March 14, 1944. G. MEIER 2,344,447

MULTIPLE MECHANICAL PENCIL

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Fig. 1

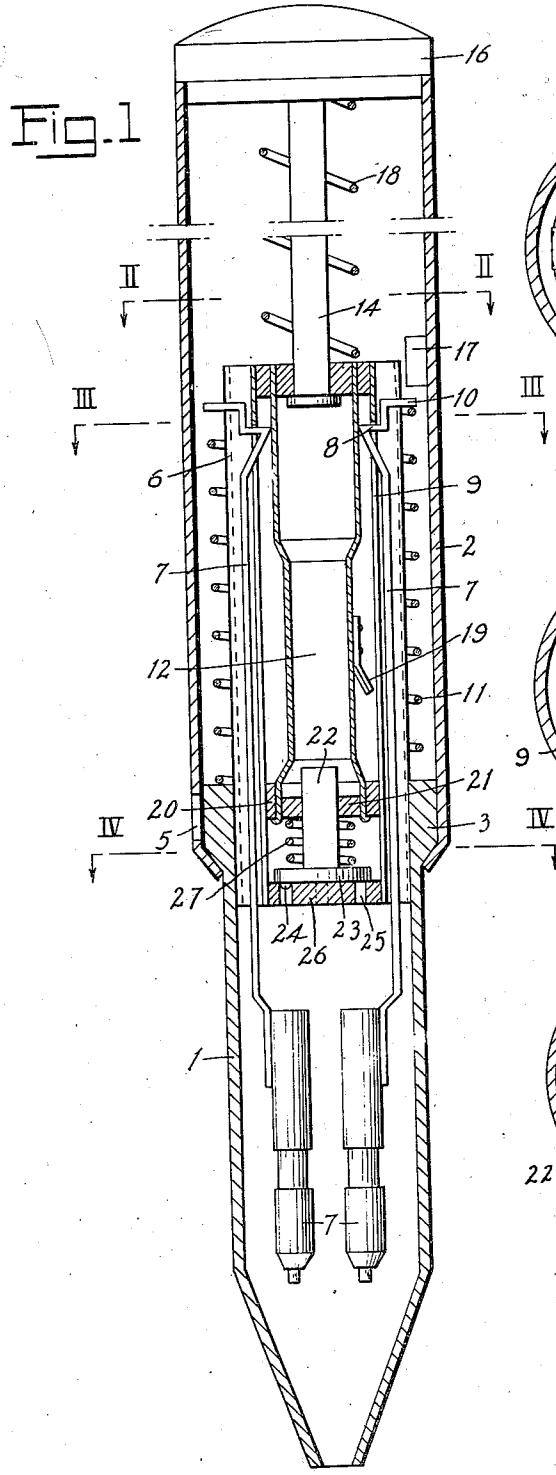


Fig. 2

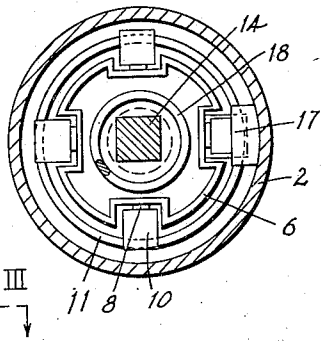


Fig. 3

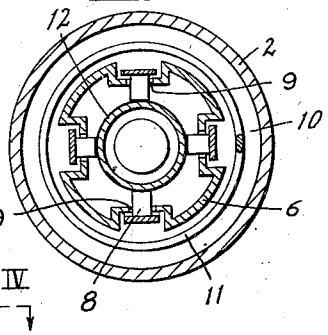
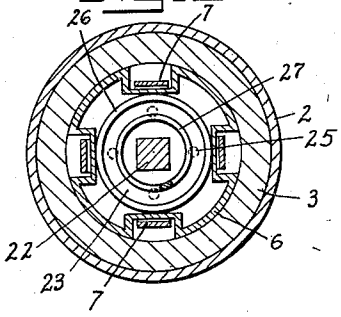


