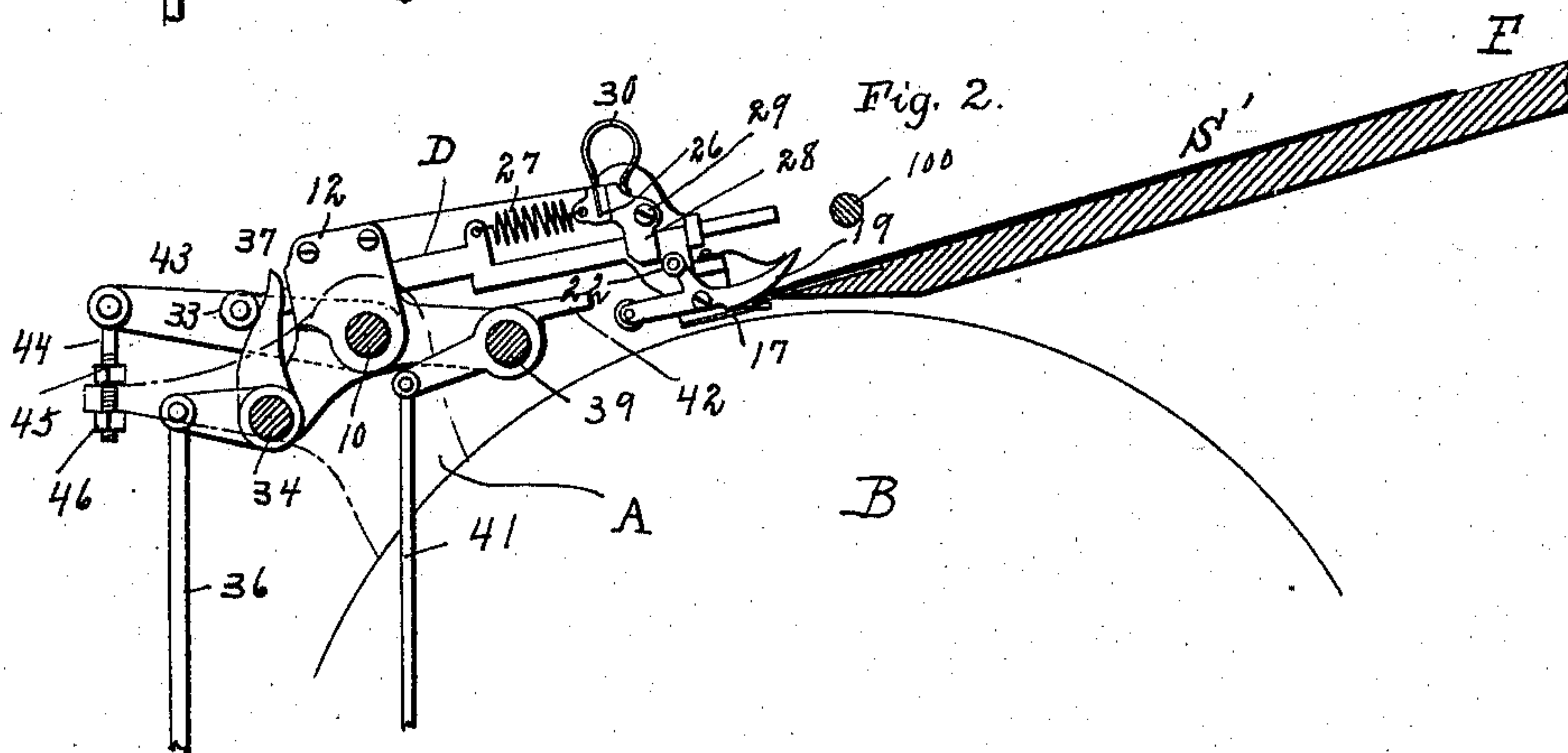
