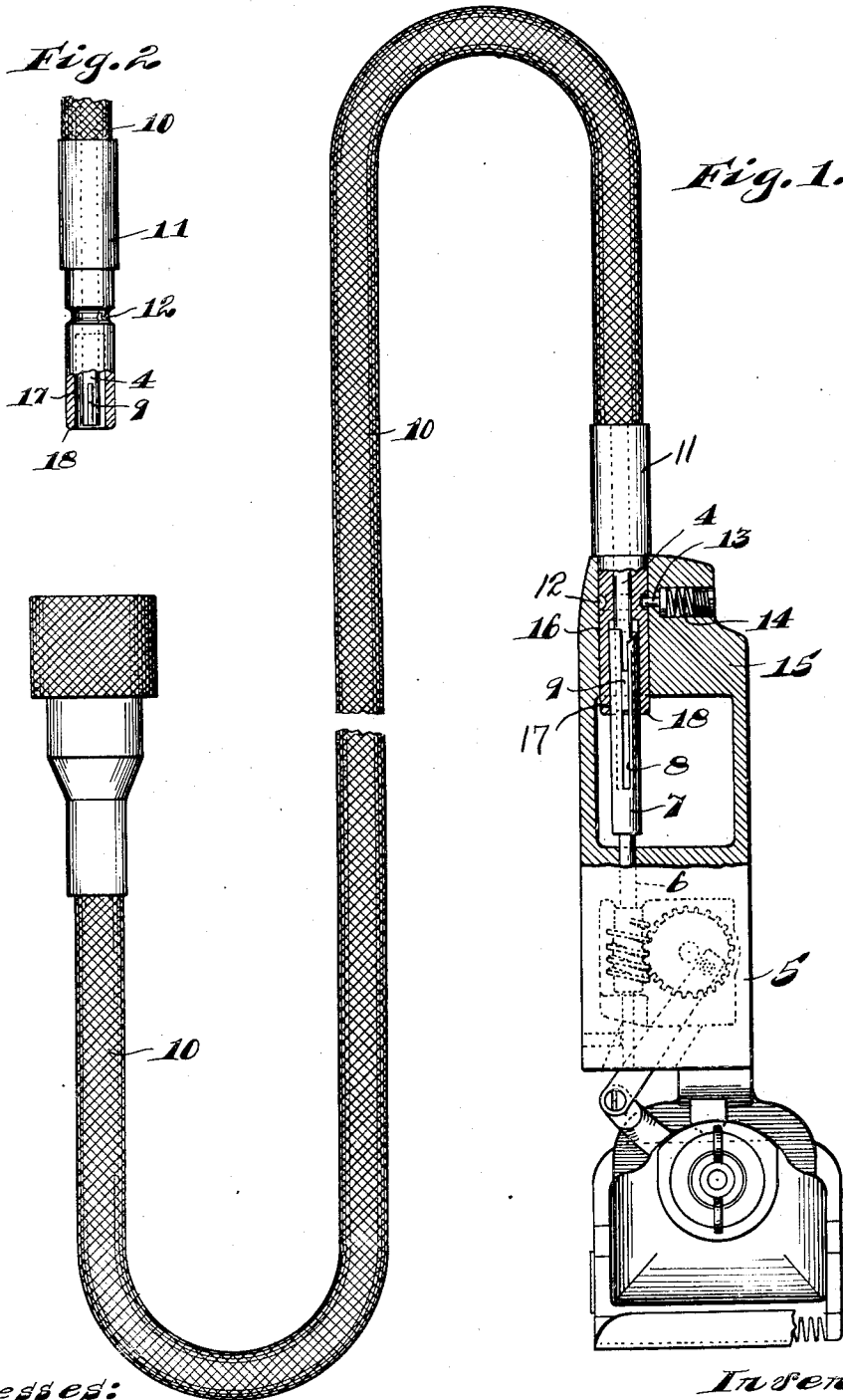


C. H. BEACH.
FLEXIBLE SHAFT GUARD.
APPLICATION FILED JULY 7, 1919.

1,391,092.

