

Sept. 29, 1953

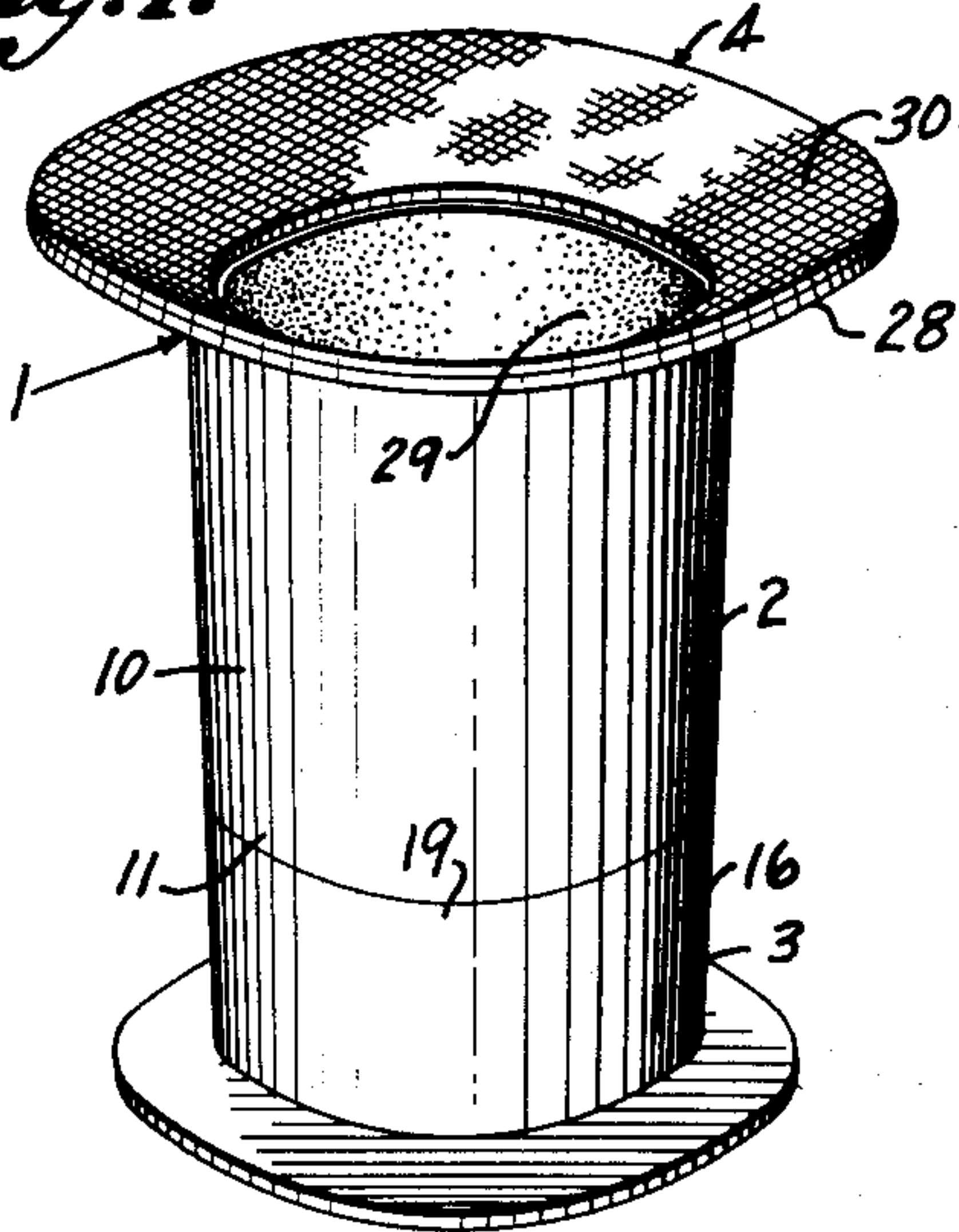
R. J. SLATTERY  
PENCIL POINTER CUP

2,653,576

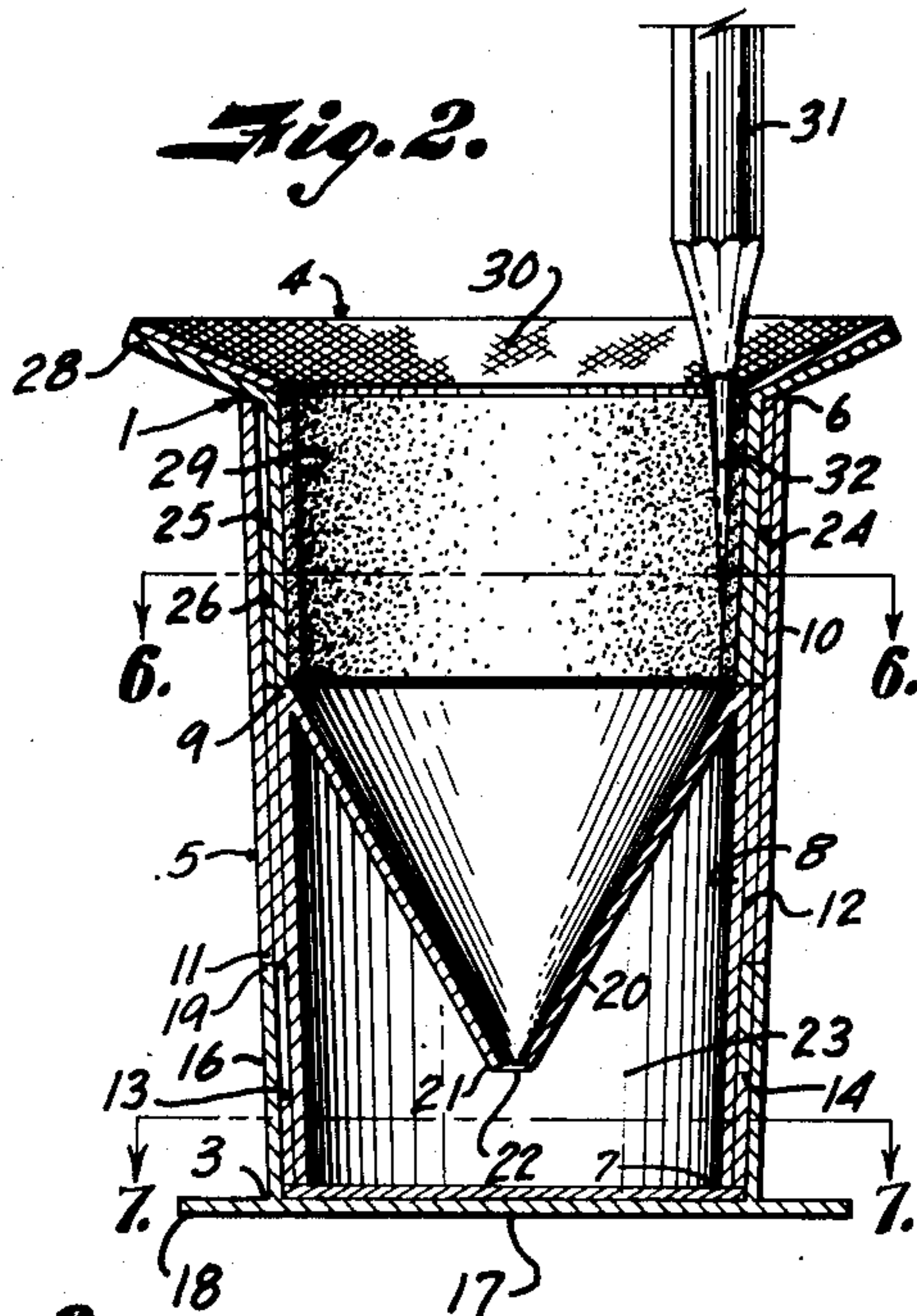
