

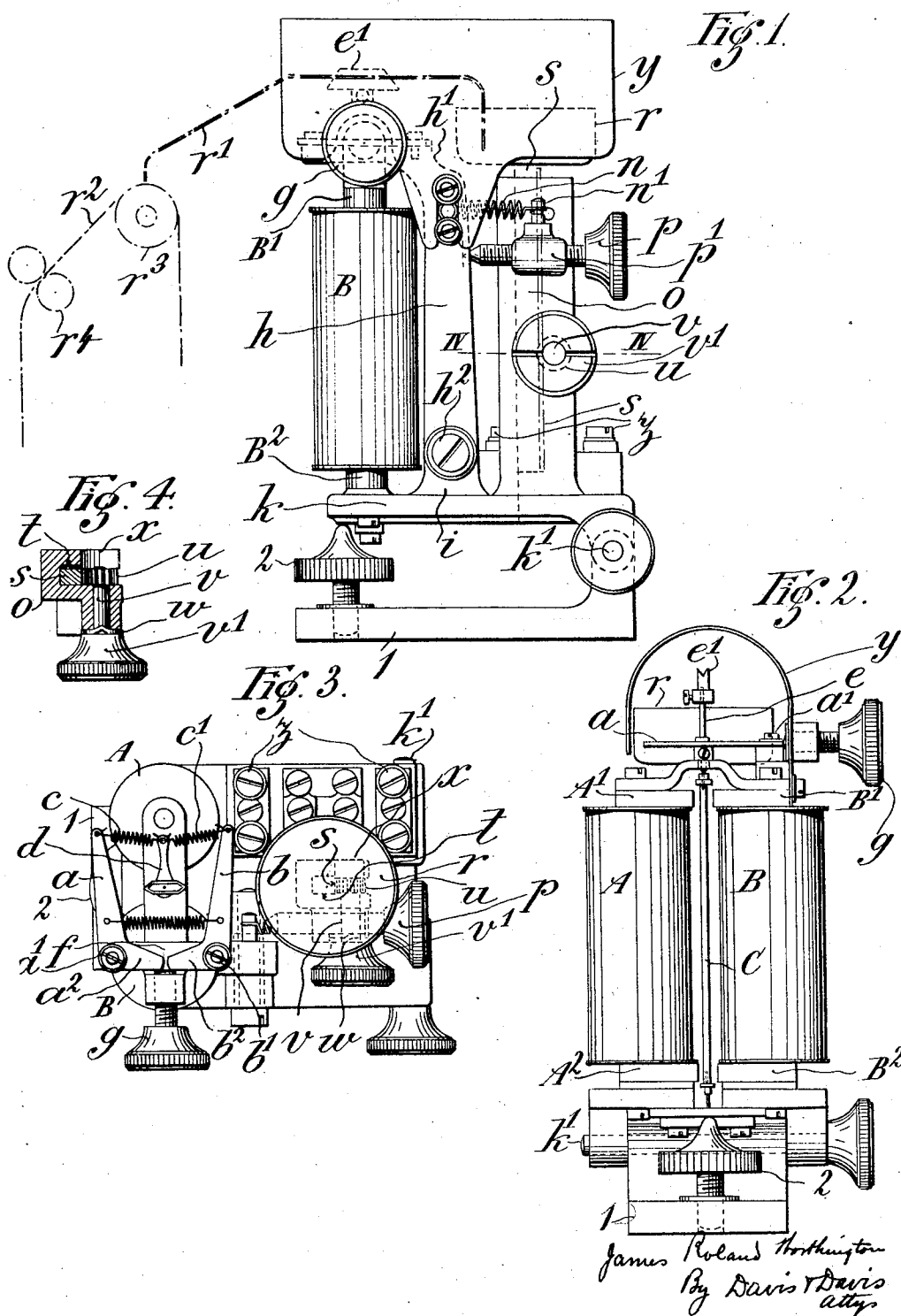
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TELEGRAPHIC RECEIVING APPARATUS

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TELEGRAPHIC RECEIVING APPARATUS.

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This invention relates to telegraphic receiving apparatus of the kind, known commercially as an undulator, comprising a siphon recorder carried by a polarized armature arranged vertically between the upper and lower pairs of poles of two vertically arranged electro-magnets the windings of which are traversed by the electric signals the nature of which is to be recorded by the siphon recorder on an endways movable tape, one end of the siphon recorder dipping into a vertically adjustable ink receptacle. The present invention has for its object to improve the construction and working of such telegraphic receiving apparatus and to enable adjustment of parts thereof to be made in a quick and effective manner to suit requirements.