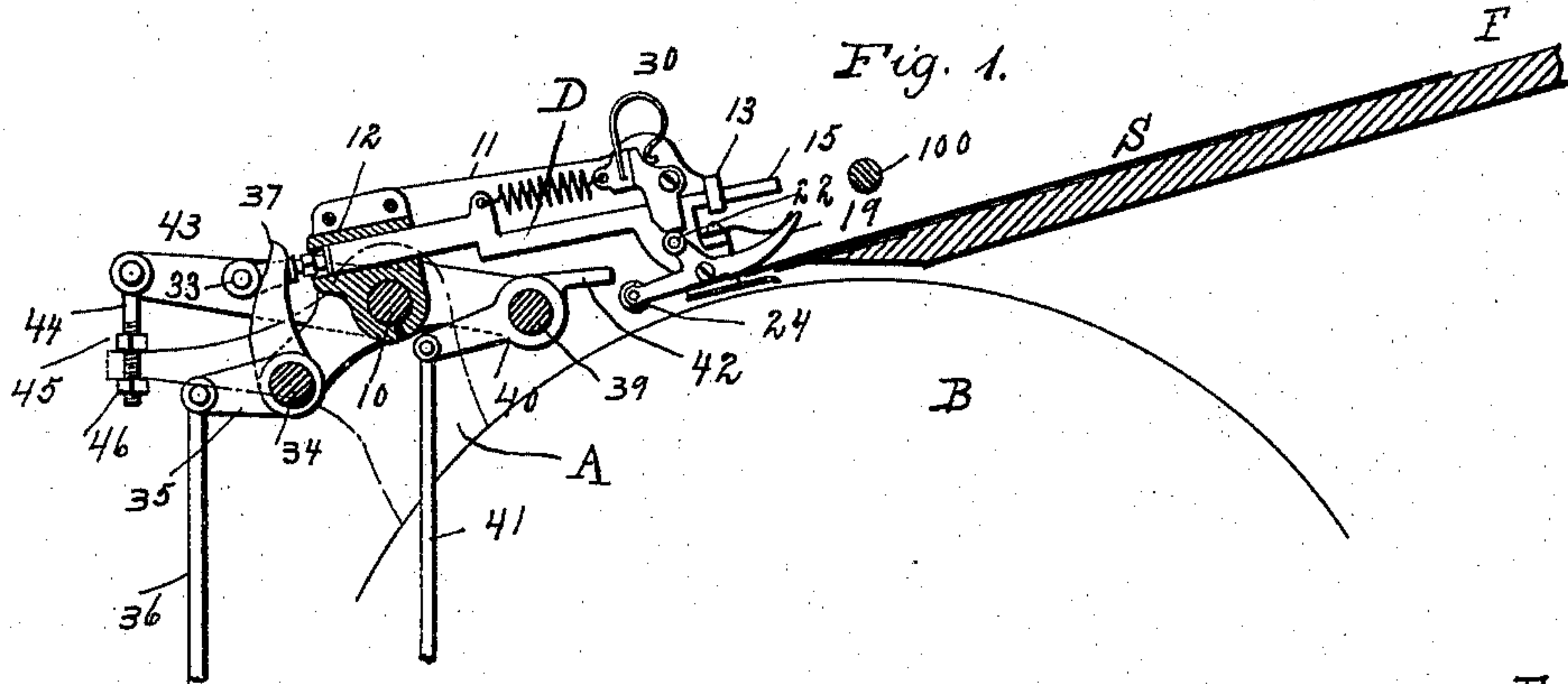
2 Sheets—Sheet 1.