Fig. 4



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Fig. 5

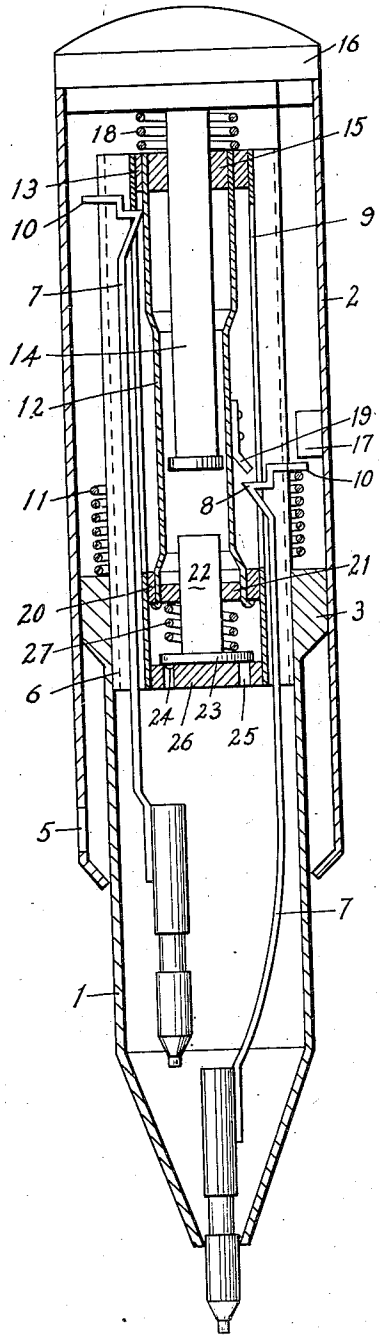


Fig. 6

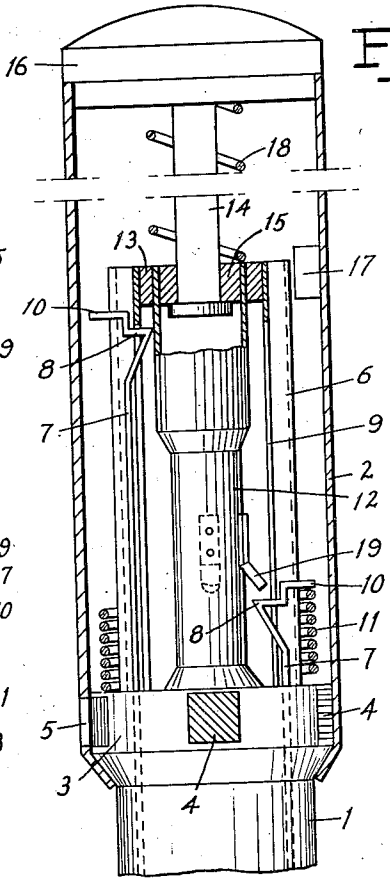
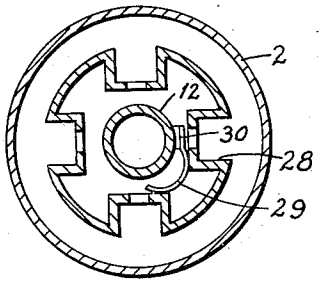


Fig. 7



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UNITED STATES PATENT OFFICE

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MULTIPLE MECHANICAL PENCIL

Georg Meier, Nuremberg, Germany; vested in the Alien Property Custodian

Application April 15, 1941, Serial No. 388,680
In Germany May 2, 1939

7 Claims. (Cl. 120—14)

The invention refers to a multiple-mechanical pencil in which the refills are brought into writing position by a pushing movement in the longitudinal direction of the pencil, the feeding member being adjustable by turning to a single refill carrier guided in a refill carrying sleeve known in the art.

