Sept. 1, 1931. F. GLAHE 1,821,889

HOCKEY STICK

Filed Dec. 18, 1929

Fig. 2.

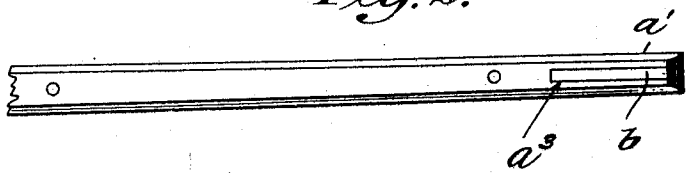


Fig. 1.

Fig. 3.

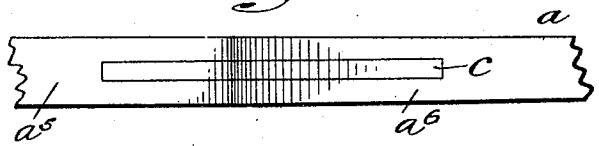


Fig. 4.

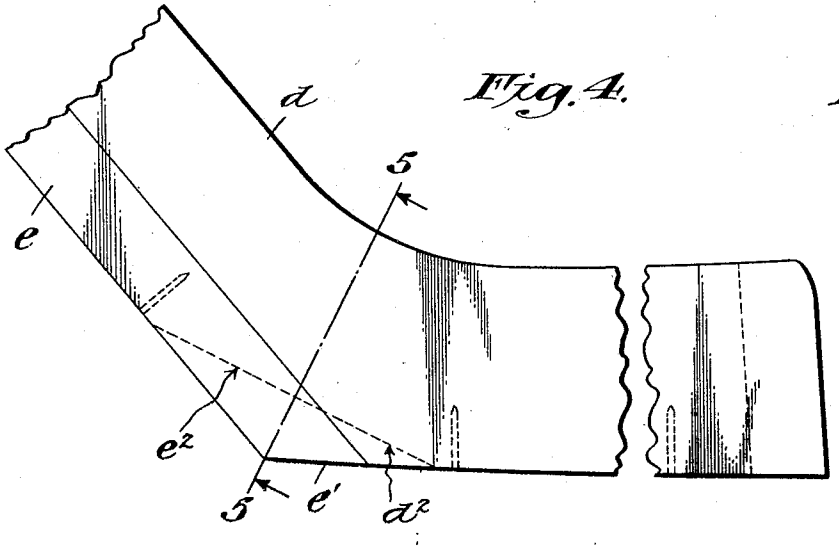
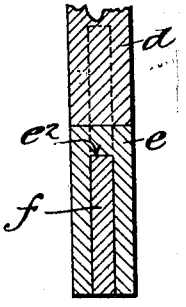


Fig. 5.



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UNITED STATES PATENT OFFICE

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HOCKEY STICK

Application filed December 18, 1929. Serial No. 414,857.

This invention relates to hockey sticks and has for its object to provide an improved reenforcement in such parts thereof as are particularly exposed to breakage, splintering and wear. It has been found in practice that the toe and heel of a hockey stick are the parts most subject to injury. Accordingly, the improvements are illustrated in the accompanying embodiments as incorporated in the heel and toe. In accordance with the invention it is proposed to incorporate a separate element as a reenforcement which shall be of such construction and so related to the material of the hockey stick as to add the maximum strength and resist most effectively forces tending to damage it. This reenforcement is of simple and inexpensive construction and lends itself to ready incorporation in the desired zone within the body of the stick after its manufacture has been completed and without altering its form. It is proposed that a groove of desired shape and dimensions shall be extended through the material of the stick where the reenforcement is to be placed and that the reenforcement shall be inserted in the groove and united permanently with the material of the stick, the edge of the reenforcement coinciding with the edge of the stick. Since hockey sticks are made of wood having preferably very uniform grain, the reenforcement likewise can also be formed of wood to the best advantage with its grain disposed angularly to the grain of the stick thereby further increasing the strength.

The invention will be described in detail in connection with the drawings, in which:

Figure 1 is a view in side elevation of a hockey stick having the reenforcement incorporated in the heel and toe in accordance with the invention, parts being broken away in the interest of clearness.

Figure 2 is a fragmentary view in plan of the stick shown in Figure 1.

Figure 3 is a view in elevation of the heel of the stick shown in Figure 1 indicating the relation of the reenforcement to it.

Figure 4 is a view in side elevation of a goal keeper's stick of somewhat modified construction but having the improved reenforcement incorporated in the heel.

Figure 5 is a sectional view through the stick shown in Figure 4 and taken on the plane indicated by the line 5—5 of Figure 4 and looking in the direction of the arrows.

The stick a shown in Figure 1 may be of any suitable form and construction and is illustrated as formed from wood in accordance with usual practice. It has been found that the toe of such a stick indicated generally at a' and also the heel indicated at a^2 are most exposed to fracture and wear because of the nature of the use. The present invention seeks to incorporate in the stick structure without modification thereof simple and effective means for resisting such fracture and wear within the most susceptible zones. To this end, it is proposed that the toe a' shall have cut therethrough from the top to the bottom edge a groove a^3 which is preferably of rectangular outline, an ample amount of wood being left on each side of the groove. This groove may be conveniently cut in manufacture after the stick is completed by means of a suitable saw or similar tool. A reenforcement consisting of a block of wood b, which is preferably precut to somewhat the same outline as the grooved area a^3, is then inserted therein and permanently united with the adjacent sections of wood by glue, the parts being clamped together for a time to effect this union. It is advisable to form the reenforcing block b so that when in place its grain may extend generally at right angles to the grain in the stick lying adjacent thereto. This adds substantially to the strength of the resultant composite toe. A reenforcement c for the heel is illustrated in Figures 1 and 3. This reenforcement is likewise disposed within a groove extending angularly which preferably has a straight line bottom indicated at a^4 disposed at an angle to the rear edge a^5 of the shaft and the bottom edge a^6 of the stick. The reenforcement c when inserted in this groove also preferably has its grain disposed at an angle to the grain of the wood in the stick immediately adjacent thereto so that when the

parts are permanently glued together the effectiveness will be at a maximum. The exposed edge of the reenforcement *c* conforms to the edge of the stick as illustrated. As regards both of the reenforcements *b* and *c* the finishing operation may consist in making the edges conform nicely to the contour of the stick.

The stick illustrated in Figure 4 at *d* has secured along the rear side of the shaft a separate piece *e* which extends down to the bottom of the stick and has its lower edge *e'* squared to constitute a continuation of the lower edge *d'* of the stick proper. A separate piece of this kind is frequently employed in a goal keeper's stick and is united therewith by means of glue. It will be evident that the lower end of such a separate section *e* is especially exposed to injury and in such a construction the improved reenforcement is of great advantage. Such a reenforcement as indicated at *f* in Figure 5 is similar to the reenforcement *c* and lies in a groove prepared therefor which extends through the piece *e* and the foot of the stick *d*, the bottom of the groove being indicated by dotted lines at d^2, e^2 in Figure 4. It will be evident that the groove spans the two united parts and when the reenforcement *f* is glued in place it will reenforce the heel of the club protecting it against wear and breakage. Here again, it is preferred that the grain of the reenforcement shall be disposed angularly to those portions of the stick with which it is united.

What I claim is:

A stick of the character described having a back piece secured thereto adjacent the heel and having a diagonal groove in the back piece and heel of the stick and a reenforcement disposed within the groove and permanently united with the adjacent portions of the stick and back piece, the exposed edge of the reenforcement conforming in outline to the edges of the said adjacent portions.

This specification signed this 14th day of December A. D. 1929.

FRED GLAHE.