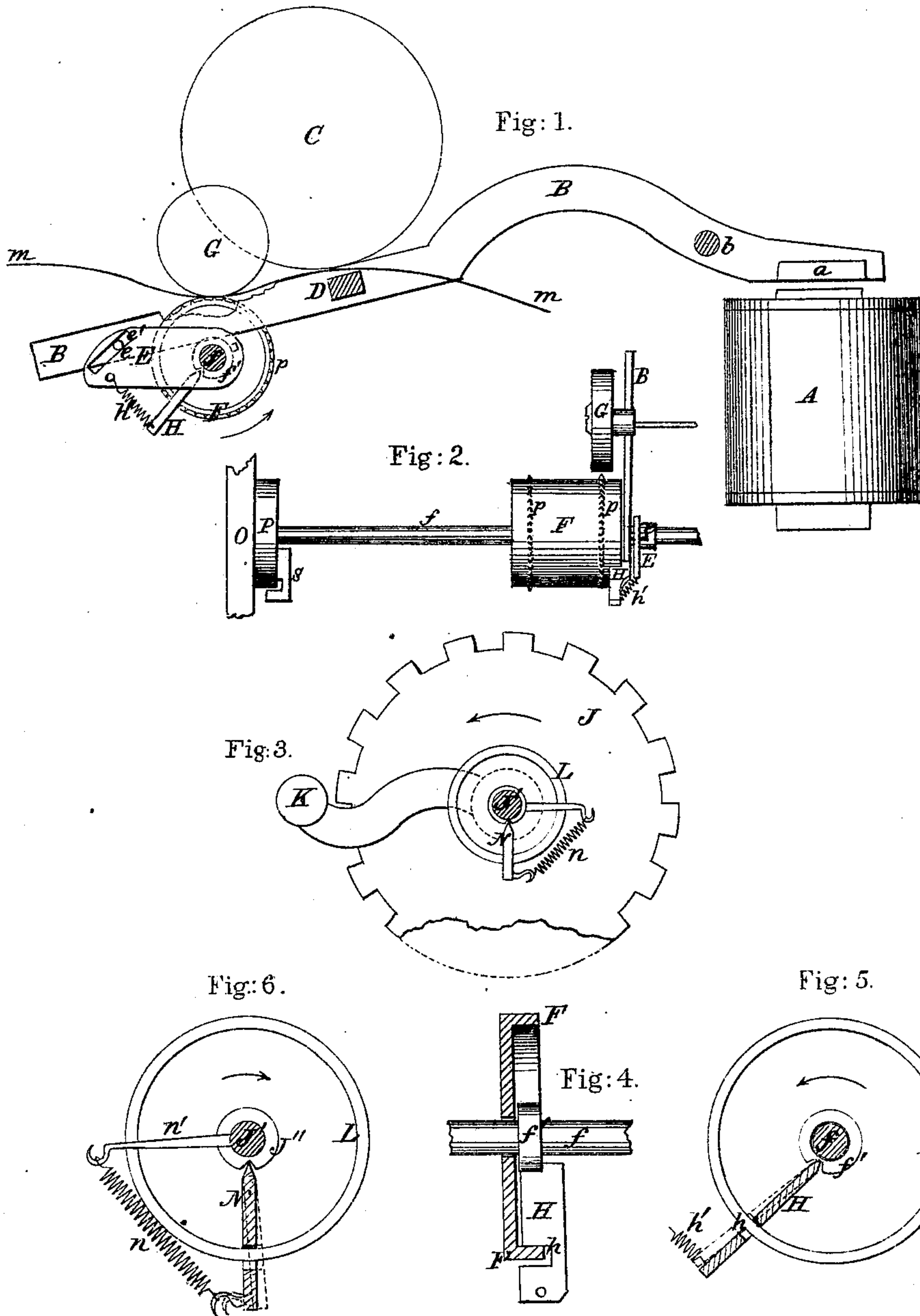


G. C. WESSMANN.

Improvement in Clutch for Telegraph Transmitting and Paper-Feeding Apparatus.

No. 126,505.

Patented May 7, 1872.



Witnesses,

Frank L. Pope
Frances. A. Foster

Inventor,

G. C. Wessmann

UNITED STATES PATENT OFFICE.

GUSTAVUS C. WESSMANN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN CLUTCHES FOR TELEGRAPH-TRANSMITTING AND PAPER-FEEDING APPARATUS.

Specification forming part of Letters Patent No. 126,505, dated May 7, 1872.

Specification describing certain Improvements in Printing-Telegraph Instruments, invented by GUSTAVUS C. WESSMANN, of Brooklyn, in the county of Kings and State of New York.

The first part of my invention relates to the combination of a double clutch with the mechanism employed for feeding the paper strip to the type-wheel in a printing-telegraph instrument, in the place of the ratchet-wheel and pawls usually employed for this purpose, whereby all lost motion is prevented and the spacing of the letters or characters imprinted upon the strip is rendered more uniform than when the said ratchet-wheel and pawl are made use of. The second part of my invention relates to the combination of a similar clutch with the main shaft of the revolving transmitter or circuit-breaker of a printing-telegraph instrument in such a manner as to allow the same to revolve freely in one direction, while any retrograde movement, however slight, is entirely prevented by the action of the clutch, thus obviating any danger of a false connection being made by the circuit-breaker in the hands of an unskillful operator.

