(No Model.) 2 Sheets—Sheet 1.

C. P. GOTT.

REGISTERING MECHANISM.

No. 517,115. Patented Mar. 27, 1894.

Fig. 1.

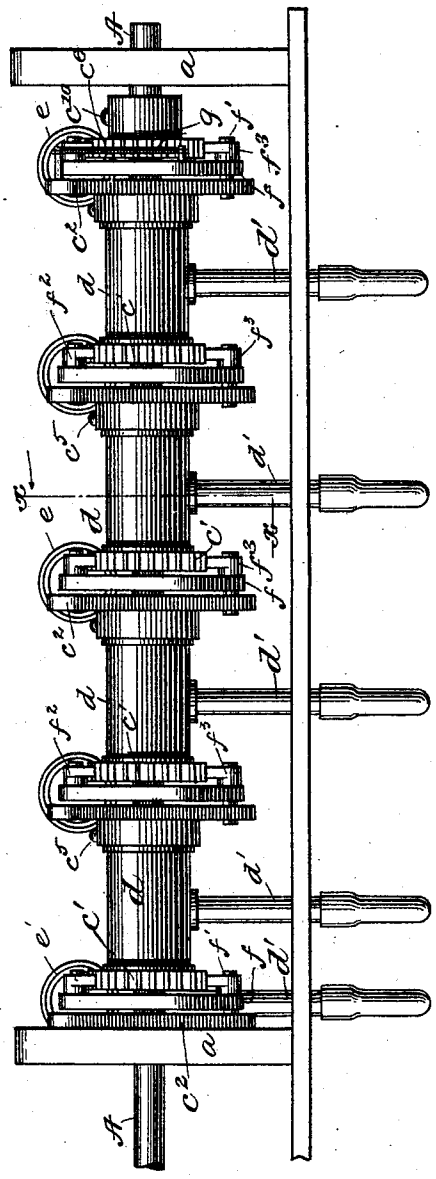
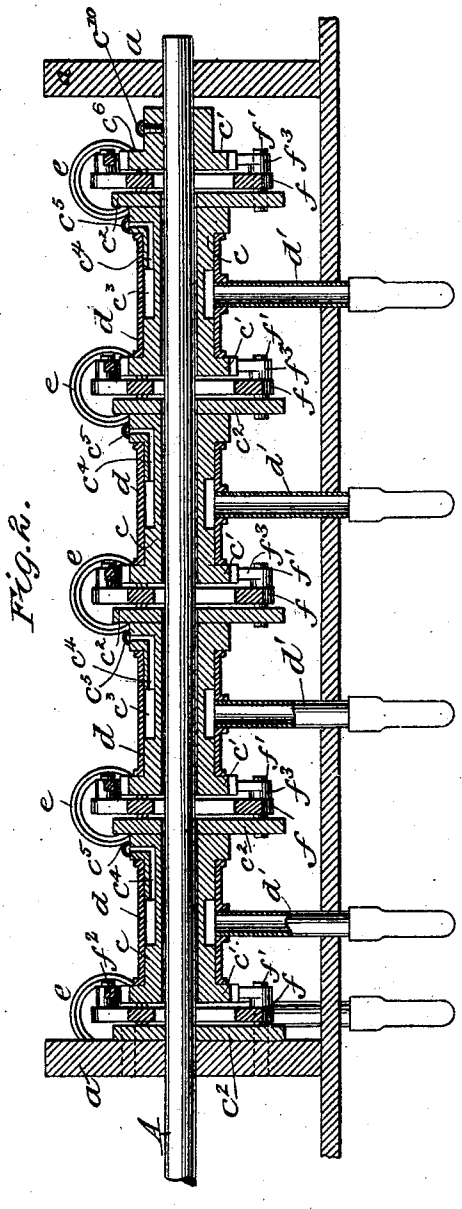


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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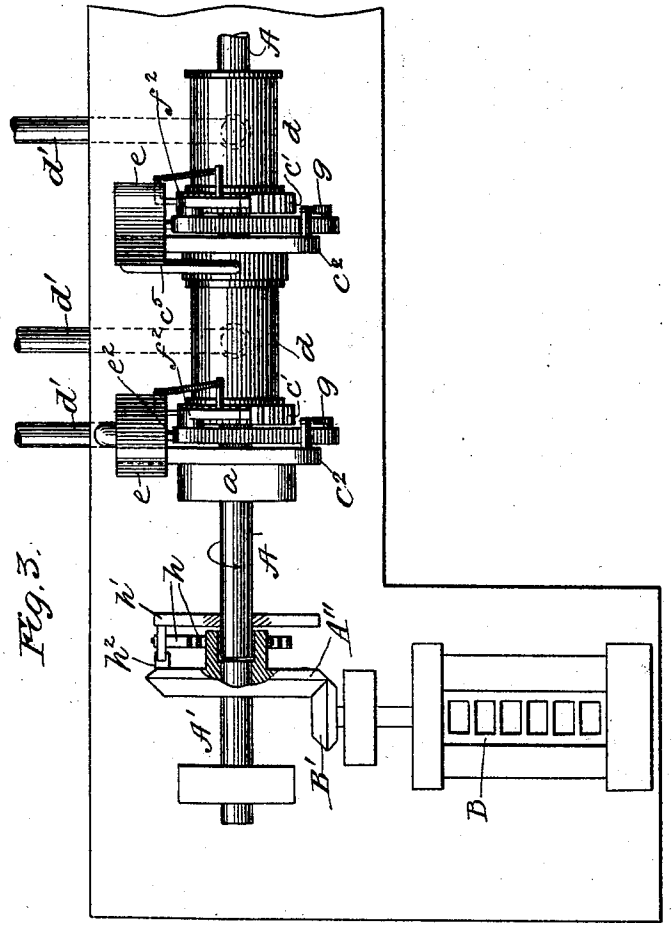

