

B. O. FANSLOW,
CARRIAGE ACTUATING MECHANISM FOR REPRODUCING MACHINES.
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1,047,397.

Patented Dec. 17, 1912.

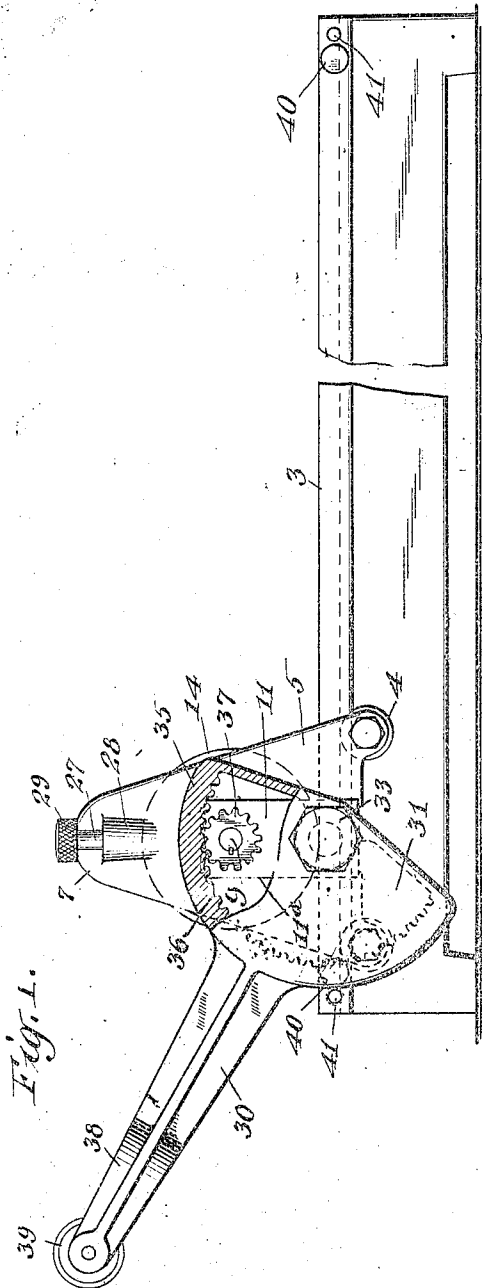


Fig. 1.

WITNESSES:
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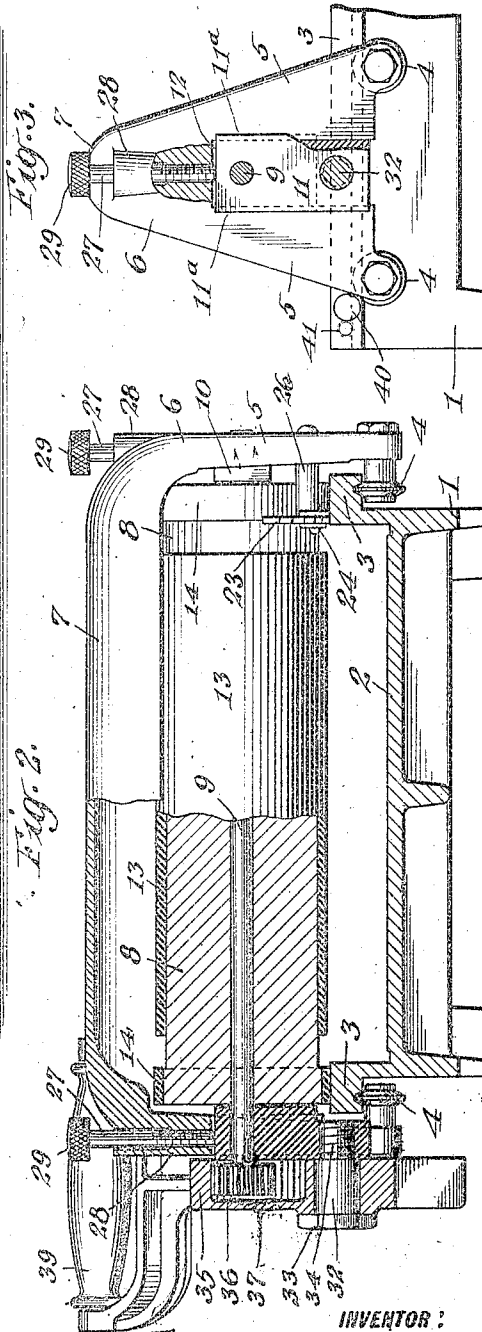


Fig. 2.

