Feb. 27, 1951 F. W. HETZEL 2,543,722

ATTACHMENT FOR GOLF CLUBS

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Fig. 1.

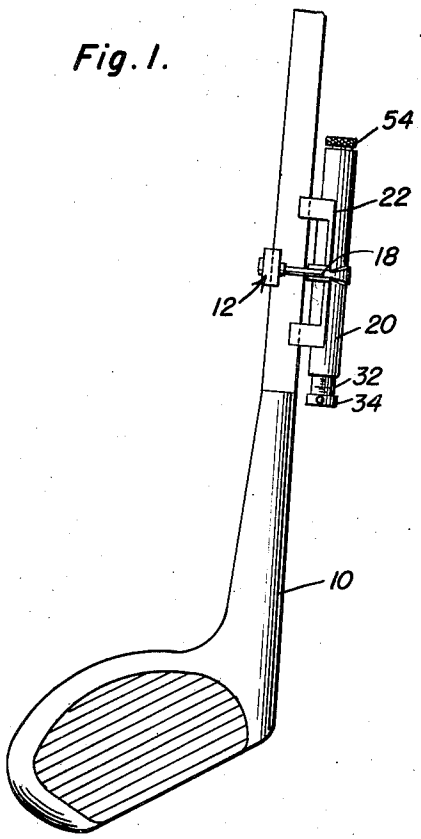

Fig. 2.

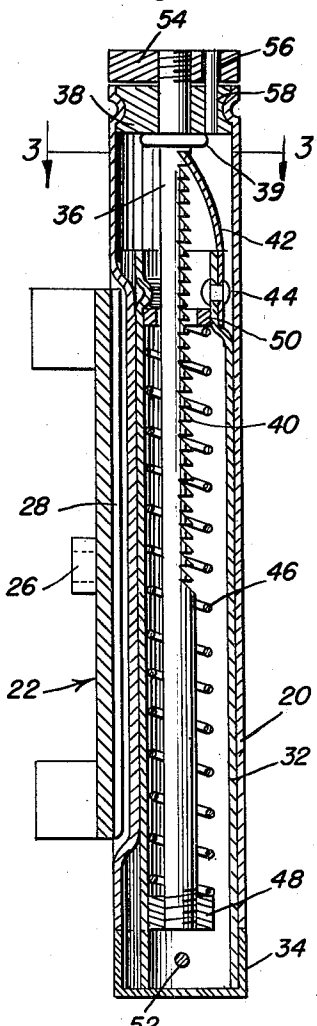

Fig. 3.

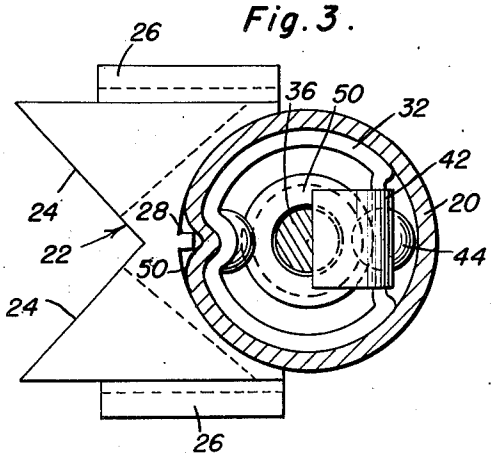

Fig. 4.

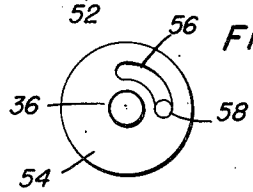

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Fig. 5.

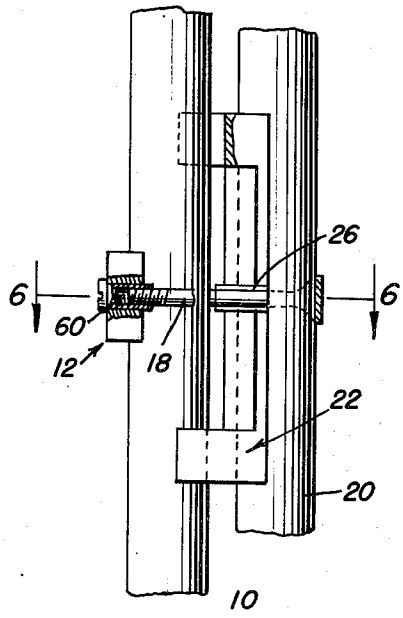

Fig. 6.

