

(No Model.)

H. G. GUILD.  
COMB AND THE MANUFACTURE THEREOF.

No. 461,977.

Patented Oct. 27, 1891.

Fig. 1.

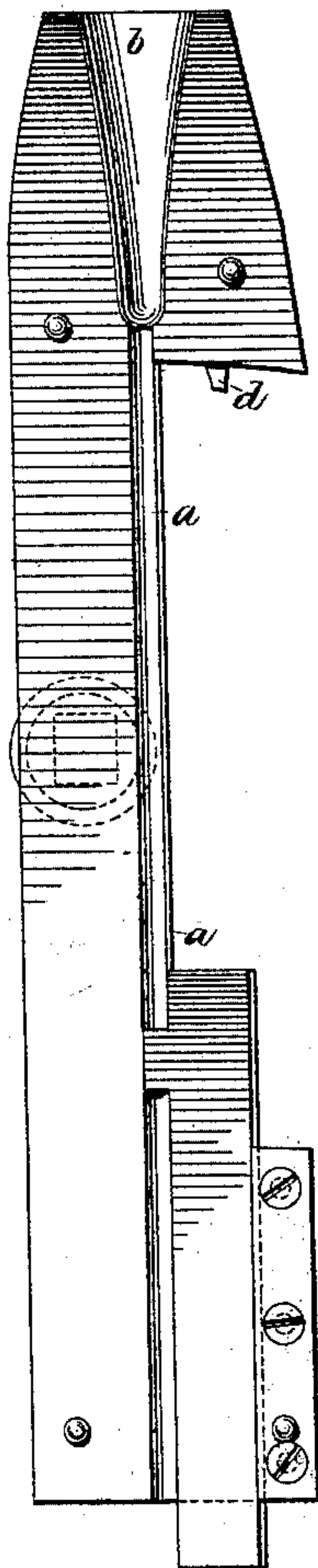


Fig. 2.

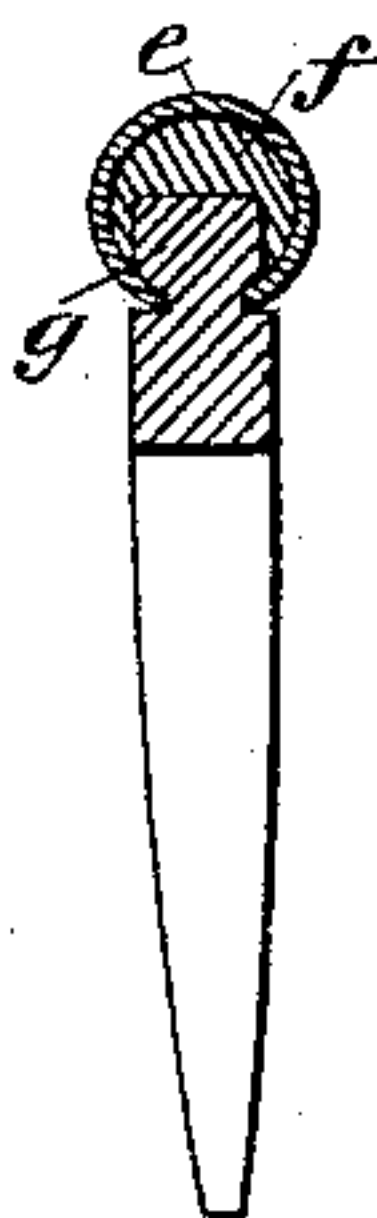


Fig. 3.

