

L. KALINA.
FOLDING TOOTH BRUSH.
APPLICATION FILED MAY 4, 1914.

1,134,459.

Patented Apr. 6, 1915.

FIG. 1.

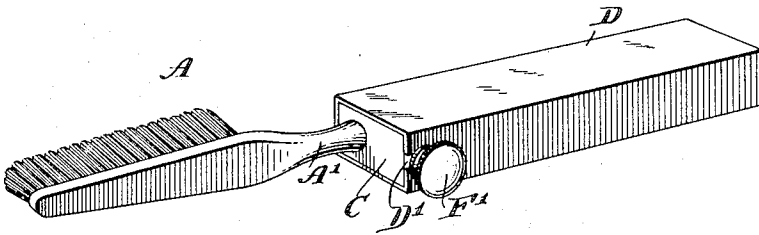


FIG. 2.

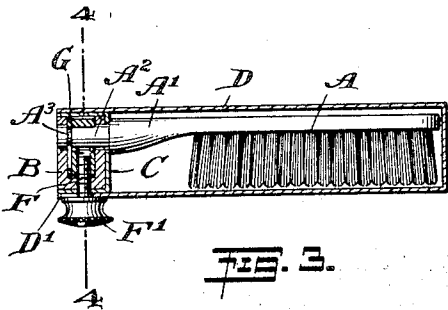
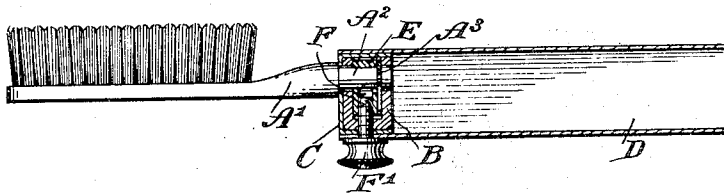


FIG. 3.

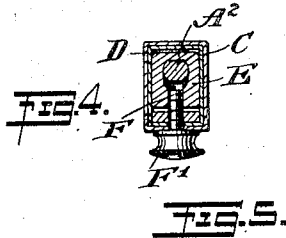


FIG. 4.

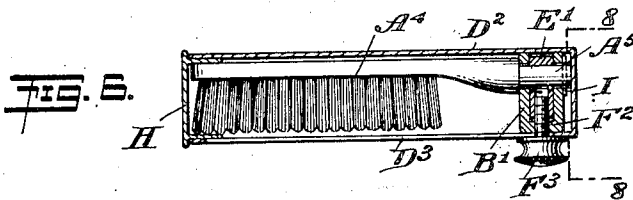


FIG. 5.

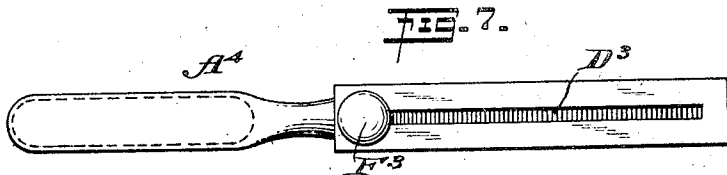


FIG. 6.

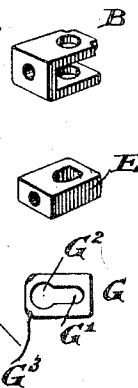


FIG. 7.

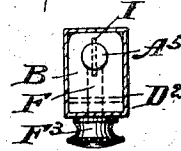


FIG. 8.

WITNESSES
G. Robert Thomas
Kerly. Koster

INVENTOR
Loeser Kalina
BY Munn Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

LOESER KALINA, OF NEW YORK, N. Y.

FOLDING TOOTH-BRUSH.

1,134,459.

Specification of Letters Patent.

Patented Apr. 6, 1915.

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To all whom it may concern:

Be it known that I, LOESER KALINA, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Folding Tooth-Brush, of which the following is a full, clear, and exact description.

10 The object of the invention is to provide a new and improved folding tooth brush arranged to permit the user to conveniently extend the brush for use or to fold the same in a hollow handle with a view to take up
15 very little room and to allow of packing the tooth brush into a hand bag, vest pocket, valise or other receptacle without danger of the bristles coming in contact with other articles.

20 In order to accomplish the desired result use is made of a hollow handle, a brush having a short shank, and a carrier held in the said hollow handle and in which the said shank is mounted to turn to allow of moving
25 the brush into extended position with the bristles projecting beyond one side of the handle and to allow of moving the brush into the hollow handle to confine the same therein.