Figure 1 is a side elevation of the impression-magnet, lever, printing and paper-feeding mechanism of a printing-telegraph instrument embodying my invention. Fig. 2 is a front elevation of a portion of the last-named mechanism. Fig. 3 is a plan view of a portion of the transmitting machinery of a printing-telegraph instrument, showing the application of my invention thereto. Fig. 4 is an enlarged vertical section of a portion of the paper-feeding mechanism, showing the arrangement of the clutch. Fig. 5 is a side elevation of the same. Fig. 6 is a detached enlarged view of the clutch attached to the transmitter, showing the details of its construction.

A, Fig. 1, represents the impression-magnet of a printing-telegraph apparatus, of which *a* is the armature. B is the printing-lever, turning upon an arbor at *b*. C is the type-wheel, and D the impression-pad, the latter being fixed upon the lever in the usual manner. F is a roller or drum, revolving upon an arbor, *f*, attached to the frame O of the machine, and provided with points *p p* upon its periphery, which take hold of the paper strip *m m*, the latter being kept in contact therewith by the

roller G. By this means, whenever the roller F is revolved in the direction of the black arrow, the paper strip *m m* is drawn forward beneath the type-wheel C. The manner in which the movement of the roller F is effected will now be explained. The swinging plate E is furnished with a diagonal slot, *e'*, near one extremity, and is also provided with a sleeve, *f'*, Figs. 1, 4, and 5, the latter being movable upon the arbor *f* of the roller F, as clearly shown in Fig. 5. A pin, *e*, fixed upon the printing-lever B, enters into the slot *e'* of the plate E. One end of the dog H, Figs. 1, 4, and 5, is wedge-shaped, and is placed in a notch in the sleeve *f'*, Fig. 5. This dog is provided with a recess, *h*, with slightly-beveled edge, Figs. 4 and 5, through which passes the edge of the hollow drum or roller F, and a spring *h'*, Figs. 1 and 5, tends to keep it in the position indicated by the dotted lines in Fig. 5. When in this position it is slightly removed from contact at *h* with the edge of the drum or roller F.

The operation of the device is as follows: When the armature *a* is attracted by the magnet A the pad D is brought into forcible contact with the type-wheel C, and a character imprinted upon the paper *m m*. The upward movement of the pin *e* on the lever B causes the plate E and sleeve *f'* to turn upon the arbor *f* in a reverse direction to the arrows in Figs. 1 and 5. The dog H partakes of this movement, but as it is not in contact with the drum F, on account of the tension upon the spring *h'*, the drum F is not moved. But when the lever B is released and descends to its normal position the downward movement of the end of the plate E, caused by the pin *e*, slackens the spring *h'*. The dog H is thereby allowed to fall into the position shown by the full lines in Fig. 5, coming in contact at *h* with the edge of drum F and locking the same to the sleeve *f'*, and thus causing the drum F to revolve a sufficient distance to draw the paper *m m* forward the distance of one letter or character.

It will thus be understood that the dog H, in connection with the drum F and its attachments, forms a clutch which causes the said drum to revolve when the end of the lever B moves downward, but not when it moves upward, thus drawing the paper forward after each impression of a letter has been taken. A second clutch, P S, placed upon the arbor *f*,

prevents any retrograde movement of the drum F. This clutch is identical in its construction with that attached to the transmitter and shown in Figs. 3 and 6, and a description of the latter, which is about to be given, will therefore serve for both.

In Fig. 2 the same clutch in principle is applied to the transmitter. J is the circuit-breaking wheel, the particular construction of which is immaterial, turning upon a shaft, J', by means of the crank K, and intended to revolve in the direction of the black arrow. L is a stationary ring or hollow cylinder, attached firmly to the frame of the apparatus or any suitable support. N is a dog arranged in a manner similar to the dog H, hereinbefore described.

By referring to Fig. 6 it will be observed that if the shaft J' and collar J'', which, in this case, is attached permanently to the shaft, be revolved in the direction of the black arrow, the movement of the arm n', which is fixed upon the collar J'', will give a tension to the spiral spring n, and the dog N is drawn thereby into the position shown by the full lines in Fig. 6, so that it revolves freely with the arbor J'; but the slightest retrograde movement of the arbor J' and arm n' brings the shoulder of

the dog N into contact with the ring L, and the motion of J' is instantly arrested.

I do not claim, broadly, the mode of constructing the clutch hereinbefore described, as it has heretofore been employed in machinery for other purposes; nor do I claim the arrangement described of the lever B, swinging plate E, pin e, slot e', and shaft f, as it has been heretofore employed in printing-telegraph apparatus.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of one or more clutches constructed, substantially as described, with the lever B and drum F, the whole combined, arranged, and operated substantially as herein specified.

2. The combination of one or more clutches constructed, substantially as specified, with the shaft that actuates the transmitter or circuit-breaker of a telegraphic instrument, combined, arranged, and operated substantially in the manner and for the purpose specified.

G. C. WESSMANN.

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FRANK L. POPE,

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