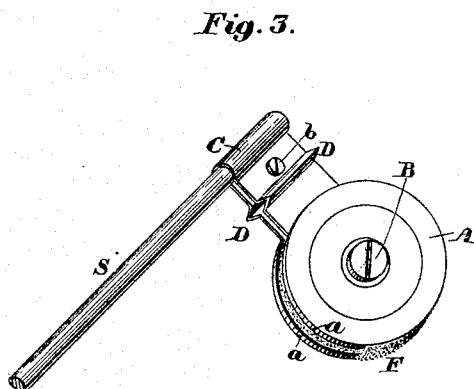
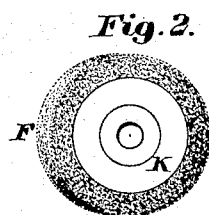
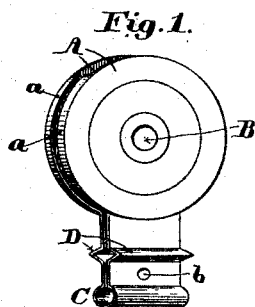


(No Model.)

F. W. WHITE.  
PIANO HAMMER.

No. 491,749.

Patented Feb. 14, 1893.



*Witnesses:*  
*Frank C. Church.*  
*S. J. Holbrook*

*Inventor:*  
*Francis W. White*

# UNITED STATES PATENT OFFICE.

FRANCIS W. WHITE, OF NORWICH, CONNECTICUT.

## PIANO-HAMMER.

SPECIFICATION forming part of Letters Patent No. 491,749, dated February 14, 1893.

Application filed May 26, 1892. Serial No. 434,519. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS W. WHITE, a citizen of the United States, residing at Norwich, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Piano-Hammers, increasing the value of same in strength, beauty, durability, simplicity, and cheapness; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to have a hammer so constructed that a fresh new surface of felt can be had at any time when desirable, a hammer so made that it is strong, and durable, and one that can be slipped off of the stick with little trouble, simply the loosening of a screw; and I accomplish the object desired in the following manner. First, I take a thin sheet of metal of suitable thickness, and with dies, fitted to the work in hand, punch out blanks, with the ordinary punching press; bend the blanks into the required shape, having two countersunk disks, with turned in flanges to inclose felt block, with open space for the felt, where it comes in contact with strings, a spring back, a socket for the stick, (or handle) and two holes for screws; one in the center to act as a screw acts upon the jaws of a vise to tighten the disks firmly around the block of felt and cork, the other hole is for a screw to clamp the socket firmly around the stick; (or handle.) This device so formed I denominate a shell; (or head). Being aware of other hammers having been made with rotating heads, I make no claim to such invention. Secondly, I take a strip of felt of suitable width and thickness, (either for an instrument of three strings, or one with two strings, as the case might be,) and make a band of the same, and I use cork for a cen-

ter piece, in preference to any other substance, made to fit snugly into the band of felt, this combination of felt and cork, I call a block, so made, to fit tightly into the shell or head, and the said block can be turned around in the shell, or held firmly in place by the flanges and center screw, as may be desired.

By reference to the accompanying drawings—Figure 1, A, shows the metal shell, (hammer head) in one piece, with flanges, *a*, *a*, spring-back, D, socket, C, and holes for screws, B, *b*. Fig. 2, represents the block, of felt and cork, the felt, F, is shown by small dots, K, is the cork center piece. In Fig. 3, the hammer is shown complete, with screws in place, B, *b*, felt, F, shown by small dots, shell, A, with disks having countersunk surfaces to let the ends of the center screw; B, in even with the outer edges of the disks, the spring back *c*; the cork center piece is not shown being in the center of the felt band, and also in the shell.

Having thus described my invention I claim

1. A piano hammer head, made of thin metal, in form of a shell as described, in one piece; having two disks, to inclose the felt-block, with flanges, and countersunk surfaces, punched or swaged for screws, to answer as nuts, and bent to form also a socket, for the stick, (handle) which socket can be adjusted by one or more screws; and a back to act as a spring, as described and set forth.

2. A block, composed of a ring of felt, and a core or center piece of cork, adapted to fit into the above described shell, or piano hammer head, and to turn therein, as described and set forth.

FRANCIS W. WHITE.

Witnesses:

S. T. HOLBROOK,  
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