

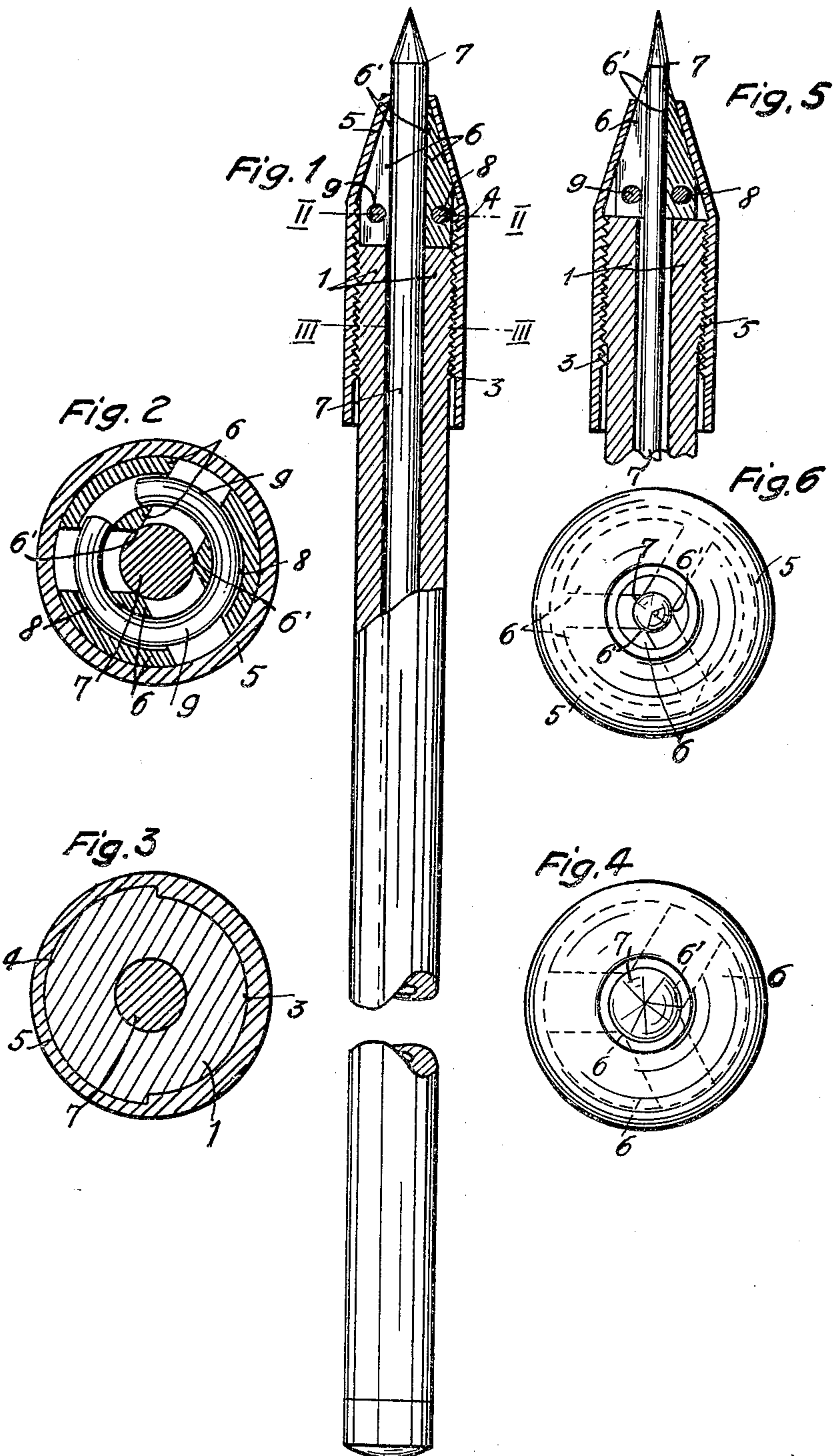
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LEAD HOLDER

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## UNITED STATES PATENT OFFICE

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## LEAD HOLDER

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Lead holders are known which have over the holding element at least two longitudinal and transversely shiftable clamping elements, which engage the lead on a relatively long length at several points. By shifting the clamping cheeks the internal diameter of the bearing sides can be adjusted so that thin or thick leads can be employed. According to one such suggestion, the clamping cheeks are tapered towards the front end corresponding to the shape of the rotary sleeve and are pressed together indirectly by means of a split ring. The clamping cheeks can then be of sector shape.