H. A. W. WOOD.

FRONT EDGE SHEET REGISTERING MECHANISM FOR PRINTING PRESSES.

No. 567,730.

Patented Sept. 15, 1896.



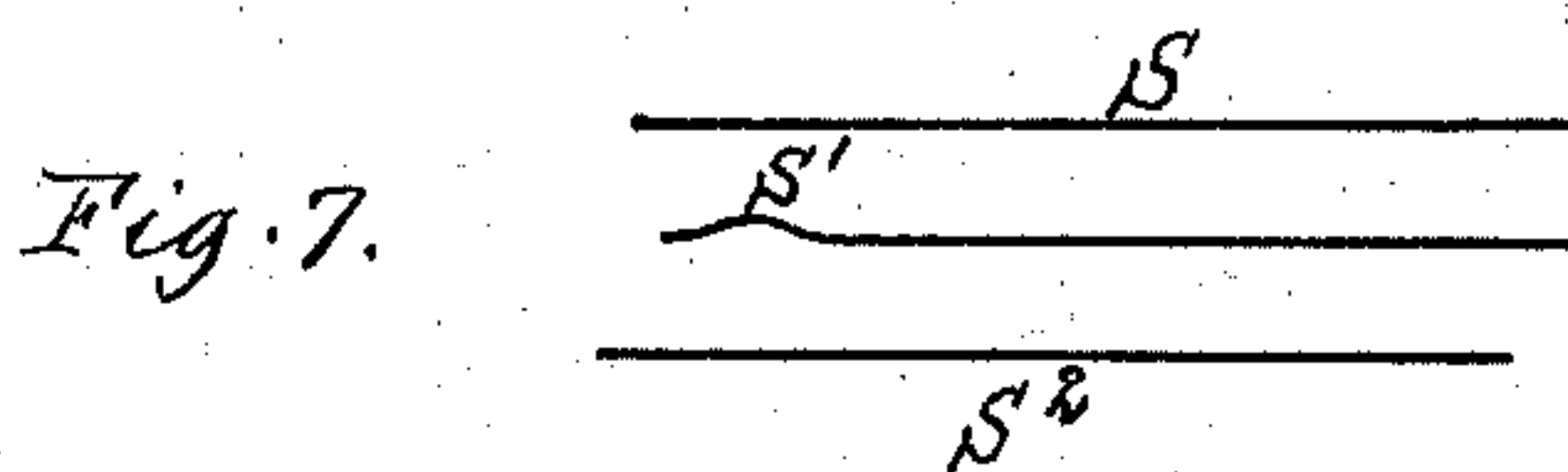
