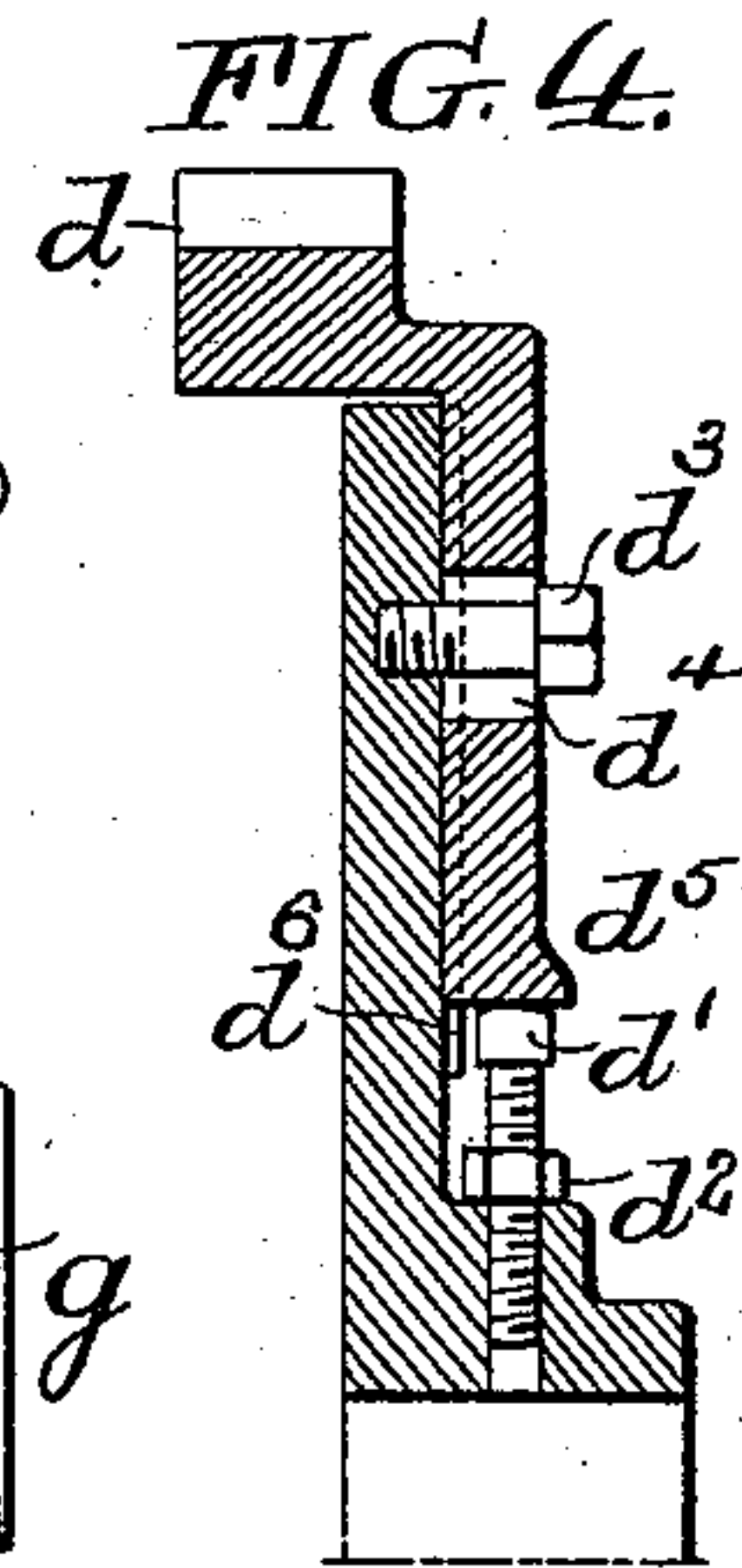