These constructions are relatively very complicated as too many parts are necessary, which, in time, unfavourably influence the reliable function.

The present invention relates to a lead holder by means of which the objections inherent to the known complicated constructions are overcome in a simple and reliable manner without affecting the accurate working and durability of the holder. This is attained according to the invention in that the clamping cheeks, which are partly straight and partly inclined, are loosely accommodated in a space formed by the cone of the rotary sleeve and the end of the lead holder.

In the rear portion of the clamping cheeks, transverse bores are provided through which the spring ring is inserted.

An embodiment of the invention is illustrated by way of example in the accompanying drawing in which:

Fig. 1 shows a holder in elevation, partly in longitudinal section.

Fig. 2 is a cross section on line I—I of Fig. 1.

Fig. 3 is a cross section on line II—II of Fig. 1.

Fig. 4 is a front end view of the holder.

Fig. 5 is a part longitudinal section, showing the lead holder with a thin lead.

Fig. 6 is a front end view of Fig. 5.

In the rear end of the lead holder casing 1 a head 2 is inserted. The front end of the lead holder casing is externally screw threaded at 3, a rotary sleeve 5, provided

with an internal screw thread 4, being screwed on. The rotary sleeve 5 tapers towards its outer end and three clamping cheeks 6 are arranged therein, above the front end of the tubular casing 1. The clamping cheeks taper towards the front to correspond to the conical shape of the rotary sleeve and they are of sector-shaped cross section. The clamping cheeks 6 are radially and longitudinally shiftable within certain limits and they have hexagonal bearing sides 6' engaging the lead 7, inserted in the holder, at three mutually displaced points on a relatively great length of the surface of the lead. The lead 7 is held by the clamping cheeks 6 along the entire length of the same, that is no longer so to say point wise in a circular line. The clamping cheeks further have bores 8 extending all at the same height in the transverse plane. A clamp opening ring 9 is inserted through these bores. This clamp opening ring is resilient and always tends to widen in order that the clamping cheeks shift in transverse direction into the position in which the bearing sides 6' have the largest internal diameter.

If the sleeve 4 is turned, so that it screws on to the lead holder casing 1, the clamping cheeks are pressed forward slightly beyond the sleeve 4 and, owing to the tapering of the sleeve, shift towards one another. Consequently the internal diameter between the bearing sides 6' is reduced and the holder can be employed for thin leads as shown in Fig. 5. If the sleeve 4 is turned in the opposite direction so that it screws off the casing 1, the clamping cheeks 6 will be pulled inwards owing to the action of the clamping ring 9 and open so that thicker leads can be inserted.

The lead holder above described ensures a reliable protective holding of the lead so that breaking of the lead cannot occur as easily as in the known forms of construction. The lead holder is suitable for leads of 1 to 4 mms in thickness, and the changing of the leads can be effected quickly without any difficulty.

Two or four or even more clamping cheeks might be employed instead of three, the re-

maining construction remaining substantially the same.

I claim:

A lead holder, comprising in combination  
5 a tubular casing, a rotary sleeve tapering towards its outer end forming a space with the end of said casing, three longitudinally and laterally shiftable clamping cheeks partly straight and partly inclined loosely mounted  
10 in the space between the cone of said rotary sleeve and the end of said casing, and having in the rear portion transverse bores, and a clamp opening ring extending through said bores.

15 In testimony whereof I affix my signature.

MAX STEIGER.

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