

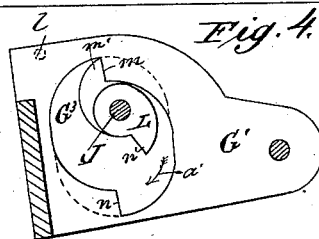
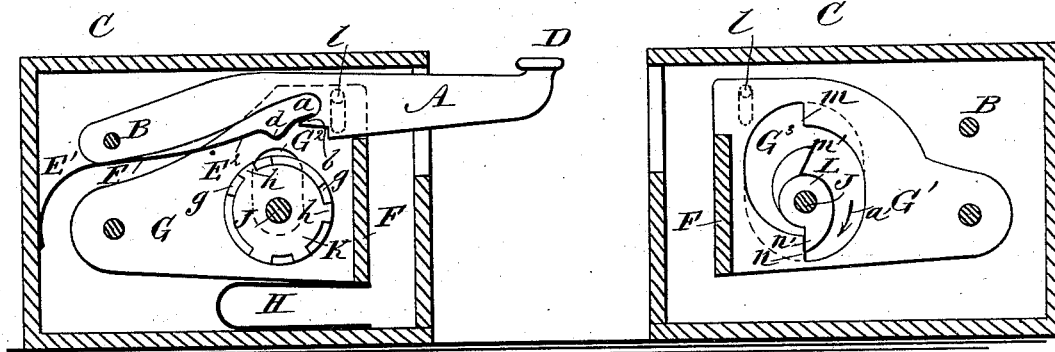
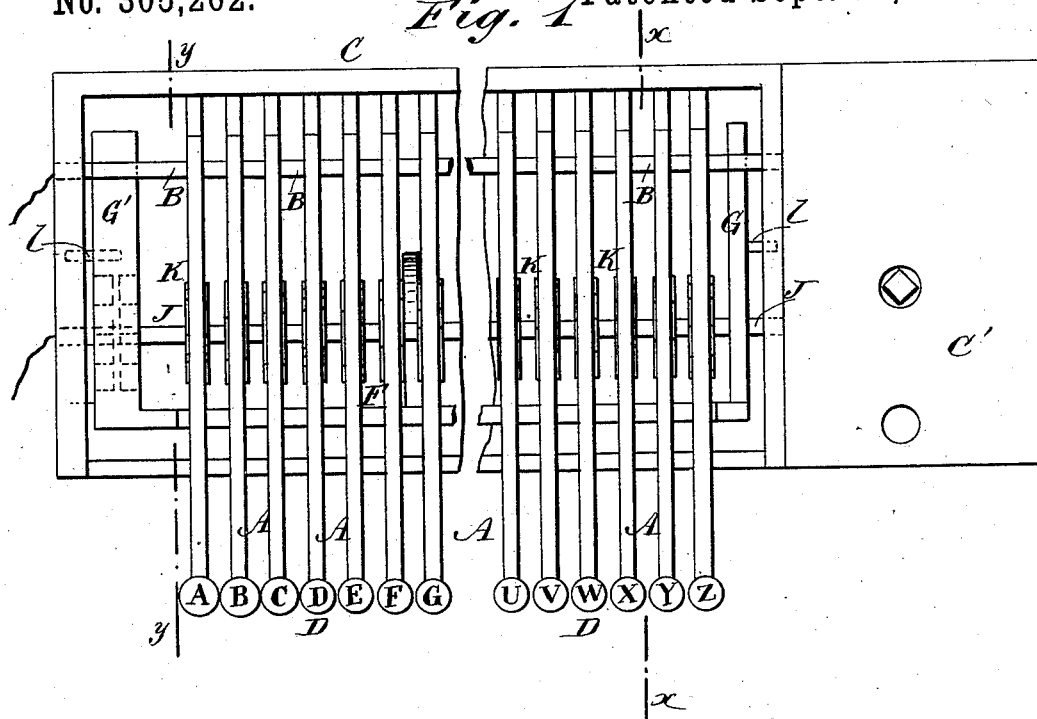
(No Model.)

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TELEGRAPHIC TRANSMITTER FOR UNSKILLED OPERATORS.

No. 305,262.

Patented Sept. 16, 1884.



WITNESSES:

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TELEGRAPHIC TRANSMITTER FOR UNSKILLED OPERATORS.

SPECIFICATION forming part of Letters Patent No. 305,262, dated September 16, 1884.

Application filed November 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, THEODORE AMES, of Hackensack, in the county of Bergen and State of New Jersey, have invented a new and Improved Telegraph-Instrument, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved telegraph-instrument, to be operated in the same manner as a typewriter, and by means of which instrument a person not skilled in the art of telegraphing the Morse or other characters can transmit a message in these characters.

The invention consists in the peculiar construction and arrangement of parts, as hereinafter fully described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my improved telegraph-instrument, a part being broken away. Fig. 2 is a cross-sectional elevation of the same on the line *x x*, Fig. 1. Fig. 3 is a cross-sectional view of the same on the line *y y*, Fig. 1. Fig. 4 is a detail of the check and cam, showing the former depressed.

