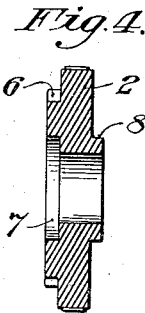
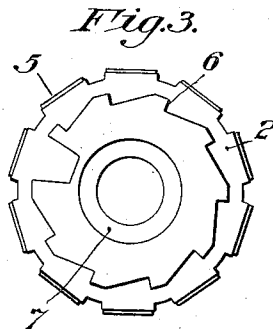
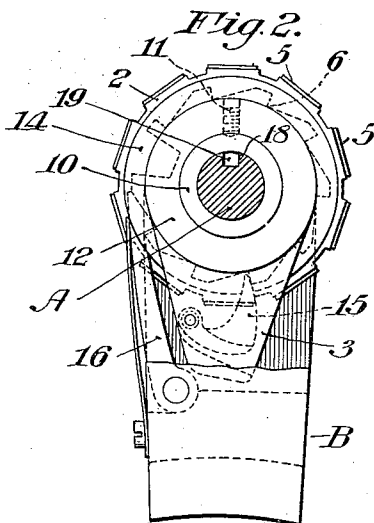


1,055,649.



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UNITED STATES PATENT OFFICE.

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NUMBERING-MACHINE.

1,055,649.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed September 27, 1912. Serial No. 722,599.

To all whom it may concern:

Be it known that I, JOHN R. NOLAN, a citizen of the United States, and resident of the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Numbering-Machines, of which the following is a specification.

This invention relates to that class of numbering machines wherein is employed a numbering "head" comprising, essentially, a frame or housing, a series of numbering wheels having a common axis of rotation, and pawl and ratchet devices for intermittently rotating the wheels independently of each other in such manner as to position in consecutive order the peripheral type numerals thereof; said head being mounted upon and bodily adjustable lengthwise of an actuating shaft which is adapted to effect and control the timely operation of the pawl and ratchet devices.

My invention particularly concerns the numbering head structure, and has for its object to provide therefor a simple and efficient construction and organization of elements whereby the numbering wheels are mainly supported one by the other within the frame or housing and yet severally have capacity for rotation relatively to each other about a common axis, and whereby the head as a unitary self-contained structure may be removed from, mounted on, or adjusted along the shaft to meet varying requirements of service, as will be hereinafter particularly described and claimed.

In the drawings—Figure 1 is a sectional side elevation of a numbering head embodying a good form of my invention, the actuating rock-shaft being indicated in dotted outline. Fig. 2 is an end view of the head, a portion of the frame or housing being broken away and the rock-shaft being shown in cross-section. Fig. 3 is a face view of one of the numbering wheels. Fig. 4 is a vertical section of the same.

A represents the actuating shaft of a numbering machine, and B the numbering head thereon. This head includes a supporting element 1, in the form preferably of a yoke-like housing. Within this housing the intermittently-rotatable numbering wheels 2 and the oscillatory pawl-bearing frame 3 are mounted. The shaft is adapted to extend longitudinally through the housing axially of the wheels and frame, and by a

spline connection with said frame to actuate the same at predetermined intervals to effect the orderly positioning of the numbering wheels. These wheels are each centrally bored and provided with the peripheral type numerals 5 (or other appropriate characters) and with the ratchet teeth 6 laterally of the numerals, as usual. In addition, however, the bore of each wheel is countersunk to afford a socket or recess 7 in one side of the wheel, and is provided with a hub 8 on the other side of the wheel, said hub and socket corresponding one with the other, whereby when two or more wheels are placed face to face, with their corresponding bores in axial alinement with each other, said bores will be unobstructed and the hub of one will be seated in the opposing socket of the next adjacent wheel, and thus the series of wheels will be axially connected and rotatably supported face to face by overlap joints.

The pawl-frame 3 in the form illustrated, comprises a U-shaped structure, whereof the upright arms are bored and provided with hubs 9, 10, respectively, which constitute in effect, hollow trunnions. These trunnions are seated in appropriate bearings in the bored end limbs of the housing, so as to permit oscillation of the frame axially of the numbering wheels. Preferably one of the trunnions (as 9) is integral with, and the other (as 10) separable from the frame, the latter trunnion being conveniently held in place by a suitably-disposed set-screw, as 11, in the contiguous arm of the frame. A washer 12, (or other spacing member) on this trunnion 10, interposed between the adjacent limbs of the housing and pawl frame, keeps the integral trunnion of said frame to its seat and thus prevents endwise displacement of the frame.

