

(No Model.)

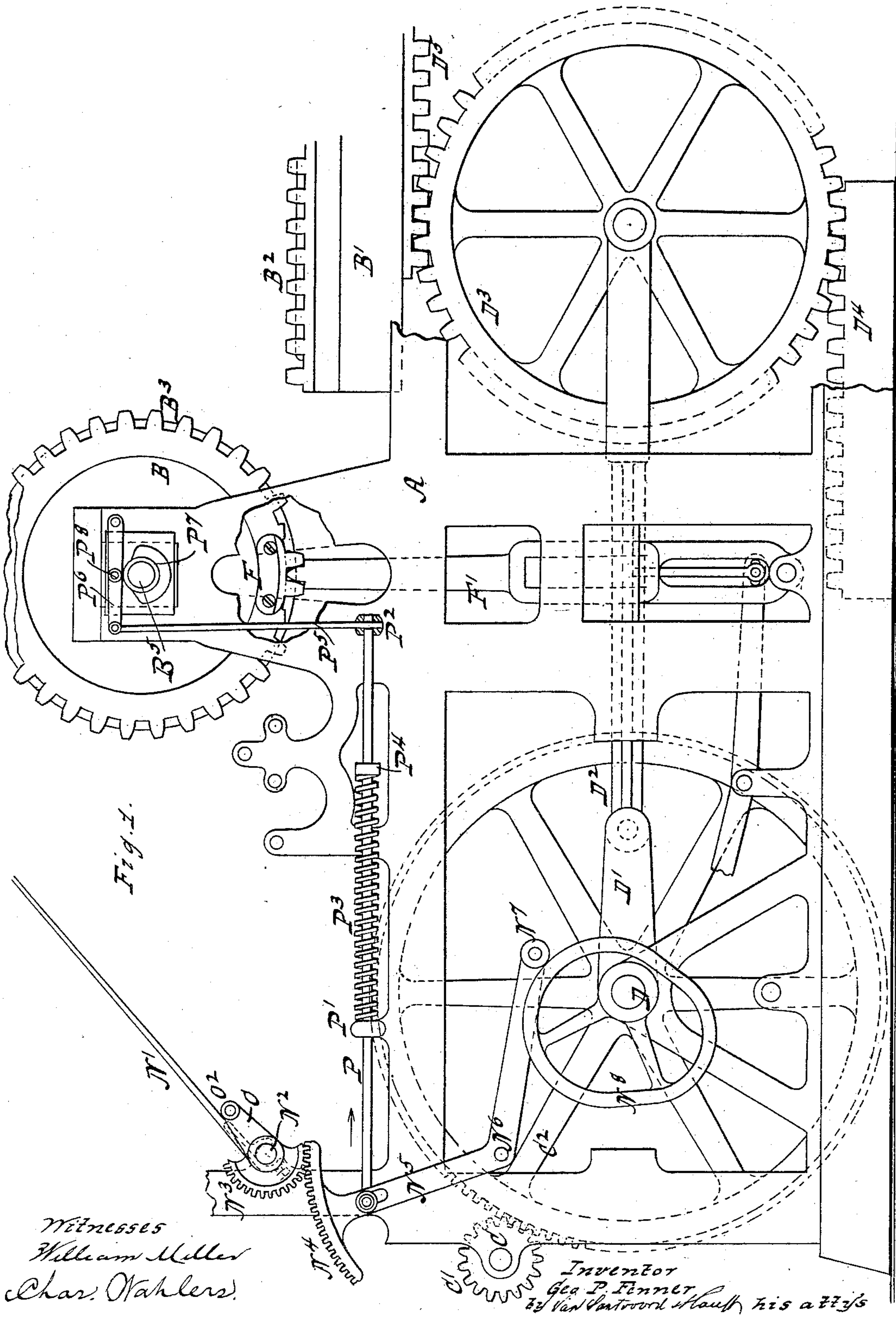
3 Sheets—Sheet 1.

G. P. FENNER.

SHEET FLIER FOR PRINTING PRESSES.

No. 317,329.

Patented May 5, 1885.



(No Model.)

3 Sheets—Sheet 2.

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SHEET FLIER FOR PRINTING PRESSES.

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Fig. 2.

