

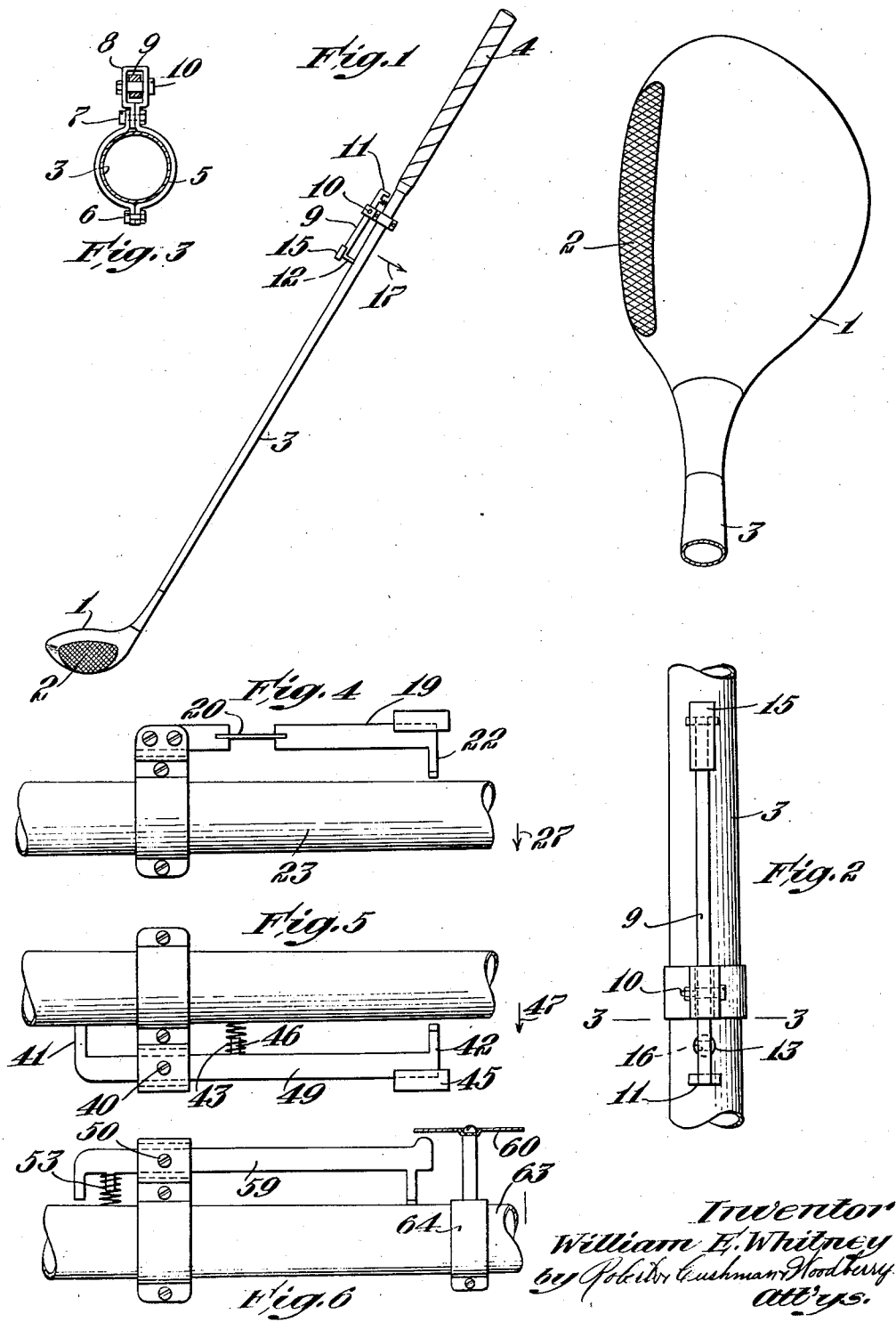
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ATTACHMENT FOR GOLF CLUBS

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ATTACHMENT FOR GOLF CLUBS

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4 Claims. (Cl. 273—77)

This invention relates to attachments for golf clubs which indicate when the club is swung improperly, particularly when the club is accelerated too rapidly at the end of the back swing, that is, slowed down too quickly as the back swing is stopped or started up too quickly as the down swing is begun.