To enable the polarized armature to be readily held normally with any desired force in any desired position between the pairs of poles between which it extends, there is fixed to the spindle extending from the upper end of the armature, a lever arm to the free end of which are connected the adjacent ends of two oppositely arranged coiled springs the other ends of which are connected to two levers, adapted to be moved apart, so as to strain the springs, by an adjustable screw acting against other parts of the levers. To enable the plane of the polarized armature in relation to the faces of the pairs of poles that normally obtains, to be readily adjusted, so as to impart a bias to the armature to suit the signals received, the levers connected by springs to the armature and the adjusting screw associated therewith, are carried by a support that is capable of being adjusted laterally, as by a set screw, against the action of a spring.

Armature adjusting means of the kind described can be variously constructed.

In the accompanying illustrative drawings, Figs. 1 and 2 are elevations at right angles to one another and Fig. 3 a plan, with parts removed, showing apparatus of the kind referred to embodying the present invention. Fig. 4 is a horizontal section on the line IV—IV of Fig. 1.

Referring to these drawings, A and B are the vertically arranged electro-magnets between the upper and lower pairs of poles A¹ B¹ and A² B² of which the vertically arranged polarized armature C is mounted to

oscillate about a vertical axis in the usual way.

The armature adjusting means according to the present invention, comprises, as hereinbefore stated, two levers *a*, *b* connected through coiled springs *c*, *c*¹ to a lever arm *d* fixed to the spindle *e* of the armature C. The levers *a* and *b*, in the example shown, consist of two flat bent arms arranged in the same horizontal plane as the lever arm *d* and pivoted at *a*¹ *b*¹ to a laterally movable support *f*, their longer arms being connected to the springs *c*, *c*¹ and their other and shorter arms *a*², *b*², extending towards one another and terminating near together. *g* is an adjusting screw mounted on the support *f* and arranged to bear against the adjacent ends of the arms *a*², *b*², so that by suitable adjustment of the screw, the force with which the armature is normally held in position can be varied to suit requirement. The support *f* is carried by the upper end *h*¹ of an upwardly extending lever arm *h* pivoted at *h*² to a lug *i* or extension carried by a base plate *k*, to which the pair of vertical electro-magnets A and B are fixed at their lower ends. The lever arm *h* is connected by a spring *n* to a pin *n*¹ fixed to a vertical support *o* extending upward from the base plate *k*, the said lever arm being adapted to be moved against the action of the spring by a set screw *p* extending through a bearing *p*¹ carried by the said vertical support *o*.

r is the ink receptacle for the siphon recorder *r*¹ which is fulcrumed, as usual, in a V shaped bearing *e*¹ at the top of the armature spindle *e*. One end of the siphon recorder dips into the ink receptacle and the other end bears against a tape *r*² which is supported by a platen *r*³ and is drawn forward by feed wheels *r*⁴ in the usual manner. The receptacle, which may be of circular shape, as shown, is carried by a vertical rack *s* arranged to slide in a vertical groove *t* formed in the said vertical support *o* and to be raised and lowered by a toothed pinion *u* fixed on a horizontal spindle *v* journaled in the said support *o*. The spindle *v* is preferably journaled, as shown, in one of the side walls of the vertical groove *t* between the outer side of which and a knob *v*¹ on the spindle *v* is interposed a spring washer *w*, or a coiled spring, that normally holds the

pinion *u* against the opposite side of the wall and in gear with the rack *s*. The opposite wall of the groove *t* is formed with an aperture *x* through which the pinion *u* with its spindle *v* can be pushed, when assembling the parts for use. *y* is a hood carried by the upwardly extending lever *h* and covering part of the mechanism described.

The vertical support *o* may advantageously be cast, as shown, in one piece with the base plate *k* which, as usual, is adapted to be pivoted at one end at *k'* to a table or other support 1 to admit of its adjustment toward and from the tape feeding mechanism by an adjustable screw 2. To the base plate are attached the necessary terminals *z* for the electro-magnets A and B.

The tape feeding mechanism, which is or may be of known kind, may be driven as usual heretofore, from an electric or other motor through mechanism of the friction type comprising a friction disc against which revolves a friction wheel adapted to be moved across the face of the wheel to obtain a variable speed.

What I claim is:

1. In telegraphic receiving apparatus of the kind herein referred to, the combination with the polarized armature of such apparatus, of springs acting in opposition upon said armature to hold it in a definite position, separate movable anchorage points for the extremities of said opposed springs remote from the armature and adjusting means, operable by independent simultaneous separation or approximation of said movable anchorage points to vary the action of said opposed springs on said armature.