Fig. 3.

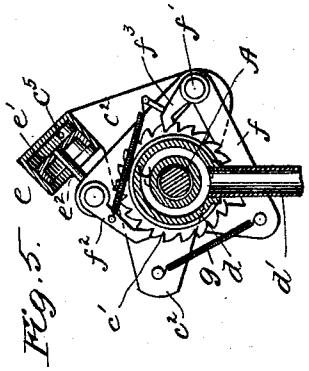

Fig. 5.

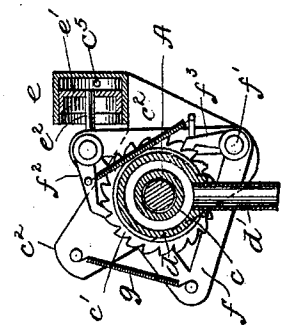

Fig. 4.

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CLARENCE P. GOTT, OF BAYONNE, NEW JERSEY, ASSIGNOR TO HIMSELF, AND J. SEAVER PAGE, OF NEW YORK, N. Y.

REGISTERING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 517,115, dated March 27, 1894.

Application filed January 24, 1893. Serial No. 459,623. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE P. GOTT, a citizen of the United States, residing at Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Registering Mechanisms, of which the following is a full, clear, and exact description.

This invention relates to mechanical movements or to a form of gearing adapted to transmit short movements or impulses to a counting mechanism or registering device, whether those movements occur in succession or simultaneously. Such mechanism is especially useful as a central station apparatus receiving simultaneously or in succession information or signals expressed in units, from various substations or districts. For instance, where voting is taking place at several different points at the same time this apparatus may be used to receive and register the total number of votes cast up to any time, when evidence of each vote is transmitted to the mechanism as it is cast.

The object of the invention is to produce a machine of this character in which the impulses or movements which are delivered to it, exercise a driving power upon the main shaft. In mechanisms of this character heretofore produced, the impulses simply release the shaft and a separate source of power drives it.

My invention consists of the details of construction which will be described with reference to the accompanying drawings, in which—

Figure 1 represents a side elevation of the apparatus constituting my invention. Fig. 2 is a longitudinal section thereof. Fig. 3 is a plan showing the means for attachment to a counting operating mechanism; and Figs. 4 and 5 are transverse sections through the main shaft on the line, x, x, of Fig. 1, showing two different positions of the mechanism.

Referring to the drawings by letter, A represents a shaft mounted in the bearings, a. It is to be rotated by means of the mechanism carried upon it, between its bearings, and its said rotation is to be imparted to a counting mechanism, B, shown conventionally in Fig. 3. Upon the shaft is mounted four, or any desired number of operating mechanisms, which are alike in every particular. These mechanisms each consist of an elongated hub, c, carrying integrally at one end say, the left a ratchet wheel, c', and rigidly at the other end a frame or flange, c^2. The middle portion of the exterior of this hub, is of less diameter than the ends, so that an annular groove will be formed around it. This groove is covered by a loose sleeve, d, which makes a comparatively tight fit with the hub and forms an annular chamber, c^3. The frame, c^2, has positively secured to it, the cylinder, e, which is provided with a single acting piston, e' (see Figs. 4 and 5). The back of this cylinder communicates with the annular chamber, c^3, by a passage, c^4, and a pipe, c^5, shown in Figs. 2 and 3. The loose sleeve, d, is provided with an inlet pipe, d', which communicates with any suitable source of fluid under pressure which normally is cut off from the chamber, c^3.

The frame, c^2, besides carrying the cylinder, e, also has pivoted to it at the point, f', a triangular frame, f, which carries two pawls, f^2 and f^3. One of the free corners of this triangular frame is positively connected with the piston, e', by a rod, e^2. When the piston moves outward, the frame, f, is swung on its pivot and when released, the spring, g, returns the frame to its normal or retracted position. There may be sufficient play between the piston and the cylinder to allow of a positive connection between the piston rod and frame.

