

No. 808,832.

PATENTED JAN. 2, 1906.

F. E. GALLAGHER.

RECEIVER AND RECORDER FOR WIRELESS AND OTHER TRANSMISSIONS.

APPLIOATION FILED JUNE 15, 1905.

2 SHEETS—SHEET 1.

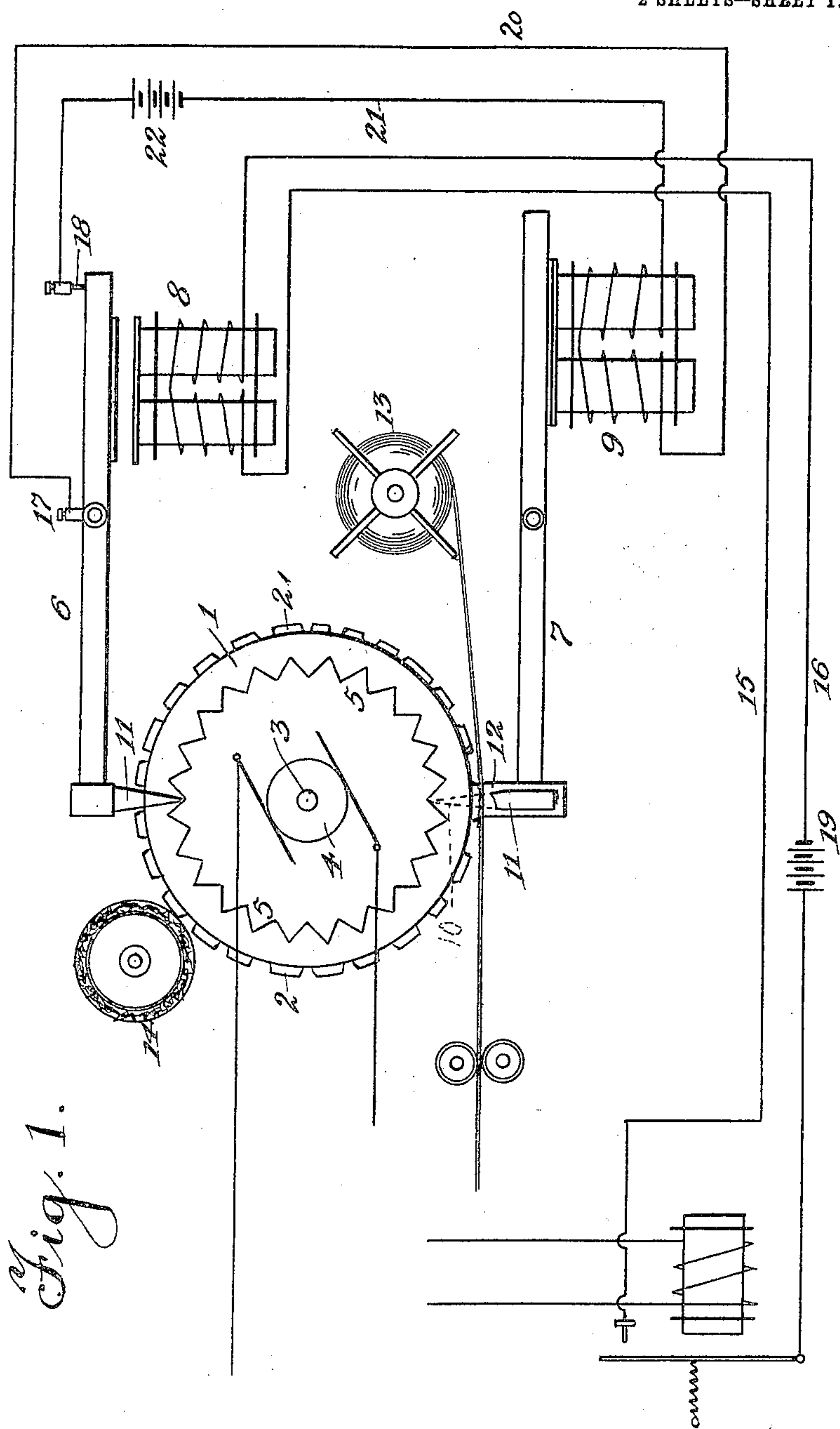


Fig. 1.

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Witnesses:

Arthur L. Slee
M. R. Seely

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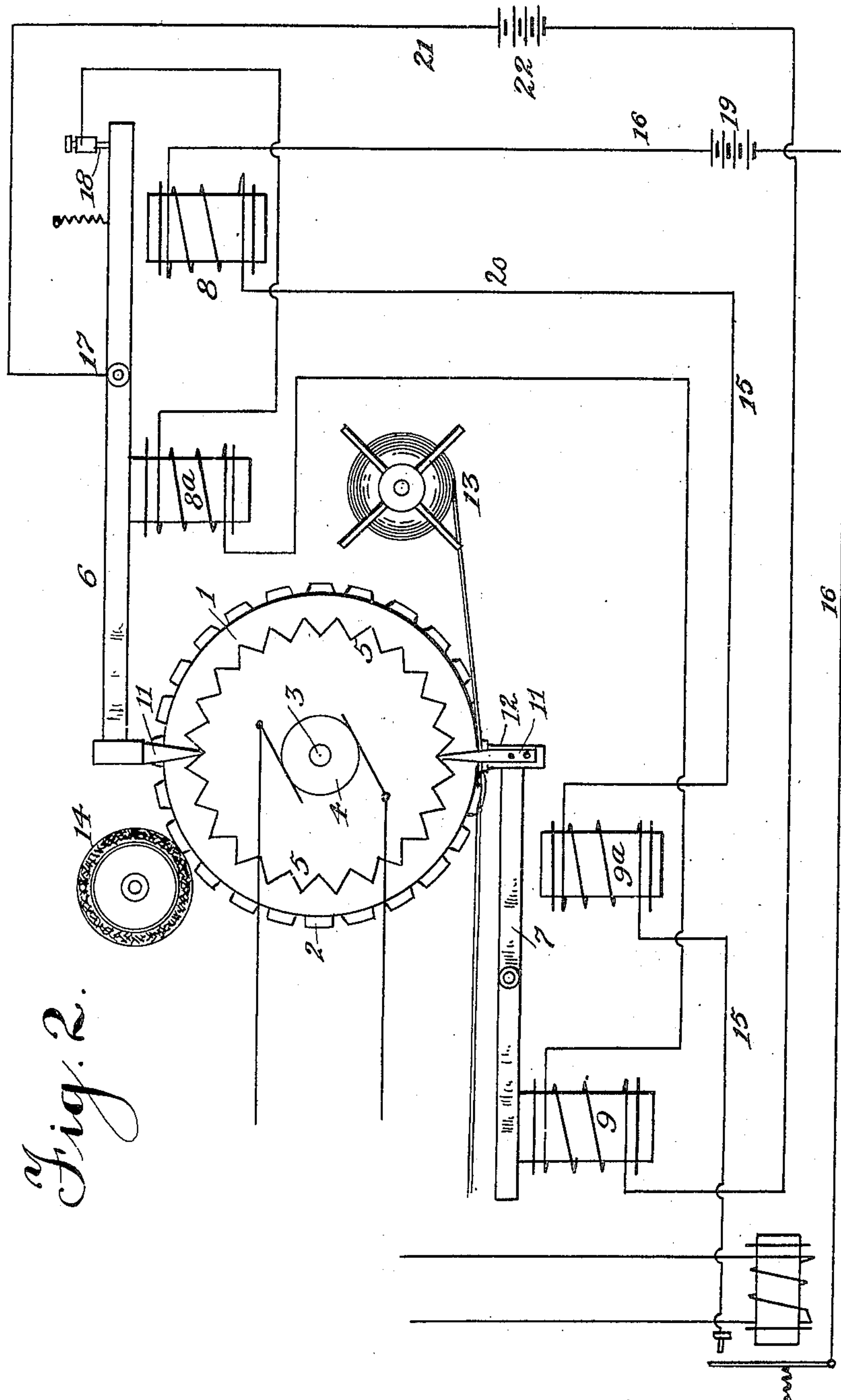


Fig. 2.

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UNITED STATES PATENT OFFICE.

FRED E. GALLAGHER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF
ONE-THIRD TO SIMEON L. PHILLIPS AND ONE-THIRD TO WALTER D.
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RECEIVER AND RECORDER FOR WIRELESS AND OTHER TRANSMISSIONS.

No. 808,832.

Specification of Letters Patent.

Patented Jan. 2, 1906.

Application filed June 15, 1905. Serial No. 265,378.

To all whom it may concern:

Be it known that I, FRED E. GALLAGHER, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Receivers and Recorders for Wireless and other Transmissions, of which the following is a specification.

10 My invention relates to the transmission of intelligence to distant points, and more especially to a simple, convenient, and easily-operated receiving and recording device at which electrical or wireless impulses received
15 from a distant point will be converted into mechanical energy in the permanent recording of messages or any kind of intelligence or information in printed characters.

20 An apparatus embodying my invention is shown in the accompanying drawings.

Figure 1 is partly diagrammatic, but shows the actual operative mechanism completely enough to give an intelligent understanding of its construction and operation. Fig. 2
25 shows a modified arrangement.

The receiving and recording apparatus is embodied first in a circular wheel or disk 1 of sufficient diameter to contain upon its periphery the desired number of letters, figures, and arbitrary characters which are indicated at 2 and which are formed with the disk or attached thereto in any suitable way. This disk is fixed upon a central shaft 3, to which a rotary motion is imparted in any suitable
35 manner. I have conventionally illustrated a small electric motor 4 on the shaft; but any other suitable driving means can be employed, such as a spring-barrel. On the face of the disk is a circular row of teeth or projections 5, preferably of a V shape. These spaces correspond in number and substantially in radial position with the peripheral characters. Operating in connection with the said wheel are pivoted levers 6 and
45 7, which are respectively the armatures of electromagnets 8 and 9. The armature 6, which I designate as the "controller" or "controller-lever," projects from the magnet toward the wheel and carries at one end a pointed tooth or projection 11, which is adapted to lock the rotary disk by entering the spaces between the series of teeth 5 and which tends to release the disk by being with-