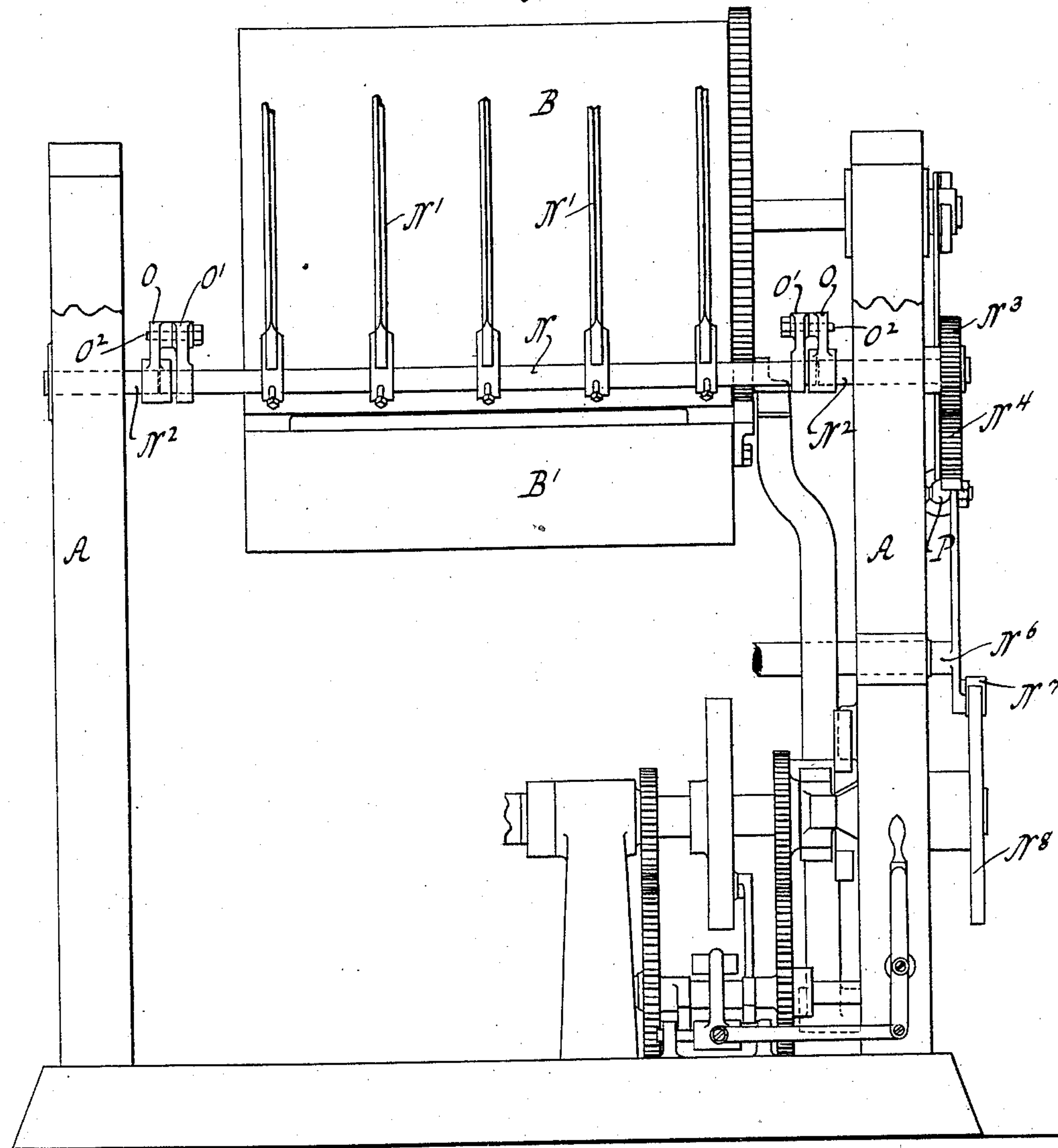