Filed April 12, 1951

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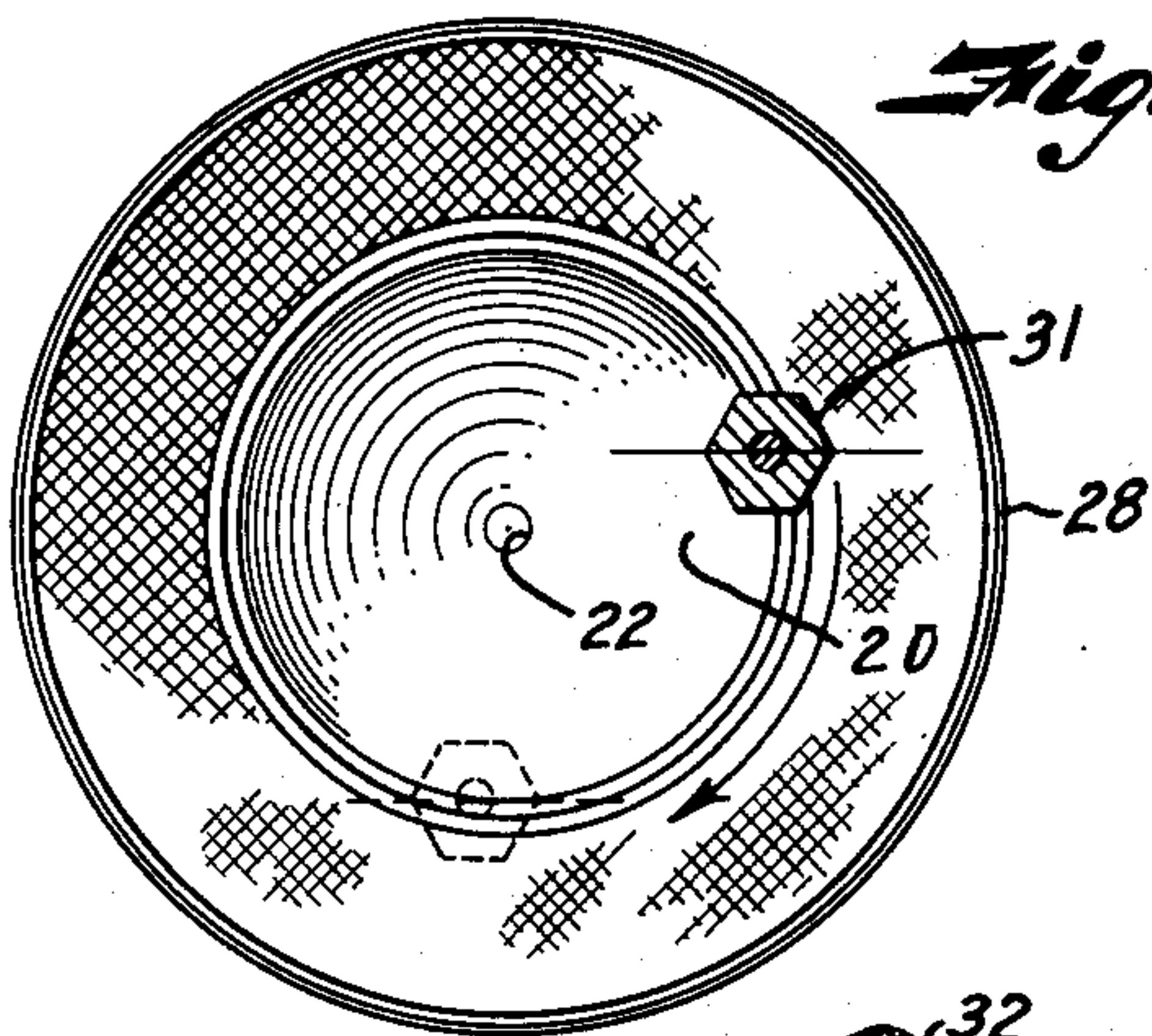
*Fig. 1.*



