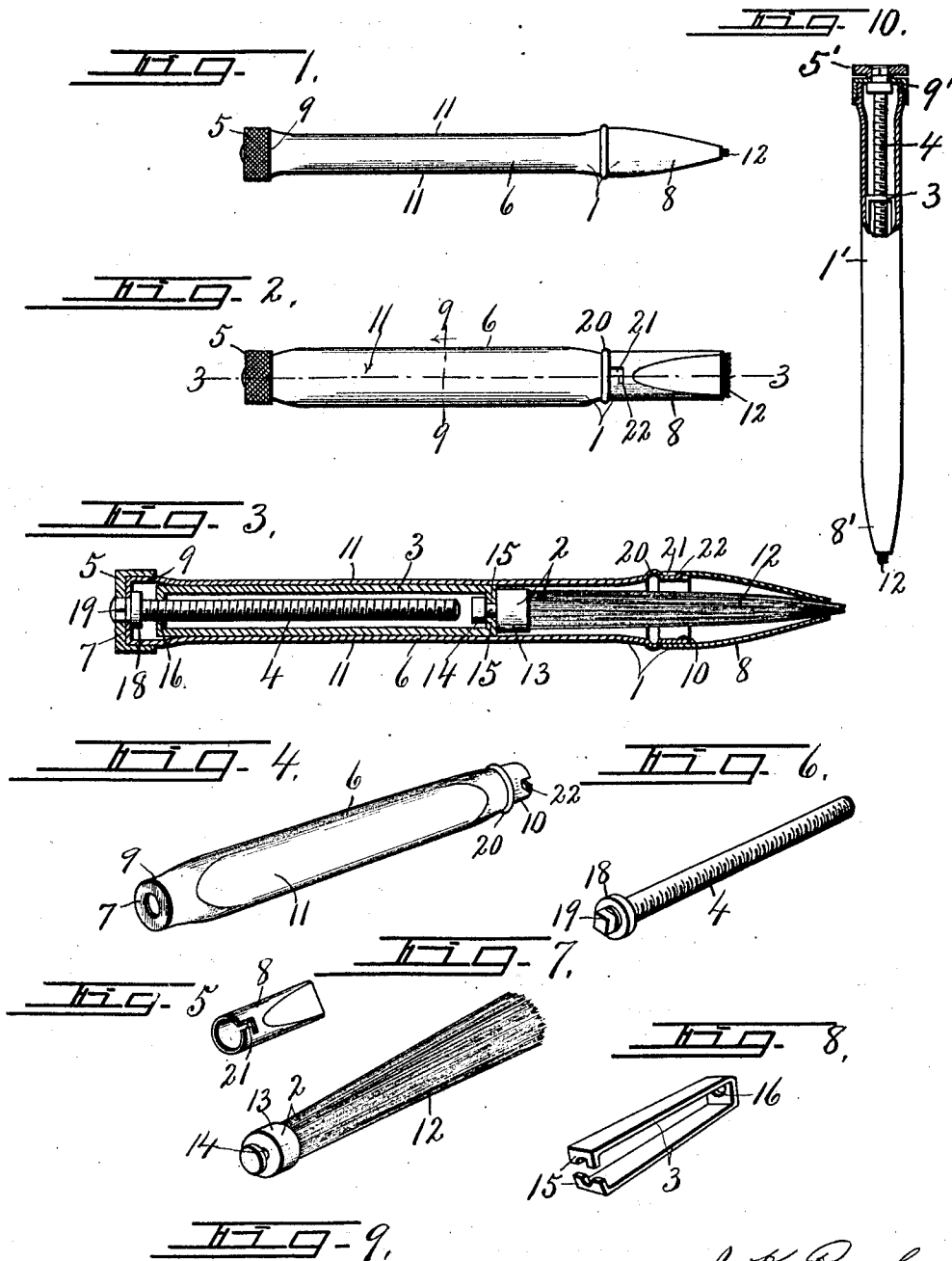


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INK ERASER.

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INK-ERASER.

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To all whom it may concern:

Be it known that I, JOSEPH K. RUSH, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Ink-Erasers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in ink erasers and refers more particularly to that class in which the erasing element consists of a glass fiber brush having one end secured to a suitable head and its other end adapted to be projected as desired through the open end of a suitable inclosing case. This glass fiber is extremely brittle and therefore adapted to break under the slightest bending or twisting, and the main object of my invention is to provide means for adjusting the brush lengthwise of the casing in such manner as to avoid such bending or twisting of the fiber.

