INNOVATIVE CRICKET BAT- A WAY TO REDUCE PLAYER'S BURDON

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Abstract - ***The main aim of the present study is based on the observing cricket players that they have too many and different type cricket bat keeping and carrying with themselves. This cricket bat with detachable handle of changing length contains two sections of the handle. Section 1 remains fixed with the blade of the cricket bat. Section 2 may be more than one having distinctive lengths and can either be detached or attached with section 1, as per the requirement of the batsman. Along with this, this invention leads the batsman to reduce the weight of their kitbags that results in the transportation to bear half of the load during teams' journey from one place to another which not only contribute economically but it will improve the environment as just half the quantity of timber will be required to manufacture and satisfies the supply demand of the cricket market.***

Key words - Detachable, Cricket bat, Assembly, Sleeve, Joint

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I INTRODUCTION

Efforts are going on to improve the performance of the cricket bat all over the world. Different types of bats having different types of handle designs are available in the market. There was no rule regarding materials of cricket bat blade and handle upto 1980, but according to Melbourne Cricket Club (MCC) Rule 6, for making handle, 'non-wood' material may be used upto 10% of the total volume of the handle.

Many inventors invented different types of handles. Henry invented a cricket bat in 1910 having cane handle along-with the flat springs[1]. The plastic bat was made by John Lewis in 1954. He used hard-setting resins reinforced with glass, nylon or cotton.[2]

Thomas G. Larsen invented a cricket bat handle with ornamental design [3]. It is disclosed in US Patent number US20130316860 that a cricket bat handle grip was invented by David John Richardson, & David Michael Richardson [4]. US patent application number 13/992,067 (Pub. No.: US 2013/0316860 A1) discloses that Richardson et al invented a cricket bat handle having better grip [5]. US Patent application number 13/652,539 and publication number US 2013/0337947 A1 discloses that Mark Khan invented a cricket bat having detachable handle in which the striking surface of the bat was off-set a distance of 1-2 cm from the front-line of the handle. In this invention the blade and the handle are joined by screw-attached brackets in order to make the components interchangeable [6].

A cricket bat with detachable handle has been invented by Shamshad Ali and Syed Tariq Murtaza and a patent application has been filed in the Office of Patent, New Delhi, India and same has been published in the Journal of Patent Office in India [7].

II OBJECTIVE OF THE PRESENT INVENTION

As has been generally observed that each batsman carries bats of varying sizes because in order to play long hits the batsman needs long handle bat and to play defensive strokes one needs short handle bat. In this way, cricket bats with varying handle length are required. To overcome this

problem authors designed and developed an innovative cricket bat with detachable handle of varying length. It is found that the performance of this bat is satisfactory.

The objective of this invention is to lighten the kit-bags of the cricketers especially batsmen & reducing the cost of purchasing extra bats which not only contribute economically but it will improve the environment as just half quantity of timber will be required to manufacture and satisfies the supply demand of the cricket market.

III DESCRIPTION OF INNOVATIVE CRICKET BAT

The cricket bat with detachable handle is comprises of sleeve, adaptor, locking pins, locking screws, Part 1 of handle and Part 2 of handle.

The sleeve is fixed with Part 1 of the detachable handle. Part 1 is permanently fixed with the cricket bat blade as shown in fig 1.

