

(No Model.)

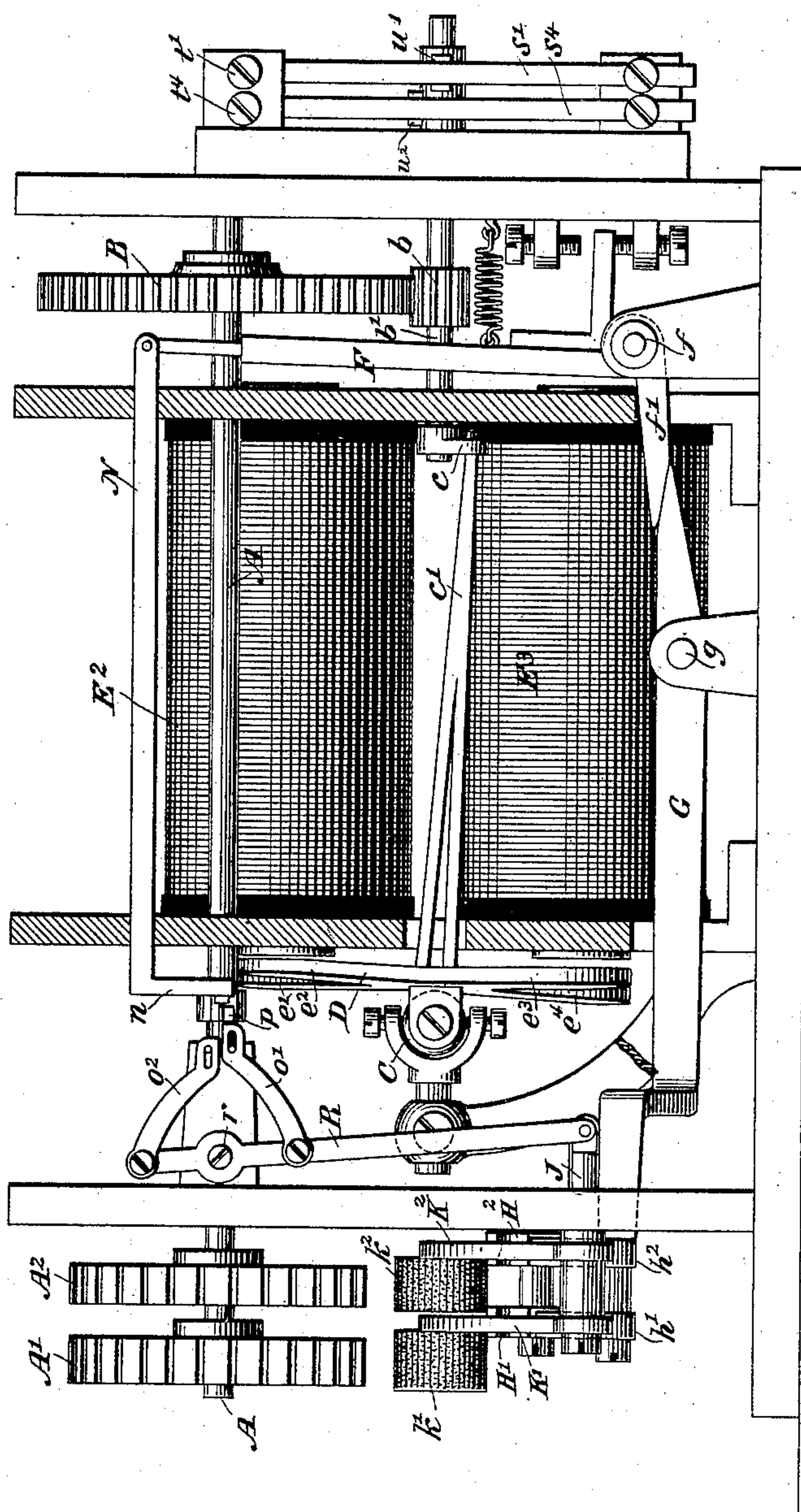
3 Sheets—Sheet 1.

R. J. SHEEHY.
PRINTING TELEGRAPH.

No. 368,692.

Patented Aug. 23, 1887.

Fig. 1.



Witnesses

Geo. W. Breck
Carrie C. Ashley

Inventor

Robert J. Sheehy.

By his Attorneys

Popet & Edgcomb

(No Model.)

