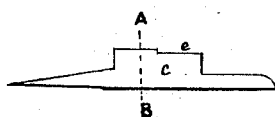


L. B. BERTRAM.

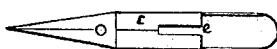
WRITING-PENS.

No. 184,319.

Patented Nov. 14, 1876.



. FIG. 1 .



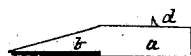
. FIG. 2 .



. FIG. 3 .



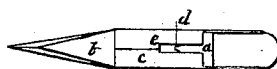
. FIG. 4 .



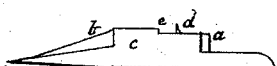
. FIG. 5 .



. FIG. 6 .



. FIG. 7 .



. FIG. 8 .

WITNESSES.

A. Proune

W. H. Burrell

INVENTOR.

L. B. Bertram

UNITED STATES PATENT OFFICE.

LEOPOLD B. BERTRAM, OF NEW WANDSWORTH, ENGLAND.

IMPROVEMENT IN WRITING-PENS.

Specification forming part of Letters Patent No. 184,319, dated November 14, 1876; application filed September 10, 1875.

To all whom it may concern:

Be it known that I, LEOPOLD BERL BERTRAM, of 4 Park Road, New Wandsworth, in the county of Surrey, England, have invented certain new and useful Improvements in Writing and Drawing Pens, for dispensing with the necessity of using liquid ink, as at present, of which the following is a specification:

This invention consists in adapting to writing and drawing pens a writing composition, so that it will only be necessary to dip the pen in water, or other liquid, in order to produce ink in the pen.

The following is an example of my said invention as applied to writing-pens, reference being had to the illustrative sheet of drawing hereunto annexed.

Figure 1 is an elevation, Fig. 2 an under-side view, Fig. 3 a top view, and Fig. 4 a section through the line A B of Fig. 1, of a pen constructed according to my said invention, and ready to receive a cartridge or cylinder containing the solid or concentrated ink, or other suitable solid or concentrated writing composition of any desired color, soluble in water. Fig. 5 is an elevation, and Fig. 6 a top view, of a cartridge or cylinder in which I place the concentrated ink.

This cartridge is cylindrical at *a* and cut

away at *b*, so as to expose the solid ink. I introduce the cartridge in the barrel of the pen at *c*, Figs. 1 and 2, the projection *d* entering into the slot *e*, thus keeping the cartridge in its place. The pen furnished with the cartridge is shown in plan and elevation at Figs. 7 and 8.

For using a pen thus constructed it is simply necessary to dip the nib in water, which will dissolve a portion of the solid ink, causing it to run down the nib ready for use.

A pen constructed as above will contain a quantity of solid ink, sufficient to last for some time, and when exhausted a fresh cartridge can easily be slipped into the barrel.

I claim as my invention—

A pen constructed with a barrel, *c*, adapted to contain a cartridge, *a*, containing solid or concentrated ink or writing composition, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

L. B. BERTRAM. [L. S.]

Witnesses:

A. BROWNE,

W. H. BURRELL,

Both of 5 Southampton Buildings,
Holborn, London, W. C.