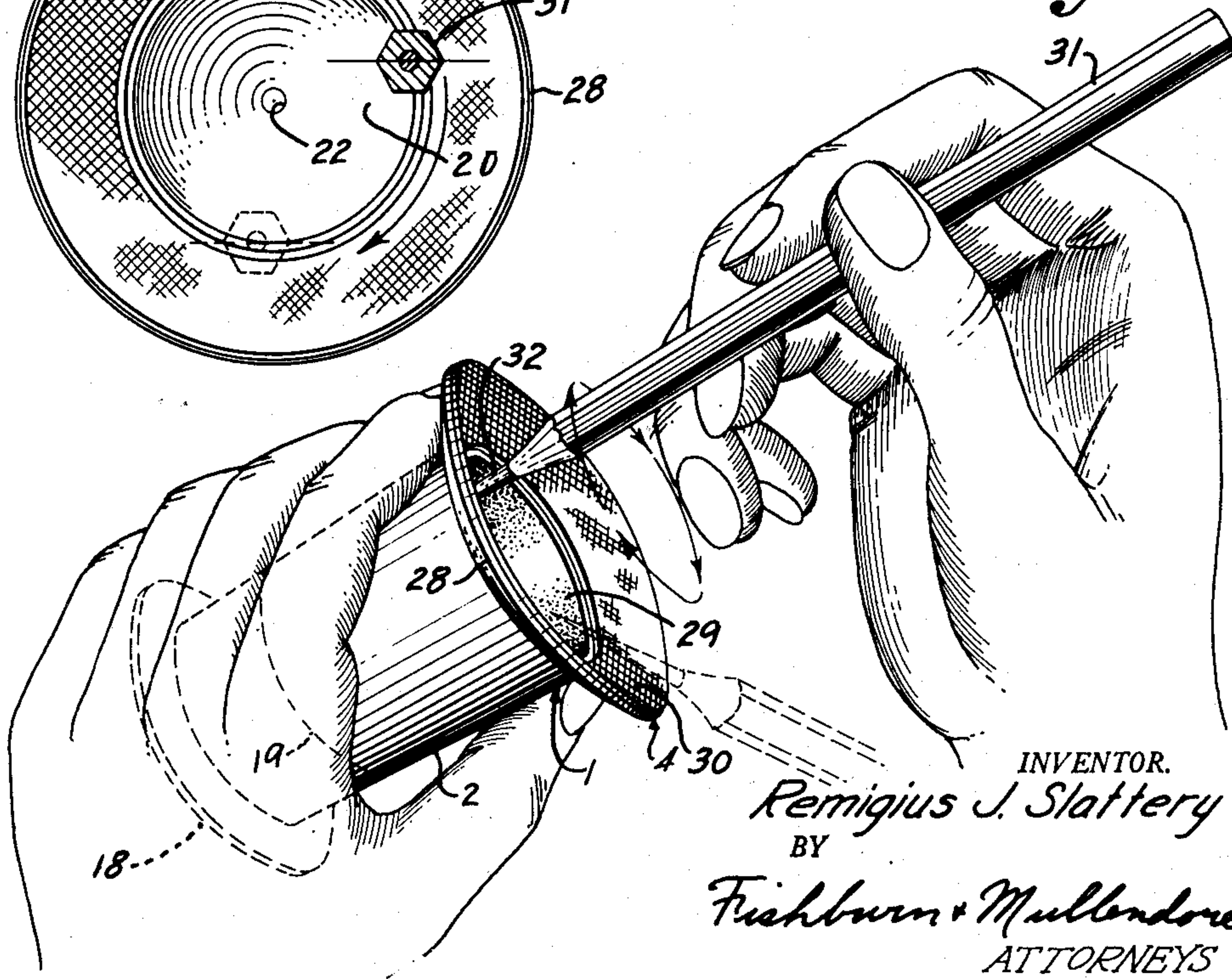
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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