Patented Sept. 20, 1921.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHESTER H. BEACH, OF RACINE, WISCONSIN, ASSIGNOR TO MOORE ELECTRIC CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

FLEXIBLE-SHAFT GUARD.

1,391,092.

Specification of Letters Patent. Patented Sept. 20, 1921.

Application filed July 7, 1919. Serial No. 309,128.

To all whom it may concern:

Be it known that I, CHESTER H. BEACH, a citizen of the United States, and a resident of the city of Racine, county of Racine, and State of Wisconsin, have invented certain new and useful Improvements in Flexible-Shaft Guards, of which the following is a specification.

My invention relates to improvements in guards for flexible shafts and has for its object the provision of a guard adapted to protect the projecting end of a flexible rotating shaft.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a perspective view of a flexible shaft embodying my invention, secured to a pair of clippers, parts being in section.

Fig. 2 is a perspective view of my invention with a part removed.

The approved form of construction, as illustrated in the drawings, comprises a flexible shaft 4, which is intended primarily to be used in connection with a pair of clippers 5. A driving shaft 6 is mounted upon the clippers 5, one end of said driving shaft 6 having an enlarged cylindrical tubular portion 7, which is provided with an elongated slot 8. Provided upon one end of the shaft 4 is a laterally projecting shoulder 9, which in operation is adapted to engage in the slot 8 of the driving shaft 6. The flexible shaft 4 is inclosed by a flexible sheath 10, one end of which is provided with a cylindrical metallic tip 11 having a groove 12 extending around the periphery thereof. The tip 11 is designed to fit a bearing 16 which is provided in the handle 15 of the clippers 5. A suitable pin 13 actuated by a compression spring seated in a slot 14 which is provided in the handle 15, is adapted to engage in the groove 12 and securely lock the tip 11 in position. As will be noticed, the tip 11 is provided at its lower end with an enlarged tubular opening or bearing 17. This bearing is provided for the reception of the enlarged end of the shaft 6, which coöperates with the shaft 4. It is also to be noticed that the end 18 of the tip

11 is beveled so as to adapt same for more ready and easy insertion into the handle 15.

The form of construction of devices of this class which are now customarily used, embraces a metallic tip similar to the tip 11, with the exception that the enlarged opening 17 is not provided therein, and with the further distinction that the tip 11 terminates immediately below the groove 12, thereby allowing the end of the shaft 4 which co-operates with the driving shaft 6, to project beyond the tip 11. In this form of construction; the end of the flexible shaft 4, which is provided with a shoulder 9, is unprotected by any sort of casing. Inasmuch as this shaft 4 revolves at a high speed, it is a source of great danger and inconvenience to the operator when unprotected, owing to the fact that it is liable to catch in the clothing or the hair. The shaft would also gather up lint and small particles of thread, which would interfere with the efficient operation of the device. Furthermore, the shaft 4, when thrust into the handle of the clippers with which used, is generally revolving, and consequently, when it comes into contact with the surface of the handle of the clippers, will generally mar the handle, chipping off the nickel or the coating of the same. These difficulties are eliminated by prolonging the tip 11 and extending it so as to incase throughout the entire length the flexible shaft 4. A further advantage is that the prolonged portion of the tip 11 affords a bearing for the end of the shaft 6 which engages the flexible shaft 4, as clearly shown in Fig. 1. The shaft 6 on this account is provided with three bearings instead of two. The lateral motion of the same is reduced to a minimum, adding efficiency and durability to the entire device.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of the construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

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

The combination with hair clippers con-

sisting of a casing having an operating shaft therein, there being a bearing in said casing surrounding said shaft, of a flexible shaft inclosed in a sheath, said sheath being provided with a tubular tip surrounding the end
5 of said flexible shaft, said tip fitting the bearing in said casing and the shaft in said casing fitting within and having a bearing in said tip, substantially as described.

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

CHESTER H. BEACH.

Witnesses:

L. H. HAMILTON,
L. I. PEASE.