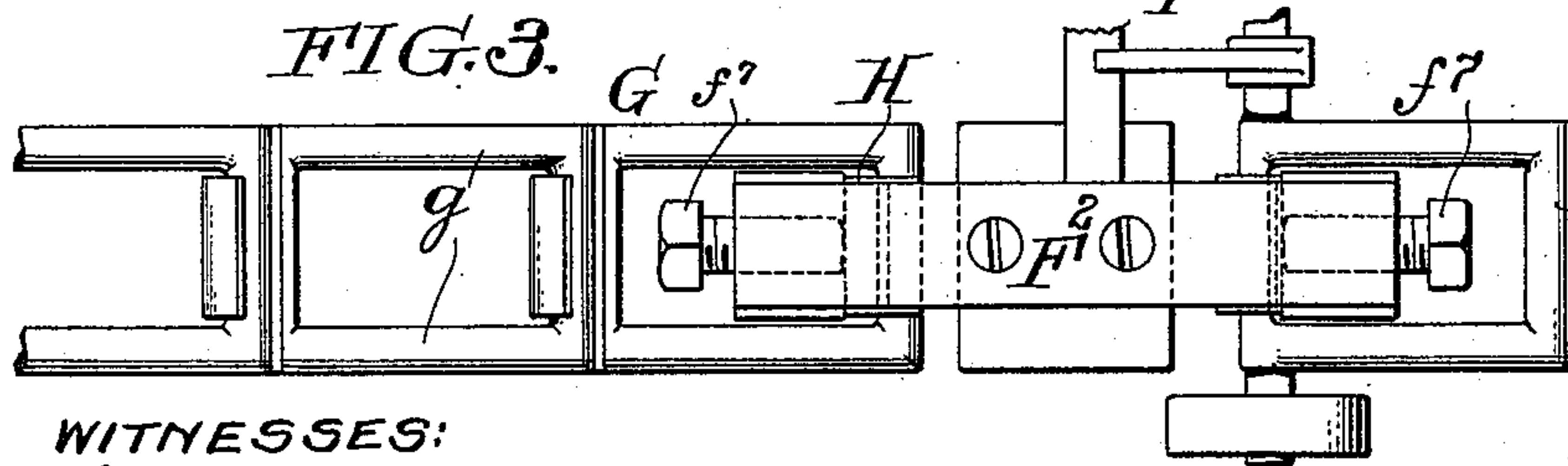
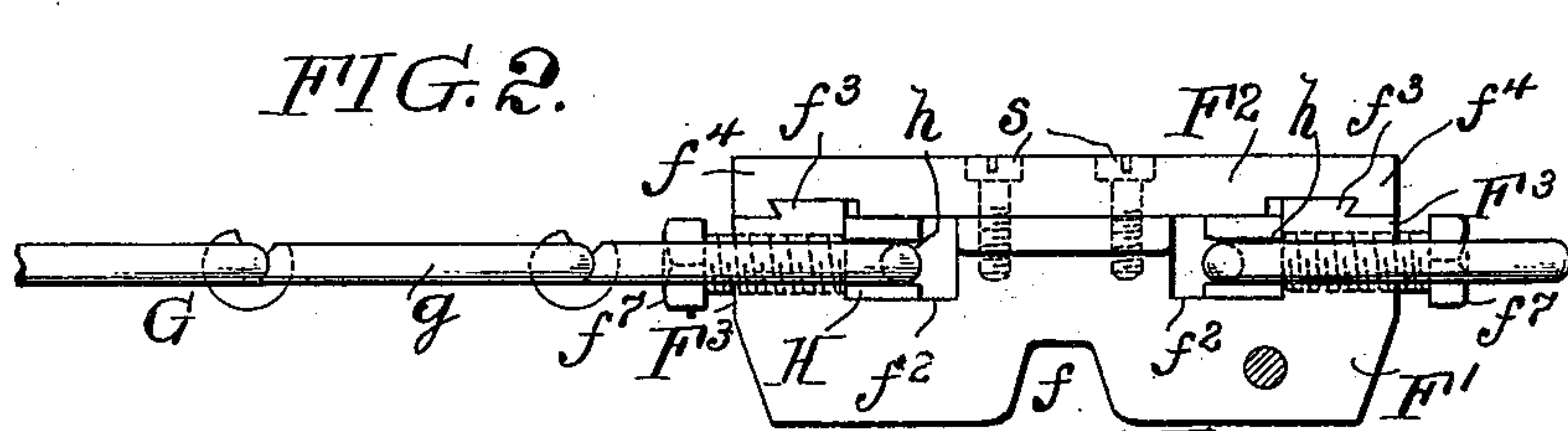
