(No Model.)

F. ANDERSON.

TRANSMITTER FOR AUTOMATIC TELEGRAPHS.

No. 265,212. Patented Sept. 26, 1882.

Fig 1

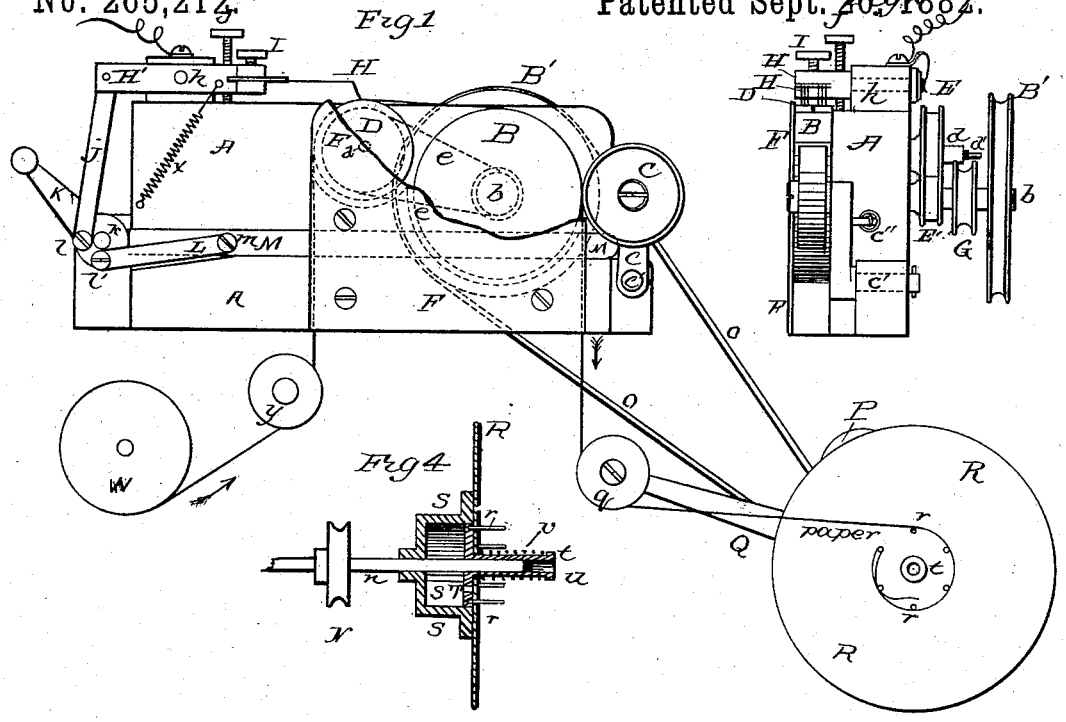
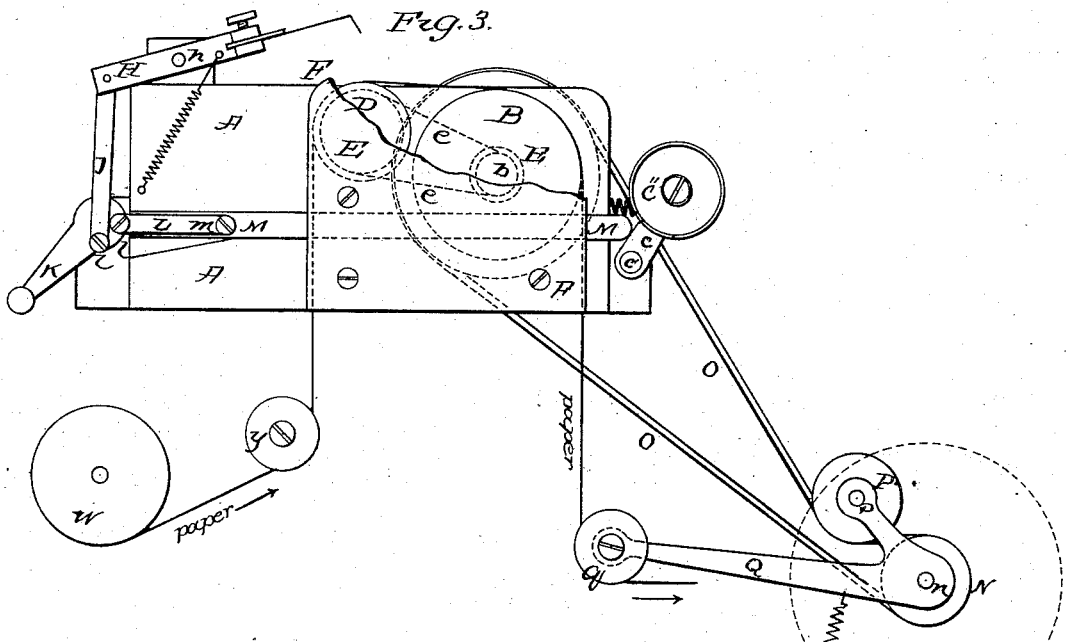