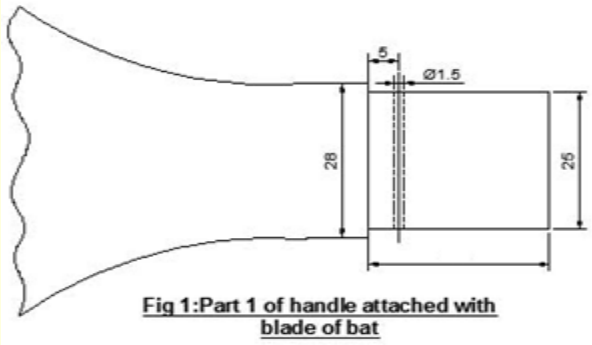


Fig 1:Part 1 of handle attached with blade of bat

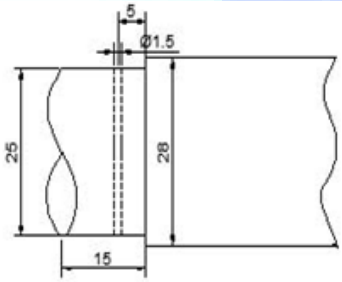


Fig 2: Part 2 of handle of bat

Fig 3: Locking pin 2 Nos

The adaptor is fixed with the Part 2 of the detachable handle. The Part 2 of the handle is shown in fig 2. Part 1 has a hole of 1.5 mm diameter. The centre of this hole is 15 mm apart from the right side end of the part 1 of the detachable handle as shown fig. 1. A hole of 2 mm diameter is also provided in the sleeve. The centre of this hole is 5 mm apart from the left side end of this sleeve as shown in fig 4.

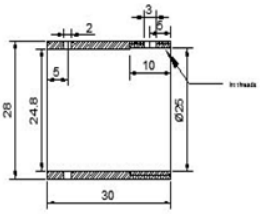


Fig 4: Sleeve

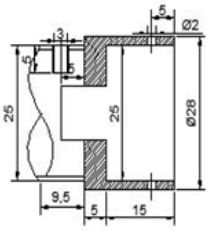
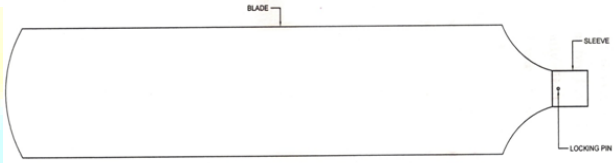


Fig 5: Adaptor

Fig 6: Locking screw



The sleeve has internal threads which are provided in 10 mm length from right side end of the sleeve as shown in fig 4. The sleeve is made of brass but it may be made of any other material as per the Rule 6 of the MCC i.e. the quantity of non-wood material by volume which may be used for making handle is 10% of the total volume of the handle.

The sleeve is pushed over the Part 1 of the handle in such a way that the centre of the 1.5 mm hole in part 1 and that of the 2 mm hole in sleeve must coincide perfectly. After ensuring that the centers of the above holes are coincided, a locking pin having diameter 2 mm as shown in fig 3 is inserted passing through these holes and at the both ends of the locking pin heads are made by hammering action for fastening the sleeve with Part 1.

As shown in fig 5, the adaptor has an internal blind hole on its right end. The diameter of internal hole is 25 mm and depth of hole is 15 mm. A hole of diameter 2 mm is made in the adaptor. The centre of this hole is 5 mm apart from the right side end of the adaptor as shown in fig 5. The left side end of this adaptor has external diameter 25 mm and length of this diameter is 9.5 mm having external threads on this end as shown in fig 5. A blind hole of 3 mm diameter is also provided in this end. The centre of this blind hole is 4.5 mm apart from the left side end of the adaptor and depth of this blind hole is 5 mm as shown in fig 5.

A hole of 1.5 mm diameter is provided in the Part 2 of the detachable handle. The centre of this hole is 10 mm apart from the left side end of the Part 2 as shown in fig 2.

The diameter of the left side end of Part 2 is 25 mm up to length 15 mm end internal diameter of the right side end of the adaptor is also 25 mm as shown in fig 2 and fig 5 respectively.

The adaptor is pushed over left side end of the Part 2 in such a way that the centre of 1.5 mm diameter hole in part 2 and centre of 2.00 mm diameter hole in adaptor must be coincided. After ensuring that the centers of the above said holes are coincided, a locking pin having diameter 2 mm is inserted passing through these holes and heads on the ends of locking pin are made by hammering action for fastening the adaptor with the Part 2 of the detachable handle

Fig 7-A: Part 1 with Sleeve

The Part 1 of the detachable handle has a sleeve on its one end having internal threads in sleeve and Part 2 has an adaptor on its one end having external threads on the left side end of the adaptor as shown in fig 7 (A) and (B) respectively.