A series of levers, *A*, are mounted to swing vertically on a shaft, *B*, secured in a casing, *C*, and on the outer end of each lever *A* a button or head, *D*, is fastened, each of which buttons is provided with a different letter or character. To the lower edge of each lever *A* a spring, *E*, is fastened at the inner end, one end, *E'*, of each of which springs rests against the inner surface of the rear casing, *C*, and thus presses the lever upward. The other end, *E''*, of the spring projects into a recess, *a*, in the bottom edge of the corresponding lever *A*, and rests upon a tongue, *b*, formed by the recess *a*. The end *E''* is provided with a bend or projection, *d*. The lower edges of all the levers *A* rest in the upper edge of a strip, *F*, uniting two end pieces, *G G'*, pivoted to the inner surfaces of the ends of the casing *C*, which strip *F* is pressed upward by springs *H*. A shaft, *J*, is journaled in the ends of the casing, and is revolved by a clock-work contained in the part *C'* of the casing. On the shaft *J* as many metal disks *K* are mounted as there are levers *A*, one

disk *K* being below each lever. Each disk *K* is provided in its edge with a series of notches, *g*, forming teeth *h*, the notches and teeth of each disk being of a different shape, size, and arrangement, according to the length and arrangement of the Morse character, to which the letter on the corresponding lever belongs. The end piece *G* is provided with a vertical slot, *G''*, and the end piece *G'* is provided with an aperture, *G'''*, having shoulders *m* and *n* at the top and bottom, respectively. On the shaft *J* a cam, *L*, is mounted within the aperture *G'''*, which cam is provided with two nearly diametrically-opposite teeth, *m'* and *n'*. Stud *l*, projecting from the end pieces, *G G'*, into vertical slots in the ends of the casing, prevent the strip *F* from being depressed too far. The transmitting-wires are connected with the shafts *B* and *J*.

The operation is as follows: The clock-work revolves the shaft *J* in the direction of the arrow *a'*; but when the cam-tooth *n'* of the cam *L* strikes against the shoulder *n* of the aperture *G'''*, the shaft *J* is arrested. If a lever *A* is depressed, it depresses the strip *F* and the end pieces, *G G'*, thus moving the shoulder *n* below the tooth *n'*, thereby releasing the shaft *J*, which can revolve sufficiently, and is then stopped by the tooth *m'*, which strikes against the shoulder *m*, while end piece *G'* is depressed. If the pressure is removed from the lever *A*, the spring *E* throws it upward, and the spring or springs *H* throw the strip *F* and end pieces, *G G'*, upward, thus raising the shoulder *m* sufficiently to release the tooth *m'*, thus permitting the shaft *J* to complete its revolution. It is then locked by the tooth *n'* and the shoulder *n* until another lever *A* is depressed, and so on. The cam-teeth *m'* and *n'* are not in the same plane, but in two planes formed on opposite sides of the cam, the planes being parallel. The shoulders *m* and *n* do not extend across the entire width of the edge of the aperture *G'''*, but only across one-half the width or thickness of the same. The top shoulder is one side of the piece *G'*, and the bottom shoulder on the other, so that the tooth *m'* only engages with the shoulder *m*, and the tooth *n'* is only stopped by the shoulder *n* alternately, the tooth *m'* and shoulder *m* engaging when the side pieces are depressed, and

the tooth n' and the shoulder n engaging when the side pieces are raised. The teeth, being set nearly opposite, permit nearly an entire revolution at the start for the tooth n' before the tooth m' is stopped by the shoulder m . The releasing of the tooth m' by the upward movement then brings the tooth n' against the shoulder n . When a lever A is depressed, the projection d of its spring is brought in contact with the edge of the corresponding disk, K . When the teeth g are in contact with the projection d , the circuit will be closed, and every time a tooth, g , passes from under the projection d the circuit will be broken. Thus the circuit will be broken more or less times, according to the configuration of the edges of the disk, and as the disks revolve, when a lever is depressed, a series of electric impulses of greater or less length are transmitted every time a lever is depressed, and these strokes produce Morse characters at the other end of the line.

A person wishing to telegraph depresses the corresponding keys in the same manner as in operating a type-writing machine, and it is seen that no knowledge of the Morse characters is required by the transmitter of the message. The receiver of the message must have a knowledge of the Morse characters.

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

1. In a telegraph-instrument, the combination, with a series of levers, of a series of con-

tact-disks mounted on a revolving shaft, a vertically-movable check provided with apertures, and a locking-cam on the shaft carrying the disks, substantially as herein shown and described.

2. In a telegraph-instrument, the combination, with a series of levers, A , of the rotary shaft J , carrying contact-disks K , the spring E , projecting from the inner ends of the levers, and provided with projections d , substantially as herein shown and described.

3. In a telegraph-instrument, the combination, with the levers A , having notches a , forming tongues b , of the springs E , projecting into the notches a , and of the rotary shaft J , carrying contact-disks K , substantially as herein shown and described.

4. In a telegraph-instrument, the combination, with the levers A , of the rotary shaft J , carrying contact-disks K , the pivoted end pieces, G G' , the strip F , the spring H , and the cam L , substantially as herein shown and described.

5. In a telegraph-instrument, the combination, with the levers A , of the shaft J , carrying contact-disks K , the strip F , the pivoted end pieces, G G' , of which the latter has an aperture, G'' , provided with shoulders m n , and the cam L , and the spring H , substantially as herein shown and described.

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Witnesses:

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