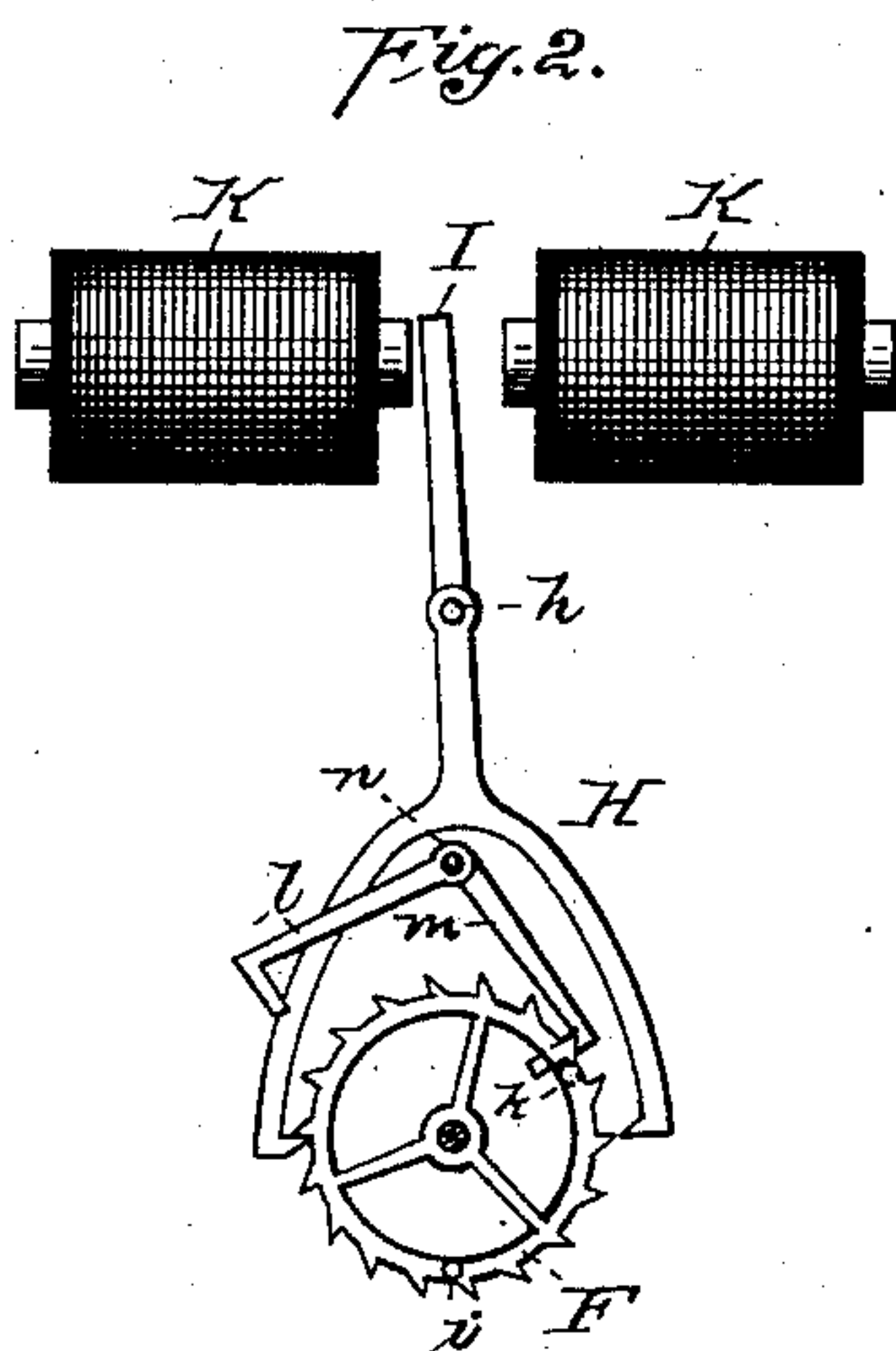