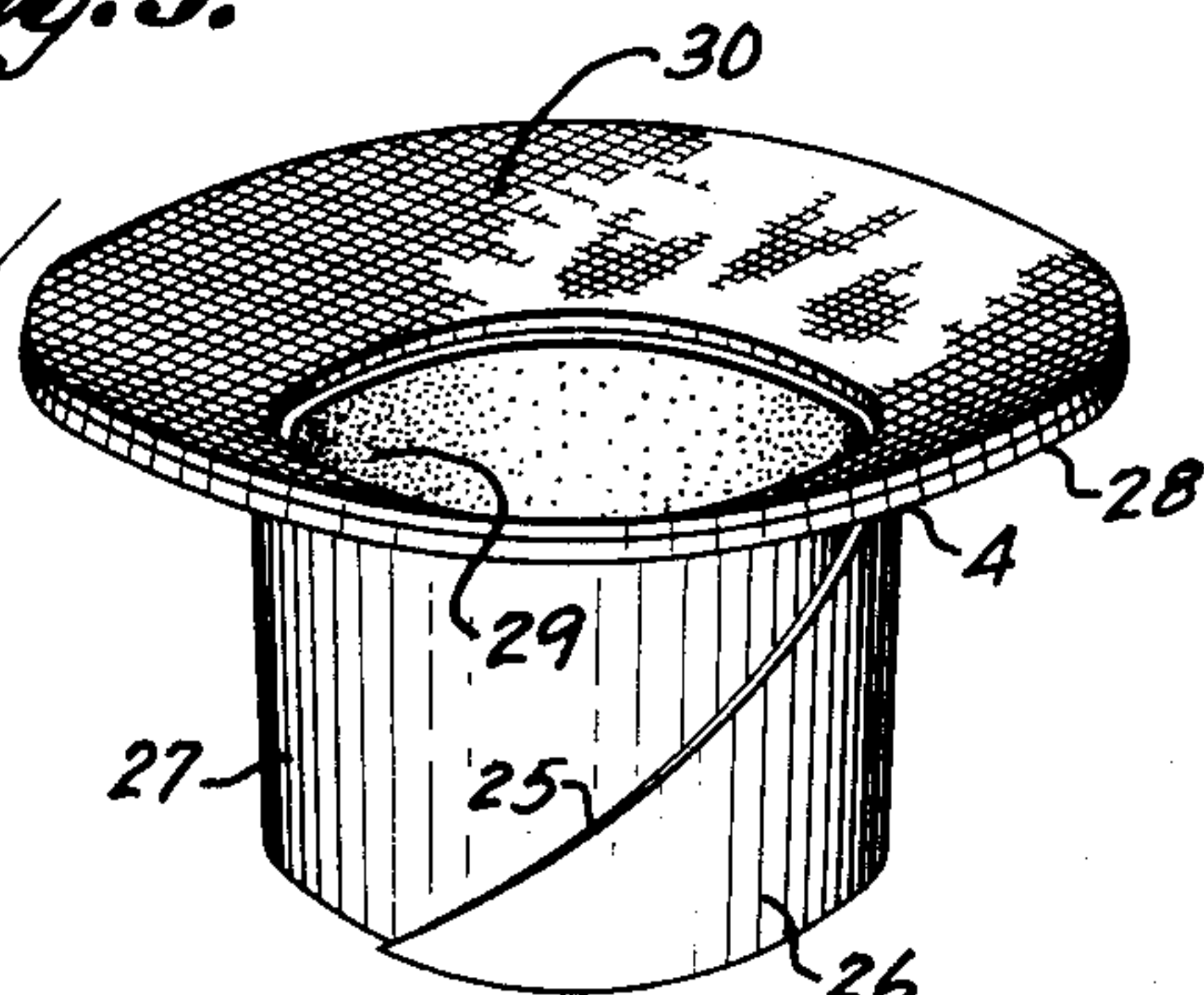
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