

No. 698,914.

Patented Apr. 29, 1902.

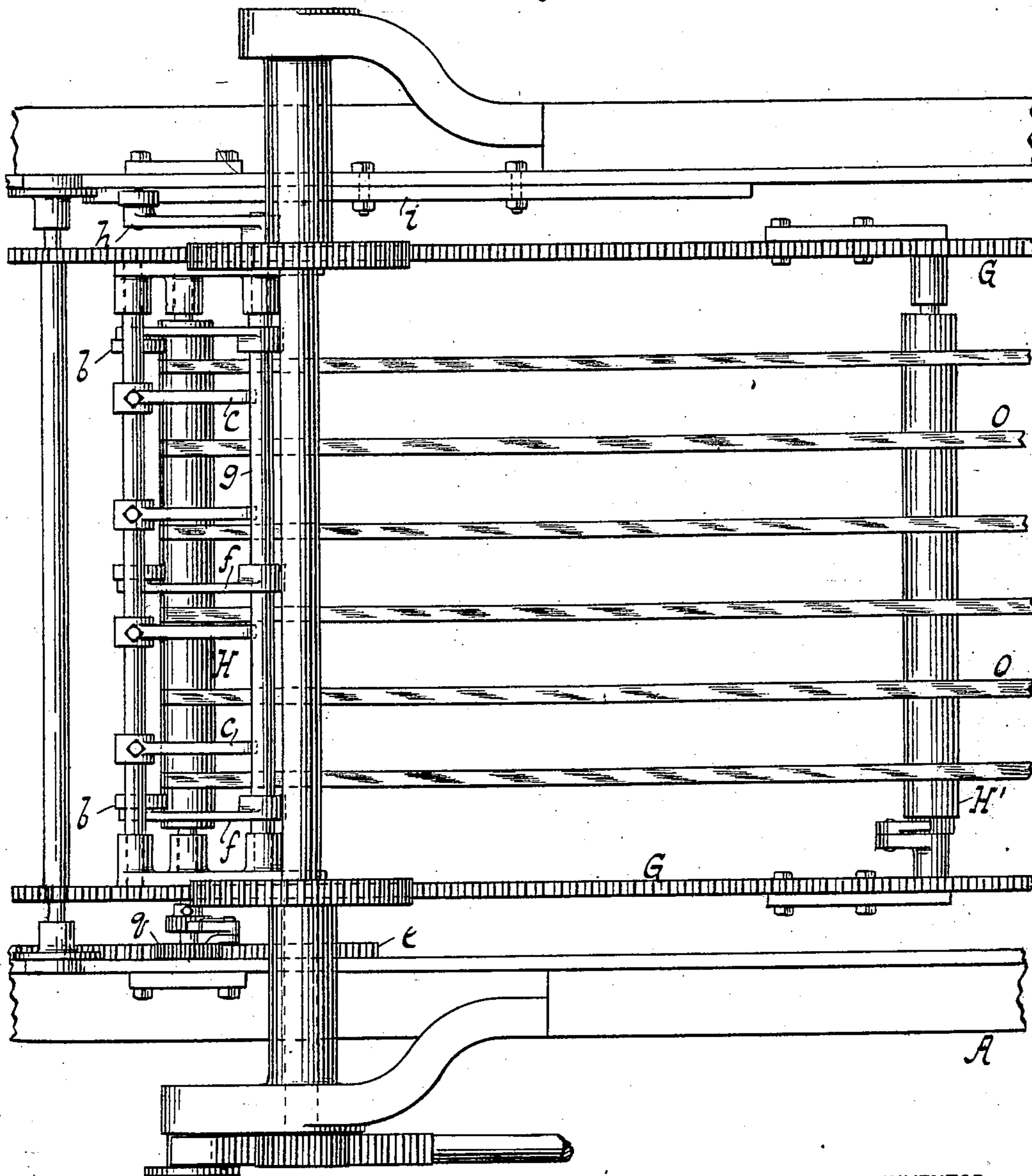
G. P. FENNER.
SHEET DELIVERY APPARATUS.

