

W. AKEMANN.
ELECTRICAL APPARATUS FOR TRANSMITTING SIGNALS.
APPLICATION FILED MAR. 9, 1915.

1,166,034.

Patented Dec. 28, 1915.

Fig. 1.

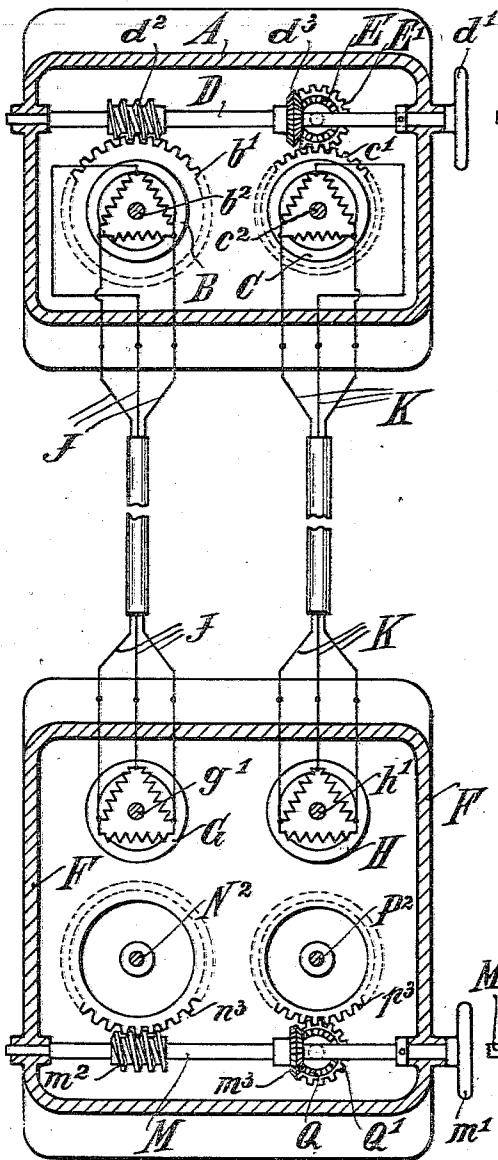
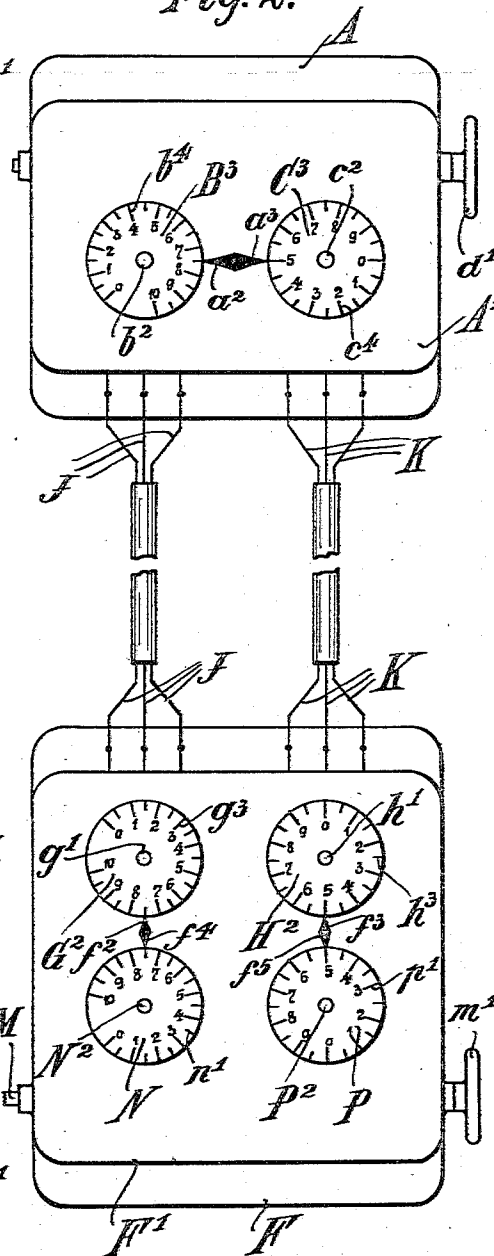


Fig. 2.



Witnesses,
J. M. Wykekoop.
D. H. Thorne

Inventor,
Walter Akemann,
By Knights Bros.
Attorneys.

UNITED STATES PATENT OFFICE.

WALTHER AKEMANN, OF ESSEN-ON-THE-RUHR, GERMANY, ASSIGNOR TO FRIED.
KRUPP AKTIENGESellschaft, OF ESSEN-ON-THE-RUHR, GERMANY.

ELECTRICAL APPARATUS FOR TRANSMITTING SIGNALS.

1,166,034.

Specification of Letters Patent.

Patented Dec. 28, 1915.

Application filed March 9, 1915. Serial No. 13,228.

To all whom it may concern:

Be it known that I, Dr. WALTHER AKEMANN, residing at Essen-on-the-Ruhr, Germany, a citizen of the German Empire, have invented a certain new and useful Improvement in Electrical Apparatus for Transmitting Signals, of which the following is a specification.