30 A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

35 Figure 1 is a perspective view of the folding tooth brush with the brush in position for use; Fig. 2 is a sectional plan view of the same; Fig. 3 is a similar view of the same with the brush in folded position within the hollow handle; Fig. 4 is a cross section of the same on the line 4-4 of Fig. 3; Fig. 5 is a perspective view of the carrier for the brush and with the several members in disassembled position; Fig. 6 is a
45 sectional plan view of a modified form of the folding tooth brush with the brush in folded position; Fig. 7 is a side elevation of the same with the brush in extended position; and Fig. 8 is a cross section of the same on
50 the line 8-8 of Fig. 6.

55 The tooth brush A proper is provided with a short shank A' terminating in a journal A² mounted to turn in a yoke B held in a cup-shaped holder C removably fitting into the open end of a hollow handle or casing D. In the yoke B is mounted to slide

transversely an apertured clamping block E through which passes loosely the journal A² and in the said clamping block E screws a screw F passing loosely through the block B, the holder C and through a slot D' 60 formed in one side of the hollow handle D at one end thereof, as plainly indicated in the drawings. The outer end of the screw F is provided with a clamping head F' 65 adapted to abut against the side of the handle D. When the head F' of the screw F is turned in one direction the clamping block E is moved in the yoke B to firmly engage the journal A² and thus clamp the same in 70 position in the yoke B. It will also be noticed that by this movement the yoke B is drawn in the same direction toward the front side of the casing D and with it the holder C whereby the latter is clamped in 75 position in the handle D. When the head F' is turned in the reverse direction the holder C is unclamped relative to the handle D and the clamping block E releases the journal A² to allow the latter to turn in the 80 yoke B. It will be noticed that when the screw F is in this released position the brush A with the holder C, yoke B and screw F can be moved from the end of the hollow handle D to permit of moving the 85 brush A either from the extended position shown in Figs. 1 and 2 or into the folded position illustrated in Fig. 3 or vice versa.

In order to insure a firm clamping of the journal A² by the clamping block E and to 90 prevent accidental turning of the journal in the yoke B the said journal A² is provided on opposite sides with flattened portions (see Fig. 4) and the clamping block E has its bore provided with a flat rear face to en- 95 gage either of the flattened portions of the journal A² at the time the brush A is in either the extended or folded position.

In order to hold the journal A² against outward movement in the yoke B the journal 100 A² is provided with an annular groove A³ adapted to be engaged by the side walls of a slot G' of a locking plate G inserted in the yoke B between the clamping block E and one member of the yoke B, as will be 105 readily understood by reference to Figs. 2 and 3. The slot G terminates in an enlarged portion G² of a diameter corresponding to that of the journal A² to permit convenient insertion of the journal A² in the 110 yoke B at the time the enlarged portion G² is in register with the journal A². After

the journal A^2 is inserted in the yoke B the locking plate G is pushed into final position so as to engage the side walls of the slot G' with the annular groove A^3 . The locking plate G is provided at two of its corners with small struck-up projections G^3 to permit of conveniently moving the locking plate G into either of the two positions whenever it is desired to insert or remove the brush A from the yoke B. It is understood that the yoke B together with the clamping block E, the plate G, the holder C and the screw F form a carrier for the brush A to support the latter in the handle D and to hold the brush in the desired position.

When the brush A is folded within the hollow handle D, as shown in Fig. 3, and it is desired to extend the brush for use then the user slightly turns the head F' to release or unlock the holder C relatively to the hollow handle D and to lock the journal A^2 in the yoke B, as previously mentioned. The user now by taking hold of the head F' can conveniently pull the carrier and the brush out of the hollow handle D, and the user now gives a half turn to the brush A and then inserts the holder C in the open end of the handle D with the brush A extending outward, as indicated in Figs. 1 and 2. The user now turns the head F' in a reverse direction to fasten the journal A^2 in the yoke B and to clamp the holder C in position in the open end of the hollow handle D. The tooth brush bristles now project beyond the rear side of the hollow handle D so as to permit convenient use of the brush without danger of striking the handle D against the lips, teeth or gums of the user. After the brush has been used, the operator again unscrews the screw F and removes the brush A with its carrier from the end of the handle D and then gives a half turn to the brush A to cause the bristles to extend to the side on which the head F' of the carrier is located. The brush A with its carrier can now be reinserted in the handle D with the brush extending within the handle, as indicated in Fig. 3. It will be noticed that the axis of the journal A^2 is to one side of the longitudinal center of the carrier to allow of projecting the bristles of the brush beyond one side of the handle D, as shown in Figs. 1 and 2, and to allow the bristles to readily pass into the handle D without requiring the use of an unduly wide handle D to accommodate the folded brush. It will be noticed that when the tooth brush is in the folded position the holder C forms a closure at the open end of the handle D to prevent dust or other extraneous matter from passing into the hollow handle D and to the brush A.