(Application filed Apr. 19, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

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INVENTOR

George P. Fenner

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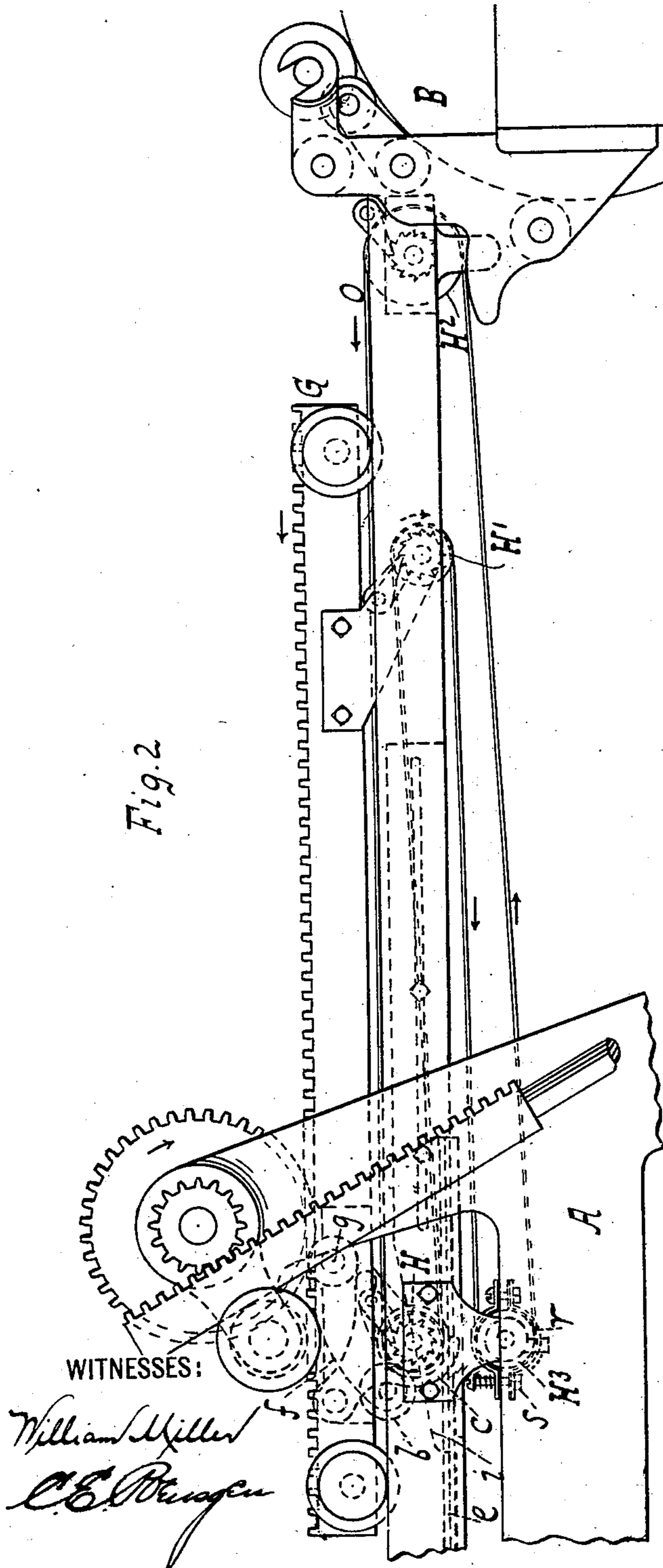
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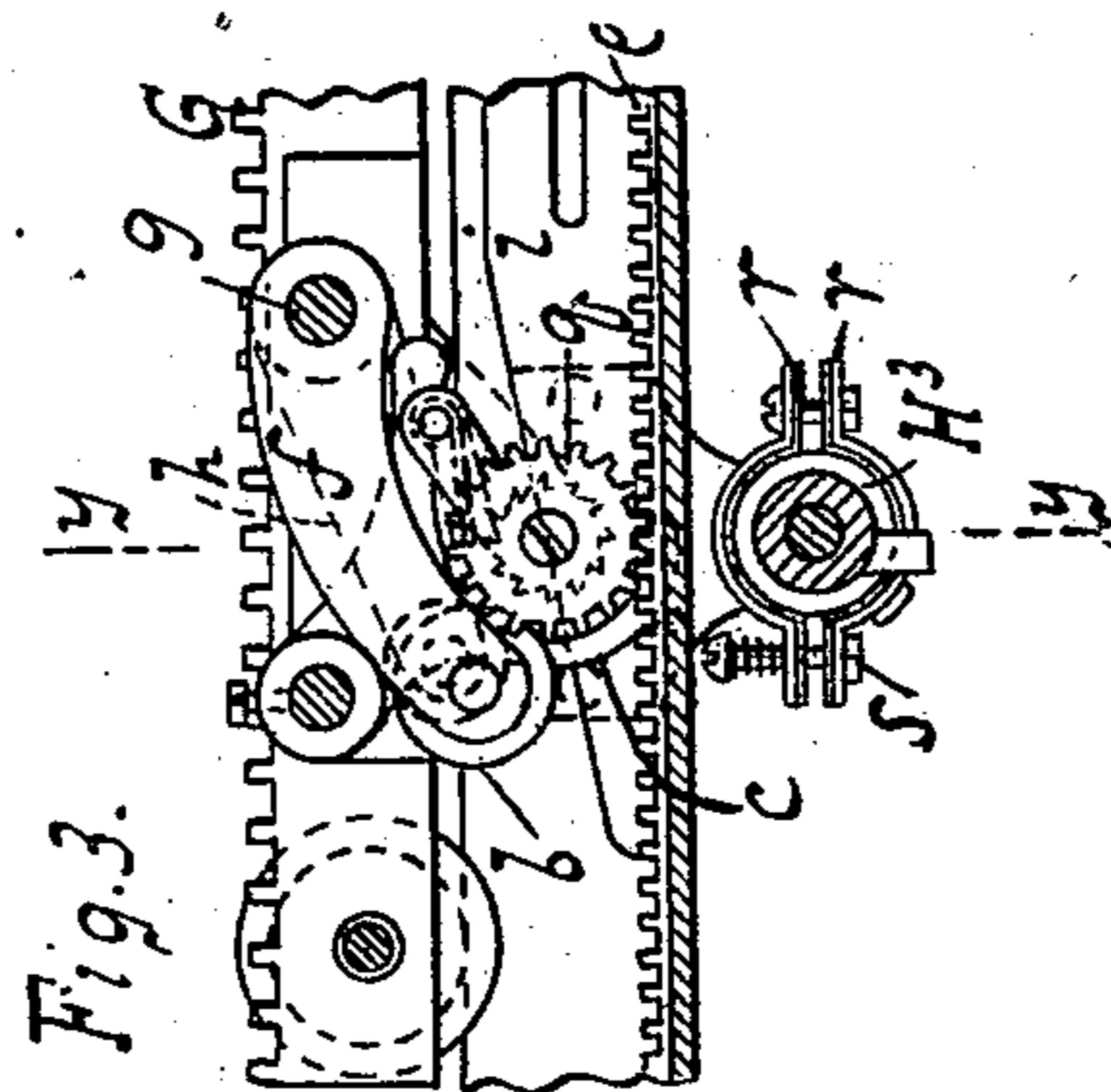