Fig 4

Fig. 3.



Attest
L. W. Seavey
F. L. Middleton

Inventor
Frank Anderson
by Ellis Spear
Atty

UNITED STATES PATENT OFFICE.

FRANK ANDERSON, OF PEEKSKILL, NEW YORK, ASSIGNOR TO THE AMERICAN RAPID TELEGRAPH COMPANY, OF CONNECTICUT.

TRANSMITTER FOR AUTOMATIC TELEGRAPHS.

SPECIFICATION forming part of Letters Patent No. 265,212, dated September 26, 1882.

Application filed January 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRANK ANDERSON, of Peekskill, in the county of Westchester and State of New York, have invented a new and useful Improvement in Transmitters; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to automatic telegraphy, and more particularly to that part of the transmitting apparatus in an automatic telegraph which carries the circuit-controlling fillet. Instruments of this class as heretofore used generally consist of a carrying-wheel, which serves also as a contact-wheel, provided with flanges for keeping the paper in place, a pressure-roller, and a brush for contact, and have no provision for taking care of the used paper.

In the first part of my invention separate carrying and contact wheels are used, in order to avoid the pressure necessarily applied to the contact-wheel to prevent the paper from slipping; and it consists in the special construction whereby the carrying-wheel is made to move slightly faster than the contact-wheel, for purposes hereinafter explained.

The second part consists of an automatic belt-loosener, by means of which the belt connecting the winding-drum to the shaft of the carrying-wheel is made to slip when increased strain is put upon the fillet.

The third part consists of an improved form of the reel.

Figure 1 is a side elevation. Fig. 2 is an end elevation. Fig. 3 is the same as Fig. 1 with parts in an "open" position. Fig. 4 is a side sectional view of the reel shown in Fig. 1.

A A represent the general frame of the machine, which may be of a solid block of wood or a more open frame of metal.

B is the carrying-wheel, which may be covered with rubber, or more durably with leather, that it may take a firmer hold of the paper. This wheel is placed on a shaft, *b*, which extends to rear of machine, and which is provided with a driving-pulley, G; or, if much speed is not required, a crank on prolongation of shaft may be used.

C is a pressure-roller, mounted on lever *c*, which is pivoted at *c'*, and is kept in contact with B by spring *c''*.

D is the contact-wheel, covered on its periphery with platinum or other suitable metal, mounted on a shaft, *d*, which extends to the back of machine.

H is the contact-brush, held in place in one end of the arm H' by the screw I. The arm is pivoted at *h* by a pin which runs through to back of machine.

Either the wheel D or the brush must be insulated from the rest of the machine; or, if desirable, both may be insulated, connection from brush being taken off at the spring *i*, Fig. 2, and from the wheel D at *d*. If a double contact-wheel is used, the two connections of wheel may be taken off at *d d'*.

The wheels D and B are preferably made without flanges to guide the paper, the frame of the instrument on one side and the stationary plate F F on the other serving much better to keep the paper in place.

Paper is supplied by the roll W, passing thence under Y, then over D to B, between B and C to the winding-reel.