drawn from such spaces. As the end of lever 6 is preferably above the wheel, the engagement of the tooth 11 with the wheel is
55 conveniently effected by gravity, while its withdrawal from the wheel is caused by the magnet 8 when energized. The lever 7, which I designate as the "striker" or "striker-lever," is arranged in such relation to the wheel that its end is below the wheel and substantially opposite the end of the controller-lever. The lever 7 carries at its end a hammer 12. This hammer or the end of the
65 lever may also carry a point or tooth 10, forming an auxiliary setting and locking means for the rotary wheel. A roll of paper, tape, or other suitable material is shown at 13, such tape being drawn under the wheel and either by an appropriate mechanism of a well-known character or by the movement of the wheel itself through the slight adhesion of the ink after the character has been formed. Ink is applied to the type on the wheel in any
75 suitable way, as by the inking-wheel 14.

The main circuit-wires 15 16, and which in this machine form a controller-circuit, derive energy from battery 19 and receive electrical impulses from any source of relay derivation, (indicated at R,) such as a telegraph-line or a wireless station, as the case may be. They are also connected to the controller-magnet 8, as shown. On the controller-lever 6 is a terminal 17, and in proximity to it is a contact 18, from which terminal and contact a circuit 20 21, having a local battery 22, extends to the striker-magnet 9.

The operation of the device as a receiver and recorder is as follows: When no current impulses, whether received by wire or wireless, are being received in the controller-circuit, the parts are in the position shown in the drawings. The armature 6 being free, its long and heavier end has fallen by gravity, with the tooth 11 in engagement with the wheel, and the wheel is locked and stationary. When the armature 6 was released, the striker-circuit 20 21 was closed at contact 18, energizing magnet 9. The consequent attraction of armature 7 has caused the hammer 12 to sharply strike the paper strip and press it against a certain inked type on the wheel, impressing a certain character upon the paper. If now an impulse be sent through the controller-circuit 15 16, the armature 6 will be
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attracted and the striker-circuit will be broken at 18. The striker-circuit being broken, the heavy or hammer end of armature 7 falls by gravity and remains out of contact, the wheel rotating to the proper point until at the termination of the impulse the wheel is again locked, the striker-circuit is reestablished, and another blow of the hammer is given. The operating impulses are furnished by an operator at any point provided with a type-wheel similar in general to the one shown and either synchronized with it as to rate of revolution or adapted to run at such a related speed as shall bring the right type in both into the right position at the same time. Such wheel being under the immediate control of the operator he is able by giving impulses of proper duration to use his own wheel as a guide, the proper synchronizing or relation of it with the receiving type-wheel insuring that both wheels are always in the same position.

It should be noted that the two armature-levers are practically interchangeable and that it is possible to carry the striking-hammer on the controller-lever and to lock the wheel with either one or both levers, as shown.

The arrangement shown in Fig. 2 differs from that shown in Fig. 1 principally in that the feature of gravity action is eliminated and the locking and releasing of the type-wheel are both performed positively by electrical action. This arrangement permits me to use a horizontal type-wheel, if I desire, since an arrangement in which gravity action is a feature practically requires a vertical type-wheel. In Fig. 2 the controller-circuit 15 16, which includes the controller-magnet 8, also includes a magnet 9^a, which acts upon the armature 7 between its pivot and the striking hammer. The striker-circuit 21, which includes the magnet 9, also includes a magnet 8^a, which acts upon the armature 6 between its pivot and the end which carries the locking projection. As a matter

of convenience in delineation I have shown the armatures 6 and 7 as extending toward the type-wheel from opposite directions instead of from the same direction, as in Fig. 1, and this modified position of the armatures can be used with the arrangement of Fig. 1, if desired, just as the armature positions of Fig. 1 can be used in the modified arrangement of Fig. 2.

The operation of the form shown in Fig. 2 is as follows: As shown in the drawings, the wheel is locked and the hammer has just struck a blow. If an impulse be now sent through the controller-circuit, both magnets 8 and 9^a will be energized, withdrawing the locking projections from the wheel, which rotates under the normal influence of its motive power, whatever that may be. When the impulse ceases, the contact is reestablished at 18, and the closing of the striker-circuit will energize both the magnets 8^a and 9, causing the positive locking of the type-wheel and the striking of the hammer.

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

In a receiver and recorder, a type-wheel having constantly-operative impelling means, a pivoted armature carrying means for locking the type-wheel, another pivoted armature carrying a striking hammer, a pair of magnets for each armature arranged respectively at opposite sides of its pivot, a controller-circuit which includes one magnet of each armature, and a striker-circuit which includes the other magnet of each armature, all substantially as and for the purposes set forth.

In testimony whereof I affix my signature, in presence of two witnesses, this 8th day of June, 1905.

FRED E. GALLAGHER.

Witnesses:

M. R. SEELY.

L. W. SEELY.