In case the bristles of the brush A have become worn or the brush is otherwise unfit for use then it can be readily replaced by a new one. For this purpose the brush A with

its holder is removed from the handle D and then the screw F is unscrewed after which the locking plate G is drawn outward until the enlarged end G^2 of the slot G' registers with the journal A^2 to allow of pulling the brush A out of the yoke B, clamping block E and holder C. A new brush A can now be inserted in the said parts and locked in place against accidental movement by the locking plate G. The screw F is then replaced to permit of fastening the tooth brush A in either of its two positions in the handle D, as above explained.

In the modified form shown in Figs. 6, 7 and 8, the holder C is omitted and the yoke B' is slidably fitted in the hollow handle D^2 , the open end of which can be closed by a cap H. The yoke B', the clamping block E' and the screw F^2 with its head F^3 are the same as above described in reference to Figs. 1 to 5, and the journal A^5 of the brush A^4 is in this case held against longitudinal movement in the yoke B' by a pin I passing through the terminal of the journal A^5 and which terminal extends somewhat beyond the inner side of the yoke B', as plainly indicated in Fig. 6. The screw F^2 in this case passes through a slot D^3 formed in one side of the hollow handle D^2 to allow of sliding the brush A either outward into extended position as shown in Fig. 7, or inward into folded position as shown in Fig. 6. When the brush A^4 is moved into outer position from the folded position shown in Fig. 6 then a half turn is given to the brush A^4 so as to cause the bristles thereof to project beyond the side of the handle D^2 opposite the one having the slot D^3 . It is understood that the cap H is removed when it is desired to extend the brush for use, and the cap H is replaced after the brush has been used and returned into the hollow handle D^2 , as shown in Fig. 6. It is understood that in either of the two positions of the brush A^4 the yoke B' is clamped in place in the hollow handle D^2 by the screw F^2 and its head F^3 .

The folding tooth brush shown and described is very simple and durable in construction and the brush proper can be readily replaced by a new one when worn out or injured so that the handle and carrier can be used indefinitely. It will also be noticed that a number of brushes having bristles of different qualities, such as soft, hard or medium bristles, for instance, can be used, to permit of inserting a brush in the handle according to the desires of the user at the time.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A foldable brush, comprising a hollow handle, a brush having a short shank, a yoke held movable in the said hollow handle and

in which the said shank is mounted to turn, the axis of the shank being to one side of the center line of the yoke and the handle to allow the brush to be turned into an active position and into a folding position, a clamping block held movable in the said yoke and adapted to engage the said shank, and a screw for moving the said block into and out of clamping engagement with the said short shank.

2. A foldable brush, comprising a hollow handle, a brush having a short shank, a carrier held in the said hollow handle and in which the said shank is mounted to turn, and means for fastening the shank in position in the carrier and for fastening the latter in position on the handle.

3. A foldable brush, comprising a hollow handle, a brush having a short shank, a carrier held in the said hollow handle and in which the said shank is mounted to turn, the axis of the shank being to one side of the center line of the carrier and the handle to allow the brush to be turned into an active position and into a folding position, the bristles of the brush when the latter is in active position projecting beyond one side of the handle and the bristles of the brush when the latter is in folded position registering with the opening of the handle, and a fastening and clamping device for fastening the shank in active or folded position on the carrier and for fastening the carrier to the handle.

4. A foldable brush, comprising a hollow handle open at one end and closed at the other end, a yoke in the said hollow handle, a brush having a shank mounted to turn in the said yoke, means for holding the shank against outward movement in the said yoke, and means for fastening the said shank in position in the said yoke and fastening the latter in position in the said hollow handle.

5. A foldable brush, comprising a hollow handle open at one end and closed at the other end, a yoke in the said hollow handle, a brush having a shank mounted to turn in the said yoke, means for holding the shank against outward movement in the said yoke and provided with an annular groove, a clamping block in the said yoke and adapted to engage the said shank, a locking plate having an opening enlarged at one end for the passage of the said shank, the side walls of the opening being adapted to engage the said groove, a cup-shaped holder for the said yoke, and a clamping screw passing through a side of the handle, the said holder and yoke and screwing in the said clamping block to clamp the shank in position in the yoke and to clamp the holder to the handle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOESER KALINA.

Witnesses:

THEO. G. HOSTER,
GEORGE H. EMSLIE.