3 Sheets—Sheet 2.

R. J. SHEEHY.
PRINTING TELEGRAPH.

No. 368,692.

Patented Aug. 23, 1887.

Fig. 3,

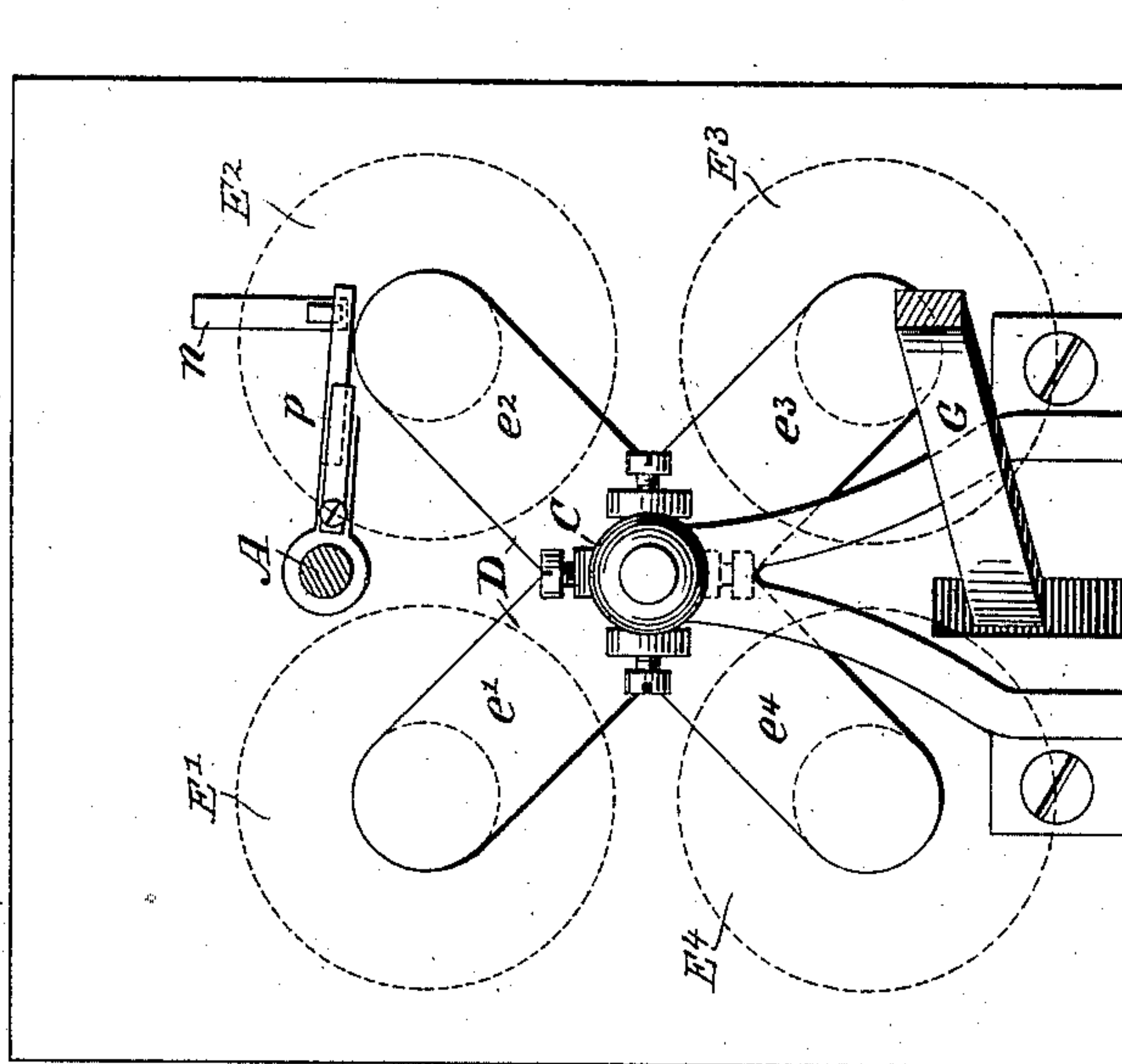
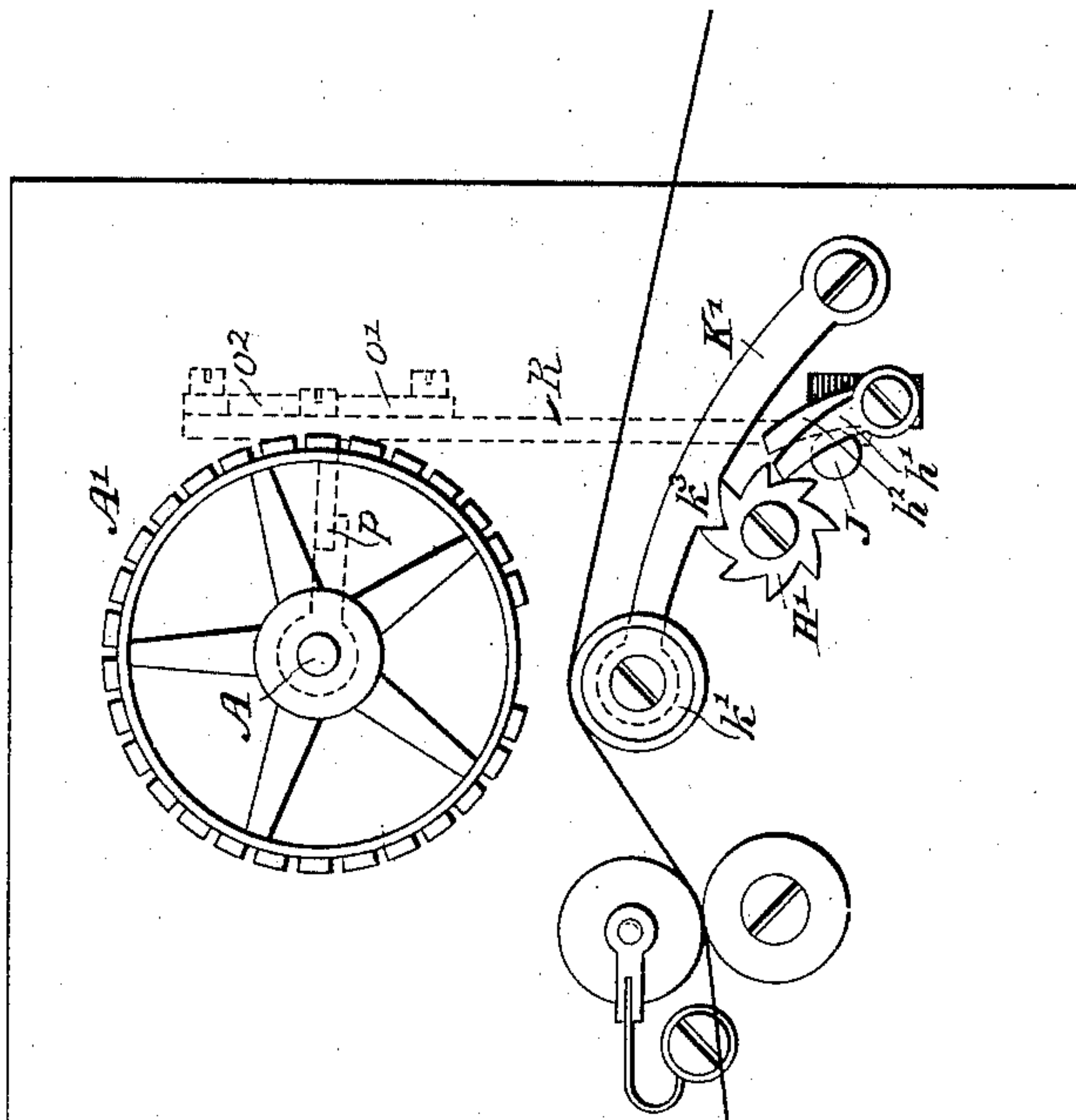