Another object is to provide simple means for positively adjusting the brush lengthwise in reverse directions so as to project the outer ends of the fiber through or withdraw them from the open end of the casing.

A further object is to provide the adjusting means with spring clamping jaws adapted to be held in operative engagement with the head of the brush when inserted into the casing and to permit the brush to be easily attached to or detached from the clamp when withdrawn from the casing.

A still further object is to flatten the opposite sides of the main body of the casing to prevent rolling of the eraser when supported upon a table or other flat or inclined support.

Other objects and uses relating to specific parts of the device will be brought out in the following description.

In the drawings—Figures 1 and 2 are face views of my improved eraser taken at right angles to each other. Fig. 3 is an enlarged horizontal sectional view of the same eraser. Fig. 4 is a perspective view of the main body of the casing, exclusive of the rotary head and tapering nipple. Fig. 5 is a perspective view of the detached tapering nipple. Fig. 6 is a perspective view of the detached screw exclusive of its operating head. Fig. 7 is a perspective view of the detached glass fiber brush. Fig. 8 is a perspective view of the detached brush clamp. Fig. 9 is an

enlarged transverse sectional view of the eraser taken on line 9—9, Fig. 2. Fig. 10 is a longitudinal sectional view of a slightly modified form of case in which the tapering end is integral with the main body of the casing and its opposite end provided with a screw cap.

This eraser comprises a tubular case —1—, a glass fiber brush —2— and suitable operating means therefor consisting of a sliding clamp —3— and a screw —4— having an external operating member —5—. The tubular case —1— preferably consists of a main tubular body —6— having one end closed by an end wall —7— and its opposite end open and provided with a tapering nipple —8—. The opposite ends of the main body —6— are cylindrical to form circular bearings —9— and —10— upon which the operating member —5— and tapering nipple —8— are respectively journaled for easy turning movement, the opposite sides of the intermediate portion of the main body being flattened at —11— to less than the diameter of the ends, while the remaining sides extend outwardly beyond the periphery of the circular portions —9— and —10—, the flattened portions serving to prevent rolling of the eraser when placed upon a flat table or similar surface.

The brush —2— comprises a circular body of collated glass fibers of equal length having one end secured firmly in a tubular holder or head —13— which is provided with an annular groove —14— for interlocking engagement with the clamping member —3—. This clamping member preferably consists of a U-shape spring of sufficiently small size transversely to fit with an easy sliding fit within the main body of the tubular case —1— as shown more clearly in Fig. 3 and its free ends are provided with interturned jaws —15— for interlocking engagement in the groove —14— of the brush head —13— for the purpose of moving said brush axially. The opposite end of the spring clamp —3— is provided with a threaded aperture —16— and constitutes a nut engaged with the screw —4— whereby the spring clamp and brush may be reciprocated or moved endwise in reverse directions within the tubular case —1—.

The distance between the jaws —15— and threaded end of the spring clamp —3— and also the length of the screw —4— are ap-

proximately of the same length as the fiber body of the brush —2— so as to permit the use of the entire length of the fibers.

The outer end of the screw is journaled in an aperture in the adjacent end of the tubular body —6— and is provided with an annulus —18— engaging the inner face of said end to hold the screw against outward displacement.

The cap —5— is rotatably mounted upon the cylindrical end —9— of the tubular body —6— and is preferably secured to an angular portion —19— on the extreme outer end of the screw so as to rest against the adjacent end of the tubular body —6— to hold the screw against endwise movement inwardly and at the same time permitting the cap to be easily rotated. This cap is preferably provided with a knurled periphery adapted to be engaged by hand and constitutes an operating member for rotating the screw and thereby moving the clamp —3— and brush —2— endwise to project or withdraw the free ends of the fiber through the open end of the nipple —8—.

The screw —4— is preferably provided with a left-hand thread so as to force the brush outwardly as the screw is rotated to the right and to withdraw the brush as it is rotated to the left.

The inner end of the tubular nipple is cylindrical and rotatable upon and removable from the cylindrical end —10— of the tubular body —6— and when in operative position is adapted to abut against a limiting stop consisting of an annular shoulder —20—, said tube being held in its operative position by a bayonet lock consisting of an angular slot —21— in the adjacent end of the nipple and a projection —22— on the cylindrical portion —10—. The opposite sides of the outer end of the nipple are preferably flattened or contracted to produce an elongated opening —23— for compressing the ends of the fiber into the same form when projected therethrough.

