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GOLF CLUB SHAFT INDICATOR

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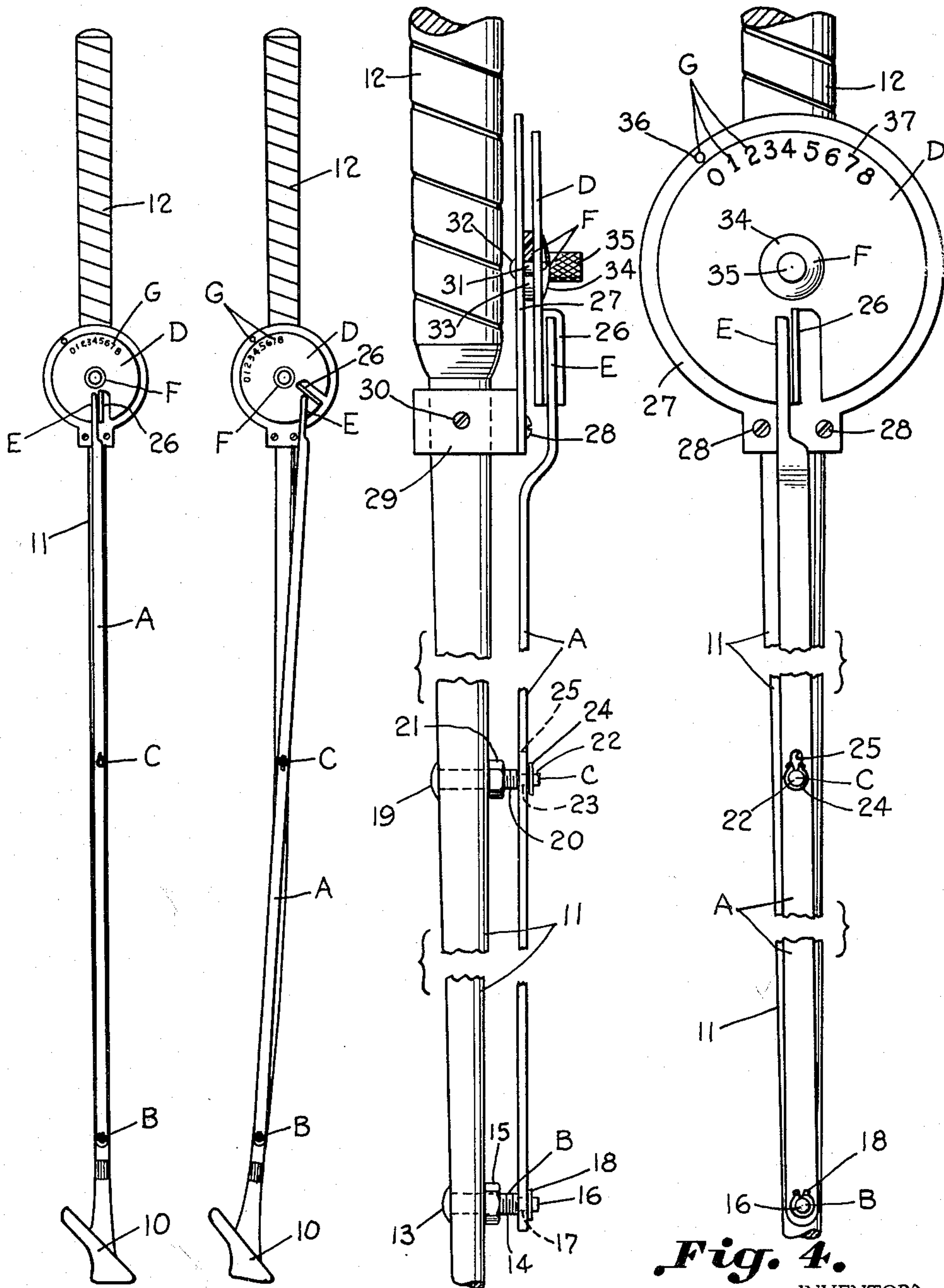


Fig. 1. Fig. 2. Fig. 3.

Fig. 4.

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GOLF CLUB SHAFT INDICATOR

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3 Claims. (Cl. 116-114)

This invention relates to a device useful in determining the correct degree of flexing in a golf club shaft to suit a particular player in which the actual degree of flexing of a golf club shaft during a golf shot is used as a standard to determine the suitability of the golf shaft to be used by the player.