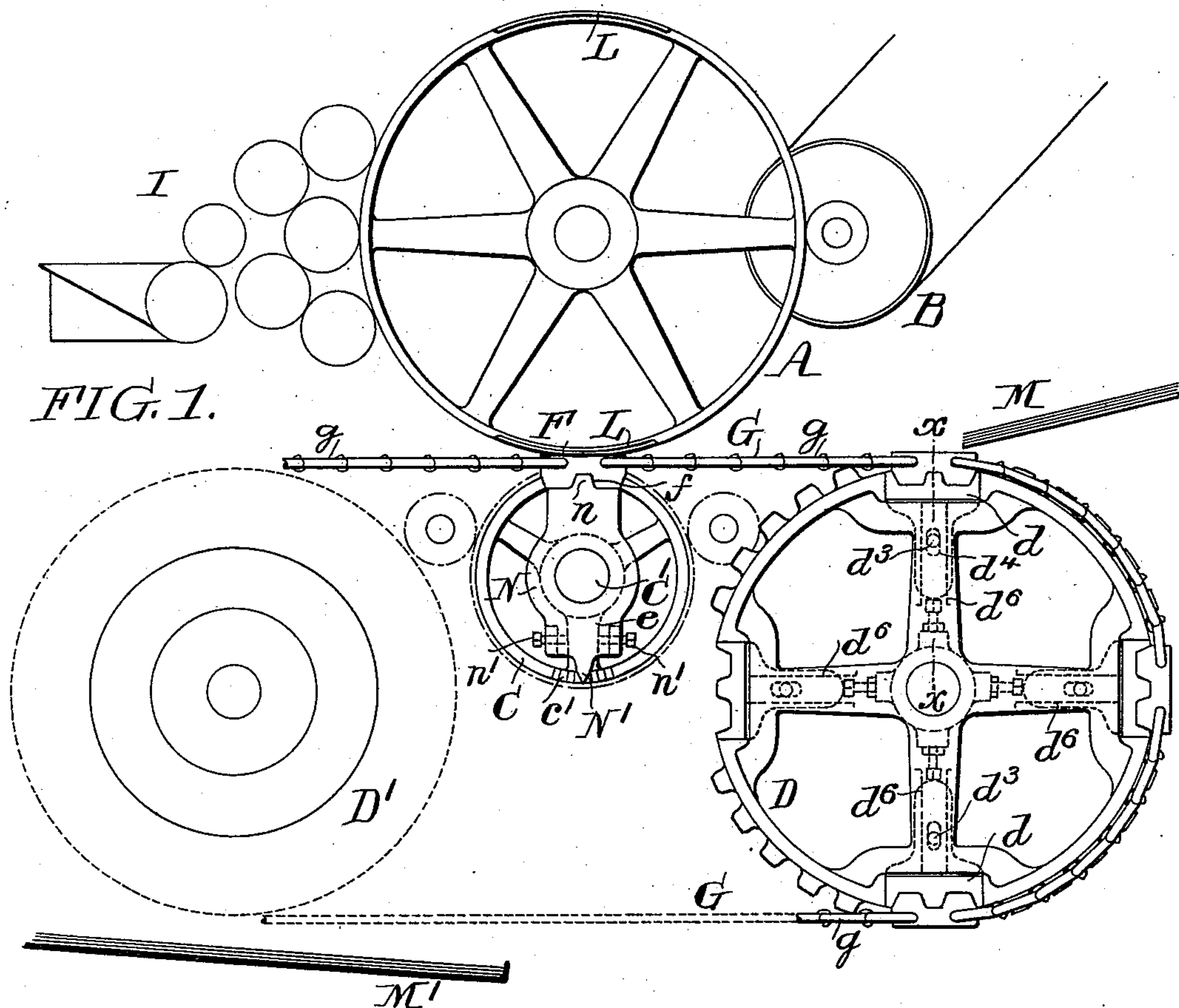