With some multiple-mechanical pencils known in the art every refill carrier has an operating member protruding through a slit of the case sleeve. The disadvantages of such pencils reside in the fact that the members protruding from the surface of the case are liable to damage garments, particularly the pockets, and interfere with the position of the pencil in the hand during operation. For every refill carrier a guiding slit must be provided, together with stops for the carrier in end position, and dust, moisture and the like are apt to enter through these slits. Also for the feed of the different refill carriers a particular member has to be operated in every case. However, it is true that other multiple-mechanical pencils are known that do not employ outwardly protruding operating members. They possess a feeding member adjustable by turning to the individual refill carriers. But these pencils too are objectionable. With these pencils, the refill carrier lying in writing position has to be returned manually to its original position by displacing it lengthways, when the refill carrier is to be changed, before one is able to change over and place a new refill carrier into writing position. The longitudinal displacement of the refill carriers and turning the feeding member for transferring it to another refill carrier are not connected to one another. Thus every one of the movements mentioned requires a special operation.

These deficiencies are eliminated by the present invention in that one of the refill carriers is brought into writing position by the feeding member and is held in this position by a turnable stop and is subject to the action of a spring which forces it back automatically to the position of rest when the stop is turned, said stop being arranged upon a part which is connected with the part carrying the feeding member and which is thus adapted to be turned along with the carrier. All the refill carriers are subjected to the action of one single spring surrounding the sleeve of the refill carriers which automatically brings back to the non-use position the refill carrier which is at the time in writing position and which is released on turning the stop.

A further feature of the invention consists in the carrier of the feeding member being urged away from the carrier of the stop by a spring which likewise returns the feeding member to its original position.

In preference the construction is such that the feeding member formed as an inward extension, projection, nose or the like is arranged at the displaceable rear part of the two-piece casing and that this part is connected with the front part of the casing by a gudgeon which on being turned carries along the carrier of the stop and which is displaceable within it. The stop carrier rests indisplaceable, but turnable in the sleeve of the refill carrier supported by the front part of the casing.

With the pushing multiple-mechanical pencil formed according to the invention, the manipulation is facilitated considerably. When the rear part of the casing and consequently the feeding member is turned, the refill carrier being in writing position is released and guided back automatically to the position of rest. As simultaneously the adjustment to the next refill carrier takes place, the process of changing over is not only simplified, it may also be carried through very quickly for the reason that the carrier of the feeding member returns likewise to its original position automatically after the respective refill carrier is brought into writing position. If the rear part of the casing serves as a carrier for the feeding member, it entails the further advantage of the pencil always showing the same length both when in use and when not in use.

In the drawings, the invention is illustrated by way of example,

Figure 1 showing a longitudinal section through a pencil when not in use,

Figure 2 a section on II—II of Figure 1,

Figure 3 a section on III—III of Figure 1,

Figure 4 a section on IV—IV on Figure 1,

Figure 5 a longitudinal section on feeding a refill carrier,

Figure 6 a part longitudinal section of the pencil ready for use,

Figure 7 a cross section of another form of construction.

The casing of the multiple-mechanical pencil consists of the forward part 1 and the rear part 2 which is displaceable in relation to the part 1. A thickened portion 3 of the front part 1 of the casing serves as a limit of displacement and receives color-indicators 4 visible through a window 5 of part 2 of the casing.

In part 1 of the casing, a tubular member 6 is supported, in the guide channels of which the

refill carriers or writing material holders 7 are displaceable. With the form of construction shown in the drawings, four refill carriers are provided.

On longitudinal displacement, the refill carriers 7 are guided by means of noses or the like 8 running in longitudinal slits 9 of the tubular member 6. At their rear end on which the feeding member acts, they are in preference bent so as to form a projection 10. They are subjected to the action of a spring 11 bearing against the thickened portion 3 and which may be so narrow as to hold the refill carriers in the guide channels of the tubular member 6. In this case, the stop 19 which will be described need not be resilient.

In the interior of the tubular member 6, a stationary tube 12 is arranged and secured in a ring 13. In tube 12, a gudgeon 14 is displaceable, which on being turned carries the disc 15 therewith pressed onto the tube 12. For this purpose the gudgeon 14 is formed square in preference. It is housed in the closing cap 16 and is connected thereby with part 2 of the casing.

Part 2 of the casing receives the feeding member 17 which is formed as an extended piece, projection, nose or the like. A spring 18 tends to hold part 2 of the casing in the outer or initial position.