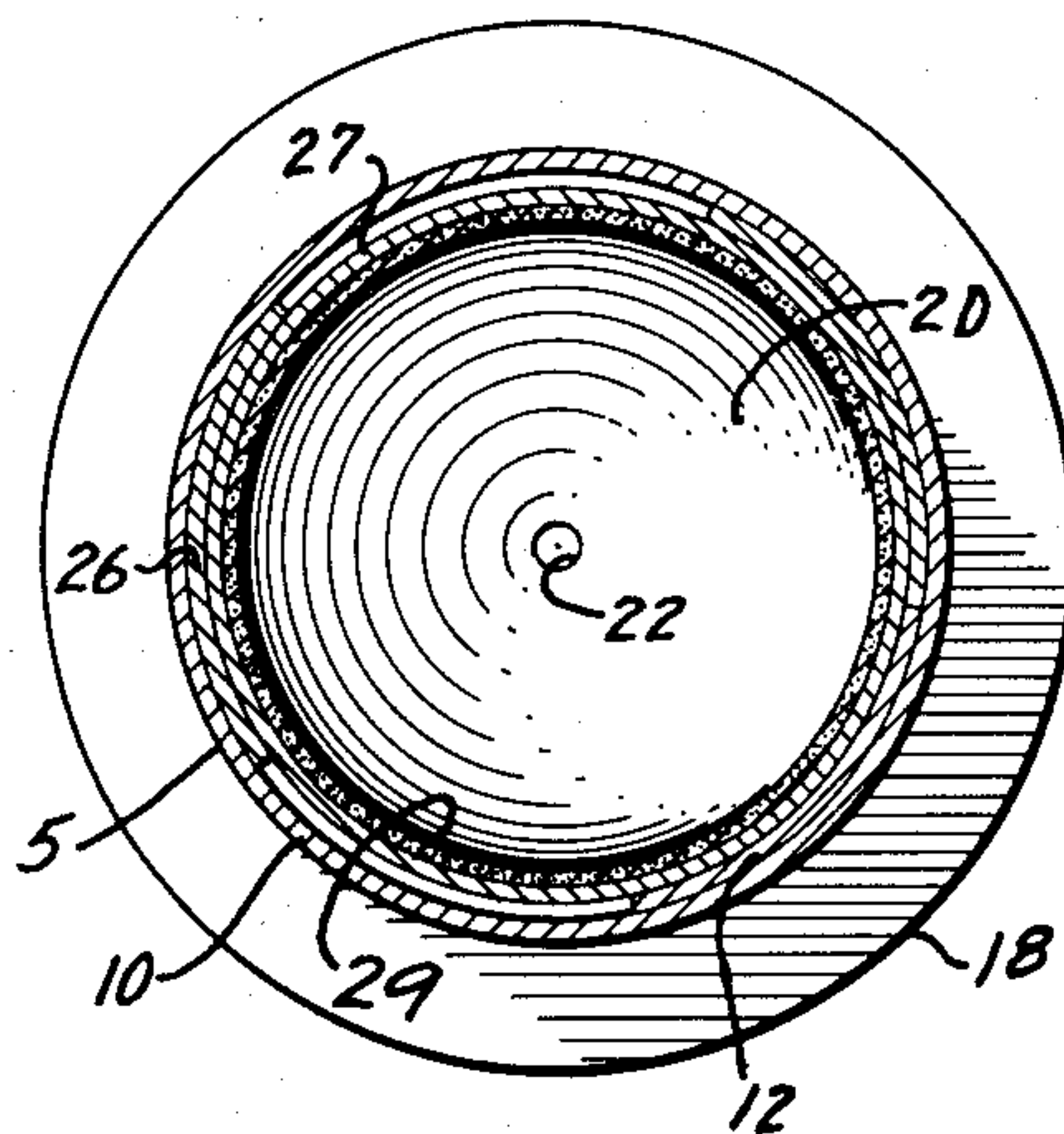
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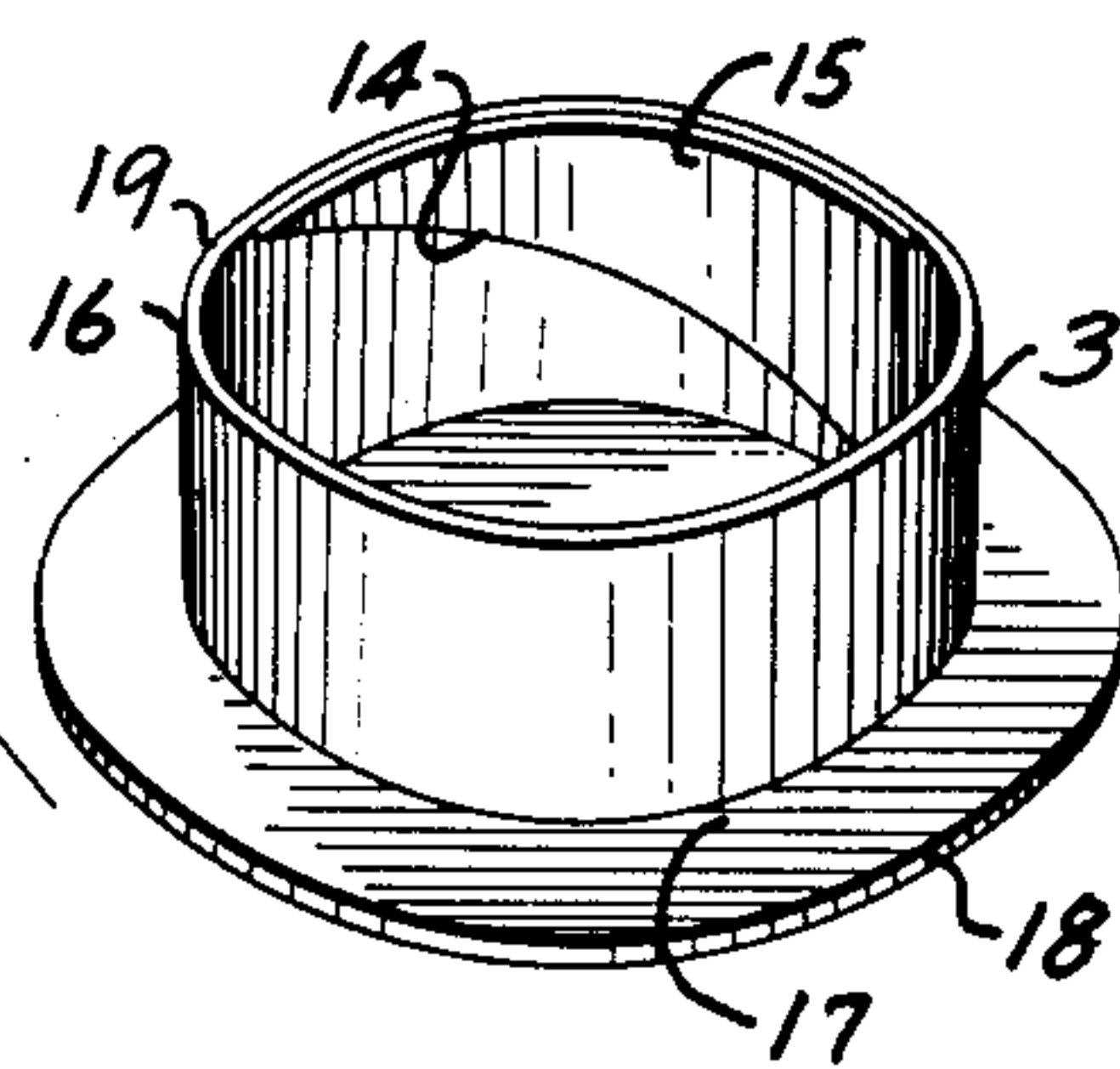