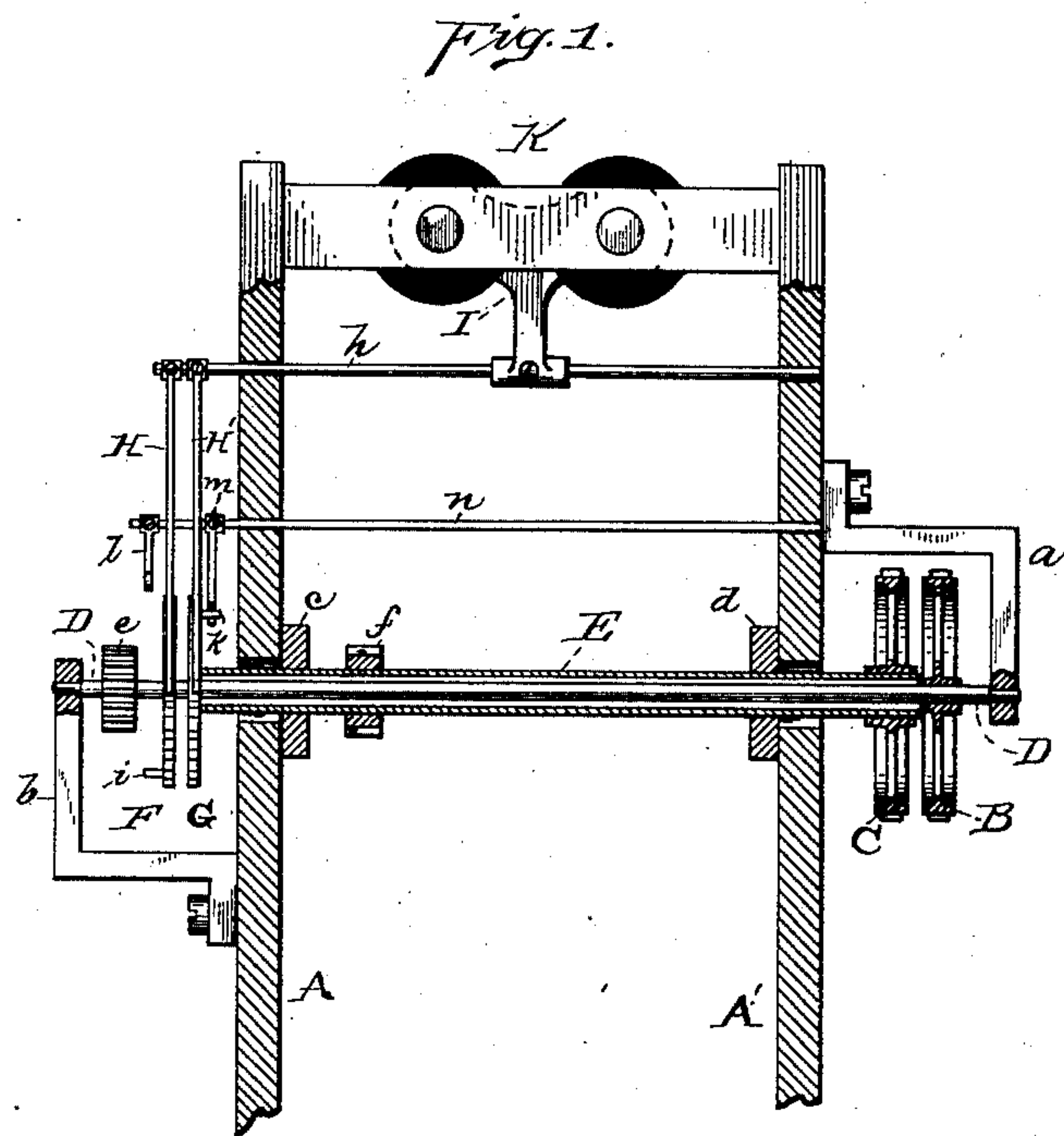