The bore of one of the arms of the pawl-frame is countersunk to provide a seat for the hub of the contiguous end wheel of the series of numbering wheels, while the socket of the wheel at the opposite end of the series affords a seat for the inner end of the detachable trunnion of the pawl frame; the two outer wheels of the series thus being rotatably supported within the frame, and the intervening wheels being similarly supported by the outer wheels and by each other through the registering hubs and sockets of the respective wheels. A washer 14, (or other spacing member) on the

trunnion 10, interposed between one arm of the housing and the adjacent outer wheel, keeps the hubs of the series of wheels to their seats and prevents their endwise displacement.

The pawl-frame carries the usual pawls 15 which co-act with the ratchet teeth of the respective numbering wheels at the proper intervals during the oscillation of the frame, so as to impart the requisite steps or impulses to the wheels. A series of spring-pressed dogs 16, pivotally supported by a rod 17 near the base of the housing, constantly engage the ratchet teeth to prevent retrogression of the wheels.

The actuating shaft A is provided with the usual groove 18 longitudinally thereof, and the trunnion 10 of the pawl-frame is equipped with an internal projection or key 19 which, entering the groove, effects operative connection between the shaft and the pawl frame when the numbering head is applied to the shaft, whereby the oscillatory action of said shaft is imparted to the pawl-frame, and yet the head may be bodily adjusted longitudinally of the shaft as requirements of service may demand, or may be removed from or mounted on the shaft without disorganizing the components of the head.

It is to be noted that the various elements of the head may be readily and accurately assembled, and the whole be then effectually locked in place by tightening the single screw 11 in the pawl-frame. To remove the wheels, or any of them, for repair, renewal or substitution, it is merely necessary to release the screw from the trunnion 10, and withdraw the latter endwise of the housing. I do not limit myself to the specific details of construction herein shown and described as the same may be modified without departure from the fair spirit of the invention.

I claim—

1. In a numbering head, the combination with a supporting element, of a series of numbering wheels mounted to rotate therein, said wheels being centrally bored correspondingly with each other and having lateral bearings successively fitted one within the other throughout the series and rotatably supporting the adjacent wheels with their bores unobstructed and in axial alinement with each other.

2. In a numbering head, the combination with a supporting element, of a series of numbering wheels mounted to rotate therein, said wheels being centrally bored correspondingly with each other and having axial hubs and sockets successively in registry with each other throughout the series, whereby adjacent wheels are rotatably sup-

ported one by the other with their bores unobstructed and in axial alinement with each other, and means for actuating said wheels.

3. In a numbering head, the combination with a supporting element, of a pawl-frame having trunnions seated in bearings in said element, means for detachably securing one of said trunnions to the frame, pawls on said frame, and a series of ratchet-toothed numbering wheels mounted in said frame, said wheels being centrally bored correspondingly with each other and provided with lateral bearings successively fitted one within the other throughout the series and with their bores unobstructed and in axial alinement with each other, one of the end wheels of the series being axially supported by the detachable trunnion of the frame.

4. In a numbering machine, the combination with the grooved actuating shaft, of a numbering head comprising a supporting element, a pawl-frame mounted to oscillate in said element, pawls on said frame, a series of ratchet-toothed numbering wheels mounted to rotate in said frame, said wheels being centrally bored correspondingly with each other and having lateral related bearings successively fitted one within the other throughout the series whereby adjacent wheels are rotatably supported one by the other, and means whereby the pawl-frame is operatively connected with the grooved actuating shaft.

5. In a numbering machine, the combination with the grooved actuating shaft, of a numbering head thereon comprising a supporting element, a pawl-frame having trunnions seated in said element, pawls on said frame, means for detachably securing one of said trunnions to the frame, a series of ratchet-toothed numbering wheels having each on its respective sides an axial hub and socket, the socket of one of the end wheels receiving the detachable trunnion of the pawl-frame, the hub of the opposite end wheel being seated in the adjacent arm of said frame, and the respective hubs and sockets of the opposing faces of the intervening wheels being in registry with each other, space members on the detachable trunnion, one being located between the frame and the proximate end wheel and the other between the frame and the said supporting element, and means whereby the pawl-frame is operatively connected with the said grooved shaft.

Signed at New York in the county and State of New York this 17th day of September A. D. 1912.

JOHN R. NOLAN.

Witnesses:

PIERRE A. NOE,
M. B. GOEWY.