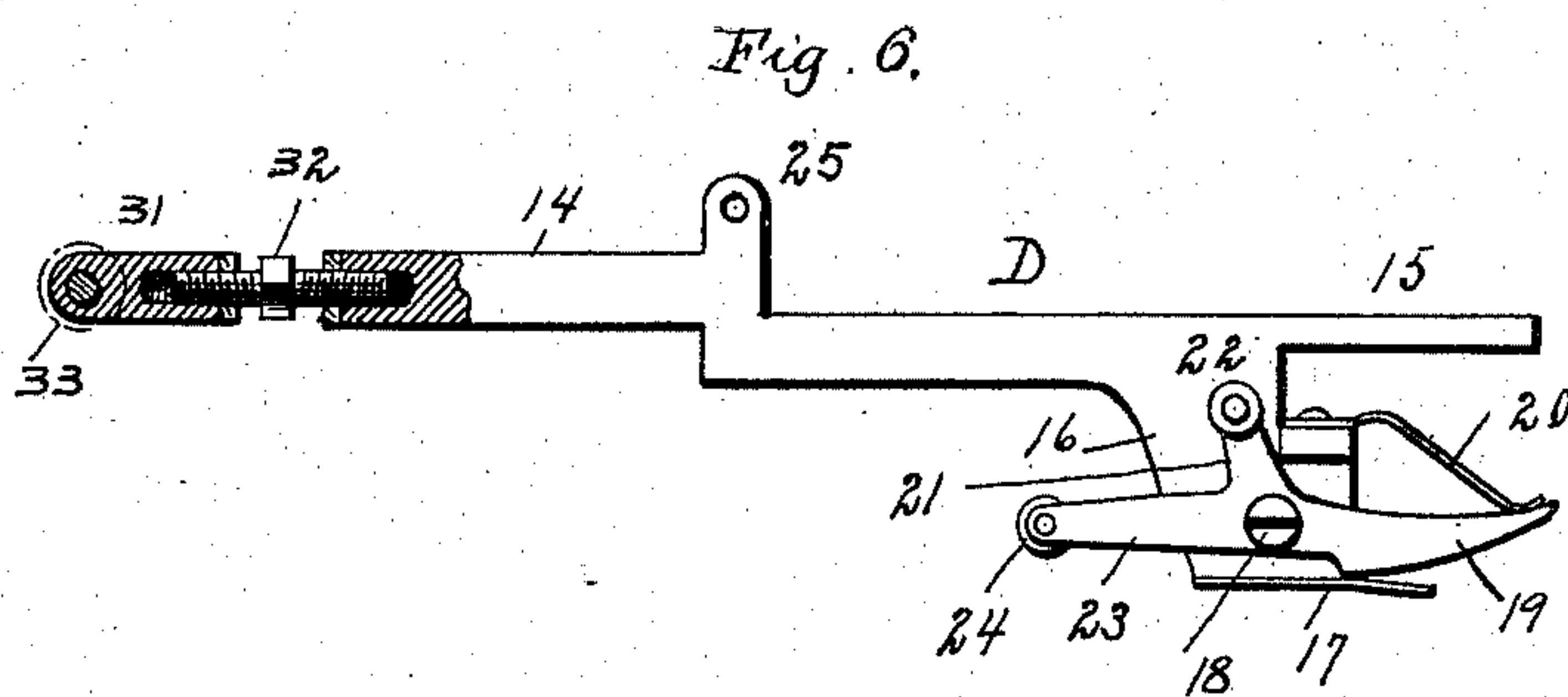
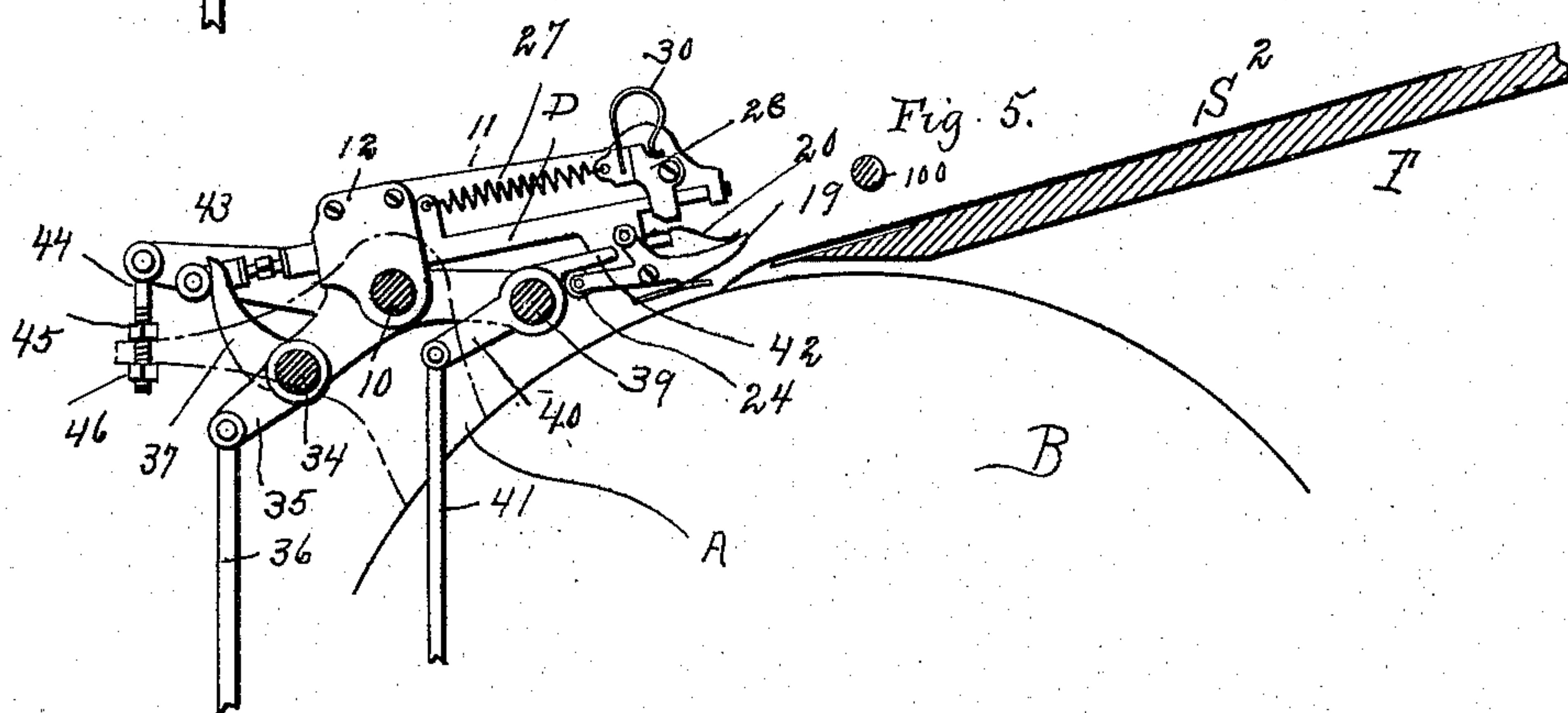
Witnesses.
Chas. F. Schuch
E. M. Haly