(No Model.)

W. H. R. TOYE.
CARRIER DEVICE FOR PRINTING MACHINES.

No. 534,301.

Patented Feb. 19, 1895.



WITNESSES:
Henry Drury
Edw. F. Ayres

INVENTOR:
William H. R. Toye
by his atty
Francis J. Chambers

UNITED STATES PATENT OFFICE.

WILLIAM H. R. TOYE, OF PHILADELPHIA, PENNSYLVANIA.

CARRIER DEVICE FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 534,301, dated February 19, 1895.

Application filed March 16, 1894. Serial No. 503,830. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. R. TOYE, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Carrier Devices for Printing-Machines, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to printing machines and more particularly to carrier devices therefor, and it has for its main object to provide means whereby the most accurate adjustment can be obtained, and also to improve the construction of this class of devices.

My invention will be best understood as explained in connection with the accompanying drawings, in which—
Figure 1 is a side view of a press provided with my improvements. Fig. 2 is an enlarged detail view of one of the carrying blocks; Fig. 3, a plan view of the carrier block shown in Fig. 2, and Fig. 4 an enlarged detail view of one of the supporting pulleys on the section line $x-x$ of Fig. 1.

I have shown my carrier applied to a conventional press, wherein the printing couple consists of a type cylinder A and an impression cylinder C.

B is a driving wheel; I, a suitable inking mechanism for the type cylinder and M, M' feed and receiving boards respectively.

The carrier G is composed of a number of links g , those I have shown being chain links which can be readily replaced when broken. Any suitable links however can be used, and a block F which carries the gripper mechanism, and to which the chain links are secured.

In order to take up for wear I prefer to provide one or both of the supports D D' for the carrier with radially adjustable sockets d . As shown in Figs. 1 and 4, the sockets d are provided with slots d^4 through which projects a screw d^3 . The end d^5 of the socket bears against a screw d' ; and preferably a feather d^6 is provided on the pulley and engages with a groove on the socket piece to guide the socket as it is moved in and out. After the socket is set by means of the screw d' this

screw is locked by the nut d^2 and the socket firmly held by the screw d^3 .

In order to adjust the length of the carrier I provide means on the block for adjustably securing the chain links to it; and the construction of this block forms an important part of my invention.

The block is formed preferably in two parts F' and F². In the part F' is formed a socket f^2 or preferably two sockets f^2 one at each end of the block. These are formed, as shown, by means of the upwardly projecting ends F³. In the socket f^2 is arranged a bearing block H preferably having a groove h to engage with one of the chain links, when these are used, and I provide means to adjust this bearing block to and from the center of the block so as to take up the length of carrier between one block and the next. As shown, a set screw f^7 extends through the end F³ of the block and bears against the bearing block H.

In order to prevent the strain, when the carrier is taut, from bending the block I provide a plate F² which is adapted to connect the ends F³ of the block. This is conveniently done by forming flanges f^3 , shown beveled, on the ends F³, and corresponding flanges f^4 on the plate F² which engage with the end flanges. After the links g are in position in their sockets f^2 the plate F² is put in place, covering these sockets, and prevents the bending of the block F' under strains. It may be secured to the lower part of the block by screws as s . It is not always possible however, to make exactly the desired adjustment by lengthening or shortening the carrier and I provide means at the printing point for retarding or advancing the carrier.

The block F carries the grippers, and therefore, if this block is in the correct position the sheet of course will start in register. To adjust the position of the block at this printing point I provide a guide for engaging with the block and adjust this guide so as to carry the block, and consequently, the sheet slightly forward or back. This guide is indicated at N and preferably moves with one of the cylinders of the printing couple, here shown as moving with the impression cylinder. The guide is preferably pivoted on the shaft C' of

said cylinder and is provided with a tooth n which engages with a socket f in the block, though, obviously the socket can be in the guide and the tooth on the block, if desired.

5 The guide and block will therefore be engaged during a part of their travel. If now it is found that the sheet does not exactly register the guide is slightly turned on the shaft C' , as a pivot, by suitable means as the
10 screws n' , the slight slack of the carrier permitting this movement. To insure that the block and guide will be positively engaged and to prevent the block from jumping off the guide I provide a lip or flange, preferably
15 on the coacting cylinder of the printing couple, as shown at L , which bears on the block and retains it in position. After the sheet is once pinched between the printing rolls there is no further need or use of attempting to guide it and therefore the guide
20 and block can safely then be disengaged.

I preferably provide the guide with a pointer N' and place an index c' on the cylinder, so that the amount of movement can
25 be noted.

As there is a similar guide on the other end of the cylinder to regulate the companion carrier, the guides may be set differently and the sheet presented slightly diagonally
30 to the printing rolls as is sometimes necessary to make exact register.