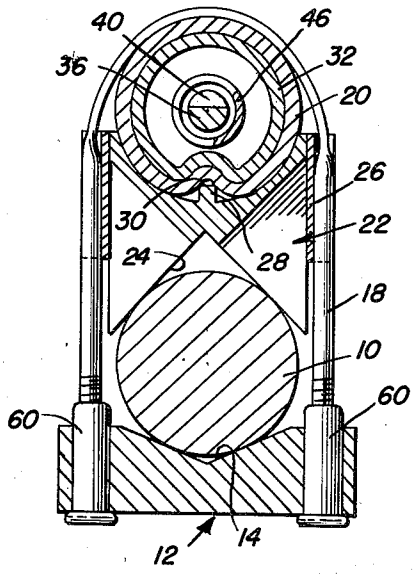

Fig. 7.

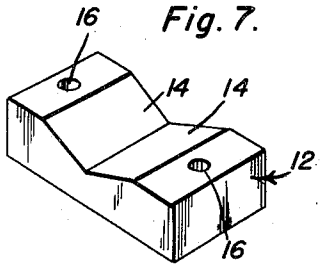

Fig. 8.

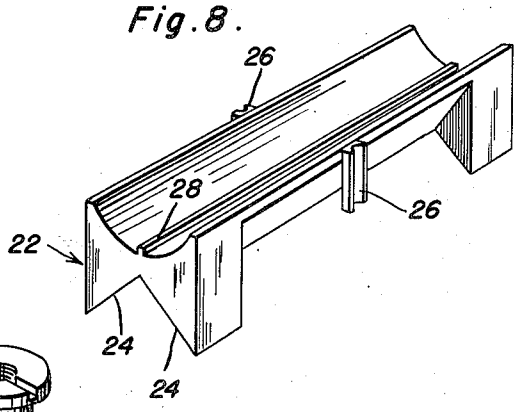

Fig. 9.

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ATTACHMENT FOR GOLF CLUBS

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Application August 1, 1947, Serial No. 765,459

3 Claims. (Cl. 73—380)

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This invention appertains to novel and useful improvements in attachments for golf clubs, particularly those attachments which are utilized for the purpose of measuring certain forces present in a golf club during the normal swinging thereof.

An object of this invention is to measure the centrifugal force of a golfer's swing and to provide an improved means for this purpose.

Another purpose of this invention is to provide improved means for attaching a housing and means for indicating centrifugal force, to a golf club.

Another purpose of this invention is to provide means positioned within a housing for sliding from said housing a predetermined amount in accordance with the centrifugal force present during a swing of a conventional golf club.

Another purpose of this invention is to lock said sliding means in the extended position.

A still further object of this invention is to provide means for unlocking said locking means.

Another purpose of this invention is to provide an extremely simple device of the character described which is useful in correcting golf swings as well as measurement of force exerted during the swing.

Other objects and features of novelty will become apparent to those skilled in the art, in following the description of the preferred embodiment of the present invention, illustrated in the accompanying drawings, wherein:

Figure 1 is an elevational side view of the preferred form of the invention, showing the same fixed to a golf club shank;

Figure 2 is a longitudinal sectional view of the indicating means forming a portion of the invention;

Figure 3 is a transverse sectional view of the invention shown in Figure 2 and taken substantially on the line 3—3 thereof and in the direction of the arrows;

Figure 4 is a plan view of the invention shown in Figure 2;

Figure 5 is an enlarged fragmentary elevational view of the preferred form of the invention, illustrating particularly the securing means utilized therewith;

Figure 6 is a transverse sectional view of the invention shown in Figure 5 and taken substantially on the line 6—6 thereof and in the direction of the arrows;

Figure 7 is a perspective view of a cradle utilized in clamping the invention to a golf club shank;

Figure 8 is the second complemental cradle

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utilized in conjunction with the above mentioned cradle, and

Figure 9 is a perspective view of the preferred form of a portion of the clamping means.

This invention has been conceived and developed to provide a device for the purpose of measuring the centrifugal force present in a golf club during the normal swing thereof. The normal golf swing, particularly the swings associated with the wood clubs should be smooth, continuous and complete with a follow through. Consequently, the measure of centrifugal force present in a golf club during the normal swing thereof is also a measure of the force exerted upon application of the head of the golf club to a conventional golf ball. Many corrections of golf swings may be indicated by utility of the present invention from a mere measurement of how much force is exerted during the swing and the approximate distance which the standardized ball travels.

The specific structure for performing the above mentioned functions is seen particularly well in Figures 2 and 6 which will be utilized primarily for explanation purposes. Referring first however, to Figure 1 there is disclosed a conventional golf club 10 with the device fixed thereto.

A cradle 12 is engageable with the shank of the golf club 10 and is used as a portion of the securing means. This cradle has wedge-shaped surfaces 14 which are adapted to abut the shank of the club. Apertures 16 are provided in the cradle for the purpose of receiving a U-bolt 18. Noting Figure 5 it will be seen that the web portion of the U-bolt 18 is flattened to engage a housing 20 which will be discussed more in detail hereinafter.

The second cradle 22, complemental to the first mentioned cradle has wedge-shaped surfaces 24 thereon which also engage the shank of the golf club 10. Guides 26 are provided on each side of the cradle 22 for the purpose of receiving the legs of the U-bolt 18.