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Attorneys

2 Sheets—Sheet 2.

FRONT EDGE SHEET REGISTERING MECHANISM FOR PRINTING PRESSES.

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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.

FRONT-EDGE SHEET-REGISTERING MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 567,730, dated September 15, 1896.

Application filed May 31, 1895. Serial No. 551,289. (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 Front-Edge Sheet-Registering Mechanism for Printing-Presses, of which the following is a specification.

The aim of this invention is to provide a new and improved automatic registering mechanism for bringing into register the sheet placed in approximately the desired position on the feed-board of a printing-machine.

To this end the invention consists of the device described and claimed in this specification, and illustrated in the accompanying two sheets of drawings, in which—

Figure 1 is a sectional elevation of the mechanism, showing the sheet placed in approximately the desired position. Fig. 2 is a similar view showing the sheet as grasped by the gripping mechanism. Fig. 3 is a similar view showing the sheet brought to the exact position. Fig. 4 is a similar view showing the gripping device as open after the sheet has been brought to the desired position. Fig. 5 is a similar view showing the gripping device clear of the sheet. Fig. 6 is a detail view, on an enlarged scale, of one of the sliding frames. Fig. 7 is a diagrammatic view showing the positions assumed by the sheet, and Fig. 8 is a sectional elevation of one of the clamping devices that I preferably employ.

Referring to the drawings, it will be seen that I have shown in diagram enough of the mechanism of a printing-machine to enable my device to be understood.

B designates the usual impression-cylinder of any printing-press, and F the feed-board thereof.

Extending up from the framing of the printing-machine are brackets, as A, and in these brackets is mounted a shaft 10. Rigidly mounted on this shaft 10 are a number of brackets 11, the number of brackets used depending on the number of gripping devices that is desired, two or more being used, depending on the width of the machine to which my invention is applied. Arranged

in each bracket 11 are suitable boxes or bearings, as 12 and 13, in which the journals 14 and 15 of the sliding frame D fit. The frame D has a downward extension 16, the edge of which next the feed-board forms what I hereinafter term the "registering" edge. On the bottom of each extension 16 is secured a projecting lip 17.

18 represents a screw on which is pivoted a suitable gripper or jaw 19, which is arranged to coact with the extending lip 17 to form a gripping device. This gripper 19 is normally kept against the lip 17 by means of a spring 20, as shown. This gripper has an extending arm 21, which carries a roller 22 arranged at an angle to the jaw 19, and an extension 23 carrying a roll 24 arranged substantially in line with the jaw 19.

The sliding frame D has a projecting hub 25, and between this hub 25 and a hub or part 26, mounted on the bracket 11, is arranged a spring 27, which tends to normally pull the sliding frame D to the right to the position shown in the drawings.

A trigger 28 is mounted on a screw 29 secured in each bracket 11, and a spring 30 is arranged, as shown, between the part 26 and the trigger 28 to keep the upper end of the trigger normally pressed against the hub or projection 26.

The sliding frame D is connected to a hub or yoke 31 by a right and left hand screw 32, as shown, so that an adjustment may be made between the hub or yoke 31 and the sliding frame D. The hub or yoke 31 carries a roller 33.

A shaft 34 is journaled in arms extending down from the brackets 11, as shown. Mounted on one end of this shaft is a lever 35, which is connected by a suitable link 36 to any suitable actuating mechanism, as the cam mechanism ordinarily employed for this purpose. Also mounted on this shaft 34 are a number of fingers 37, a finger being provided for each frame D, and these fingers are arranged so as to catch and bear on the rollers 33 of the yokes 31, as shown. A shaft 39 is also journaled in projections extending from the brackets 11, and on the end of this

shaft is mounted a lever 40, which connects by a link 41 to any suitable cam mechanism ordinarily used for this purpose. A number of fingers 42 are mounted on this shaft 39 in position to engage each of the rollers 24 of the gripping-jaws.

Mounted on the rear end of the shaft 10 is an arm or lever 43, which has a bolt 44 connected thereto, and which bolt passes through an extension on the rear frame A, and is held in place therein by means of nuts 45 and 46, by adjusting which nuts the position of the gripping-jaws relatively to the feed-board can be accurately and nicely determined.

A shaft 100 is mounted transversely in the machine over the feed-board, as shown, and the same carries a number of registering-fingers 101, which have the downwardly-extending registering-pins 102 and springs 103.