It will, of course, be understood that I do not limit the application of my device to a press provided with a single pair of cylinders, having simply shown it applied to such
35 a press for the sake of convenience, since it is especially adapted to be applied to presses where a number of printing couples are employed, each printing in a different color.

40 Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a printing couple one of the members of which is a cylinder, of
45 a sheet carrier, a block forming part of said carrier and having gripper mechanisms, a guide moving with the cylinder and adapted to engage positively with the block during a portion of its travel and means for adjusting this registering guide whereby the carrier may be slightly advanced or retarded
50 relatively to said cylinder.

2. The combination with a printing couple consisting of two cylinders, of a carrier for
55 conveying sheets between the cylinders, a block having gripper mechanism secured thereto and forming part of said carrier, a guide moving with one of the cylinders for engaging positively with the block during a portion of its travel and means for adjusting the guide whereby the carrier may be slightly
60 advanced or retarded relatively to the cylinder.

3. The combination with two cylinders forming a printing couple, of a carrier for conveying
65 sheets between said cylinders, a block hav-

ing gripper mechanisms and forming part of the carrier, a guide C moving with one of the cylinders and adapted to engage with the block during a portion of its travel by means
70 of a mutually registering tooth and socket and means for adjusting said guide to advance or retard the carrier.

4. The combination with two cylinders forming a printing couple, of a carrier for conveying
75 sheets between said cylinders, a block having gripper mechanisms forming part of said carrier, a guide C moving with one of the cylinders and adapted to engage with the block during a portion of its travel by means of a
80 mutually registering tooth and socket, set screws for adjusting the guide so as to advance or retard the carrier and an index to indicate the amount of adjustment.

5. The combination with one of the cylinders
85 of a printing couple, of a carrier for conveying sheets to be printed, a guide C pivoted on the shaft of the cylinder and having means for engaging with a portion of the sheet carrier and means for adjusting said guide
90 around said shaft as a pivot.

6. The combination with one of the cylinders of a printing couple, of a carrier for conveying sheets to be printed, a guide C pivoted
95 on the shaft of the cylinder and having means for engaging with a portion of a sheet carrier, means for adjusting said guide around said shaft as a pivot and an index to indicate the amount of adjustment.

7. The combination with two cylinders constituting a printing couple, of a carrier for
100 conveying sheets between the cylinders of said printing couple provided with blocks at suitable intervals, supports for said carrier, radially adjustable sockets on said supports
105 adapted to engage with the blocks, a guide on one of the cylinders adapted to engage with the carrier and means for adjusting the guide so as to advance or retard the carrier.

8. The combination in a printing press of
110 a printing couple, a carrier for conveying blanks between the printing couple and provided with blocks, gripper mechanisms carried by said blocks, and a support for said carrier consisting of a pulley D having sockets
115 d adapted to engage with the blocks and screws d' adapted to bear against the sockets and adjust them radially.

9. In a carrier for conveying sheets to be printed, a block adapted to carry the gripper
120 mechanisms having a socket f^2 , a bearing H adapted to fit in the socket f^2 of the block and means for adjusting the bearing toward and from the center of the block in combination with a band or bands which engage with
125 the bearing H and serve to connect one block with the next.

10. In a carrier for conveying sheets to be printed, a block adapted to carry the gripper
130 mechanisms having a socket f^2 a bearing H having a groove h adapted to fit in the socket f^2 of the block and a set screw f^7

adapted to bear against the bearing and adjust its position relatively to the block in combination with a band or bands which fit in the groove h of the bearing H and serve to connect one block with the next.

11. In a carrier for conveying sheets to be printed, a block F adapted to carry the gripper mechanisms having ends F^3 forming sockets f^2 and a plate F^2 adapted to engage with the ends F^3 and cover the sockets f^2 in combination with a band or bands one end of which is seated in said socket and which serves to connect one block with the next.

12. In a carrier for conveying sheets to be

printed, a block F adapted to carry the gripper mechanisms having ends F^3 forming sockets f^2 , bevel flanges f^3 on said ends, a plate F adapted to engage with the flanges on the ends F^3 and cover the sockets, bearings H in the sockets F^2 and screws to adjust the position of said bearings in combination with a band or bands, one end of which engages with the bearings and which serve to connect one block with the next.

WILLIAM H. R. TOYE.

Witnesses:

CHARLES F. ZIEGLER,
EDWARD F. AYRES.