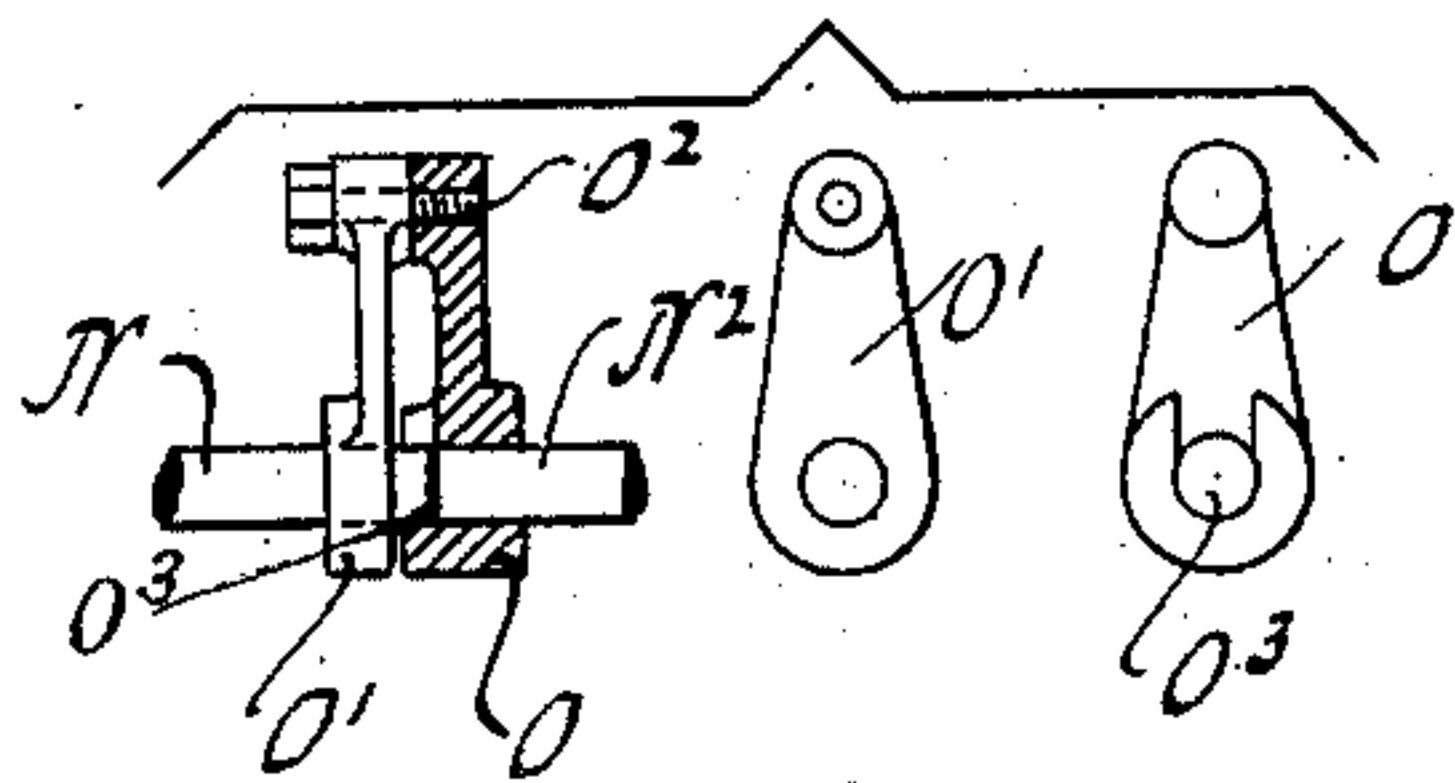