It is highly desirable that a player have golf clubs with shafts presenting the proper degree of flexibility. A certain amount of flexibility resulting from a golf shot in the shaft is desirable in any golf club shaft. It is the purpose of this invention to determine the correct degree of flexibility of the shaft to afford a given player that desired certain amount of flexibility. For example, a strong player would require a shaft having relatively little flexibility in order to produce the desired flexing during his golf shot. A relatively weak player on the other hand would require considerable flexibility in the shaft to produce the same desired degree of flexing during his golf shot. At present shafts of varying degrees of flexibility are provided, and it is contemplated that the variety may be enlarged so that a given player may be more nearly suited with the proper shaft.

Golf pros are presently confronted with the problem of advising players as to the degree of flexibility of a shaft which should be used. This question is generally resolved by having the player try out a number of golf clubs having varying degrees of flexibility and by trial and error, fitting the player with the club with which the player seems to be most satisfied, and with which he appears to play the best game. The device of the present invention makes it possible for a golf pro to prescribe and sell a set of clubs to a player which has the proper degree of flexibility as determined through an actual measurement of flexing resulting from the player's golf shot.

Accordingly, it is an object of this invention to provide a means for measuring the relative strength and ability of golfers so as to prescribe golf clubs having shafts with the desired degree of flexibility to suit a particular player.

Another important object of this invention is to provide a relatively simple device for making actual measurements of flexing resulting in a standard golf shaft in actual play so as to prescribe the proper set of golf clubs for use by a given player.

The construction designed to carry out the invention will be hereinafter described, together with other features thereof.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawing forming a part thereof, wherein an example of the invention is shown and wherein:

FIGURE 1 is a front elevation illustrating a device constructed in accordance with the present invention,

FIGURE 2 is a front elevation of the device illustrated in FIGURE 1 in which the shaft is flexed as it would be during an actual golf shot,

FIGURE 3 is an enlarged foreshortened side elevation, further illustrating the device constructed in accordance with the present invention, and

FIGURE 4 is an enlarged foreshortened front elevation further illustrating the device constructed in accordance with the invention.

The drawing illustrates a device useful in determining the correct degree of flexibility in a golf club shaft to suit

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a particular player. The device includes a golf club having a handle and a club head joined thereto by a flexible shaft. An elongated arm A is pivotally mounted upon the shaft adjacent the club head as illustrated at B. A pivotal connection C is carried by the shaft intermediate the club head and the handle adjacent the point of maximum flexing of the shaft during a golf shot. The pivotal connection C compensates for the axial transformation between the pivot member and the arm resulting from the flexing of the shaft with respect to the arm which remains substantially unflexed during a golf shot. An indicator D is carried adjacent the handle and a cam portion E adjacent the upper portion of the arm moves the indicator responsive to flexing of the shaft during a golf shot. Means F are provided for retaining the setting of the indicator at the point of maximum displacement resulting from flexing during the golf shot, and calibrations G are carried adjacent the handle reflecting a measure of shaft flexing. Thus, the calibration corresponding to the setting of the indicator is indicative of the desirable flexibility of a golf shaft for a particular player.

It will be observed that the elongated arm A extends from a point adjacent the club head 10 to a point adjacent the juncture of the shaft 11 with the handle 12. The arm A should be constructed of relatively rigid material such as wood, metal or plastic, and is preferably rectangular in cross-section having its major dimension in the plane of flexing of the shaft so as to present substantial rigidity against a force tending to bend the arm laterally. It will also be observed that the golf club including the club head 10, the shaft 11, and the handle 12 may be conventional in all respects. A somewhat modified club might be used if desired, however, it is important that a club affording sufficient flexing to suit a large number of players be provided so as to give representative readings as to flexibility.

The pivot member B includes a head 13 and an elongated enlarged shank portion 14 which passes through the shaft 11, and which is threaded so as to receive the nut 15 to confine the member tightly upon the golf club shaft. A reduced unthreaded portion 16 passes through an opening 17 in the lower portion of the arm A. A snap-ring or other suitable fastening means 18 is provided to maintain the lower portion of the arm A upon the reduced unthreaded portion 16 so as to pivot somewhat thereon. The pivotal connection C includes a head 19 and a threaded shank 20 passing through the shaft 11. A nut 21 is provided for maintaining the shank upon the golf club shaft 11, and a reduced unthreaded portion 22 passes through an opening 23 in the member A. A snap-ring 24 is provided to confine the member A upon the unthreaded stub shaft 22. A small slot 25 is provided above the unthreaded shank 22 so as to compensate for axial transformation between the unthreaded shank portion 22 and the arm A during flexing. Since the unthreaded shank 22 is fixed with respect to the shaft 11 adjacent its point of maximum flexing, such transformation would occur in an upwardly direction in the drawing.