The two pawls referred to, which are connected with any one particular operating mechanism, engage with the ratchet wheel, c', on the next succeeding mechanism to the right. The pawl, f^2, forces the wheel around the space of one notch, when the piston is operated, while the pawl, f^3, which is hung on the pivoted point of the frame prevents a backward movement of the ratchet wheel when it is released. It will thus be seen that the power which acts in any one cylinder, is applied to the ratchet wheel of the next adjacent mechanism to the right, and that when any ratchet wheel moves, it also carries with it around the shaft, its cylinder and triangular frame, f, thus causing all of the hubs, c, between the cylinder in which the power is

applied and the right-hand end of the shaft, to rotate.

The last ratchet wheel on the shaft which is represented on the drawings by c^6, is fixed rigidly to the shaft, by a set screw c^{10} so that when it turns, it will carry the shaft with it.

Now it is obvious, that if two or any number of the pistons are thrown forward simultaneously, each one of them will cause its ratchet wheel and hub to turn all the other ratchet wheels and hubs between itself and the hub, c^6, and the shaft, consequently, will be moved a distance equal to the sum of the movement of all the ratchets and hubs primarily operated.

In Fig. 3 I have shown a device which allows the shaft A to rotate at any speed which the impulses are capable of imparting to it and at the same time transmit that motion, at a slower rate if necessary, to the counting mechanism, B. Shaft A is connected to shaft A′ through a coiled spring h and shaft A′ is connected to a counter B through beveled gears A″ and B′. One end of the coiled spring h is fastened to a pin h' carried by shaft A and the other end is secured to the hub of wheel A″. The spring normally holds the pin against the front of a lug h^2 carried by the wheel A″, and the spring is made sufficiently strong to carry the impulses promptly from the shaft A to the shaft A′, but when the shaft A moves extraordinarily fast, the spring is wound a little tighter and runs away from the lug, h^2. As soon, however, as the shaft A slows down or stops, the tension of the spring h will carry the shaft A′ around until the lug h^2 comes in contact with the pinion h', when it will stop. The counter B, therefore, will receive all the impulses which are delivered to the shaft A, but will take them at its own speed. It will be observed that the first cylinder e to the left is mounted upon a plate c^2 which is attached to a fixed part of the frame as seen in Fig. 2 and therefore does not revolve. The mechanisms are operated by sending blasts of air or other fluid through the respective pipes, d'. The pressure is communicated to the respective pistons, and the shaft is rotated one step for each application of pressure, without regard to the order or speed with which the applications are made.

Having thus described my invention, I claim—

1. The combination with a shaft, of a plurality of loose, hubs, arranged end to end thereon in a series, each hub carrying a ratchet wheel at one end, say for instance the left, and a pawl at the other, the pawl of one hub being in engagement with the ratchet wheel of the next hub to the right, and independent means for imparting power to the respective pawls to drive the ratchets which they engage, substantially as described.

2. The combination with a shaft, of a plurality of loose, hubs thereon arranged end to end in a series, each hub carrying a ratchet wheel at one end, say for instance, the left, and a pawl at the other, the pawl of one hub being in engagement with the ratchet wheel of the next hub to the right, independent means for imparting power to the respective pawls to drive the ratchets which they engage, and a ratchet wheel fixed to the shaft at the right hand end of the series of hubs, said wheel being in engagement with the wheel carried by the hub to the left, substantially as described.

3. The combination with a shaft, of a plurality of loose, hubs thereon, arranged end to end in a series, each hub carrying a wheel at one end, say for instance the left, and a pawl and motor cylinder with its piston at the other, the pawls being in engagement with the next adjacent ratchet wheels to the right and the pistons in the motor cylinders arranged to drive said ratchet wheels through the agency of the piston rods and wheels, substantially as described.

4. The combination with a shaft, of a plurality of loose, hubs, arranged end to end in a series, each hub carrying a wheel at one end, say for instance the left, and a pawl and motor cylinder with its piston at the other, the pawls being in engagement with the next adjacent ratchet wheels to the right and the motor cylinder with its piston arranged to drive said ratchet wheels through the agency of the pawls, and means for supplying a motive agency, such as compressed air or steam to the motor cylinders, substantially as described.

5. The combination with a shaft, of a plurality of loose hubs thereon, arranged end to end in a series, a loose sleeve surrounding each of said hubs and inclosing an annular chamber between the sleeves and hubs, an inlet port to said chamber, a ratchet wheel carried at one end of each hub, say for instance the left, a cylinder with its contained piston and a wheel carried at the other end of each hub, said pawls being in engagement respectively with the next adjacent ratchet wheels to the right, substantially as described.

In testimony whereof I subscribe my signature in presence of two witnesses.

CLARENCE P. GOTT.

Witnesses:
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JAMES J. FITZGERALD.