Fig. 3.

WITNESSES:

William Miller
Attest du Fournier



INVENTOR

George P. Fenner

BY

Van Santvoord & Hauff

ATTORNEYS

(No Model.)

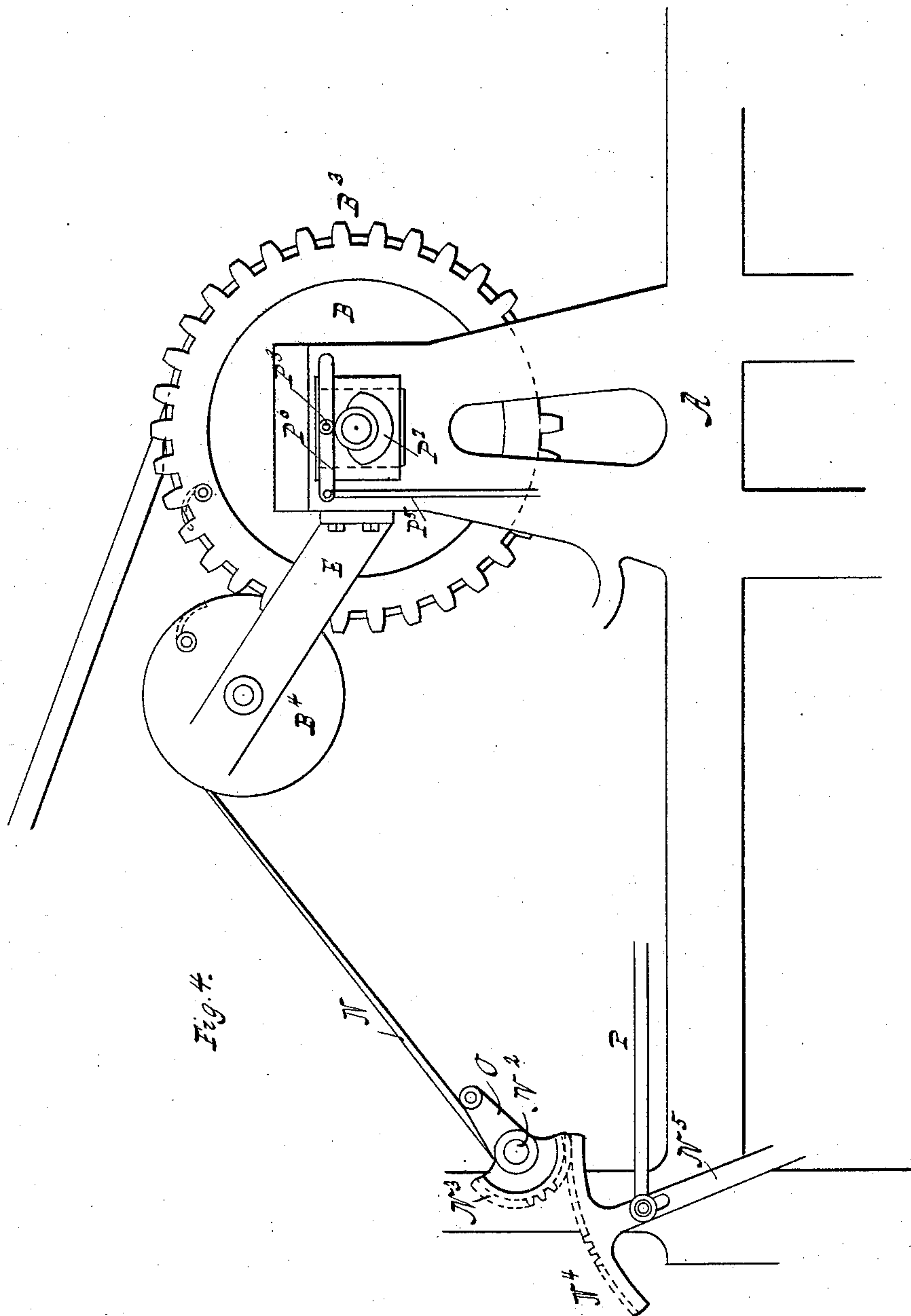
3 Sheets—Sheet 3.

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WITNESSES:

Alfred du Fair Jr.
William Miller

INVENTOR

George P. Fenner
BY
Van Santvoord & Hauff
his ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE P. FENNER, OF NEW LONDON, CONNECTICUT.

SHEET-FLIER FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 317,329, dated May 5, 1885.

Application filed May 8, 1884. (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-Fliers for Printing-Presses, of which the following is a specification.

My invention is especially adapted to stop-cylinder printing-presses for lithographic and other purposes; and it consists in certain novel means for rendering the sheet-flier removable to facilitate the act of "making ready," also in certain novel means for arresting the flier in the intervals during which the impression-cylinder remains stationary, whereby this purpose may be performed in a superior manner.

In the accompanying drawings, Figure 1 is a side elevation of a press embodying my invention. Fig. 2 is an end view looking from the left-hand side of Fig. 1. Fig. 3 is a detail view of parts used for securing the flier. Fig. 4 is a side view showing means for delivering the sheet to the flier.

Similar letters indicate corresponding parts.