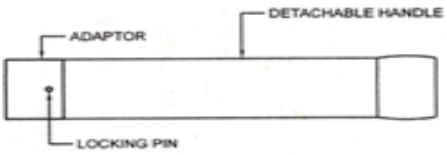


Fig 7-B: Part 2 with Adaptor

The Part 1 and Part 2 works as female and male parts having internal and external threads respectively. The sleeve attached with Part 2 works as nut and adaptor attached with Part 1 works as bolt.

To assemble these two parts, Part 1 is tightened with Part 2 on the nut and bolt principle to form a complete bat. A locking screw is used for locking the assembly by tightening the locking screw passing through adaptor and sleeve. The figure of locking screw is shown in fig 6. The complete assembly of the cricket bat with detachable handle is shown in figure 8.

Fig 8: Cricket Bat with Detachable Handle

IV DISCUSSION

US Patent application number 13/652,539 and publication number US 2013/0337947 A1 discloses that Mark Khan invented a cricket bat having detachable handle. In this invention the surface of the bat was off-set a distance of 1-2 cm from the front-line of the handle and blade and the handle are joined by screw-attached brackets in order to make the components interchangeable. The shape of the bat is different from the conventional bat and it will not be an easy task to change the bat handle. The MCC Rule 6 does not allow any type of change in the shape of the blade as well as any material other than wood for making bat so the bat developed by Mark Khan cannot be used to play in International cricket matches. The handle is fixed on the back side of the blade that's why it will also not be convenient to use this bat. The bat invented by the authors of the invention has same shape as that of conventional cricket bat and is easy to change cricket bat handle. Further the bat described in this paper does not violet the MCC Rule 6. The assembly of this innovative detachable cricket bat is simple in design and easy to assemble and dissemble. The on-field tests were carried out on this bat and it is found that its functioning is proper and it comfortable to use the bat.

There is no literature available till date in India which deciphered the number of players who take part in cricket but the researchers, based on their experiences in the field of games & sports opined that around two lac players are playing in above 19 age categories and who use around four bats on an average per year, wherein each bat costs INR 3500/- The preceding information culminates in the following expenditure made by players only on purchasing bats to play cricket: 2 00 000 players x 4 bats per year = 8 00 000 bats per year. The cost of purchasing 8 lacs bats comes to 280 crores INR (8 lac x 3500).

If, each manufacturer starts using the proposed technology for the preparation of cricket bat (with detachable handles) then the cost would automatically be cut into half i.e. 140 crore INR which not only contribute economically but it will improve the environment as just half quantity of timber will be required to manufacture and satisfies the supply demand of the cricket market.

The preceding wishful data is confined only to India whereas we all know that the cricket is being played by almost all the countries of the world (ICC has 155 countries as its members!).

Another techno-economical advantage of this technology is that its positive results would help the transportation to bear half of the load during teams' journey from one place to another.

The price of each bat may be hiked while the cost and quality of raw materials for the production of bat will be reduced significantly resulting the increase of the manufacturing profit.

V CONCLUSION

1. This innovative detachable cricket bat leads the batsman to reduce the weight of their kit bag.
2. This innovative detachable cricket bat is responsible to bear half of the load during teams' journey from one place to another.
3. This detachable cricket bat handle is compatible with the player.
4. The assembly of this detachable cricket bat is simple in design and easy to assemble and dissemble.
5. This detachable cricket bat is easy to manufacture resulting low cost.
6. The assembly of this detachable cricket is simple in maintenance resulting low maintenance cost.
7. The of this innovative bat will improve the environment as just half quantity of timber will be required to manufacture and satisfies the supply demand of the cricket market.

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