(No Model.)

H. MAHNKEN.
PRINTING TELEGRAPH RECEIVER.

No. 367,720.

Patented Aug. 2, 1887.



ATTEST:
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UNITED STATES PATENT OFFICE.

HENRY MAHNKEN, OF BROOKLYN, ASSIGNOR TO THE COMMERCIAL TELEGRAM COMPANY, OF NEW YORK, N. Y.

PRINTING-TELEGRAPH RECEIVER.

SPECIFICATION forming part of Letters Patent No. 367,720, dated August 2, 1887.

Application filed November 6, 1886. Serial No. 218,127. (No model.)

To all whom it may concern:

Be it known that I, HENRY MAHNKEN, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Printing-Telegraph Receivers, of which the following is a specification.

My invention relates to that class of printing-telegraph receivers employing two type-wheels and printing two lines upon the tape, wherein such type-wheels are rotated independently by separate power connections, and are controlled in their movement by an anchor-escapement lever working upon two escape-wheels—one for each of said type-wheels—stops being provided for holding either type-wheel at rest while the other rotates.

The object I have in view is to so organize a printing-telegraph machine of this specific character that the type-wheels will be arranged outside of the frame carrying the power-trains. This I accomplish by mounting one of the type-wheels upon a sleeve surrounding the shaft which carries the other type-wheel. With this device, if the sleeve has bearings on the shaft it surrounds, the friction of one on the other while under the strain of the power-train will prevent the machine from being practically operative. This detrimental action affects the shaft principally or entirely. When the shaft revolves and the sleeve is stationary, the shaft is subjected to the great friction caused by the strain of the power-train on the sleeve. On the other hand, when the shaft is stationary and the sleeve revolves, the strain of the power-train on the shaft is taken by the shaft-bearings and the sleeve is free to revolve. A further object is to overcome this difficulty, which I do by giving the sleeve and shaft separate bearings, so that one will not bear on the other.

In the accompanying drawings, forming a part hereof, Figure 1 is a central vertical section of the machine with parts in elevation, and Fig. 2 a side view of the type-wheel magnets and the anchor-escapement.

A A' are the side plates of the frame, which carry the parts of the machine.

B C are the figure and letter type-wheels, which are arranged side by side outside of the frame of the machine and between the side plate, A', and a bracket, a, secured thereto.

These wheels are mounted one upon a shaft, D, and the other upon a sleeve, E, surrounding such shaft. The sleeve and shaft D E pass entirely through both of the side plates, A A', the shaft D being journaled at one end in the bracket a, before referred to, and at its other end in a bracket, b, secured to the side plate, A. The sleeve E is journaled directly in the side plates, A A', or in bearing-plates c d, secured to such side plates, as shown. The sleeve E is supported entirely by its own outside bearings and does not bear upon the shaft D, and hence the shaft is free to revolve without being subjected to friction caused by the strain of the power-train on the sleeve.

The shaft D is provided with a pinion, e, while the sleeve E has a pinion, f. These pinions are connected with separate trains of gearing, (not shown,) operated independently by the same or by different weights, as is well understood in this class of machines. On the ends of the shaft and sleeve, outside of the side plate, A, and between such plate and the bracket b, are secured two escape-wheels, F G. These are operated by two anchor-escapement levers, H H', secured side by side rigidly to a rock-shaft, h, journaled in both side plates, A A'. The levers H H' work together as one upon both escape-wheels, and may be replaced by an equivalent construction well known in the art—i. e., a single lever having pallets wide enough to engage the teeth of both escape-wheels at the same time. The rock-shaft h carries the armature I, which is vibrated by the type-wheel magnets K.

The escape-wheels F G have pins i k, which are engaged alternately by stop-arms l m on the unison rock-shaft n. This shaft is rocked one way to stop the figure-wheel and release the letter-wheel, and in the other direction to stop the letter-wheel and release the figure-wheel. The means for operating this unison rock-shaft, as well as the printing, inking, and tape-feeding device and the power-trains, are omitted from the drawings for simplicity and because such parts are well understood.