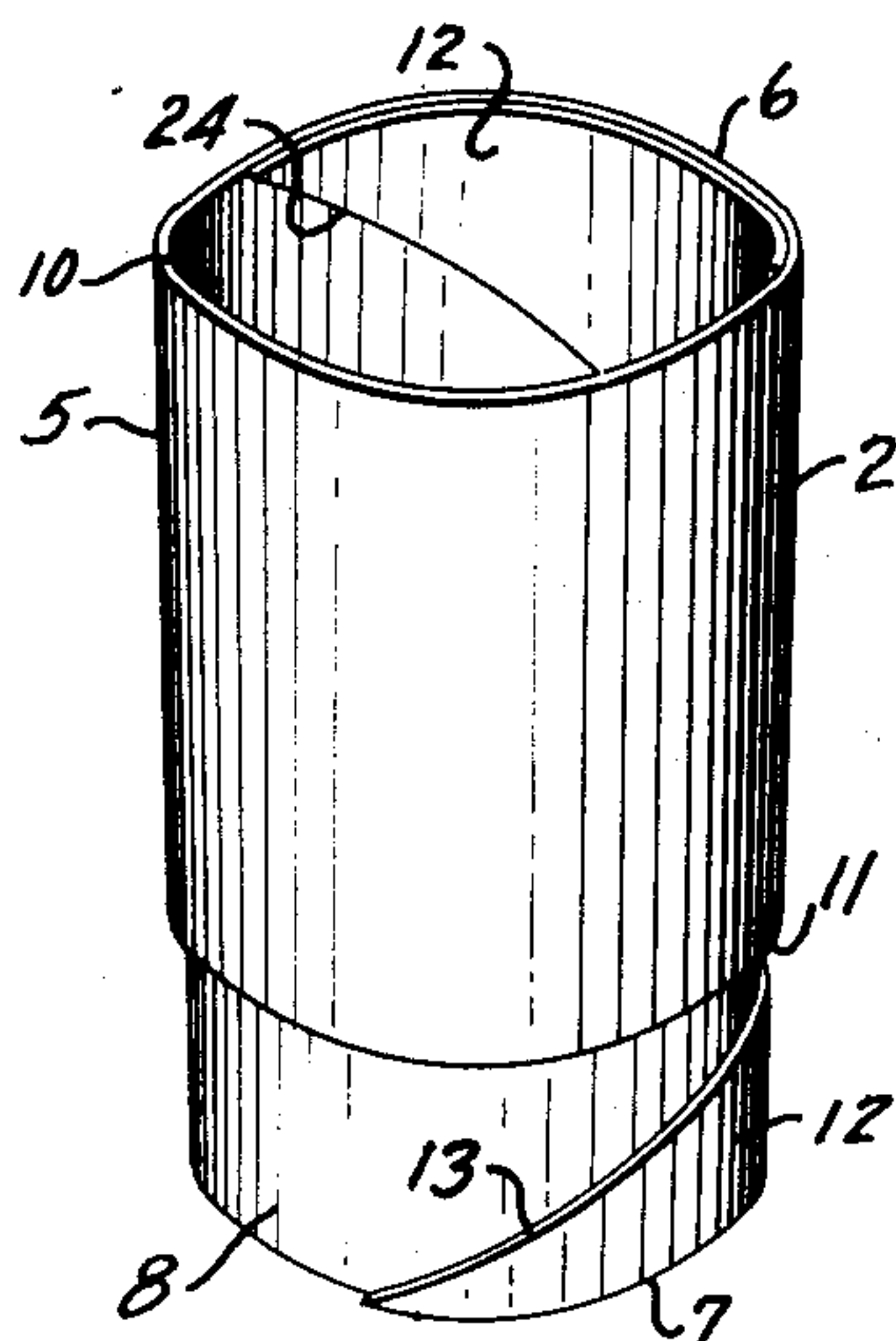
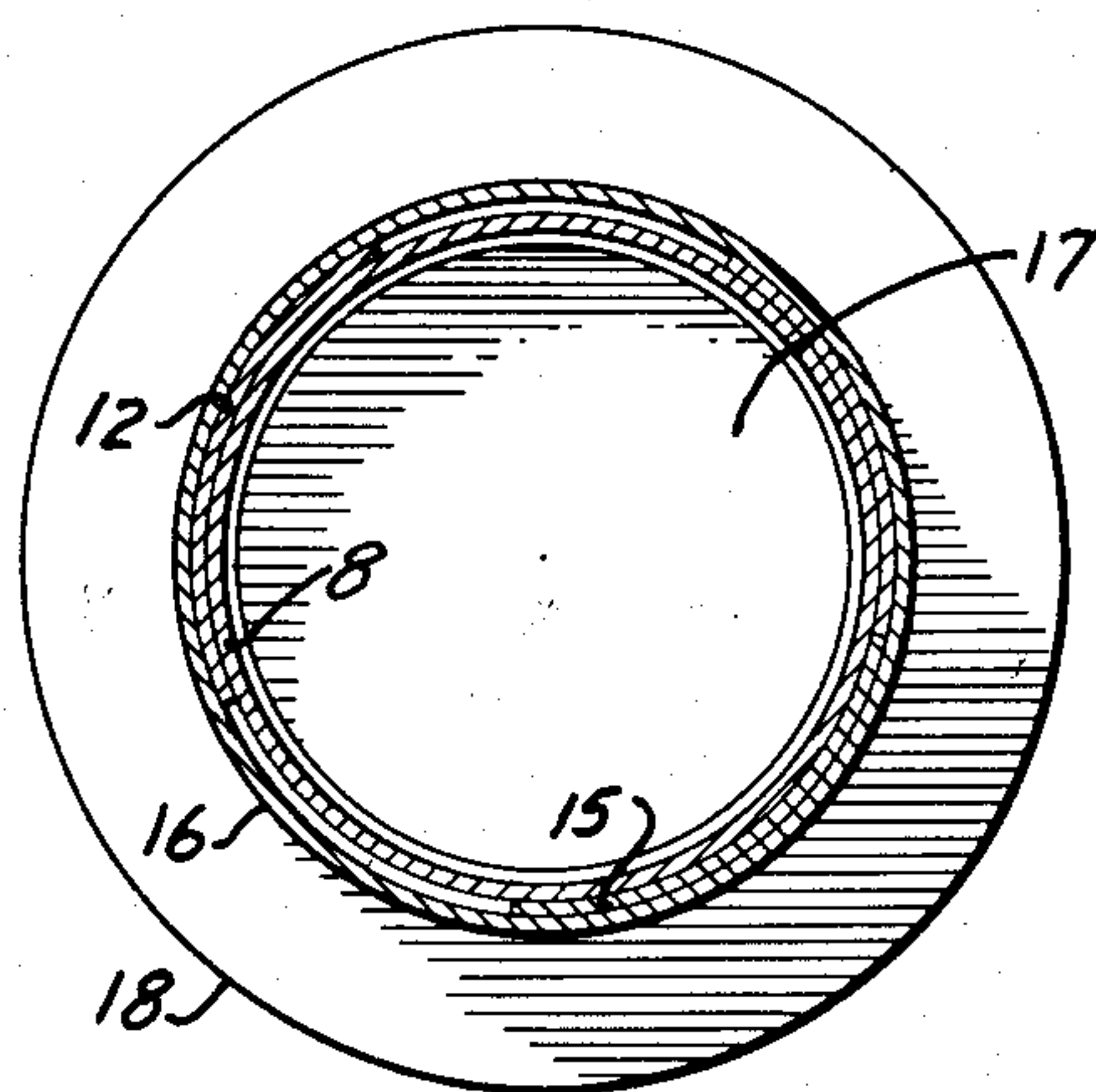
*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