Fig. 2,



Witnesses

Geo. W. Bruck.
Carrie C. Ashley

Inventor

Robert J. Sheehy,

By his Attorneys

Pope & Edgescomb

(No Model.)

3 Sheets—Sheet 3.

R. J. SHEEHY.
PRINTING TELEGRAPH.

No. 368,692.

Patented Aug. 23, 1887.

Fig. 5.

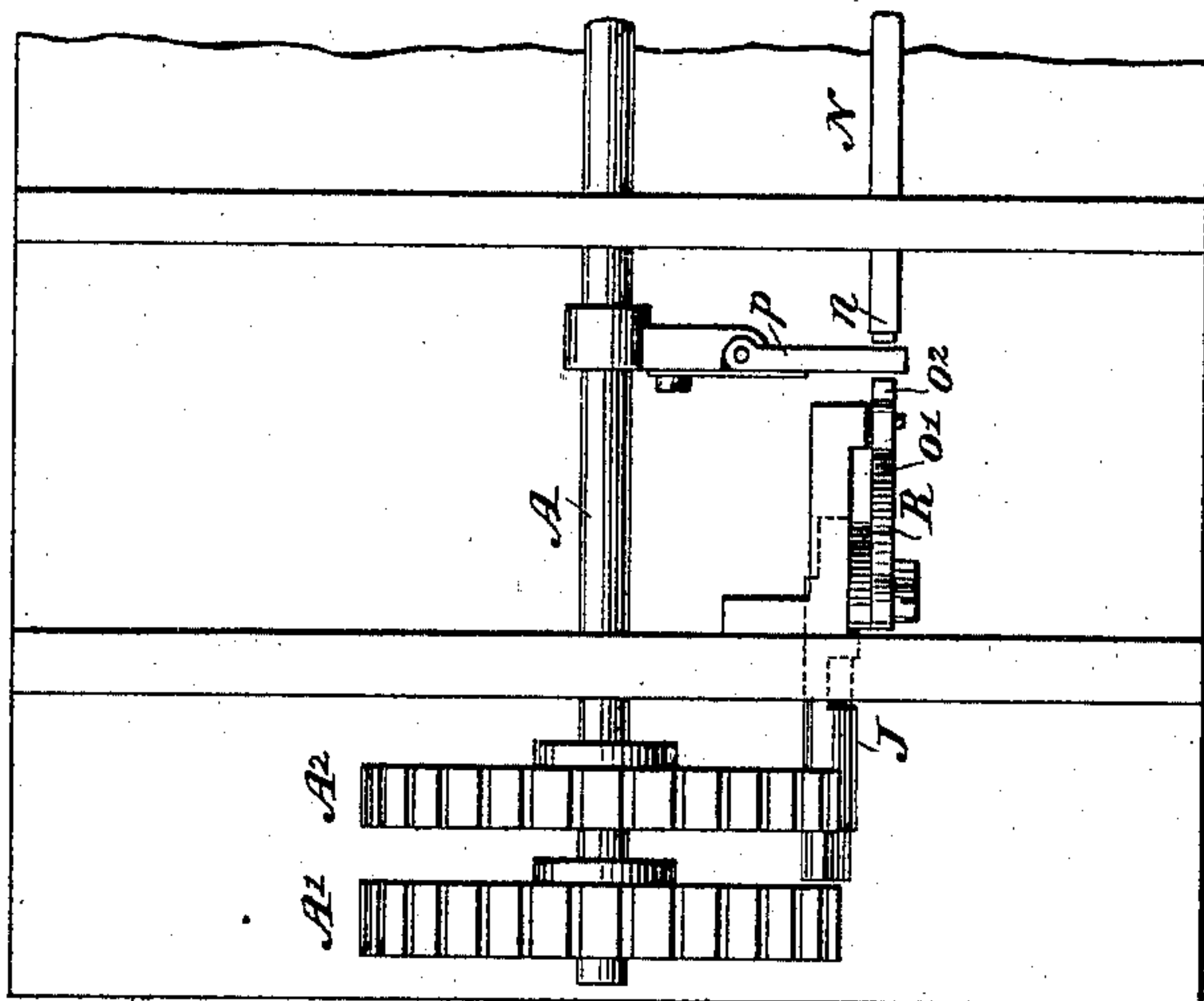
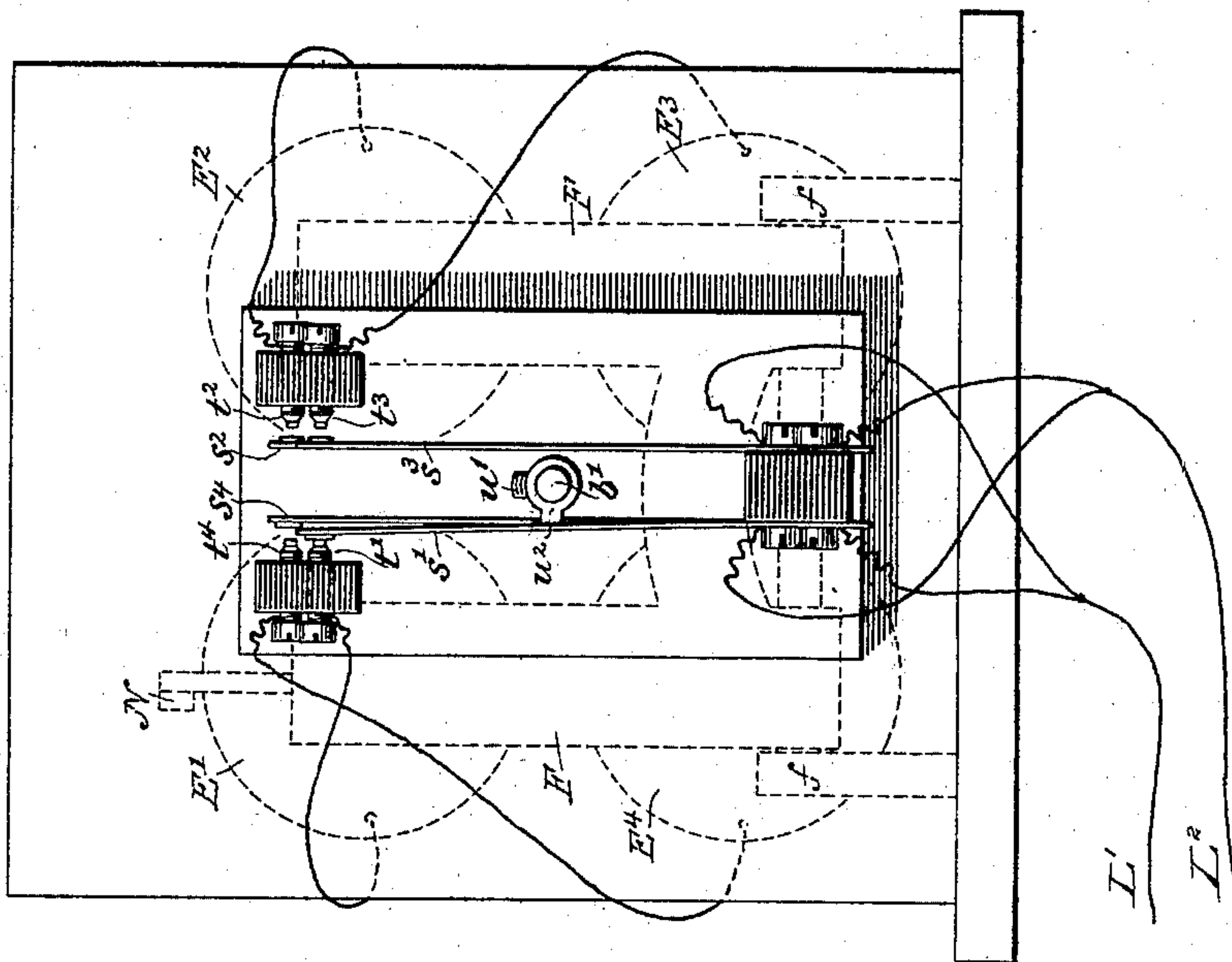


