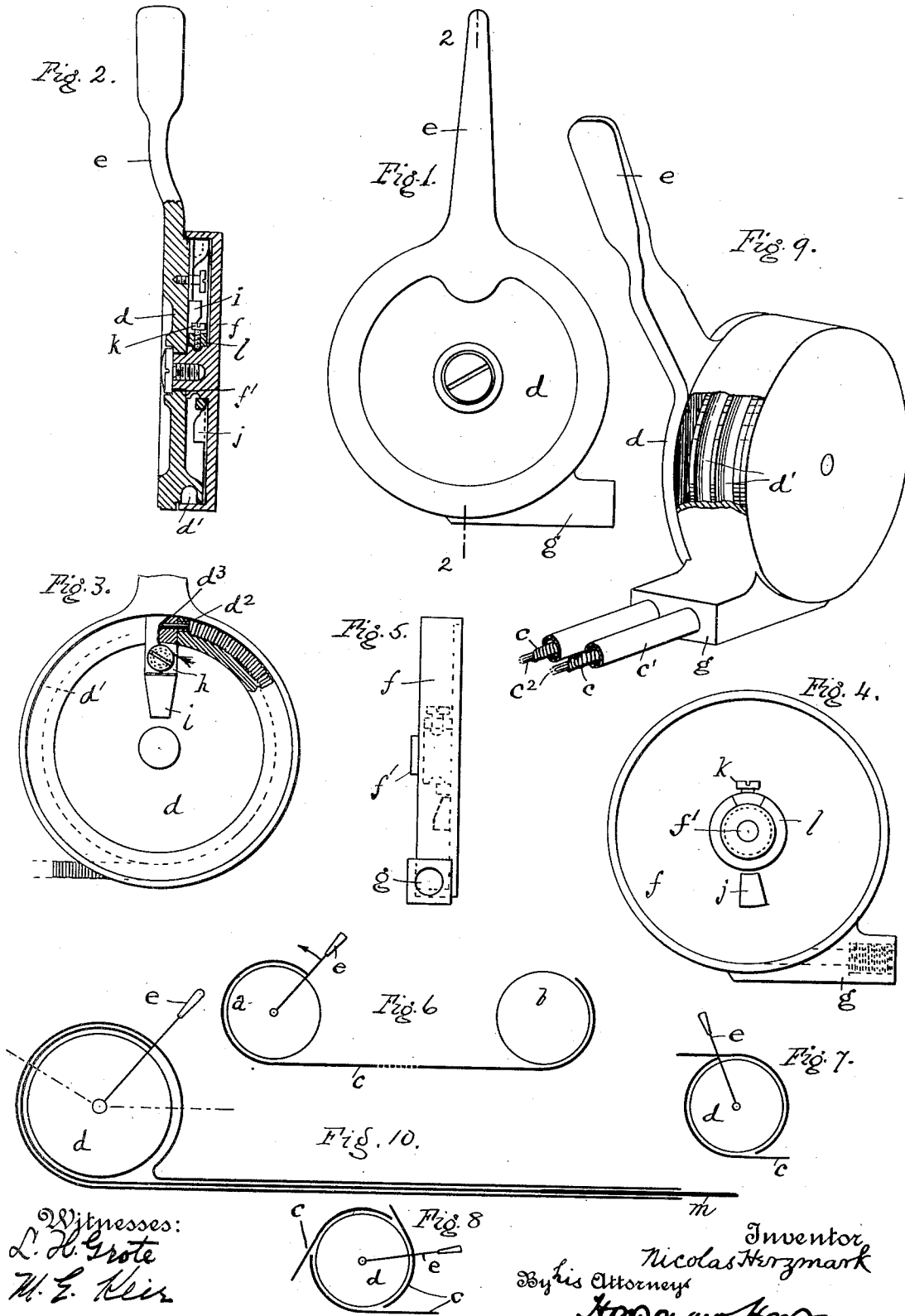


N. HERZMARK.
POWER TRANSMITTING DEVICE.
APPLICATION FILED OCT. 28, 1912.

1,100,482.

Patented June 16, 1914.



Witnesses:
L. H. Grote
W. E. Keir

Inventor,
Nicolas Herzmark
By his Attorneys
Hanson and Hanson

UNITED STATES PATENT OFFICE.

NICOLAS HERZMARK, OF PARIS, FRANCE.

POWER-TRANSMITTING DEVICE.

1,100,482.

Specification of Letters Patent.

Patented June 16, 1914.

Application filed October 28, 1912. Serial No. 728,158.

To all whom it may concern:

Be it known that I, NICOLAS HERZMARK, a subject of the Emperor of Russia, and a resident of 7 Rue de Poliveau, Paris, France, have invented certain new and useful Improvements in Power-Transmitting Devices, of which the following is a specification.

The present invention relates to power transmitting devices and more particularly to means for transmitting intermittent rotary movements to a distance which are based upon the employment of the cable which forms the object of the United States application Serial Number 666,539, filed December 18th, 1911, or of equivalent cables. This device is characterized by the fact that the sheath or envelop which surrounds the cable in its passage over the transmitting or receiving apparatus comprises a movable portion connected with the controlling member or the controlled member. Furthermore the device presents the peculiarity of permitting of the reception of a movement of rotation in any plane other than that of the transmission apparatus.