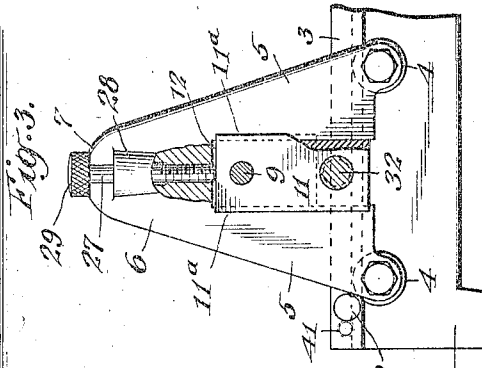


Fig. 3.

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UNITED STATES PATENT OFFICE.

BENJAMIN O. FANSLAW, OF WILLIAMSPORT, PENNSYLVANIA, ASSIGNOR TO
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CARRIAGE-ACTUATING MECHANISM FOR REPRODUCING-MACHINES.

1,047,397.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed May 11, 1909. Serial No. 495,303.

To all whom it may concern:

Be it known that I, BENJAMIN O. FANSLAW, a citizen of the United States, residing in Williamsport county of Lycoming, and State of Pennsylvania, have invented a new and useful Improvement in Carriage-Actuating Mechanism for Reproducing-Machines, of which the following is a description.

This invention relates to duplicating printing machines and particularly to the type thereof which has become known to the trade by my designation of "polygraph," and the invention especially relates to the carriage-actuating mechanism of such and other similar types of machines.

Among the objects of my invention may be noted the following: to provide a cheap, compact and simple structure by means of which the carriage may be driven along the frame of the machine a maximum distance with a minimum amount of effort and angular movement of the actuating-lever; to provide an effective and positive driving means for the carriage, which moves bodily with the latter during its actuating movements relatively to the latter; to provide a carriage-driving mechanism of a character such that only a partial rotation of the actuating-lever or crank is necessary to drive the carriage from end to end of the frame in either direction; and to provide a simple and positive driving means for the carriage which accompanies the latter throughout all its travel on the frame and which is removable with the carriage from the frame, and removable from and adjustable to the carriage with ease and expedition.

With the above objects in view, and others which will be detailed during the course of this description, my invention consists in the parts, features, elements and combinations of elements hereinafter described and claimed.

Referring to the drawings forming part of this description: Figure 1 is a side elevation of a polygraph with parts broken away to illustrate details of the carriage-driving mechanism; Fig. 2 is a transverse, vertical section showing parts of the carriage and actuating mechanism therefor in elevation and in section; and Fig. 3 is a side elevation of one end of the machine with certain

parts removed and other parts broken away to disclose certain details.

Referring to the figures, the numeral 1 indicates the frame of the machine from the central bed 2 of which, on its opposite sides, longitudinal overhanging rails 3 are extended, the top surfaces of which are smooth and the under surfaces of which are grooved for the reception of anti-friction rolls 4, which travel therein and which are journaled at the lower ends of the legs 5 of the carriage 6, which, at its top, is provided with the bridge 7 beneath which, in the opposite ends of the carriage, the impression-roller 8 is journaled by means of its shaft 9, extending from opposite ends thereof into the slidable journal-blocks 10 and 11, disposed at opposite ends of the carriage, respectively, in the crotch 12 between the legs 5. The impression-roller 8 is provided with the yielding rubber surface 13 and at its opposite ends with the resilient or elastic rims or tires 14, which rest in traction with the smooth surface of the rails 3. The bed 2 of the frame receives upon it the composition from which the impression is taken through the medium of a ribbon extending over the surface of the same, and between said surface and the impression-roller 8, and which ribbon is supported by and wound upon spindles at opposite ends of the frame which are intermittently actuated by ratchet-wheels and feed-pawls, all as shown in my companion application executed of even date herewith Serial No. 495,302. Each of the bearings 10 and 11 is freely slidable in the crotch 12 of the carriage and is adjustable therein by means of the screw 27 tapped through the lug 28 of the carriage and having its end impinging upon the top of said bearing-block. The head 29 of the screw 27 is milled, so as to enable it to be turned with ease by the fingers for adjusting the position of the journal-blocks so as to regulate the pressure of the elastic tires 14, carried by the opposite ends of the impression-roller 8.

