

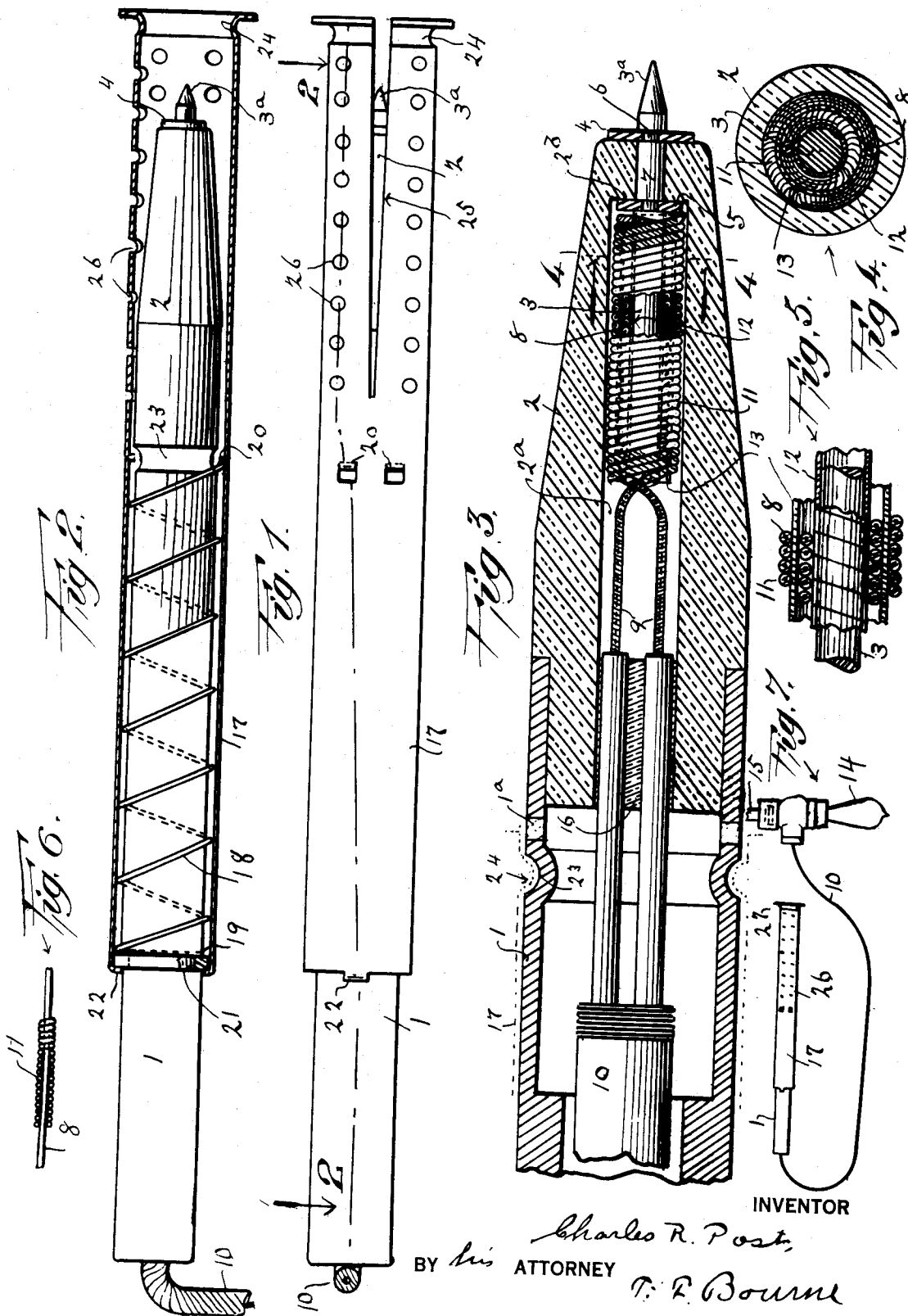
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C. R. POST

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ELECTRIC WRITING INSTRUMENT

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INVENTOR

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BY HIS ATTORNEY

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UNITED STATES PATENT OFFICE.

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ELECTRIC WRITING INSTRUMENT.

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To all whom it may concern:

Be it known that I, CHARLES R. POST, a citizen of the United States, and resident of New Rochelle, in the State of New York, have invented certain new and useful Improvements in Electric Writing Instruments, of which the following is a specification.