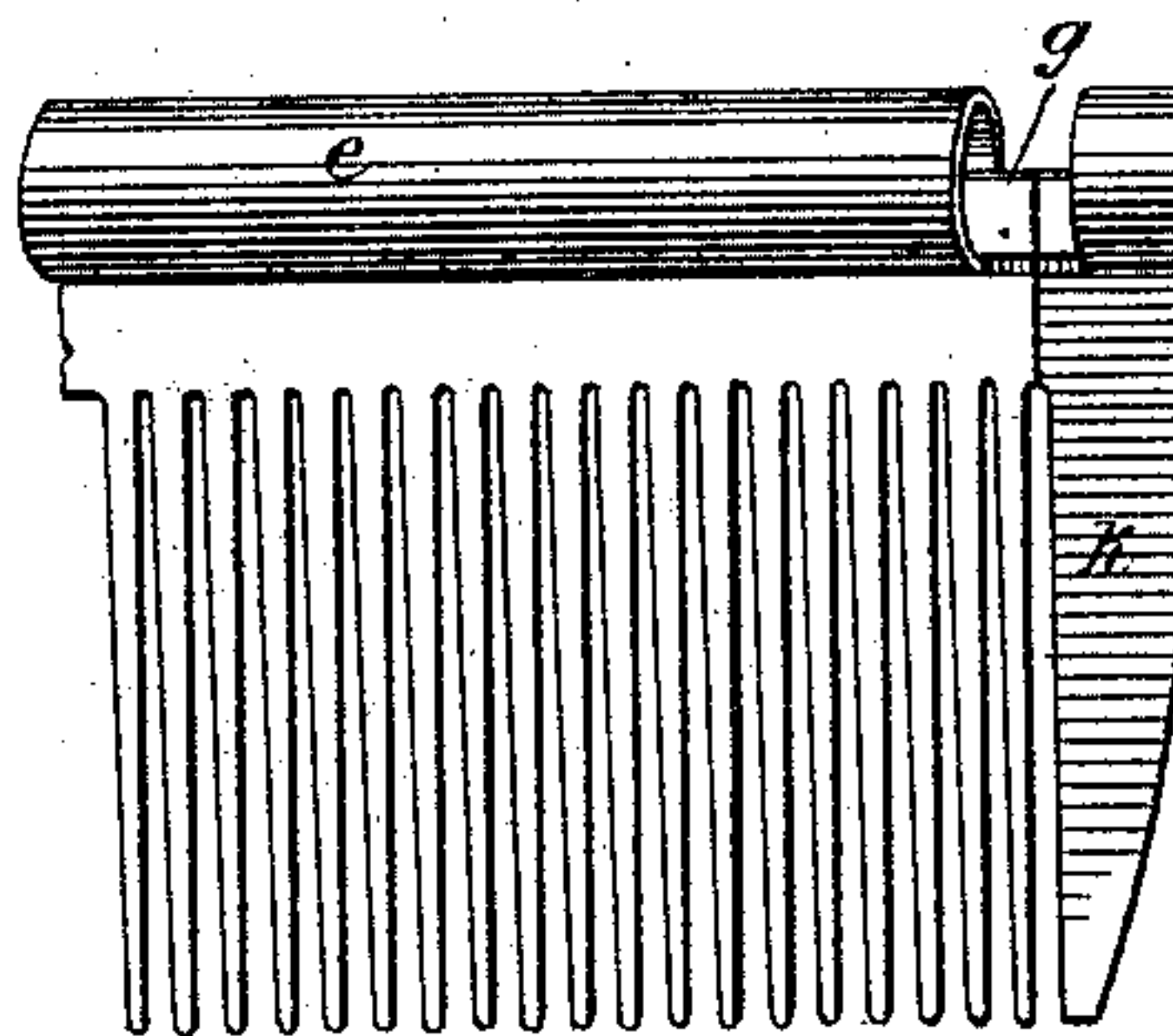


Fig. 4.



WITNESSES:

William Goebel.  
George Isakson.

INVENTOR

Henry G. Guild

# UNITED STATES PATENT OFFICE.

HENRY G. GUILD, OF NEW YORK, N. Y.

## COMB AND THE MANUFACTURE THEREOF.

SPECIFICATION forming part of Letters Patent No. 461,977, dated October 27, 1891.

Application filed March 23, 1891. Serial No. 385,963. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY G. GUILD, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Combs and in the Manufacture Thereof, of which the following is a specification.

My invention relates to improvements in combs and in the manufacture thereof, the object being to produce a durable, strong, and slightly comb which is believed to be superior to any cheap comb at present known and more economically produced than by the ordinary methods.

It has heretofore been customary to strengthen the heads or backs of combs with metal tubing pressed onto the back of the comb, and a re-enforce has been formed of cast metal; but there are objections which are not unimportant to all the methods heretofore practiced. If the re-enforce is formed of sheet metal and attached by pressure, there is constant danger of its displacement, whereby the value of the comb is destroyed. The cost of production is very considerable, and if the re-enforce is made of thin tubing or metal, it is easily sprung out of place and the comb is not as strong as is desirable.

The distinctive novelty of my invention consists in fastening a re-enforce of rolled or sheet-metal tubing to the back of the comb by means of molten metal, as hereinafter more fully described, whereby an effective and permanent attachment is accomplished and an improved and superior comb produced at reduced expense with greater facility.

In the accompanying drawings I have shown a form of mold which may be successfully employed in practicing my invention, and have also illustrated the completed article, together with modifications thereof.

Figure 1 represents a plan or face view of one section of a two-part die, which may be used in carrying out the invention. Fig. 2 is a view in section, showing the preferred construction of my improved comb and the relations of its parts to each other. Fig. 3 is a face view of one end of a comb in which independent or metallic teeth are made use of at the ends of the comb. Fig. 4 is a view

showing the preferred construction of the independent or metallic teeth.

The preferred method of manufacturing my improved comb by means of a mold of the nature illustrated by Fig. 1, will first be described.