Fig. 4.



Witnesses

Geo. W. Dreck.
Carrie C. Ashley.

Inventor

Robert J. Sheehy,

By his Attorneys

Robert Edgecomb

UNITED STATES PATENT OFFICE.

ROBERT J. SHEEHY, OF NEW YORK, N. Y.

PRINTING-TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 368,692, dated August 23, 1887.

Application filed March 24, 1886. Serial No. 196,341. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. SHEEHY, a citizen of the United States, residing in New York, in the county and State of New York, have invented certain new and useful Improvements in Printing-Telegraphs, of which the following is a specification.

The invention relates to the class of apparatus employed for printing messages and dispatches from one or more revolving type-wheels operated by means of electric currents transmitted from a distant station.

It is usual to revolve the type-wheels of printing-telegraph instruments by alternating or intermittent currents transmitted over one or more main-line conductors. In other instances electric motors having revolving armatures have been employed. In the present instance an armature supported upon a universal joint and rocking or vibrating in four different directions is employed. A circular movement of an armature lever or arm fixed to the armature is thus occasioned, and this rotary movement is conveyed to the type-wheel shaft through a suitable train of gear connected with the armature-lever through a crank-arm. The armature consists of four radiating arms applied to the poles of four single-coil electro-magnets. These magnets are successively placed in circuit by the automatic action of a circuit-controller operated by the revolutions of a crank-shaft. Two line-wires are employed, one line-wire being capable of being alternately connected through one of the electro-magnets and that diagonally opposite, while the other is connected alternately through the remaining two electro-magnets. By sending currents alternately through the two lines the shaft is revolved step by step, and by prolonging a current through one line and simultaneously closing the circuit through the other not only will the type-wheel shaft be arrested, but an impression-armature applied to the opposite ends of the electro-magnets will be drawn toward the poles of the magnets and an impression effected.

