May 16, 1933. W. A. S. HECKING 1,909,616

PEN, PEN POINT, AND PROCESS OF MAKING SAME

Filed Sept. 15, 1927

Fig. 1.

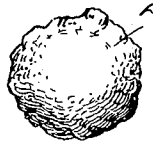


Fig. 2.

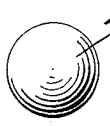


Fig. 3.

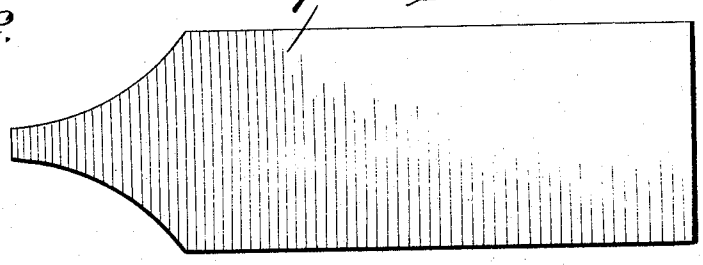


Fig. 4.

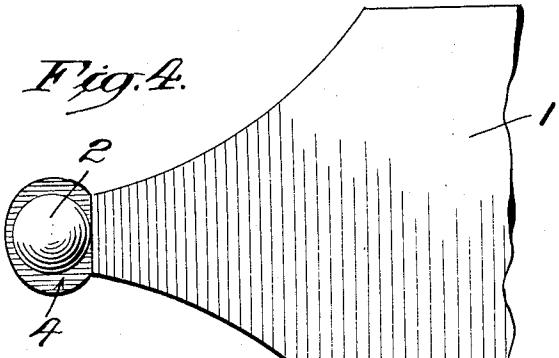


Fig. 6.

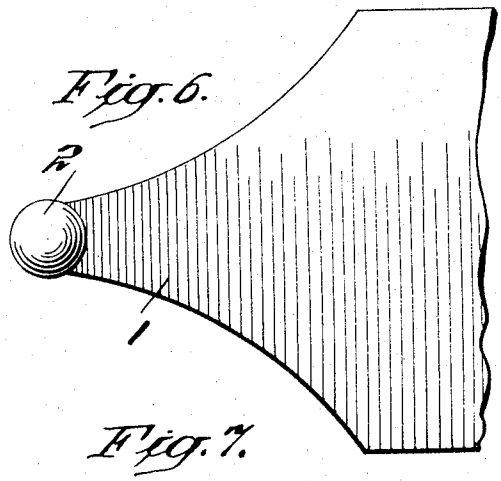


Fig. 5.

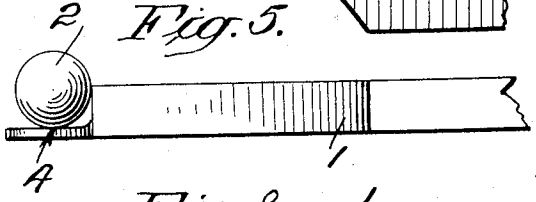


Fig. 7.

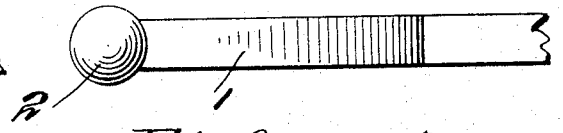


Fig. 8.

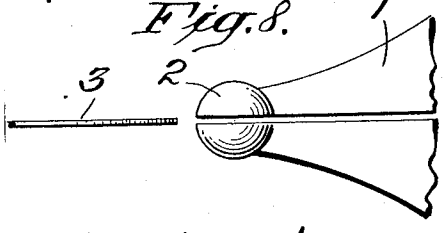


Fig. 9.

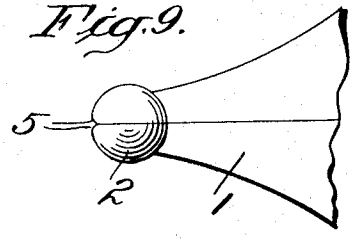
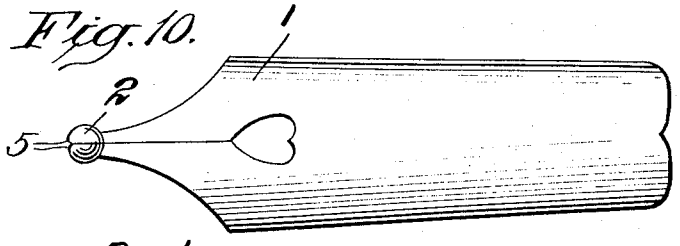


Fig. 10.