As has been stated, Fig. 1 is one section of a two-part die. The other part corresponds in shape to the section shown, being constructed of metal and arranged to be heated according to methods well understood by persons skilled in the art and which need not be herein specifically described. The mold is constructed with a groove or channel *a*, which is adapted in size and shape to the re-enforce to be applied, and at the lower end of the said channel suitable means of plugging the groove or preventing the escape of the molten metal will be provided.

*b* indicates the mouth or upper part of the mold into which the metal is poured and which is made of a suitable shape to accomplish the desired object.

In practice the back of the comb is by preference grooved or indented, so as to receive the lips or edges of the re-enforce, and the re-enforce having been placed in position, is laid in the groove or channel *a*, the teeth of the comb extending outwardly and resting upon the stud *d*. The parts of the mold having been secured together and provision having been made to prevent the escape of the molten metal by plugging or stopping the lower part of the re-enforce, the molten metal, by preference lead, is poured into the mold and passes down, being directed into the re-enforce forming a permanent and very desirable attachment of the parts without in any degree injuring the comb. Great care will be taken to have the mold heated, whereby the re-enforce is heated before the metal is introduced, and after operations have commenced, the heat will be continued by the introduction of the molten metal.

The re-enforce will be made of any of the sheet metals now in use, and will be of any preferred size and configuration, the only essential being that a sufficient space be left within it and between it and the horn to permit the molten metal to enter and effect the desired attachment.



As will be readily understood, it is not essential that the metal be caused to flow the entire length of the re-enforce. I prefer to fill the re-enforce from end to end; but a good  
 5 result is accomplished when the molten metal is introduced at one or both ends of the comb for a short distance only.

While the method hereinbefore described of carrying out my process is a desirable one,  
 10 a similar result may be accomplished by means of molds of other and different constructions; and I do not limit myself to any particular method, process, or means of accomplishing the introduction of the molten metal, as it is  
 15 obvious that said introduction may be accomplished without the use of molds of any kind, and the shape or configuration of the re-enforce of sheet metal may be varied according to circumstances, and may be of any desired  
 20 thickness, and ornamented or coated at will, according to the character of the comb.

In Fig. 2 I have shown in detail the preferred construction of my improved comb, in which *e* is the re-enforce proper of rolled or  
 25 sheet-metal tubing; *f*, the molded re-enforce of cast metal, which is introduced and formed by pouring in a molten state, and *g* the back of the comb, showing the manner in which it is grooved and the relation of all the parts to  
 30 each other.

In Fig. 3 I have shown a modification of my invention, in which separate and independent teeth *h*, of any desired and suitable material, are introduced, one or more at each  
 35 end of the comb. In practice these teeth are by preference grooved at their bases, as shown in Fig. 4, so as to correspond, when in position, with the grooved back of the comb, in connection with which they are to be used.  
 40 They are introduced to occupy relatively the positions which the outer teeth of the comb occupy when it is made of a single piece of horn, and being thus placed in position within the re-enforce the metal is poured, as hereinafter described, as when they are not used,  
 45 or in other suitable ways. They will be made of any preferred and suitable shape, preferably of metal, and of a shape and configuration as may be desired.

50 In the construction of my improved comb I prefer to use horn or analogous mate-

rial having substantially the same characteristics, but as far as I am aware all other materials which have been used in the manufacture of combs may be availed of.

It will be obvious that the comb may be made in sections of different materials, the backing made in one piece, virtually and practically transforming it into a comb of a single piece.

While I prefer to make use of the retaining-groove and recommend its employment as insuring satisfactory results, it may be dispensed with, if desired, in which event the tubing or metal will be placed in position and  
 65 the molten metal introduced to all intents and purposes the same as when the retaining-groove is used, and, if desired, the back of the comb may be formed with shoulders and the tubing applied so that its lips or edges  
 70 rest upon shoulders, which construction and others which will suggest themselves may be employed, although with less satisfactory results than when the retaining-groove is made use of, as hereinbefore specifically described.

Having described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. The process herein described of constructing combs having re-enforced backs, which process consists in applying to the back  
 80 of the comb a re-enforce of rolled or sheet metal tubing and introducing molten metal into the space within the re-enforce, substantially as described.

2. As an article of manufacture, a comb consisting of the usual teeth and back of horn or other material, and having an exterior re-enforce of rolled or sheet metal tubing in said  
 85 back and an interior section or re-enforce of cast metal between said back and exterior re-enforce, whereby the comb is strengthened and the parts effectively united, substantially as described.

Signed at New York, in the county of New York and State of New York, this 20th day  
 95 of March, A. D. 1891.

HENRY G. GUILD.

Witnesses:

HERMAN GUSTOW,  
 GEORGE ISAKSEN.