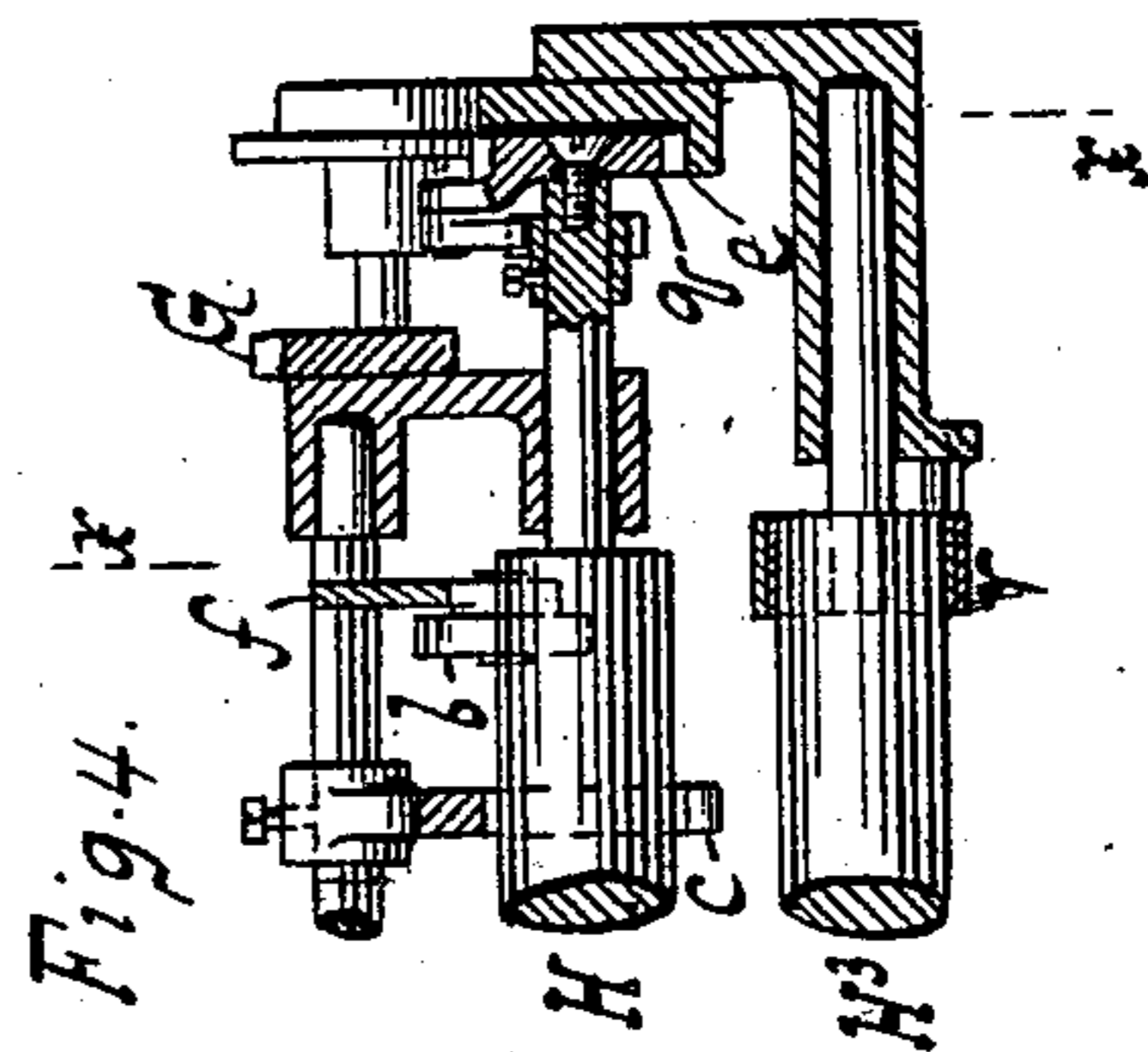
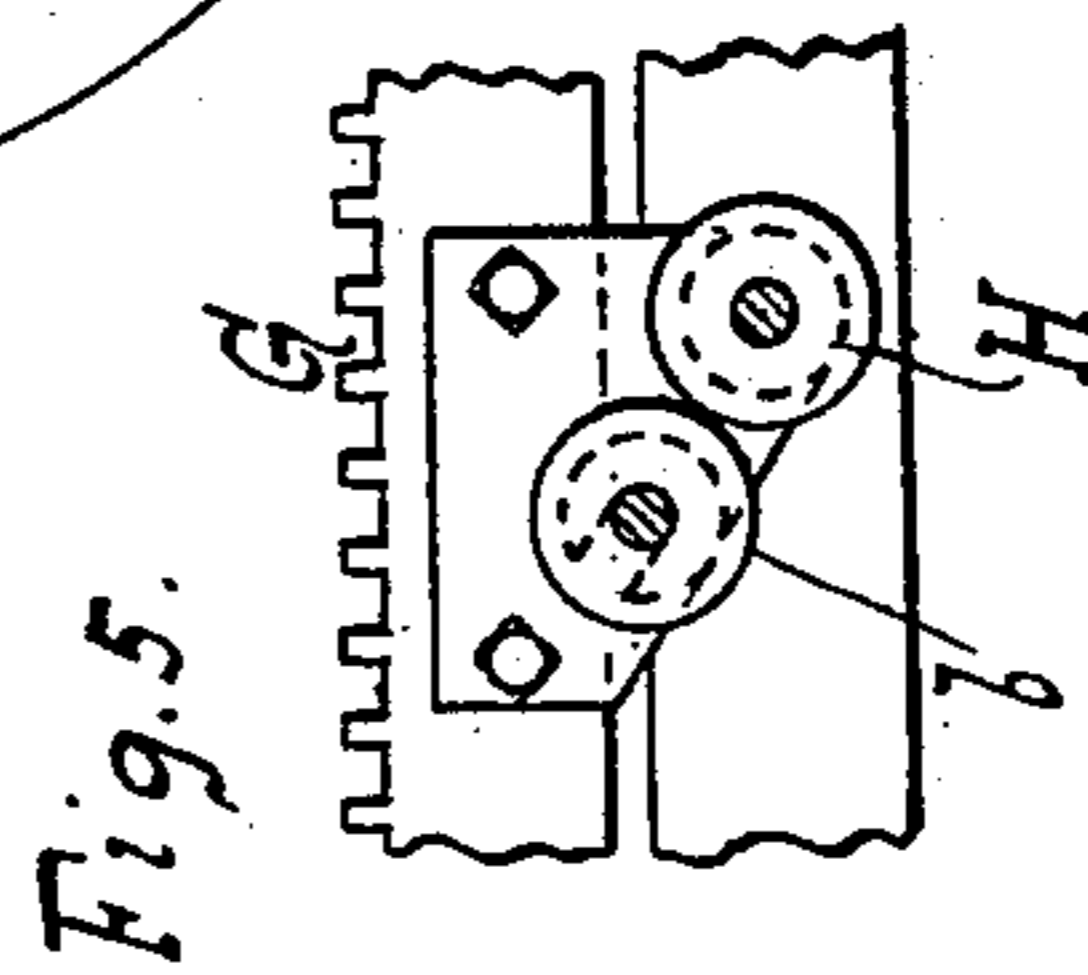
2 Sheets—Sheet 2.