An embodiment of a device in accordance with this invention is illustrated in the accompanying drawing, in which:

Figure 1 is an elevation of the transmitting apparatus. Fig. 2 is a section on the line 2-2 in Fig. 1. Fig. 3 is an internal view of the transmitting disk, with a part broken away to show a detail of construction more clearly. Fig. 4 is an internal view of the cup portion of the transmitting apparatus. Fig. 5 is an end elevation of the part shown in Fig. 4. Figs. 6, 7 and 8 are diagrammatic views. Fig. 9 is a perspective of a modified form of conductor and Fig. 10 is a diagram of a further modification.

The apparatus consists essentially of a transmitting apparatus *a* (Fig. 6) and of a receiving apparatus *b* upon which a cable *c* of the type described in my copending application Serial Number 666,539 or of an analogous type is wound. Any rotation of the transmitter produces an equal rotation in the same direction of the receiver.

The transmitting apparatus (Figs. 1 and 2) consists broadly of a disk *d* controlled by a lever *e* and pivoted to the center *f'* of a cup *f*, inside which it is adapted to rotate. The disk *d* is provided on its periphery with a groove *d'* in which the cable *c* is wound. The cable *c* enters the cup *f* through a threaded tangential socket *g* (Figs. 4 and 5)

in which the extremity of the sheath or envelop *c'* (Fig. 9) which incloses the cable in its passage from the transmitter to the receiver is screwed.

The extremity of the cable *c* is fixed to the disk *d* in the following manner (Fig. 3): The convolutions of the helicoidal winding of the cable through which compressional efforts are transmitted terminate in contact with a stop *d²* (Fig. 3) which obturates the groove *d'*. The tensional wires *c²* (Fig. 9) which form the core of the cable *c* enter a passage *d³*, bend toward the center of the disk and are wound around a screw *h* which locks them by pressure. The disk *d* comprises a fixed projection *i* (Fig. 3) which limits its rotation in both directions, being engaged between a fixed stop *j* integral with the cup *f* and an adjustable stop *k*. The adjustable stop *k* is formed by the head of a screw secured in a collar *l* which is concentric with the central pivot *f'* of the cup *f*. By tightening the screw *k* the collar *l* can be locked in the desired position.

The receiving apparatus *b* is identical with the transmitting apparatus *a*. Nevertheless the stops are unnecessary and the operating lever *e* is replaced by the member intended to be displaced relatively such as a hand index, control handle or the like.

A number of receivers can be actuated by one and the same transmitter. For this purpose the arrangement diagrammatically indicated in Figs. 7 and 8 may be utilized. The disk *d* is provided with a single groove. The cup *f* receives as many tangential sockets as there are receiving apparatus and each cable is wound on a portion of the arc of the groove in the disk. The disk might equally well be provided with a number of parallel grooves, each cable being wound in one of them as illustrated in Fig. 9.

It is obvious that the invention is not limited to the particular forms that have been described and that any modifications may be introduced which do not depart from the principle employed. Thus for example one of the transmitting or receiving members may be rectilinearly displaced if the transmission or receiving movements render this arrangement more practical. This is diagrammatically illustrated in Fig. 10 where the lever *m* is represented as rectilinearly reciprocated by the locking lever *e*.

I claim as my invention:—

1. A device of the character described,

- comprising an oscillating member, a support on which the same is pivoted, a cable comprising a sheath abutting said support, a flexible helicoidal member within the sheath; an abutment therefor on the oscillating member and a flexible wire element extending longitudinally within the helicoidal member and means for securing the end of said wire element to the oscillating member.
2. A device of the character described, comprising a support, an oscillating member pivoted thereon and provided with a cable groove terminating in an abutment, a cable lying in said groove and having a helicoidal member the end of which bears under compression against said abutment and a flexible wire element extending longitudinally within the helicoidal member and means for securing said wire element to the oscillating member.
3. A device of the character described, comprising a support, an oscillating member pivoted thereon and provided with a cable groove terminating in an apertured abutment, a cable lying in said groove and having a helicoidal member the end of which bears under compression against said abutment and a flexible wire element extending longitudinally within the helicoidal member and passing through the aperture in the abutment for the latter, together with means for securing said wire element to the oscillating member.
4. A device of the character described

comprising a cup shaped support with bearing hub, an oscillating member pivoted on said hub, and having a cable groove terminating in an abutment, a cable lying in said groove and having a helicoidal member the end of which bears under compression against said abutment and a flexible wire element extending longitudinally within the helicoidal member and fixed to the oscillating member, a fixed stop on said support, an adjustable stop mounted on said hub, and a lug on said oscillating member working between the said stops on the support, substantially as described.

5. A transmission device of the character described comprising a pair of supports, a pair of oscillating members pivoted thereon and provided with cable grooves terminating in abutments, a cable extending between said oscillating members and having a helicoidal member bearing at its opposite ends under compression against said abutments and a flexible wire element extending longitudinally within the helicoidal member under tension and secured at its opposite ends to said oscillating members, for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

NICOLAS HERZMARK.

Witnesses:

HANSON C. COXE,
LÉON PEILLET.