An object of my invention is to provide a writing instrument having a stylus or writing point to be heated sufficiently to scorch or burn paper or analogous material to be written upon to prevent changing or altering such writing. My invention is particularly adapted for writing upon checks and documents to prevent alteration of the writing without detection of the change.

Another object of my invention is to protect the stylus when not in use to avoid danger from the heated stylus.

My invention comprises novel details of improvement that will be more fully hereinafter set forth, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a side view of a writing instrument embodying my invention on an enlarged scale; Fig. 2 is a section on line 2, 2 in Fig. 1; Fig. 3 is an enlarged detail section; Fig. 4 is a cross section on line 4—4 in Fig. 3; Fig. 5 is a fragmentary detail section; Fig. 6 is a detail of a conductor; Fig. 7 is a diagrammatic view illustrating an electric circuit for the instrument.

Similar numerals of reference indicate corresponding parts in the several views.

The barrel or handle member of the instrument is indicated at 1, which may be of tubular form of insulating material; such as rubber or fibre. At the writing end the barrel is provided with a tubular tip 2 of non-heat conducting insulating material, such as asbestos. A metal heat conductor core or rod 3, preferably of copper, is located within bore 2^a of tip 2 and has a tapering or pencil-like writing end 3^a, in the nature of a stylus, projecting from tip 2. A stop 4 on core 3 near its writing end bears against the outer end of tip 2 and a stop 5 on core 3 within bore 2^a bears against shoulder 2^b at the end of bore 2^a of tip 2, whereby core 3 is retained on the tip. The stops 4,

5 are shown in the form of split rings received in recesses 6, 7 respectively of core or rod 3, whereby the latter is detachably retained on the tip, since stop 4 may be removed and replaced. The arrangement described permits core 3 to be removed from tip 2 and replaced by merely removing and replacing stop 4. Core 3 is to be heated to scorch or burn the paper or material to be written upon. I have shown a conductor 8 coiled around core 3 within tip 2 and extending from insulated line wires 9 of a cable 10 in the barrel. The conductor 8 is a resistance wire capable of producing required heat around core 3 to properly heat the latter. The resistance conductor 8 at its ends may be twisted to the line wires 9 and covered by a winding 11 of asbestos cord to insulate the conductor. I have shown a layer of mica 12 around core 3, a winding of insulated conductor 8 around said mica, a layer 13 of mica over said winding and a winding of insulated conductor 8 over mica 13. The inner winding of conductor 8 is wound from the inner end of core 3 to the outer part and the outer winding of conductor 8 is wound over said inner winding continuing from the outer to the inner part of core 3. The covering 11 and the mica 12, 13 thoroughly protect the resistance conductor 8 from the short-circuiting between the windings of the latter. By using conductor 8 of very small gauge wire the instrument may receive current from the ordinary electric service lines in buildings, without requiring a current regulator or resistance in the circuit to reduce the current. When a conductor 8 of larger gauge is used any suitable regulator or resistance may be in the line to reduce the current flowing to conductor 8, such as shown in Fig. 7 where the cable 10 and resistance lamp 14 are in series in the fixture attached to the service line 15. Instead of lamp 14 a suitable resistance coil may be included in the circuit of cable 10 to reduce current in winding 8. The resistance referred to enables the same to be located at a suitable distance from the writing instrument so that the heat of the resistance will not interfere with the user of the instrument. The bore 2^a of tip 2 is charged with insulating material 16 embedding conductors 9, preferably of asbestos, thereby serving to force the heat

from the windings of conductor 8 forwardly toward the stylus. Any suitable switch may be employed to control the flow of current through the wiring of the instrument.

5 To protect the stylus when not in use I have provided a sleeve or tube 17 slidably mounted upon barrel 1, open at the outer end, adapted to extend over and protect stylus 3^a (Figs. 1 and 2) and to be slid
10 along the barrel to expose the stylus, Fig. 3. A spring 18 coiled around barrel 1 within protector 17 serves to automatically project the protecting sleeve 17 forwardly when the sleeve is released. Said spring bears at one
15 end against a stop 19 on the barrel and at the other end against a stop 20 projecting inwardly from sleeves 17, which stop may be punched from the sleeve. The stop 19 may be a split ring received in an annular
20 recess or groove 21 in barrel 1. The protector 17 has one or more inwardly projecting lugs 22 to engage stop 19 to limit the movement of the protector along the barrel, so that the protector, will enclose the stylus
25 when not in use. The barrel 1 is shown provided with an exterior annular recess or groove 23 near tip 2 to receive the inwardly extending rib 24 near the outer end of sleeve 17. Said sleeve is slit or divided longitudi-
30 nally at 25 so that the adjacent portions may be squeezed or pressed inwardly to engage rib 24 in recess 23, to retain the sleeve in retracted position. The sleeve 23 is shown provided with perforations 26 to permit cir-
35 culation of air and escape of heat.