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## UNITED STATES PATENT OFFICE

2,653,576

## PENCIL POINTER CUP

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Application April 12, 1951, Serial No. 220,676

3 Claims. (Cl. 120—91)

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This invention relates to pencil point sharpeners and more particularly to a pencil pointer cup having an abrasive surface for sharpening the lead of a pencil to a point.

Draftsmen and the like usually desire a long, tapered point on the lead of a pencil with either an ordinary wood encased pencil lead or a mechanical pencil wherein the leads are advanced or held within a barrel of metal or the like. It has been the practice for draftsmen to point their pencils by rubbing the lead thereof on a sandpaper block having a plurality of flat sheets of sandpaper, even though this device has many disadvantages such as the lead dust sifting or blowing off of the block onto the drafting table causing the drawing to become dirty in appearance and making the cleaning thereof difficult. A meticulous draftsman points his pencil very often and each time in order to achieve a symmetrical point on a sanding block he is required to spin his pencil as he strokes it to prevent the lead from becoming flat on one side. In handling the sanding block his hands frequently become soiled, requiring him to wash his hands often in order to reduce soiling and smudging of the drawings.

The principal objects of the present invention are to provide a pencil pointer cup having an abrasive surface in a circular cone segment shape having a slope corresponding to the slope desired on the pencil point; to provide a pencil pointer cup with a lead dust receptacle at the lower end thereof and a partition in a downwardly directed conical shape with a small opening at the apex thereof providing communication from the abrasive area of the cup to the receptacle; to provide a pencil pointer cup of this character with an upwardly sloping annular flange with a wiping surface thereon for removing dust from a sharpened pencil point; to provide a pencil pointer cup structure with removable ends for facilitating cleaning and replacement of worn parts; and to provide a pencil pointer cup which is economical to manufacture, efficient in operation to quickly provide a sharp point on a pencil and trap the dust resulting from the pointing operation and thereby prevent soiling of drawings, clothes and the like from flying dust.

In accomplishing these and other objects of the present invention, I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of the pencil pointer cup embodying the features of the present invention.

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Fig. 2 is a vertical sectional view through the cup with a pencil in pointing position.

Fig. 3 is a plan view of the cup and pencil, dotted lines being used to show the pencil after partial movement thereof.

Fig. 4 is a perspective view illustrating the use of the pencil cup in pointing a pencil.

Fig. 5 is a detail perspective view of the parts of the pencil pointer cup shown in disassembled spaced relation.

Fig. 6 is a transverse sectional view through the cup on the line 6—6, Fig. 2.

Fig. 7 is a transverse sectional view through the cup on the line 7—7, Fig. 2.

Referring more in detail to the drawings:

1 designates a pencil pointer cup generally consisting of a body 2, a receptacle closure or bottom member 3 and a top member or abrasive and wiping portion 4. The pencil pointer cup 1 is preferably formed of paper, plastic or other suitable material and may be manufactured by molding, or other conventional process. However, in the form illustrated the parts are formed of a plurality of layers of suitable material such as paper for economy. The body member 2 is preferably tubular with layers of material so arranged to provide a cylindrical, conical segment shape to said body, the walls 5 sloping inwardly from the upper end 6 toward the lower end 7, the slope being substantially the same as the desired slope of a lead of a sharpened pencil. The inner layer 8 of paper or the like extends upwardly from the lower end 7 and terminates, as at 9, in spaced relation to the upper end 6. The outer layer 10 extends downwardly from the upper end 6 and terminates as at 11 in spaced relation to the lower end 7. The intermediate layer 12 preferably extends the full length of the body and has portions cut away between the lower end 7 and the lower end 11 of the outer layer 3 to form an upwardly sloping, spiral edge 13 adapted to be engaged by a corresponding spiral, sloping edge 14 of a layer of material 15 suitably secured on the inner surface of a tubular shell 16 of the bottom member 3.

The shell 16 is preferably slightly greater in height than the spacing between the lower end 7 of the body and the lower end 11 of the layer 10, and the lower end of the shell 16 is suitably secured to a circular plate 17 which extends into and closes the lower end of the shell 16. The plate 17 has an annular extension which is preferably larger in diameter than the shell forming an outwardly extending annular flange 18 to provide additional supporting area for the device.

The shell 16 is preferably the same shape and size



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as the outer layer 10 on the body, whereby the shell may be sleeved over the lower portion of the body and rotated whereby the edges 13 and 14 form cooperating screw or cam surfaces for securing the bottom member on the body. When so secured, the upper edge 19 of the shell preferably engages the lower end 11 of the layer 10 on the body.

An inverted, conical partition 20 is arranged in the body member with the large end suitably secured to the wall of the body at the upper end of the inner layer 8. The lower end of the conical partition terminates as at 21 in spaced relation to the lower end of the body and is provided with a small orifice 22 for flow of material downwardly into a receptacle 23 defined by the inner layer 8 of the wall of the body member, the bottom plate 17 and conical partition 20. Due to the small aperture 22 and arrangement of the conical partition, material in the receptacle 23 is trapped and cannot escape upwardly through the aperture 22 regardless of the position in which the device is turned.

The intermediate layer 12 of the wall of the body member has portions cut away between the upper end 6 of the body and the upper end 9 of the inner layer 8 to form a downwardly sloping, spiral edge 24 adapted to be engaged by a corresponding sloping edge 25 of a strip of material 26 secured to the outer surface of the tubular member 27 on the top member 4 of the pointer cup. The tubular portion 27 preferably is of such size as to form a continuation of the inner layer 8 of the body 2 and the strip 26 is substantially the same thickness as the intermediate layer 12 of the body, whereby when the tube 27 is inserted into the upper end of the body and rotated the cooperating edges 24 and 25 will draw the tubular portion 27 into the body and secure same with the outer face of the strip 26 substantially engaging the inner face of the outer layer 10 of the body and the outer face of the tube 27 substantially engaging the inner face of the portion of the intermediate layer 12.