The letter A designates the press-frame, having suitable bearings for the impression-cylinder B, and suitable guideways for the traveling bed B'. At one end of this frame is arranged the driving-shaft C, from which motion is transmitted by gear-wheels C' C'' to the main shaft D, and from this shaft motion is in turn transmitted by the usual crank, D', and connecting-rod D'' to the rack-wheel D''', which gears into two racks, D'' D''', one fixed to the base of the machine and the other to the traveling bed, for imparting a reciprocating motion to the latter in the usual manner. The impression-cylinder receives its motion from the traveling bed B' through a second rack, B'', which is fixed to the bed to gear into a cog-wheel, B''', of the cylinder, also in the usual manner, a portion of the cogs of this wheel being cut away, as shown in Fig. 1, leaving a space through which the bed may travel under the wheel without turning it when the cylinder is at rest.

At a point opposite to the space left in the wheel B''', as last stated, the impression-cylinder B carries a catch, F, which is adapted to engage with a catch-lever, F', which oper-

ates to check, hold, and start the impression-cylinder under the impulse of adjusting mechanism the construction of which is fully set forth in Letters Patent No. 301,703, granted to me by the United States Patent Office, July 8, 1884.

In proper relation to the impression-cylinder B is arranged the sheet-flier, consisting of the usual shaft, N, and arms N'. The flier-shaft N is connected to rock-shafts N'', Figs. 2 and 3, which are mounted in the sides of the press-frame to coincide with each other, and to one of which is fixed a toothed segment, N''', gearing into a similar segment, N''', on one end of a lever, N'', which is fulcrumed on the press-frame at N'', and the other end of which carries a roller-stud, N'', whereby it engages a cam, N'', on the main shaft D, so that the motion of the flier in a forward direction toward the cylinder is produced from this shaft.

The means for uniting the flier-shaft N to the rock-shafts N'' consists of cranks O O', which are fixed to the shafts respectively, and are connected together at the ends by screw-bolts O'' or other suitable means, so that by simply withdrawing these bolts the flier-shaft is set free, and the flier may be entirely removed from the press. The crank O of each rock-shaft is constructed with a radial notch, O'', in the hub, opening toward the end of the crank, to receive the proper end of the flier-shaft, as shown in Fig. 3, whereby an axial connection of the shafts is produced.

To the flier-lever N'' is connected one end of a slide-rod, P, which rests in guides P' P'' of the machine-frame, and is exposed to the action of a spring, P'', having a tendency to force it in the direction of the arrow shown in Fig. 1, so that the flier is moved to a rear position under the impulse of this spring. The flier-spring P'' is coiled on the slide-rod P to impinge against the rod-guide P' at one end and a collar, P'', of the rod at the opposite end. Into the rod-guide P'' extends a check-pin, P'', connecting with one end of an operating-lever, P'', which is fulcrumed at the opposite end on the machine-frame, and engages with a cam, P'', on the shaft B'' of the impression-cylinder in such a manner that when the cylinder reaches its stopping-point the check-pin is thrown into the path of the slide-rod P,

as shown in Fig. 1, and it retaining that position until the cylinder passes the point named, the slide-rod is thereby held against the action of the flier-spring in the intervals during which the impression-cylinder remains stationary, so that the flier is arrested during those intervals.

To engage the cam P^7 , the check-pin-operating lever P^6 is provided with a roller-stud, P^8 , and since the position of the check-pin is directly dependent on the impression-cylinder a positive action thereof is insured.

The printed sheet may be delivered from the impression-cylinder to the flier by any of the well-known means used in the art. In the example shown in the drawings, Fig. 4, a delivery-cylinder, B^4 , of ordinary construction is used, which has bearings in arms E , extending from the press-frame, and is geared to the impression-cylinder in the usual manner.

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

1. The combination of the sheet-flier shaft having a crank at each end, the two coincident rock-shafts arranged respectively at opposite sides of the machine, and each having

a crank at its inner end, and means, such substantially as described, for removably connecting the cranks of the flier-shaft to the cranks of the rock-shafts.

2. The combination of the flier having its shaft provided with cranks, and the coincident rock-shafts having cranks which are united to the cranks of the flier-shaft, and constructed with radial hub-notches to receive the ends of the flier-shaft.

3. The combination, with the impression-cylinder, the delivery-cylinder, and the sheet-flier, of the flier-lever, the slide-rod connected to the flier-lever, the flier-spring acting on the slide-rod, the check-pin entering one of the guides of the slide-rod, the check-pin-operating lever, and the cam on the impression-cylinder shaft engaging the operating-lever, substantially as described.

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

GEORGE P. FENNER. [L. S.]

Witnesses:

EDWD. T. BROWN,
GEORGE COLFAX.