Objects of the invention are to provide an attachment which is simple and inexpensive to construct, which is durable and effective in use, which may be attached to any one of a wide variety of clubs, and which is generally superior to prior art devices for this general purpose.

According to this invention the attachment comprises a part movable by its own inertia in response to excessive acceleration (either positive or negative) at the end of the back swing, in combination with means for mounting the part on a club so that the aforesaid part is normally movable transversely of the axis of the club in an approximately vertical plane containing the said axis when the club is held grounded in normal stance. The attaching means preferably comprises a clamp adapted to be fitted around the shaft of a golf club for anchoring the attachment in fixed position on the club, and the aforesaid movable part preferably comprises an arm pivoted or otherwise movably mounted on the clamp. While the movement of the aforesaid part may produce a signal in any one of many ways, it is preferably arranged to produce the signal merely by tapping against the shaft. While the device preferably includes a spring for holding the part in normal position and for returning the part to normal position after it has been moved to signal position by an improper swing, it may be held in normal position merely by frictional engagement with its pivotal support.

For the purpose of illustration typical embodiments of the invention are shown in the accompanying drawing in which

Fig. 1 is a face view of a golf club in the position which it occupies in normal stance, the club carrying an attachment embodying the present invention;

Fig. 2 is a top view with parts broken away; Fig. 3 is a section on line 3—3 of Fig. 2; and

Figs. 4, 5 and 6 are enlarged views corresponding to Fig. 1 of modifications of the attachment.

While the subject matter of the present invention may be applied to any kind of a club, it is illustrated in the drawing as applied to a wooden club comprising a head 1 having a face 2 and a shaft 3 having a grip or handle 4. The

attachment shown in Figs. 1, 2 and 3 comprises a clamp 5 formed in two parts which are secured together by bolts 6 and 7. At its upper end the clamp terminates in a loop 8 in which is pivoted an arm 9 by means of a pivot bolt 10. At its opposite ends the arm 9 has fingers 11 and 12 which extend toward the shaft of the club, the length of the fingers being such that when one finger contacts with the club the other finger is spaced somewhat from the club, whereby the arm may oscillate back and forth about the pivot 10 with the fingers 11 and 12 impinging upon the shaft 3 and limiting the oscillatory motion. Yieldingly to hold the arm 9 in the position in which the finger 12 contacts with the shaft and the finger 11 is spaced away from the shaft, a spring 13 is interposed between the arm and the shaft intermediate the clamp and the finger 11. To hold the spring in position between the arm and the shaft the arm may be provided with a pin 16 extending through the spring toward the shaft but terminating somewhat short of the shaft so as not to impinge upon the shaft when the arm is oscillated in the direction to cause the pin 11 to contact with the shaft. The inherent inertia of the arm 9 may if desired be augmented by a weight 15.

When the attachment is applied to the club the arm 9 is located approximately in the plane which contains the axis of the club and which extends approximately lengthwise of the face 2 of the club head (the plane of the paper in Fig. 1). Since the wrists roll clockwise on the back swing so that the toe of the club points downwardly at the end of the back swing, the force which checks the back swing and starts the club on the down swing tends to cause the arm 9 to swing about the pivot 10 in a clockwise direction (Fig. 1) due to the inertia of the arm 9 and/or augmented by that of the weight 15. Thus if the back swing be decelerated too quickly or the early portion of the down swing be accelerated too quickly the arm swings against the action of the spring 13 until the finger 11 impinges against the shaft, whereupon the spring 13 returns the arm to normal position. Thus the excessive acceleration (either positive or negative) produces a warning in the form of a tapping noise, once when the finger 11 impinges upon the shaft and again when the finger 12 impinges against the shaft. The spring 13 is so tensioned that if the acceleration at the end of the back swing is not excessive the finger 12 does not leave the shaft.

On the down swing the wrists roll back in a

counter-clockwise direction and as the club head approaches the ball the acceleration of the club tends to swing the arm 9 not in the aforesaid plane but in the plane of the stroke which is perpendicular to the aforesaid plane. Inas-
 5 much as the arm 9 is not free to swing in this direction rapid acceleration of the club as it approaches the ball produces no movement of the arm. Thus at the proper time, but not be-
 10 fore, the player may rapidly accelerate the club head, by what is commonly called wrist snap, without producing the aforesaid signal.