The end opposite the wedge portion 24 of the said cradle 22 is curvilinear for the purpose of more firmly seating the housing 20 therein. A tongue 28 extends longitudinally of the said cradle 22 and is engageable with the slot 30 which is provided in the housing 20. Obviously, this tongue and groove construction obviates the possibility of relative rotation between the clamping means and housing 20.

The housing 20 has a sleeve 32 slidably received therein, which sleeve has a cap 34 at one end

thereof which is substantially the same diameter as the housing **20**. The cap is fixed to the sleeve by standard means, as the pin **52**. Accordingly, this cap serves the purpose of a limiting means, restricting relative axial travel of the sleeve **32** and housing **20**.

A rod **36** is secured to the housing **20** or more specifically, secured to a closure member **38** which is in turn pressed to the said housing. A collar **39** is fixed to the rod **36** to prevent axial movement of said rod in one direction. Ratchet teeth **40** are provided on the rod **36** which is preferably round in cross section. These teeth **40** extend a substantial distance along the longitudinal axis of the said rod **36** and form an operative portion of a locking means which will be described at this time.

A resilient keeper **42** is secured to the upper portion of the sleeve **32** through the utility of a rivet **44** or some other suitable equivalent such as brazing, soldering, bolting or the like. The keeper **42**, being engageable with the teeth **40** serves the purpose of a ratchet as the housing and sleeve **32** are permitted axial relative movement. Of course, as the sleeve **32** is moved outwardly of the housing **20**, the keeper **42** engages a selected tooth **40** of the plurality of teeth.

Means for resiliently biasing the sleeve **32** inwardly of the housing **20** is provided. This means is preferably a conventional coil spring **46** which seats upon a collar **48**, which is in turn threadedly disposed on the terminal portion of the rod **36**. The opposite end of the spring **46** engages a second collar **50** which is fixed in the bore of the said sleeve **32** (Figure 2).

Upon the normal swing of the said golf club, the inner sleeve **32** is urged outwardly of the housing **20** against the spring **46** which is calibrated to give a true reading of how much force is necessary to compress the said spring a predetermined amount.

Suitable indicia are placed on a portion of the inner sleeve member **32** for the purpose of registering in pounds the amount of force which was requisite for urging the said sleeve from the housing.

It is noted that the ratchet construction described above, retains the sleeve **32** in its extended position for a reading of the indicia. Consequently, in order to return the sleeve **32** within the said housing **20** a particular means is provided for releasing the latching means. This last mentioned releasing means is a simple construction disclosed in Figures 2 and 4. The rod **36** is threaded on a knurled knob **54** which is positioned at the upper portion of the housing **20**. Also, a slot **56** is provided in the knob for the purpose of receiving a pin **58**. This pin is secured to the closure **38**. Upon rotation of the knurled knob **54**, within the limits of the slot-pin construction, the rod **36** is rotated so that the keeper **42** is disengaged from the teeth **40**. Obviously, the spring **46** may then be free to urge the sleeve **32** within the housing **20**.

In removing the device from a conventional golf club **10**, it is only necessary to remove the two sleeve-nuts **60** from the terminal portions of the U-bolt **18**. These sleeve-nuts are disposed in the apertures **16** and are used to hold the U-bolt **18** in fixed assembly on the golf club shank.

Having described the invention, what is claimed as new is:

1. A force measuring attachment for golf clubs comprising a housing, means for detachably securing said housing to a golf club, means in said housing for indicating the force to which said housing is subjected in swinging the housing, said indicating means including a sleeve slidably received in said housing, means reacting on said housing for resiliently urging said sleeve so as to oppose axial movement of said sleeve, means for locking said sleeve in selected positions relative to said housing, said locking means including a rod secured to said housing, said rod having teeth, a keeper secured to said sleeve and engaged with said teeth and arranged to hold said sleeve releasably fixed in an extended position with respect to said housing when said sleeve is urged outwardly of said housing against the opposing force of said urging means, and means connected to said rod for releasing said teeeh from engagement with said keeper.

2. In a force measuring attachment for golf clubs which includes a housing, means for detachably securing said housing to a golf club, means in said housing for indicating the force to which said housing is subjected in swinging the housing, said detachable securing means comprising a cradle having wedge portions engageable with a golf club, a second cradle with a side having converging surfaces engageable with the golf club, said second cradle having a housing supporting side, means for clamping said cradles and said housing in a fixed assembly on the golf club, said housing having a groove, a tongue on said second cradle and located in said housing supporting side and engaged in said groove for preventing relative rotation of said housing and said second cradle.

3. The combination of claim 1 and said releasing means comprising a knob fixed to said rod to rotate said rod, and means operatively connected with said knob for limiting the extent of rotation of said rod.

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