For the purpose of printing from either of two type-wheels carried upon the shaft, a shifting device is employed for moving a platen-controlling bar into position to cause one or

the other of two platens to be actuated. This arm is moved in one direction or the opposite, provided the impression device is actuated, when the type-wheel-shaft is arrested in one or the other of two predetermined positions.

In the accompanying drawings, Figure 1 is a side elevation of an instrument embodying the features of this invention, and Fig. 2 is a front view of the same. Fig. 3 is a vertical section, and Fig. 4 is a rear view, of the instrument. Fig. 5 is a plan of a section of the instrument.

Referring to the figures, A represents a type-wheel shaft carrying two type-wheels, A' and A². The shaft A carries a suitable toothed wheel, B, meshing with a pinion, b, carried upon an arbor or shaft, b'. The shaft b' has at one end a crank-arm, c, receiving at its end an arm or armature-lever, c'. The arm c' is supported in a universal joint, C, of any suitable character, and carries an armature, D, applied to the poles of four parallel electro-magnets, E', E², E³, and E⁴. The armature consists in this instance of four radiating arms, e', e², e³, and e⁴, extending above the poles of the respective electro-magnets and capable of being drawn downward, one at a time, toward the same. It is designed that currents shall be transmitted through the electro-magnets in succession, so that the several arms of the armature shall be drawn downward in recurring succession. The lever or arm c' is thus caused to turn about the axial line of the shaft b' in the manner of a revolving pendulum, and to thereby rotate that shaft. The step-by-step movement thus communicated to the shaft b' is in turn communicated to the shaft A, and preferably the parts are so organized that one type shall be brought above the platen for each step-by-step movement of the shaft.

For the purpose of controlling the circuit-connections through the electro-magnets E, E², E³, and E⁴, four springs, s', s², s³, and s⁴, are employed in connection with four corresponding contact-points, t', t², t³, and t⁴. The points are respectively connected with conductors leading to the coils of the four magnets, while the springs s' and s² are connected with one main line, L', and the springs s³ and s⁴ are connected with the other main line, L². Upon the shaft b' there are placed two cams, u' and u²,

which by the revolution of the shaft press the springs in succession against their contact-points. When the electro-magnet E' is vitalized, it turns the cams sufficiently to place the spring s^2 against the point t^2 , thus placing the electro-magnet E^2 in circuit with the main line L^2 . A current being then transmitted through this line L^2 , the electro-magnet E^2 is vitalized and the cams turned sufficiently to place the spring s^3 in contact with the point t^3 , and thereby connect the main line L' through the magnet E^3 , the circuit from this main line through the magnet E' having meanwhile been interrupted by the separation of the spring s' from the point t' . In this manner, by alternately closing the circuits through the lines L' and L^2 , the magnets will be vitalized in succession and the required movement given to the armature.

For the purpose of effecting impressions from the type-wheels an armature, F , is employed. This is applied to the poles of the magnets E' , E^2 , E^3 , and E^4 at the opposite ends from the armature D . This armature extends over the four poles of the magnets and is actuated either by a prolonged impulse through one of the electro-magnets or, as is preferably the case, by the combined action of two of the same, so that when an impression is to be effected, considering that the electro-magnet E^2 has been last vitalized by a current over the line L^2 , this current is continued, and a current is also sent over the line L' . This last current will traverse the coils of the magnet E^3 , and thus both the electro-magnets E^2 and E^3 are vitalized. They together draw forward the armature F , which is supported upon an arbor, f . An arm, f' , also carried upon this arbor, thereupon engages the short arm of a press-lever, G , which is pivoted at g . The remaining arm of this lever carries two pawls, h' and h^2 , which are respectively designed to engage two ratchet-wheels, H' and H^2 . A movable bar or rod, J , serves to throw one or the other of the pawls out of engagement with its corresponding ratchet-wheel, accordingly as it is in the position shown in the drawings, or in a forward position, so that whenever the lever G is actuated only one pawl will be in position to engage its corresponding wheel and revolve the same one step. The position of this pawl-controlling bar J is determined in a manner which will be presently explained. When the parts are in the position shown in the drawings, then the pawl h^2 is held back while a notch or depression in the bar is beneath the pawl h' , and therefore this latter pawl will engage the wheel H' and by its upward movement revolve the wheel one tooth.