The operation of this mechanism is as follows: A sheet is placed in approximately the desired position on the feed-board F and so that the edge of the same extends within the gripping-jaws, as shown in Fig. 1. The sliding frames D will then move toward the feed-board and will bring the registering-edges thereof against the edge of the sheet, which will be slightly buckled or crowded upon the feed-board, as indicated at S' in Fig. 7. As the gripping-jaws move past the triggers 28 the jaws will be opened, but when the sliding frames move a sufficient distance to the right the rollers 22 will clear the triggers 28, and then the springs 20 will force the jaws 19 to grasp and seize the edge of the sheet. This will bring the parts to the position shown in Fig. 2. Then the sliding frames will move to the left a distance greater than that which they previously moved to the right. As the rollers 22 in this movement pass by the triggers 28 they will move the upper edge of the triggers away from the hubs or projections 26, and the jaws will not be opened thereby. This movement to the left of the frames D will bring the sheet to the exact position S² which is desired, or to the position shown in Fig. 3. I generally use the registering-pins shown in Fig. 8, and the same are arranged on the shaft 100 so as to intermesh with the gripping devices. These fingers are so arranged that when the sheet is pulled into proper position the front edge of the same will rest against the fingers 102, and so that the springs 103 will hold the sheet in exact position until the same is taken by the grippers of the impression-cylinder, when the fingers will be raised to release the sheet. Of course the springs 103 will be held away from the feed-board while the gripping devices are bringing the sheet into proper register or against the registering-pins 102. I have not shown these registering-fingers in the sectional elevations, Figs. 1 to 5 inclusive, as the same would tend to interfere with the proper showing of the gripping devices. I intend in some cases to omit these fingers and depend merely on the sheet being brought to position by the gripping devices,

but for most cases I use these fingers. After the sheet is brought to the position shown in Fig. 3 the rod 41 is actuated so that the fingers 42, bearing on the rollers 24, will open the jaws, so that the gripping devices will be clear of the sheet. This position of the parts is shown in Fig. 4. After the sheet is brought to the position shown in Fig. 4, the sliding frames D will be moved still farther to the left, so that the gripping devices will clear the sheet, as shown in Fig. 5, so that the sheet can be taken by the grippers of the impression-cylinder. Thus a sheet placed in approximately the desired position on the feed-board will be brought automatically into exact front register or exact position, so that when the same is taken by the grippers of the impression-cylinder it will be in exact position so far as its front edge is concerned.

The details and arrangements herein described may be varied by a skilled mechanic without departing from the scope of my invention as expressed in the claims.

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

1. The combination in a sheet-registering mechanism, of a sliding frame having a gripping device, a registering edge in said gripping device, means for moving said gripping device so that the registering edge will contact with the sheet and slightly buckle the same, means for then moving the gripping device in the opposite direction, and a trigger mechanism arranged so that the movement of the frame toward the sheet will open the gripping device and so that when the sheet has been buckled, the gripping device clears the trigger mechanism releasing the gripping mechanism to seize the sheet, substantially as described.

2. In a sheet-registering mechanism, the combination of an adjustable bracket, a sliding frame mounted in the bracket, said sliding frame carrying a gripping mechanism, and a trigger mechanism mounted on said bracket, and arranged so that the movement of the sliding frame will open the gripping device, substantially as described.

3. The combination of an adjustable bracket, a sliding frame mounted in said bracket, a gripping mechanism carried by said sliding frame, and a spring-actuated, pivoted trigger mounted in said bracket, and arranged to operate the gripping mechanism, substantially as described.

4. The combination of a bracket, a sliding frame mounted in the bracket, a gripping mechanism carried by the sliding frame consisting of a lip and a pivoted jaw having an extension, a pivoted trigger mounted on the frame, a part or projection against which the trigger bears so arranged that as the extension moves past the trigger in one direction, the gripping mechanism is opened, and so that as the extension moves past the trigger in the other direction, the trigger will

turn without affecting the gripping mechanism, a lever as 42, a roll carried by said jaw bearing on said lever, and means for actuating said lever to open the gripping mechanism to leave the sheet in its registered position, substantially as described.

my hand in the presence of two subscribing witnesses.

H. A. WISE WOOD.

Witnesses:

WALTER G. BENNETT,
JAS. H. CRAFT.

In testimony whereof I have hereunto set