2. In telegraphic receiving apparatus of the kind herein referred to, the combination with the polarized armature of such apparatus, of springs acting in opposition upon said armature to hold it in a definite position, separate movable anchorage points for the extremities of said opposed springs remote from the armature and adjusting means adapted simultaneously to approximate one of the opposed spring anchorages to the armature while withdrawing the other spring anchorage therefrom.

3. In telegraphic receiving apparatus of the kind herein referred to, the combination with the polarized armature of such apparatus of a lever connected to said armature, springs adapted to act in opposite directions against said lever, other levers adapted to act upon said springs and adjusting means adapted to vary the positions of the last mentioned levers and the action of said springs on the first mentioned lever.

4. In telegraphic receiving apparatus of the kind herein referred to, the combination with the polarized armature of such apparatus of a lever connected to said armature, spring controlled means adapted to act on

said lever and hold it and said armature in position, a support for said spring controlled means and means whereby said support and spring controlled means can be adjusted laterally and the plane of the polarized armature in relation to the faces of the pairs of magnet poles between which it extends, readily adjusted.

5. In telegraphic receiving apparatus of the kind herein referred to, the combination with the polarized armature of such apparatus of a lever connected to said armature, adjustable spring means adapted to act on said lever and hold it and said armature in position, a support for said spring controlled means and means whereby said support and spring controlled means can be adjusted laterally and the plane of the polarized armature in relation to the faces of the pairs of magnet poles between which it extends, readily adjusted.

6. In telegraphic receiving apparatus of the kind herein referred to, the combination with the polarized armature of such apparatus of a lever connected to said armature, oppositely arranged coiled springs connected at one end to said lever arm, two bent horizontal levers connected to the other ends of said springs, a laterally movable support for said bent levers and adjusting means carried by said support and adapted to vary the position of said bent levers and the action of said springs on the lever connected to said armature.

7. In telegraphic receiving apparatus of the kind herein referred to, the combination with the polarized armature of such apparatus of a lever connected to said armature, spring controlled means adapted to act on said lever and hold it and said armature in position, a laterally movable support for said spring controlled means, a spring controlled lever connected to said support and means for varying the position of said lever and support and thereby the position of the plane of the armature in relation to the pole faces of said magnets.

8. Telegraphic receiving apparatus of the kind herein referred to, wherein there is connected to the polarized armature of such apparatus, a lever the free end of which is connected to the adjacent ends of two oppositely arranged coiled springs the other ends of which are connected to the two levers adapted to be moved apart, so as to strain the springs, by an adjustable screw acting against other parts of the levers, substantially as described for the purpose set forth.

9. Telegraphic receiving apparatus according to claim 8, wherein the levers connected by springs to the polarized armature and the adjusting screw associated therewith, are carried by a support that is capable of being adjusted laterally against the action of a spring, so as to enable the

plane of the polarized armature in relation to the faces of the pairs of magnet poles between which it extends to be readily adjusted, substantially as described for the purpose set forth.

10. Telegraphic receiving apparatus according to claim 8, wherein the levers connected through the coiled springs to the lever arm fixed to the armature spindle, consist of two flat bent arms that are arranged in the same horizontal plane as the lever arm fixed to the armature spindle, and are pivoted to a laterally movable support, the arms of the levers opposite to those to which the springs are connected extending towards one another and the adjusting screw being mounted on the same movable support and arranged to act against the adjacent ends of the last mentioned arms, substantially as described.

11. In telegraphic receiving apparatus of the kind herein referred to, the combination with the polarized armature of such apparatus of a lever arm connected to said armature, a laterally movable support, oppositely arranged levers pivoted to said support,

oppositely arranged springs connecting said lever arm to the oppositely arranged levers, adjusting means carried by said support and adapted to act simultaneously upon and adjust the position of the oppositely arranged levers, an upwardly extending spring controlled lever arm carrying said movable support and an adjusting screw adapted to move the last mentioned lever arm with its attached parts against the action of its spring.

12. In telegraphic receiving apparatus of the kind referred to, the combination with the polarized armature of such apparatus of a lever fixed rigidly to said armature so as to pivot therewith, springs arranged to act in opposite directions against said lever and adjusting means adapted to vary the action of said springs on said lever by simultaneous movement in a path transverse to said lever of the ends of the springs remote therefrom.

Signed at London, this 1st day of November, 1923.

JAMES ROLAND WORTHINGTON.