On the tube 12 which is incapable of being displaced, but capable of being turned, there is arranged a stop 19 which holds the respective refill carrier in writing position. It consists in preferenec of a resilient arm inclined forwardly over which nose 8 of the refill carrier catches and which in this manner prevents the respective refill carrier from being pushed back when not desired.

In front, the tube 12 is guided in the tubular member 6 by means of a ring 20. The tube 12 receives in its interior at the front a disc 21 which is engaged by a square gudgeon 22, the head 23 of which has an elevation, e. g. a lug 24 which engages, under action of spring 27, into notches, holes or the like 25 of a disc 26 arranged in front in the tubular member 6.

When the parts of the improved multiple-mechanical pencil are in the position shown in Figure 1, when not in use, and when the refill carrier adjusted for advancement—the color of its refill may be seen through the window aperture 5—is to be brought into writing position, the part 2 of the casing, and thus the feeding member 17, is pushed forwardly. In doing so, the refill carrier adjusted is guided forwardly according to Figure 5, until its nose 8 catches over the resilient stop 19. The refill carrier is in writing position. The part 2 of the casing is pushed back automatically to its original position by spring 18 (see Figure 6).

Now, when a refill of some other color is desired for writing, the part 2 of the casing is turned until the color-indication desired becomes visible through the window 5. At the same time, feeding member 17 is adjusted to register with the respective refill carrier. By the act of turning tube 12 by turning part 2, the stop 19 is carried along. As soon as the stop 19 has passed from the nose 8 of the refill carrier then in writing position, the refill carrier jumps back into its position of rest under the action of spring 11, without any particular manipulation being required. The refill carrier adjusted for advancement can now be guided into the writing position, in the manner described above.

The detent arrangement 22, 23, 24, 25, 26 and 27 secures an exact adjustment of the feeding member 17 and of stop 19 to the respective refill carrier and prevents any undesired turning during writing.

Instead of the detent arrangement 22—27 and the stop 19 separated from it, an arrangement according to Figure 7 may be used with which one single member secures the adjustment and holds the refill carrier in writing position. In this case, the stop according to Figure 7 is formed as a resilient member 28. A curved portion 29 of this member 28 arranged at the end forms a detent between two guide channels of the tubular member 6 and thus takes over the function of the detent arrangement 22—27 described above. The part 30 of the member 28 takes over the function of the stop 19 described above. This construction has the advantage of simplifying the manufacture and thus reducing the cost. But in this case the turning can be effected only in one direction when changing over, contrary to the construction according to Figures 1–6.

What I claim is:

1. A multiple-mechanical pencil comprising a casing for writing material carriers, means secured to each of said carriers to move a selected carrier to writing position, a movable feeding member to actuate said means, a stop member, a rotatable member, on which the stop member is mounted, for so positioning said stop member that it co-acts with the moving means of a selected carrier, to hold such moving means in the writing position and a spring to move the carrier back to non-writing position when the rotatable member is rotated to displace the stop member.

2. A multiple-mechanical pencil according to claim 1, in which the rotatable stop member is rotated by means of the feeding member.

3. A multiple-mechanical pencil according to claim 1, in which a tubular member is provided and having slots in which said means are guided and the spring being provided around said sleeve and means.

4. A multiple-mechanical pencil according to claim 1, in which the feeding member comprises a lug extending inwardly from an outer rotatable sleeve and adapted to contact the means of the selected material carrier.

5. A multiple-mechanical pencil according to claim 1, in which an outer rotatable sleeve, carrying the feeding member, is provided with a gudgeon slidable and non-rotatable in a disc mounted in said rotatable member.

6. A multiple-mechanical pencil according to claim 1, in which the stop member consists of an arm directed forwardly, inclined and is resilient.

7. A multiple-mechanical pencil according to claim 1, in which a tubular member is provided in which the rotatable member is mounted, a disc having slots is mounted in said tubular member, and a spring-pressed detent member is mounted in said rotatable member and co-acts with the slots in the disc to prevent accidental rotation of the rotatable member.

GEORG MEIER.