When the instrument is to be used the sleeve 17 is retracted from over the stylus or writing point 3^a to expose the latter and may be retained by pressing the rib 24 into
40 groove 23 by the fingers of the user, and the current is caused to flow through the windings 8. The core 3 will be heated and the stylus 3^a will receive sufficient heat to scorch or burn the paper or other material
45 to be written upon, the instrument being used in the nature of a writing pencil. When sleeve 17 is released the spring will project the sleeve forwardly to protect the stylus, so that if the instrument is laid upon
50 a desk or papers while the stylus is hot injury will not result. The lateral flange 27 at the outer end of sleeve 17 may rest upon the desk or papers to raise the sleeve therefrom to protect the same from heat and per-
55 mit circulation of air around the sleeve for cooling it.

My invention is particularly useful for writing names and amounts upon bank checks, notes and other instruments, since
60 the heated stylus will scorch or burn the writing in the paper and so change its character where written upon as to prevent alteration of the writing without leaving evidences of the change, whereby to render
65 useless the raising of checks and the like.

The barrel 1 may have one or more holes 1^a for ventilation.

Having now described my invention, what I claim is:

1. A writing instrument comprising a bar- 70
rel provided at one end with a non-heat
conducting tip, said tip having a bore com-
municating at its inner end with the barrel,
a heating core within said bore having a
stylus extending from the tip, a resistance 75
conductor coiled around the core within said
bore, and conductors connected to said re-
sistance conductor and extending through
said barrel from its outer end.

2. A writing instrument having a tip pro- 80
vided with a bore having an open inner end
and a closed outer end, a core in said bore,
a stylus extending from the core through
the closed end of the tip, a resistance con-
ductor coiled around the core within said 85
bore, and means communicating with said
conductor through the inner end of said bore
to connect said conductor with a source of
electric current.

3. A writing instrument having a tip pro- 90
vided with a bore, a core in said bore, a
stylus extending from the core through the
tip, a resistance conductor coiled around the
core within said bore, and means to connect
said conductor with a source of electric cur- 95
rent, and a protector adapted to enclose and
expose said stylus.

4. An electric writing instrument com-
prising a barrel provided with a stylus,
means to heat the stylus, and a protector 100
adapted to enclose and expose the stylus.

5. An electric writing instrument compris-
ing a barrel provided with a stylus, means
to heat the stylus, a protector sleeve slidable
on the barrel to enclose and expose the stylus, 105
and a spring between the barrel and pro-
tector and co-operative therewith to push
the protector over the stylus.

6. An electric writing instrument compris-
ing a barrel provided with a stylus, means 110
to heat the stylus, and a protector adapted
to enclose and expose the stylus, and means
co-operative between the barrel and pro-
tector to retain the latter retracted from
the stylus. 115

7. An electric writing instrument compris-
ing a barrel provided with a stylus, means
to heat the stylus, and a protector adapted
to enclose and expose the stylus, said barrel
having a peripheral recess, said protector 120
having an inward rib to engage said recess
and having a longitudinal slit to permit the
protector to be pressed inwardly to engage
the rib with said recess.

8. An electric writing instrument compris- 125
ing a barrel provided with a stylus, means
to heat the stylus, and a protector adapted
to enclose and expose the stylus, said pro-
tector having an inward lug, a stop upon
the barrel to engage said lug, and a spring 130

between the barrel and the protector co-
operative with said stop and the protector
to push the latter to conceal the stylus.

9. A writing instrument comprising a bar-
rel having a tip provided with a bore having
a shoulder, a core in said bore having a stop
against said shoulder and having a stylus
projecting through and from the tip, said

stylus having a stop at the outer end of the
tip, a resistance conductor upon said core, 10
and line wires in said barrel connected to
said conductor.

Signed at New York city, in the county
of New York, and State of New York, this
23rd day of November, A. D. 1920.

CHARLES R. POST.