From this construction, it will be seen that, though the journal-blocks 10 and 11 are freely slidable between the legs 5 of the carriage, they, nevertheless, are held in position therein by reason of the fact that the journal or shaft 9 of the impression-roller

passes therethrough and since the roller is supported by the rails 3 of the frame, as clearly indicated in Fig. 2. Obviously, the resiliency of the elastic tires 14 of the impression-roller keeps the anti-friction rolls 4 in proper engagement with their running grooves in the rails 3 and the adjustment of the bearing-blocks 10 and 11, by the screws 27, brings about sufficient tractional friction between the surfaces of the rails 3 and the tires 14 to produce a rotary driving action of the impression-roller 8 when the carriage is bodily moved longitudinally of the frame. The bearing-blocks 10 and 11 are each prevented from having any movement longitudinally of the roller 8, by reason of embracing flanges, particularly shown in Figs. 2 and 3 on the block 11 and therein indicated by 11^a said flanges extending along the longitudinal edges of the block and embracing opposite sides of the two legs 5. The flanges on block 10 are not shown, since their illustration in connection with block 11 is deemed sufficient. To produce this bodily movement or travel of the carriage longitudinally of the frame and, simultaneously therewith, the rotation of the impression-roller 8, with a minimum amount of movement of the actuating lever or crank, I provide mechanism consisting of the crank or lever 30, journaled at the base of its enlarged semi-cylindrical or segmental portion 31, on the journal-pin 32, the outer end of which is provided with the head 33 and the inner end 34 of which is screw-threaded and tapped into the lower end of the journal-block 11, this block being elongated and extended to near the bottom of the legs 5 for the purpose. The base or segmental portion 31 of the lever is hollowed out to provide the flange 35, the inner periphery of which is formed with teeth 36, with which cooperate a pinion 37 fixed upon the outer end of the shaft or journal 9 of the impression-roller 8. The outer end of the lever is given the form of a yoke 38, the arms of which are connected by a handle 39 for convenient manipulation of the lever. The pinion 37 is of a size such that, in cooperating with the long segmental rack 36, the movement of the lever from the position shown in Fig. 1 to a corresponding position on the opposite side will be sufficient to cause the travel of the carriage from one extreme end of the frame to the other extreme end thereof. Hence, but a comparatively small movement is necessary to secure the complete travel of the carriage along the frame from end to end and the drive of the carriage and rotation of the impression-roller is positive and powerful. The movement of the carriage at opposite ends of the frame is limited by means of the adjustable stop-plug 40, which may be shifted from one to the other of the holes 41 at the respective ends of the frame.

From the foregoing description, it will be understood that, with a single movement of the crank or lever 30 of less than one-half revolution, the entire carriage can be traversed from one end to the other of the machine and simultaneously therewith the impression-roller can be rotated considerably more than a complete revolution and substantially one and one-half revolutions, thus distributing the wear and tear on the impression-roller over the entire circumference and from end to end thereof. Furthermore, it will be seen that, irrespective of the adjustment of the bearing-blocks so as to create more or less traction between the elastic tires 14 and the traction surfaces of the rails 3, the leverage of the driving mechanism is sufficient, and so powerful as, to make the drive of the carriage comparatively easy and with little or no resistance, and that the drive of the impression-roller in both directions will be positive and certain; and it will also be understood that, though the driving mechanism is located entirely on one side of the carriage and of the machine, no binding or retarding action is created thereby, since the balance of the carriage is such and the cooperation of its anti-friction rolls 4 with the grooves of the rails 3, and the cooperation of the latter with the elastic tires 14 are such as to overcome any tendency toward binding and to produce perfect steadiness of action without in any manner detracting from the positiveness of the drive of the carriage and the rotation of the cylinder, and the ease of movement of the actuating crank or lever.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In combination, a supporting-frame; a carriage mounted to travel on the frame; an impression-roller journaled in the carriage; means producing frictional engagement between the frame and the roller; and means for causing the carriage to travel on the frame and the roller to rotate relatively thereto, comprising a substantially semi-circular rack and a pinion cooperating therewith, both mounted upon the carriage, said rack having a handle extending therefrom whereby it may be manipulated to move the carriage on the frame and rotate the roller on the carriage.

2. In combination, a supporting-frame; a carriage mounted to travel on the frame; an impression-roller journaled in the carriage; means producing frictional engagement between the frame and the roller; and means for causing the carriage to travel on the frame and the roller to rotate relatively thereto, comprising a substantially semi-circular rack and a pinion cooperating therewith, both mounted upon the carriage, said rack having a handle extending therefrom

whereby it may be manipulated to move the carriage on the frame and rotate the roller on the carriage, the ratio between the rack and the pinion being sufficient to cause the
5 carriage to travel from end to end of the frame during substantially a half rotation of the rack.

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

BENJAMIN O. FANSLOW.

Witnesses:

CHAS. MCC. CHAPMAN,
FLORENCE ATEN IVES.