(No Model.)



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UNITED-STATES-PATENT-OFFICE.

GEORGE P. FENNER, OF NEW LONDON, CONNECTICUT.

SHEET-DELIVERY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 698,914, dated April 29, 1902.

Application filed April 19, 1901. Serial No. 56,630. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. FENNER, a citizen of the United States, residing at New London, in the county of New London and State of Connecticut, have invented new and useful Improvements in Sheet-Delivery Apparatus, of which the following is a specification.

By means of this invention a sheet coming from a printing-press can be reversed or delivered on the receiving-board with the face or printed side down, if desired.

The invention resides in certain novel details of construction set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a plan view of a delivery apparatus. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a section along $x x$, Fig. 4, showing a side elevation of tape and pressure rollers. Fig. 4 is a section along $y y$, Fig. 3. Fig. 5 shows a modification.

A printing-press frame is indicated at A and impression-cylinder at B. The carriage G has tapes O running about rollers H¹ H² H³. The manner of operation of the tapes and reciprocation of the carriage are set forth in United States Patent No. 335,066, of January 26, 1888, and No. 506,990, of October 17, 1893, and need not be detailed here. Pressure-rollers are shown at b acting on the tape or onto the tape-roller H₁ and a reverser or curler is shown at c . A sheet fed off the tapes and passing between rollers H and b will be reversed by the fingers or curler c —that is, bent so as to fall on the receiving-board printed face down. The roller H has a ratchet-and-pawl connection with gear q , running on rack e , so that as the carriage moves forward the gear rotating or running along the rack will rotate the roller H to move the stretch of tape between roller H to H², while on the return of the carriage the ratchet-and-pawl connection remains idle or slips, so as to leave roller H stationary or unaffected by the rotation of gear q . In the forward travel of the carriage the top stretch of tape not only moves with the carriage, but has further motion by reason of the roller H being rotated by the ratchet-and-pawl connection with gear q and rack e . The sheet is thus

fed from the tape under the presser-roller b and curler c with increased speed.

The presser roller or disks b can be mounted in a movable support or lever-frame, such as arms f and rock-shaft g , and a cam or wedge i can be arranged or fixed to lift the arm h , Fig. 1—that is, the presser-roller b —off the tape or out of action to run onto a sheet or so that the leading edge of a sheet coming from a printing-press can come under the presser-roller and be grasped between the latter and the tape when on the forward stroke of the carriage the presser-roller contacts with or drops onto the tape.

The lifting arrangement or wedge i has been found practical; but it has been found that the device will also work when the presser-roller b is loosely mounted—say in a slot-bearing, as shown in Fig. 5. It has also been found practical to make the face of the presser-roller elastic or yielding—say of rubber.

The curlers c can be secured to or form part of a bracket carried by or connected to the tape-carriage, and this bracket can also support the bearing of the presser-rollers. By removing this bracket or the reverser c the sheets will be left free to deliver printed face up. Sheets can thus be reversed or not, as called for.

In place of curlers c the roller b could be made to act on tape-roller H forward or so far to one side of the top line or uppermost point of such tape-roller whereby the leading edge of the sheet is bent down as it is leaving the tape-roller to reverse or curve about said roller and to cause the sheet leaving the carriage in its forward travel to fall on its face or printed side.

A brake or friction has been found serviceable when running at high speed and there is nothing to check the delivery-rollers or the momentum of the tape-rollers is retarded by nothing but the friction of the rollers turning on their journals and the running of the tape over their surfaces. To keep these rollers always at proper speed, so that they will not go faster than driven, a clutch or friction, as shown in Fig. 3, can be applied. The friction-brake is shown composed of cheeks r , suitably connected by fastenings or bolts s , at one or more of which a spring or yielding

resistance can be applied. The brake clasp-
ing a roller—say, for example, the shaft of
tape-roller H³—can be made to check excess-
ive speed.

5 What I claim as new, and desire to secure
by Letters Patent, is—

1. A delivery apparatus for printing-ma-
chines comprising a reciprocating tape-car-
riage and tape-rollers, and a presser-roller
10 made to act on a tape-roller to one side of
the top line so as to cause a sheet leaving the
tape-rollers to reverse or curve about said
roller substantially as described.

2. A delivery apparatus for printing-ma-
15 chines comprising a reciprocating tape-car-
riage and tape-rollers, a presser-roller made
to act on the tape, a reverser, and a brake or
friction appliance made to engage one of the
rollers for checking the movement of the tape
20 substantially as described.

3. A delivery apparatus comprising a re-

ciprocating tape-carriage and tape-rollers, a
pressure-roller made movable toward and
from the tape, a reverser or curler, and a sup-
port or bracket for the pressure-roller and 25
reverser carried by said carriage substan-
tially as described.

4. A delivery apparatus comprising a re-
ciprocating tape-carriage provided with tape-
rollers and tape, a ratchet-and-gear connec- 30
tion for one of the rollers to give increased
speed to the tape during the forward travel
of the carriage, and a sheet-reverser substan-
tially as described.

In testimony whereof I have hereunto set 35
my hand in the presence of two subscribing
witnesses.

GEORGE P. FENNER.

Witnesses:

CHARLES A. FAIRBANKS,
FRED S. ENGLISH.