The tube 27 is preferably substantially the same length as the spacing between the upper end 9 of the inner layer 8 of the body and the upper end 6 of the body, said tube 27 being provided at its upper end with an outwardly directed, upwardly sloping, annular flange 28. When the top member 4 is assembled on the body 2 the lower face of the flange 28 will engage the upper end 6 of the body 2.

Abrasive material 29, for example emery cloth or the like, is suitably applied to cover the entire inner face of the tubular portion 27 of the top member 4. The tubular portion 27 and also the abrasive have the same slope as the walls of the body 2, that is the slope desired on the lead pencil point, the abrasive being in the shape of a cylindrical, conical segment. A soft fabric, felt or the like 30 is suitably secured to the upper face of the flange 28 for forming a wiping surface for removing lead dust from a pointed pencil lead.

In using a pencil pointer cup constructed and assembled as described, the cup body is grasped in one hand and a pencil 31 having the lead extending from the wood or other casing is grasped in the other hand. The lead 32 of the pencil is moved into contact with the abrasive 30 and the pencil moved in a circular path. During the movement of the pencil in said circular path, the pencil is held whereby the axis thereof is parallel to the axis of the circular path,

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which is coaxial with the vertical axis of the cup. The pencil is not rotated about its own axis but is held in the same relationship as illustrated in Fig. 3, whereby when one complete circuit of the circular path is negotiated each portion of the surface of the lead will have had contact with the abrasive, thereby providing a uniform removal of lead to form a conical point. The lead dust formed by the action of the abrasive on the lead of the pencil falls downwardly along the upper face of the conical partition 20 and passes through the orifice 22 into the receptacle 23. When the pointing of the pencil is completed, the lead point thereof is wiped on the fabric material 30 to remove the lead dust from the pencil. During these operations, the flange 28 serves as a guard to protect the hand holding the cup from accidental engagement with the pencil point. After considerable lead dust has collected in the receptacle 23 the bottom member 3 may be rotated to disengage the sloping edges 13 and 14 whereby said bottom member may be removed from the body 2, providing access to the receptacle for emptying the dust therefrom. The bottom member may then be reapplied to the body and the cup is ready for further use.

When the abrasive becomes worn, it may be replaced in any suitable manner, the removal of the top member facilitating said replacement of the abrasive. If desired, the entire top member may be removed and discarded and a new one inserted into the body to recondition the entire pencil pointer cup for further pointing operations.

While the cup has been illustrated and described as having removable top and bottom members, it can be secured permanently to the body member and the cup discarded when it has become worn to the point that it is no longer serviceable.

It is believed obvious that the pencil pointer cup may be utilized for quickly pointing a pencil and retaining the lead dust therefrom in such a manner as to prevent the dust being scattered over drawings and the like. Also, accidental tipping or upsetting of the cup will not discharge the dust therefrom.

What I claim and desire to secure by Letters Patent is.

1. A pencil lead pointer comprising, a tubular body member having side walls in the form of an inverted cylindrical conical segment with the slope of said side walls corresponding to the taper desired on a pencil point, a cup-shaped bottom member removably mounted on the lower portion of the body member to close same, an inverted conical partition the upper portion of which is secured to the side walls between the top and bottom thereof and slopes inwardly and downwardly terminating in an apex spaced from the bottom and having a relatively small orifice therein, said side walls, bottom member and partition defining a substantially closed receptacle into which lead dust enters through the small orifice, said conical partition and location of the small orifice therein preventing escape of lead dust when the pointer is upset, and an abrasive secured to the inner surface of the side walls and concentric therewith between the partition and top of the side walls.

2. A pencil lead pointer comprising, a tubular body member having side walls in the form of an inverted cylindrical conical segment with the slope of said side walls corresponding to the taper



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desired on a pencil point, a bottom member mounted on the lower portion of the body member to close same, an inverted conical partition secured to the side walls between the top and bottom thereof with the apex spaced from the bottom and having a relatively small orifice therein, said side walls, bottom member and partition defining a lead dust receptacle wherein the partition and location of the orifice prevent escape of lead dust when the pointer is upset, a top member having a tubular portion in the form of an inverted cylindrical conical segment with a slope corresponding to the slope of the side walls of the body member, said tubular member being removably mounted on the upper portion of the body member, an abrasive secured to the inner surface of said tubular portion of the top member, and an annular flange extending outwardly from the tubular portion of the top member adjacent the upper end thereof to form a guard to prevent accidental movement of the pencil point downwardly alongside the exterior of the body member.

3. A pencil lead pointer comprising, a tubular body member having side walls in the form of an inverted cylindrical conical segment with the slope of said side walls corresponding to the taper desired on a pencil point, said side walls having a reduced portion adjacent the lower end thereof, a cup-shaped bottom member having a substantially cylindrical wall removably sleeved over the reduced portion of the body member to close same, cooperating spiral members on the cylindrical wall of the cup-shaped bottom and reduced portion of the side walls for securing the cup-shaped bottom on the body member, an annular flange at the lower end of the cup-shaped bottom and extending outwardly therefrom for increased supporting area therefore, an inverted conical partition secured to the side walls be-

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tween the top and bottom thereof with the apex spaced from the bottom and having an orifice therein, said side walls, bottom member and partition defining a lead dust receptacle, said body member having an enlarged bore between the partition and the top of said side walls, a top member having a tubular portion in the form of an inverted cylindrical conical segment with a slope corresponding to the slope of the side walls of the body member, said tubular member being slidably received in the enlarged bore of the body member, cooperating spiral members on the tubular portion and in the enlarged bore for securing the top member to the body member, an abrasive secured to the inner surface of said tubular portion of the top member, and an annular flange extending outwardly from the tubular portion of the top member adjacent the upper end thereof to form a guard to prevent accidental movement of the pencil point downwardly alongside the exterior of the tubular body member.

REMIGIUS J. SLATTERY.

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