An arm, K' , carrying a printing-platen, k' , extends above the teeth of the ratchet-wheel. A tooth or projection, k^3 , upon the arm K' rests upon the teeth of the ratchet-wheel H' , and each forward movement of the wheel throws the arm upward, causing its platen to strike the type-wheel A' . When the bar J is in the other position, then the wheel H^2 is actuated

in the same manner by the pawl h^2 , and a platen, k^2 , carried upon an arm, K^2 , effects impressions from the type-wheel A^2 .

For the purpose of shifting the bar J , and thus determining from which wheel an impression shall be effected, there is attached to the armature F an arm, N , projecting forward in a direction parallel with the shaft A and carrying at its extremity an arm, n . A hinged arm, p , carried upon the type-wheel shaft and revolving therewith, is designed to engage one or the other of two arms, o' or o^2 , accordingly as the type-wheel shaft is arrested in one or the other of two predetermined positions, provided the press-armature F is then actuated. The arm n engages the arm p in whichever of these two positions the shaft is arrested, and the latter is thereby thrust against one or the other of the arms o' or o^2 . These arms are respectively carried upon opposite sides of the pivot r of the arm R , so that the latter is moved in one direction or the other, accordingly as one or the other arm is engaged by the arm p . By this means the bar J , which is pivoted to the arm R , is moved into position to hold one or the other of the pawls h' or h^2 out of engagement with the corresponding wheel, H' or H^2 .

It should be observed that sufficient play is given the arm N to allow the press-lever to raise the pawl last in engagement with its wheel before the bar J commences to move, so that it can pass beneath that pawl while it is raised and prevent it from subsequently falling against the teeth of the wheel.

It is evident that other well-known methods of actuating the press mechanism might be employed—as, for instance, a separate magnet with its armature, as in many other forms of printing-telegraphs.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, of two main lines, four parallel electro-magnets, means for alternately connecting said main lines through the coils of diagonally-opposite electro-magnets in recurring succession, an armature and armature-lever actuated by said electro-magnets, and a type-wheel shaft revolved by said lever.

2. The combination, substantially as hereinbefore set forth, of two main lines, four electro-magnets, means for connecting one of said main lines with one of said electro-magnets, the second main line with the second electro-magnet, the first main line with the third electro-magnet, and the second main line with the fourth electro-magnet in recurring succession, an armature applied to said electro-magnets, and a type-wheel shaft operated by the movements of said armature.

3. The combination, substantially as hereinbefore set forth, of an armature supported at or near its center by a universal joint, four electro-magnets for rocking said armature, means for vitalizing said electro-magnets one at a time, a type-wheel and its shaft revolved by said armature, a printing-platen applied to said type-wheel, and an armature applied to

said electro-magnets for operating said printing-platen.

4. The combination, substantially as here-
inbefore set forth, of four electro-magnets, an
5 armature centrally supported by a universal
joint, means for vitalizing said electro-mag-
nets in succession, and thereby rocking said
armature in its support, a type-wheel revolved
by the movements of the armature, means for
10 vitalizing two of said electro-magnets at a
time, a second armature responding when two
of said electro-magnets are so vitalized, and a
press mechanism operated by said second ar-
mature.

15 5. The combination, substantially as here-
inbefore set forth, of four electro-magnets, an
armature applied thereto, a type-wheel shaft
revolved by the movements of said armature,

two type-wheels carried upon said shaft, means
for effecting impressions from said type-wheels, 20
and a shifting device determining from which
of said type-wheels an impression shall be ef-
fected, consisting of an impression-armature,
means for actuating the same at will, a shift-
ing-bar, a pivoted arm revolving with the type- 25
wheel shaft, and means controlled by the im-
pression mechanism for moving said bar in
one direction or the opposite through the in-
strumentality of said pivoted arm.

In testimony whereof I have hereunto sub- 30
scribed my name this 18th day of February,
A. D. 1886.

ROBERT J. SHEEHY.

Witnesses:

DANL. W. EDGECOMB,
CHARLES A. TERRY.