It will be observed that an indicator D is carried adjacent the handle 12 in the form of a relatively flat round disc. The disc has a struck up portion 26 which serves as a bearing surface for the cam portion E carried at the upper portion of the arm A adjacent the handle 12. It will be observed that a second disc-like member 27 is carried as by screws 28 upon a bracket member 29 having fixed connection upon the shaft 11 adjacent the handle 12. A setscrew 30 is provided for locking the bracket or collar 29 with respect to the shaft 11. The disc D is carried for rotation upon the disc 27 by the shaft 31 which is a part of the means F for retaining the setting of the indicator at the point of maximum deflection resulting from flexing during a golf shot. A head 32 is car-

ried by the stub shaft 31 on the back side of the disc 28. A washer 33, which may be constructed of any suitable material, but preferably a synthetic polymeric material such as nylon, is carried upon the shaft 31 between the disc D and the second disc 27. A spring washer 34 is also carried upon the shaft 31, and is mounted between the disc D and a knurled knob 35. It will be observed that by tightening the knurled knob 35 the spring disc 34 will exert an increased pressure upon the nylon sleeve 33 thus providing increased frictional resistance to rotational movement of the disc D. Thus, the amount of such frictional resistance may be varied or adjusted.

The indicia G has been illustrated as including a reference point 36 upon the disc 27 and numerals 37 upon the disc D. It is to be understood, however, that indicators of any desired type may be used to accomplish the desired relative readings as to flexibility.

It is to be understood that while the positioning of the pivot B, the pivotal connection C and the indicator mechanism has been described as being adjacent the club head, point of maximum flexing and the handle, respectively, it is to be understood that such points need only be sufficiently near to afford representative readings as to the actual relative flexibility which occurs in the club shaft 11 as between golf shots.

While a preferred embodiment of the invention has been described using specific terms, such description is for illustrative purposes only, and it is to be understood that changes and variations may be made without departing from the spirit or scope of the following claims.

What is claimed is:

1. A device useful in determining the correct degree of flexibility in a golf club shaft to suit a particular player including, a golf club having a handle and a club head joined thereto by a flexible shaft, an elongated arm, a first pivot member carried by said shaft intermediate the club head and the handle adjacent the point of maximum flexing of the shaft during a golf shot providing a pivotal connection between said pivot member and said arm, a connection between said first pivot member and said arm permitting axial sliding movement therebetween compensating for the axial transformation between the pivot member and the arm resulting from the flexing of the shaft with respect to the arm which remains substantially unflexed during a golf shot, a second pivot member carried by the shaft remote from the first pivot member for pivotally mounting the arm upon the shaft, an indicator carried by the golf club and being spaced from the first pivot member on the side thereof remote from the second pivot member, a cam portion carried by the arm

above said pivot member and adjacent the indicator for moving the indicator responsive to flexing of the shaft during a golf shot, means retaining the setting of the indicator at the point of maximum displacement resulting from flexing during the golf shot, and calibrations operatively associated with the indicator for reflecting a measure of shaft deflection, whereby the calibration corresponding to the setting of the indicator is indicative of the desirable flexibility of a golf shaft for a particular player.

2. A device useful in determining the correct degree of flexibility in a golf club shaft to suit a particular player including, a golf club having a handle and a club head joined thereto by a flexible shaft, an elongated arm pivotally mounted upon the shaft adjacent the club head, a pivot member carried by said shaft intermediate the club head and the handle adjacent the point of maximum flexing of the shaft during a golf shot, a connection between said pivot member and said arm including a slot compensating for the axial transformation between the pivot member and the arm resulting from the flexing of the shaft with respect to the arm which remains substantially unflexed during a golf shot, an indicator carried by the golf club adjacent the handle, a cam portion carried by the arm adjacent the upper portion thereof for moving the indicator responsive to flexing of the shaft during a golf shot, means retaining the setting of the indicator at the point of maximum displacement resulting from flexing during the golf shot, and calibrations operatively associated with the indicator for reflecting a measure of shaft deflection, whereby the calibration corresponding to the setting of the indicator is indicative of the desirable flexibility of a golf shaft for a particular player.

3. The structure set forth in claim 2 in which the indicator includes a movable member, a calibration carrying member, said calibration carrying member being carried by the golf club adjacent the handle, said calibration member carrying the movable member for rotation thereon, means carried by the indicator providing frictional resistance to rotation between the movable member and the calibration carrying member, and means carried by the indicator for varying said frictional resistance.

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