In assembling the parts of my improved eraser, assuming that the nipple —8—, brush —2— and clamp —3— are removed and that the cap —5— is placed in operative position upon the end —9— and that the screw —4— has been inserted through the open end of the tubular body —6— and secured to the cap —5— in the manner described, the clamp —3— is then operatively connected to the head of the brush —2— by pressing the jaws —15— together in the annular groove —14—, whereupon the clamp with the brush attached thereto are inserted endwise through the open end of the tubular body —6— and the screw —4— rotated to the left by the cap —5— to engage the threaded end of the clamp and draw it together with the brush inwardly into the tube to the limit of the inward movement,

whereupon the nipple —8— is placed in operative position upon and locked to the cylindrical end —10— of the tubular body —12— which constitute the means for erasing ink or other marks.

As the ends of the fiber body —12— wear, the brush may be projected forwardly at will by simply rotating the cap —5— and screw —4— to the right but by the reverse action the brush may be withdrawn inwardly from the open end of the nipple.

The opposite arms of the spring clamp —3— are tensioned to spring apart when withdrawn from the interior of the tubular body —6—, thereby automatically disengaging the head of the brush therefrom but are held in interlocking engagement with the head of the brush by the sides of the tubular body —6— when the parts are assembled as shown more clearly in Fig. 3.

In Fig. 10 I have shown a case —1'— in which the tapering end as —8'— is integral with the main body and the opposite end is closed by a screw cap —9'— having a central aperture in which the outer end of the screw —4— is journaled, said screw being provided with an operating member —5'— adjacent the outer face of the cap —9'—. Otherwise the connection of the screw —4— with the clamp —3— is substantially the same as shown in Fig. 3. This modification may be preferable to that previously described in that the brush together with its holder —3— and screw —4— may be removed through the open base of the tubular case by simply unscrewing the cap —9'— which is free to rotate relatively to the screw. This prevents turning of the fiber brush in the case and also avoids turning any part of the case around the fibers which are extremely sensitive and are liable to break under the slightest bending or twisting.

What I claim is:

1. An ink eraser comprising a tubular case open at one end, a glass fiber brush movable endwise within the case and provided with a head having an annular groove, a clamp also movable endwise in the case and engaged in said groove, a nut on the clamp, a screw engaging the nut, and means on the tubular case for rotating the screw by hand.

2. An eraser comprising a tubular case open at one end, an erasive body movable endwise in the case through the open end and provided with a head, a spring clamp interlocked with said head and provided with a nut, a screw engaged with the nut, and a hand-piece secured to the outer end of the screw for rotating the same and thereby moving the spring jaws and erasive body endwise.

3. In an ink eraser, a tubular body having cylindrical ends and opposite sides of

its intermediate portion flattened, a glass fiber brush movable endwise within the tubular body and provided with a head having an annular groove, a U-shape spring
 5 slidable endwise within the tubular body and having its free ends engaged in the annular groove and held in operative position by contact with the sides of the tubular body, the opposite end of the spring being
 10 provided with a threaded aperture, a screw engaged in the threaded aperture and extending inwardly between the arms of the spring, and a cap secured to the outer end of the screw, said screw and cap having
 15 portions thereof engaging the inner and outer face of the adjacent end of the tubular body to hold the screw against endwise movement.

4. In an ink eraser, a tubular body having cylindrical ends and opposite sides of its intermediate portion flattened, a glass fiber brush movable endwise within the tubular body and provided with a head having an annular groove, a U-shape spring
 20 slidable endwise within the tubular body and having its free ends engaged in the annular groove and held in operative position by contact with the sides of the tubular body, the opposite end of the spring being
 25 provided with a threaded aperture, a screw engaged in the threaded aperture and ex-

tending inwardly between the arms of the spring, and a cap secured to the outer end of the screw, said screw and cap having portions thereof engaging the inner and outer
 35 face of the adjacent end of the tubular body to hold the screw against endwise movement, and a nipple removably secured to the opposite end of the tubular body by a bayonet lock.

5. An eraser comprising a tubular case having a removable cap at one end, a glass fiber brush movable through the opposite end of the case, a clamping device slidable
 40 endwise within the case and held against rotary movement and in operative engagement with the head of the brush for moving said brush endwise, said clamping device being provided with a threaded aperture in
 45 its outer end, and a screw having one end engaged in the threaded aperture and its opposite end journaled in the cap and provided with a hand piece by which it may be turned to adjust the clamping device and
 50 brush endwise.

In witness whereof I have hereunto set my hand on this 7th day of May 1912.

JOSEPH K. RUSH.

Witnesses:

H. E. CHASE,
 E. S. TUCKER.