It will be seen that the motion of the paper imparted by B will tend to revolve the contact-wheel D with it; but as such a result would not be the most favorable for good contact at high speed, on account of the presence of dust, fibers, &c. I provide the shaft *d* of wheel D with a pulley, E, and the shaft *f* with the smaller pulley, E', and connect the two with a belt, *e e*, as shown in Figs. 1 and 2, or, in lieu of pulleys and bolts, toothed wheels and an intermediate, the action of which is to cause the contact-wheel to move slower than the paper, the result being that the paper is caused to hug tightly the part of the wheel it touches, and the wheel is also kept bright and clean by the sliding paper. These two objects might be accomplished by making the wheel D entirely stationary; but in such a case the contact with brush would be made in one spot, which would soon become unfit for a good contact, (the latter requiring a rubbing of surfaces,) while by giving the wheel a slower motion than the paper all these points are secured.

To provide for the winding of the paper fillet as it is delivered by the carrying-wheel, the reel R R is placed in line with carrying-wheel, and has on its spindle a pulley, N, around which passes a belt, O, which also passes

around pulley B′ on main shaft. The reel is provided near its center with a series of pins, *r r*, forming a core on which to wind the paper.

It is evident that if the reel runs at a uniform speed it will require more and more paper at each succeeding revolution on account of the increasing diameter of the roll, and if the wheel B runs at a uniform rate the paper will either be broken as the size of the roll increases or it will cause the belt O to slip; but if the belt is tight enough to drive the reel as it should the paper would generally be broken. To remedy this the lever Q is pivoted preferably on the spindle N of the reel. On the longer arm of this lever is the idle-roller *q*, and on the short arm, *p*, is the idler P. The lever Q may be weighted or held by a spring in about the position shown. Then the idler P rests on and takes up the slack of the belt O, the spring being just strong enough to cause the belt to drive P. The paper fillet, as it leaves B, passes under the idler *q* on its way to the reel, as shown. Owing to the leverage of the long arm Q, the paper is amply strong enough to overcome the spring and lift *q* whenever strain is brought upon it.

It will be seen that so long as the paper is not wound up faster than it is supplied the lever Q will remain quiet in position, as shown; but as soon as by the increase of the roll an undue strain is brought on the paper the idler *q* will be lifted, carrying also the idler P, until the tension of the belt is lessened, so as to carry the reel only as fast as the paper is supplied.

In fast telegraphy the delay occasioned by the time consumed in manipulating instruments is an important element to get rid of.

To save time in detaching the paper from reel, the following device is used: The hub S of the reel-flange R is made large and hollow, as shown in Fig. 4. This hub is made fast to the spindle *n*, by which the reel is driven. Within the chamber *s* is loosely fitted the disk T, which has a sleeve projecting through the flange R, this sleeve and disk being supported loosely on the spindle *n*. The pins *r r* pass loosely through the flange, and are secured in the disk T. A spiral spring on the sleeve bears against the flange R at one end and against a collar on sleeve at the other, and tends to keep sleeve, pins, and disk in position shown. Pressure on the end of the sleeve forces the disk T backward, withdrawing the pins from the paper roll, leaving the latter free to be removed.

To further save time in manipulation of the instrument, a lever or crank, K, is pivoted to the frame at *k*. A link, *j*, connects the brush-arm H′ with the crank at *l*, and a link, L, connects the point *l′* of crank with the sliding bar M at *m*. The farther end of the bar M abuts against lever *c* of pressure-roller C, as shown in Fig. 1, when the crank is in its closed or upward position. Fig. 3 shows the position of parts when the crank is turned down about ninety degrees, or to its "open" position. In the latter position, it will be seen, the brush is thrown up and the pressure-roller C back—a position in which everything is in readiness for matter.

Having thus described my invention, what I claim is—

1. In a transmitter for automatic telegraphs, a contact-wheel, a separate carrying-wheel, suitable pulleys, and a connecting belt or gearing, substantially as described, adapted to give the contact-wheel slightly slower motion than that of the carrying-wheel.

2. In combination with a transmitter, a winding-reel, R, geared to the transmitter by belt or friction device, and the lever Q and idlers *q* and P, all operating as shown.

3. A reel for winding the fillet, consisting of the flange R, shaft *n*, hollow hub S, disk T, carrying pins *r*, projecting through holes in R, said disk having also the sleeve and spring, the parts being constructed and connected to the carrying-wheel, all substantially as described.

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

FRANK ANDERSON.

Witnesses:
JOHN C. FOSTER,
RUFUS ANDERSON.