The operation of the parts of the machine to which my invention extends is as follows: Suppose the figure-wheel B is to be printed from. The unison rock-shaft will be shifted in the

direction to intercept the pin *k* on the escape-wheel G by the arm *m*. The sleeve E and the letter-wheel C will thus be held stationary at the unison-point against the strain of the power-train, while the shaft D and the figure-wheel are free to revolve. A rapidly-alternating current being passed through the type-wheel magnets K, the armature I will be vibrated, and this, through the rock-shaft *h*, will vibrate the escapement-levers H H'. The pallets of these levers will work upon both escape-wheels F G; but the wheel G being held, it cannot turn. The wheel F, however, and the shaft D and the figure-wheel B are revolved by the power-train acting on the pinion *e*, under control of the escapement-lever, until the proper figure is brought into position for printing. If a letter is next to be printed, the figure-wheel is first revolved to the unison-point and the rock-shaft *n* is then shifted, releasing the wheel G and locking the wheel F. The letter-wheel C may then be rotated, as before explained with respect to the figure-wheel. The unison-point on each type-wheel, as will be understood, is a blank space or a dot, so that no confusing character is printed by the wheel held at unison.

What I claim is—

1. In a printing-telegraph receiver, the combination, with two independently revolving type-wheels arranged side by side, of a shaft carrying one of such wheels, a sleeve surrounding the shaft and carrying the other of such wheels, and independent bearings for such shaft and sleeve, substantially as set forth.

2. The combination, substantially as described, of two independently-rotating type-wheels, one secured to a shaft and the other to a sleeve around said shaft, independent bearings for such shaft and sleeve, escapement-wheels for the shaft and sleeve, and an escapement-lever common to both said escape-wheels.

3. The combination, substantially as described, of two type-wheels secured, respectively, to a shaft and to a sleeve surrounding said shaft, independent bearings for such shaft and sleeve, independent driving mechanism for said shaft and sleeve, separate escapement-wheels, one secured to the shaft and the other to the sleeve, escapement devices for said es-

capement-wheels, and an armature common to the said wheels for operating the escapement devices.

4. The combination, substantially as described, of two type-wheels, independently rotatable and secured, respectively, to a shaft and to a sleeve through which the shaft passes, independent bearings for such shaft and sleeve, an escapement-wheel for each type-wheel, stops for holding either type-wheel at rest while the other rotates, and an anchor-escapement device vibrating and engaging with both escape-wheels when one is held stationary to permit the independent rotation of the other.

5. The combination of a shaft carrying one type-wheel and provided with a gear-wheel or pinion through which it may be driven, a sleeve surrounding the shaft carrying another type-wheel, and also provided with a wheel or pinion, independent bearings for such shaft and sleeve, and escapement-wheels secured, respectively, to the shaft and sleeve and placed in juxtaposition, substantially as set forth.

6. The combination of a shaft mounted at one end in a bracket outside the frame, a type-wheel secured to said shaft, a sleeve surrounding said shaft, carrying a second type-wheel arranged beside the first and between the bracket and frame, a wheel or pinion on the sleeve, a separate wheel or pinion on the shaft, independent bearings for such shaft and sleeve, an anchor-escapement wheel on the sleeve, an anchor-escapement wheel on the shaft, and anchor-escapement devices for said wheels, having a common actuating mechanism.

7. The combination, substantially as described, of two type-wheels secured, respectively, to a shaft and to a sleeve surrounding said shaft, independent bearings for such shaft and sleeve, independent driving motors for said shaft and sleeve, stops for holding either type-wheel at rest while the other rotates, and an anchor-escapement common to both wheels.

This specification signed and witnessed this 4th day of November, 1886.

HENRY MAHNKEN.

Witnesses:

WM. PELZER,
H. N. POWERS.