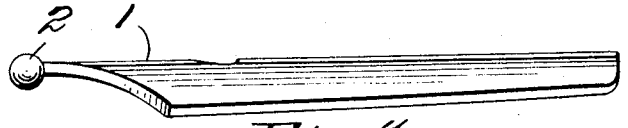


Fig. 11.

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BY
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His ATTORNEY

Patented May 16, 1933 1,909,616

UNITED STATES PATENT OFFICE

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PEN, PEN-POINT, AND PROCESS OF MAKING SAME

Application filed September 15, 1927. Serial No. 219,618.

This invention relates to improvements in pens, pen-points and processes of making same.

As heretofore manufactured, gold pens tipped with the material known in the pen-making trade as "iridium" or "iridium composition" have been provided with tips of varying irregular shapes and configuration, and in order to provide a smooth writing surface these tips of irregular shape were necessarily slit and then held in order to be trimmed or ground on opposite sides, at front and rear and on top to bring the iridium tip portion into a conformation substantially like a frustum of a pyramid with the top corners rounded. This results in considerable labor and expense and in so trimming or grinding, the metallic iridium or hard composition, which is coated with gold, is often unequally arranged on opposite sides of the slit, and in this grinding a substantial part of the iridium tip is often wasted.

The object of this invention is to avoid the labor and expense of grinding tips of such irregular shape by providing or mounting on a pen, a tip of iridium or similar hard metal composition having the shape of a sphere or ball, whereby substantially all grinding will be eliminated and a better and smoother writing point will be provided.

Another object of the invention is to produce pens having iridium ball points so slitted as to provide a smooth and non-scratching writing point which will in writing not catch in the paper but will glide over the surface thereof, and at the same time produce an even uniform mark.

With these and other objects in view, the invention comprises the combination of members and arrangement of parts so combined as to co-act and cooperate with each other in the performance of the functions and the accomplishment of the results herein contemplated, and comprises in one of its adaptations the species or preferred form illustrated in the accompanying drawing, in which:—

Fig. 1 is a view of an irregularly-shaped piece or block of iridium or similar hard material suitable for making a conventional pen point;

Fig. 2 is a view of a sphere formed of a block of metallic iridium or other composition, such as shown in Fig. 1, and comprising my preformed pen point;

Fig. 3 is a view, in plan, of a conventional pen blank;

Figs. 4 and 5 are plan and edge views of a conventional pen blank having the point notched and the spherical ball mounted in the notch;

Figs. 6 and 7 are plan and edge views respectively of a pen point after the sphere has been brazed in place on said point;

Fig. 8 is a view, in plan, of a pen point showing the blank after it has been put through the usual operations of rolling, blanking, piercing, stamping, raising, cutting off and, lastly, slitting;

Fig. 9 is a view similar to Fig. 8 of a pen point showing the edges of the slit smoothed off; and

Figs. 10 and 11 are respectively plan and edge views of the finished pen embodying my invention.

Referring now to this drawing, which illustrates a preferred embodiment of my invention, 1 indicates a gold pen blank which is prepared for tipping in the conventional manner as has been used heretofore for tipping with irregularly shaped points of iridium or similar composition, and on which, in accordance with my invention, is mounted a ball or spherical point 2 which will obviously provide a better writing point having a more uniform bearing surface and providing a non-scratching writing point. The ball or spherical tip or point 2 is composed of a block 2′ of iridium or similar hard composition of iridium and other metals conventionally used for application to pens for the purpose of providing hard and substantially indestructible points.