The modification shown in Fig. 4 differs from the attachment above described in that the arm
 15 19 is mounted on a spring 20 and has only one finger 22 corresponding to finger 12 in Fig. 1. When the club is accelerated too rapidly in the direction indicated by the arrow 26, which is the same direction as indicated by the arrow
 20 16 in Fig. 1, the finger 22 moves away from the shaft 23 due to flexing of the spring 20; and at the end of the excessive acceleration the spring 20 returns the arm 19 to the normal position shown in Fig. 4, at which time the finger 22 im-
 25 pinges upon the shaft to signal the operator as aforesaid.

The modification shown in Fig. 5 is identical with that shown in Figs. 1, 2 and 3, except in that the spring 43 and pin 46, corresponding
 30 to parts 13 and 16 of Figs. 1 to 3, is located on the opposite side of the pivot 40 between the arm 49 and the shaft 33 so as normally to hold the finger 41 (instead of the finger 42) against the shaft. This modification is mounted under
 35 the shaft instead of over the shaft as in Figs. 1 and 2. Thus when the club is accelerated too fast in the direction of the arrow 47, corresponding to the direction indicated by the arrow 17 in Fig. 1, the inertia of the arm aug-
 40 mented by that of the weight 45 causes the finger 42 to tap against the shaft.

The modification shown in Fig. 6 is like that shown in Figs. 1 to 3 but in addition to the arm
 45 59, corresponding to the arm 9 in Figs. 1 to 3, a sounding disk 60 is mounted on the shaft 63 by means of a clamp 64 so that, when the arm 59 swings in a counterclockwise direction about its pivot (Fig. 6) in response to excessive ac-
 50 celeration, the long end of the arm 59 impinges upon the disk 60 to give the aforesaid signal.

As indicated by the taper of the shafts in Figs. 4, 5 and 6, the head ends of the shafts are at the right-hand ends of the figures.

It should be understood that the present dis-
 55 closure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims. For example, in-
 stead of employing a spring to hold the inertia

arms in normal position they may be held solely by friction, in which case they are returned to normal position by hand after an improper swing; and instead of relying on a mechanical
 5 signal the device may operate an electrical signal by insulating the inertia arm from the shaft and connecting the signal circuit to the arm and shaft respectively so that the circuit is closed when the inertia arm moves in response to an improper swing.
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I claim:

1. An attachment for a golf club comprising a part movable in response to excessive accelera-
 15 tion at the end of the back swing to indicate when the club is swung improperly, and means for mounting said part on the club so that the part is normally free to move by its own inertia in response to said acceleration transversely of the axis of the club in an approximately verti-
 20 cal plane containing said axis when the club is held grounded in normal stance.

2. An attachment for a golf club comprising a part movable in response to excessive ac-
 25 celeration of the club at the end of the back swing, to indicate when the club is swung im- properly, and means for mounting said part on the shaft of a golf club so that the part is nor-
 30 mally free to move by its own inertia in response to said acceleration transversely of the shaft approximately in the plane which contains the axis of the club and which extends lengthwise of the face of the club.

3. An attachment for a golf club comprising a part movable in response to excessive accelera-
 35 tion of the club at the end of the back swing, to indicate when the club is swung improperly, means for mounting said part on the shaft of a golf club so that the part is movable transversely of the shaft approximately in the plane which contains the axis of the club and which extends
 40 lengthwise of the face of the club, and yielding means normally resisting the movement of said part, said movable part being otherwise free to move by its own inertia against the resistance of said yielding means in response to said accelera-
 45 tion.

4. An attachment for a golf club comprising a clamp for anchoring the attachment in fixed
 50 position on the shaft of the club, and an arm carried by the clamp and extending lengthwise of the shaft, the arm being normally movable transversely of the axis of the shaft approxi-
 55 mately in a plane which contains said axis and which extends approximately lengthwise of the face of the club, and the arm being free to move as aforesaid by its own inertia in response to excessive acceleration of the club at the end of the back swing.

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