This invention relates to an electrical apparatus for transmitting signals, the apparatus comprising a transmitter, a receiver, provided with a reading device indicating the desired setting, and a setting device by means of which the desired setting, observed on the receiver, will be accomplished on the part to be adjusted, this setting being independent of the receiver.

Signal transmitting apparatus are known wherein the receiver is provided with a pointer, which, upon the setting of the transmitter, makes a corresponding deflection and returns to a fixed mark by the use of the setting device. Such signal transmitting apparatus provides a very convenient use of the setting device, as the reading is always done at the same place, and the operator never needs to note down the numbers, but these apparatus possess the disadvantage, that in all the receivers, the motor must be mounted on a movable part of the setting device, or, if placed on a stationary part, must be provided with a special revolving-gearing or the like.

The object of the present invention is now to provide an electrical apparatus for transmitting signals of the kind referred to above, in which the service of the setting device is equally practicable as in the above-named apparatus, but which, however, is devoid of the enumerated disadvantages in said known apparatus.

In the accompanying drawing, one embodiment of this invention is illustrated and Figure 1 shows a diagrammatic horizontal section of the electrically driven apparatus for transmitting signals, and Fig. 2, a diagrammatic top plan view of the same.

In the stationary transmitter housing A are revolvably mounted two armatures B and C, one of which, B, serves to transmit a preliminary setting, and the other, C, to transmit the fine adjustment. Both armatures are provided with a common setting shaft D which is revolvable by means of a hand wheel d^1 which has driving connection

with the armature B through a worm gearing $d^2 b^1$, and with the armature C by means of beveled gears $d^3 E$, and a pair of spur gears $E^1 c^1$. The two armatures B and C are each mounted on the shaft b^2 and c^2 respectively which projects through the cover a^1 of the transmitter housing. At its free end the shaft b^2 carries a graduated disk B³ provided with a scale b^4 and the shaft c^2 carries a graduated disk C³ having a scale c^4 . To read the scale b^4 a fixed mark a^2 is provided on the cover A¹ and for reading the scale c^4 a similarly arranged fixed mark a^3 on the cover A¹.

In the fixed receiver housing F are revolvably mounted two armatures G and H. The armature G for the primary setting is in a well known manner connected with the transmitter armature B through a three-phase conductor J and the armature H for the fine-setting system is connected with the transmitter armature C through a three-phase conductor K. The two armatures G and H are respectively mounted on the shafts g^1 and h^1 which project through the cover F¹ of the receiver housing F. The shaft g^1 carries at its free end a graduated disk G² provided with a scale g^3 , and the shaft h^1 carries a graduated disk H² provided with a scale h^3 . For reading the scale g^3 a fixed mark f^2 is provided on the cover F¹ of the housing F and for reading the scale h^3 a mark f^3 is similarly arranged on the cover F¹.

In the receiver housing F is moreover mounted the driving shaft M provided with a hand wheel m^1 , and by means of which the desired setting may be accomplished of the part to be set, for instance, the sight carrier of a gun sighting device, this setting having been previously observed on the graduated disks G² and H² of the receiver. This setting device has a reading device with a graduated disk N for the preliminary setting and a graduated disk P for the fine setting. The graduated disk N provided with the scale n^1 is mounted on the free end of the shaft N² projecting through the cover F¹, which shaft is mounted in such a manner in the housing F that the graduated disk N lies directly at the side of the graduated disk G². The graduated disk P mounted on the shaft P² and provided with a scale p^1 is now arranged in an exactly similar manner relative to the graduated disk H². The fixed

mark f^4 on the cover F^1 belongs to the scale n^1 and a fixed mark f^5 belonging to the scale p^1 is similarly situated on the cover F^1 . The two marks f^2 and f^4 are situated on the part
 5 of the cover F^1 which lies between the graduated disk G^2 and N and are connected to represent a double headed arrow. In exactly the same manner are the marks f^3 and f^5 arranged.

10 The graduated disk N is in driving connection with the driving shaft M through the worm gearing $m^2 n^3$ and the graduated disk P through the spur gears $m^3 Q Q^1 p^3$. The worm gearing $m^2 n^3$ and $d^2 b^1$ possess
 15 the same ratio of transmission as does also the spur gears $m^3 Q Q^1 p^3$ and $d^3 E E^1 c^1$. Furthermore the graduated disks N and G^2 on the one hand, and the graduated disks P and H^2 on the other hand, possess the same
 20 divisions and enumerations which is made possible by the above-named selection of the transmission ratio.

The use and operation of the described device need no further explanation.

25 It is also obvious that this device possesses

considerable advantages over the ones described in the beginning of the specification.

I claim:—

In electrical apparatus for transmitting signals, a receiver with a reading device for
 30 indicating the desired setting and a setting device for setting the member to be adjusted to the setting observed on the receiver, but independently of said receiver; said reading
 35 device comprising an armature and a movable graduated disk in driving connection therewith; said setting device comprising a movable graduated disk arranged adjacent
 40 to said first graduated disk, both of said disks being provided with identical graduation and numeration; said second graduated
 disk having driving connection with said member.

The foregoing specification signed at Bar-
 men, Germany, this second day of February, 45
 1915.

WALTHER AKEMANN. [L. S.]

In presence of—

HELEN NUFER,
 ALBERT NUFER.