In accordance with this invention, the tip or point 2 is initially formed in the shape of a ball or sphere, is then mounted and brazed on the conventionally formed and notched pen blank, the ball-point because of its shape being capable of symmetrical mounting in the notch in the pen blank which is thereafter put through the usual opera-

tions of rolling, blanking, piercing, stamping, raising, cutting off and polishing, after which the pen and ball-point is slitted. This is accomplished by guiding the point-end of the pen into cutting contact with a conventional slitter 3.

By my invention as aforesaid, the balls are initially formed and when the point is notched as shown at 4 in Figs. 4 and 5, and the ball 2 placed in the said notch 4 by the conventional method, the ball 2 is brazed or sweated on the notched point of the blank 1 and shape of the ball causes it to assume a symmetrical relationship to the point, as shown in Figs. 6 and 7, so that all pen points provided with ball tips are capable of being slit along a substantially standard line, which is not possible with irregularly shaped tips. These balls or spheres of iridium or similar hard metal composition may be formed in any suitable way, and I have heretofore made balls of this type by taking the irregularly shaped tips or blocks of metal heretofore used, isolating each of the blocks and melting or fusing the same at a high heat to cause the irregularly shaped block to assume the form of a globular drop, which when cooled will have the configuration or shape of a sphere.

When a ball or spherical point as hereinabove specified has been utilized, no further grinding or trimming is necessary, except that it is desirable to separate the two parts of the point and to round off the sharp edges at opposite sides of the slit, as shown at 5 in Fig. 9 whereupon the pen will be finished as shown in Figs. 10 and 11 and ready for mounting in a fountain pen holder or for such other use as may be desired.

Having described my invention, I claim:

1. A pen comprising a pointed and formed metallic blank having mounted on and fastened thereto at the pointed end a writing point composed of a preformed body of hard metal of completely spherical shape, the said pen having a slit extending substantially diametrically through its said spherical body.

2. A gold pen comprising a pointed and formed metallic blank having mounted on and fastened thereto at the pointed end a point composed of a preformed body of hard metal of completely spherical shape, the said pen having a slit in a line substantially coinciding with the diameter of the spherical body.

3. A pen comprising a pointed and formed metallic blank formed of precious metal having mounted on and fastened thereto at the pointed end a point composed of a preformed body of hard metal of completely spherical shape, the said pen having a slit in a line substantially coinciding with the diameter of the sphere, and also having the edges of the pen point adjacent to the slit of said ball rounded off.

4. A process of pen making which comprises first forming by fusing a shot-like body having an operative writing surface, then securing said body to a pen, and finally splitting said body.

5. A process of pen making which comprises first fusing a point body to form a surface adapted for writing use without further processing to said surface, and then fusing said point to a pen, and finally splitting said point.

6. A process of making pen points, comprising fusing small bodies to provide curved surfaces of a shape adapted for writing; and securing the bodies to the respective prongs of pens, said surfaces being retained free of grinding to form the writing surface.

7. A pen point comprising, two substantial halves of a centrally split shot-like body, said halves having curved and hardened writing surfaces, adapted to be secured to the points of a writing pen.

8. A body adapted to be split to form complementary portions of a pen point, said body comprising a small shot-like superficially hardened body of non-corrosive metal having a smooth polished curved surface.

9. An article of trade comprising body adapted to be fused and split to form complementary portions of a pen point, said body comprising a small hardened body of non-corrosive metal of inherent set and shape caused by the natural properties of the metal, and having a smooth polished curved surface of inherent molecular set and contour.

10. A pen comprising a pen body having a split and pointed outer end; and a pen point secured to said end and comprising two substantial halves of a shot-like body centrally split, said halves having curved and hard writing surfaces.

11. A pen comprising a pen body having a split and pointed outer end; and a pen point secured to said end and comprising two substantial halves of a body fused and centrally split, said halves having curved and hard writing surfaces of a shape caused by the natural properties of the metal.

12. A pen having writing points embodying complementary parts of a globular body having inherent operative writing surfaces.

13. A pen having writing points embodying halves of a preformed globular body having inherent operative writing surfaces.

14. A pen having writing points embodying preformed bodies each having inherent operative writing surfaces.

15. A pen having writing points comprising bodies, each having a curved hard writing surface of inherent molecular set and shape.

In witness whereof, I have signed my name to the foregoing specification.

WILLIAM A. S. HECKING.