Sept. 20, 1971 W. R. STEPHENS 3,605,832

HAMMERS

Filed Oct. 10, 1968

Fig. 1.

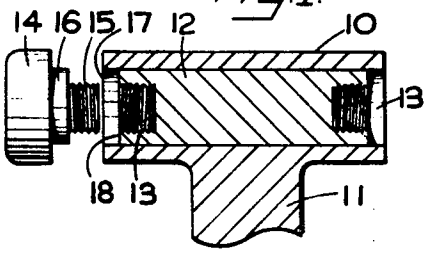


Fig. 2.

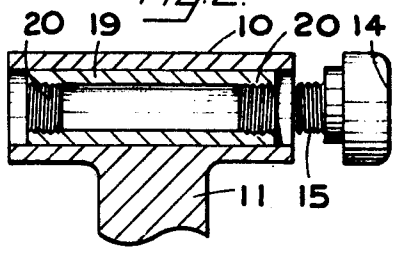


Fig. 3.

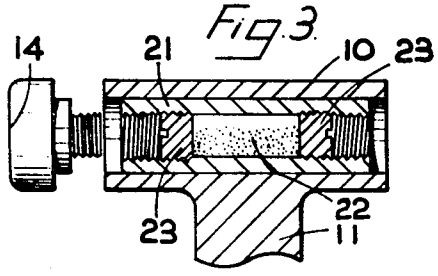
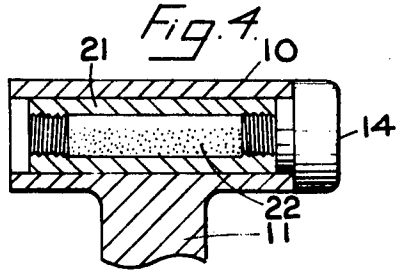


Fig. 4.



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HAMMERS

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Int. Cl. B25d 1/02
U.S. Cl. 145—29A 4 Claims

ABSTRACT OF THE DISCLOSURE

A hammer having one or two replaceable striking faces and comprising a head which is of tubular form and within which is fitted a removable insert, the or both replaceable striking faces being connected to the insert so that when in position the head, insert and the or both replaceable striking faces are all held rigidly together. Provision may be made for the accommodation of a quantity of metal shot.

BACKGROUND OF THE INVENTION

This invention relates to hammers of the type comprising a head, at one end of a handle, and wherein the head is provided with a replaceable striking face at one or both of its ends. Such hammers are hereinafter referred to as being "of the type specified."

With some hammers of this type the head is provided with one or two replaceable striking faces of "soft, or relatively soft, material," which expression is deemed to include such materials as plastics material, rubbers, rawhide, soft metals such as copper, lead, zinc and their alloys, hard wools and wood or fibre compositions and any other relatively soft materials which are provided in such hammers, principally so as to avoid damage being caused to the work which is being hammered.

There is now a wide variety of jobs and uses for hammers of the type specified and various soft and hard materials are required for the different jobs, and also various shapes of striking faces for different applications of the hammer. Also, different applications may require different weights behind the blows which are struck and in some cases may require the use of what is generally known as a "dead-blow" hammer which is one in which the head is so loaded as to have the effect of substantially eliminating the rebound normally encountered with a solid hammer.

The object of the invention is to provide, for a hammer of the type specified, a basic design of head which can be adapted for the majority, at least, of the possible uses for which the hammer is likely to be required, so that the variations required in striking faces and in operative weights can readily be obtained from such basic design of head.

SUMMARY OF THE INVENTION

According to the invention there is provided a hammer of the type specified, wherein the head is in the form of a straight tube of uniform cross sectional area open at one or both of its ends, and wherein the or each replaceable striking face is formed on or attached to an end, or each end, of a straight elongated insert which is releasably retained within the tubular head in such manner that the or each replaceable striking face is held in fixed position on the head, the form of the insert being such as to satisfy the weight and other requirements of the hammer.

The head is preferably formed as a simple moulding in a suitable plastics material, or light metal or light metal alloy, and in a preferred form of hammer this head

is moulded integrally with a handle which itself may be provided with a separate rubber or plastics material hand grip portion formed with grooves, serrations or the like to provide for a firm grip, or the serrations or the like may be formed on the handle.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is illustrated in the accompanying drawings which show several embodiments by way of example and FIG. 1 shows a section through the head of a hammer and part of the integral handle and with a replaceable striking face shown in exploded fashion, FIG. 2 shows a similar section of a different embodiment of hammer according to the invention. FIG. 3 shows a similar section of a further embodiment of hammer according to the invention. FIG. 4 shows a section through the head and part of the handle of a still further embodiment of hammer.

DESCRIPTION OF PREFERRED EMBODIMENTS

The basic construction of the hammer head and handle, shown in the embodiments of FIGS. 1 to 4, comprises a head **10** in the form of an open ended tube with the handle formed **11** integrally therewith and such basic piece may be made as a simple moulding in suitable plastics material or as a die casting in an aluminium or zinc alloy or other suitable light alloy.

The handle **11** may be provided with a separate rubber or plastics material grip or it may itself be formed with grooves, serrations or the like to provide a hand grip portion.

In one form, shown in FIG. 1, the insert **12**, which is fitted into the tubular head **10** of the hammer, is of solid, generally cylindrical, form having an axial length slightly less than the axial length of the tubular head **10** and each end of said solid insert **12** is provided with an axially inwardly extending internal threaded hole **13**.

The insert **12** may be made of metal or plastics material, depending upon the overall weight required for the hammer, and each replaceable striking face **14** (only one of which is shown), of generally cylindrical form and has an axially extending externally threaded boss **15**, which is adapted to have screw threaded engagement with the internally threaded opening **13** in the end of the solid insert **12** for the purpose of securing the striking faces **14** and insert **12** firmly in position.

The surface of the striking face **14** surrounding the axially extending screw threaded boss **15** has a raised annular portion **16** adapted to fit within the end **17** of the tubular head so as to bear against the end face **18** of the insert which end face **18** and/or the end face of the portion **16** may be provided with serrations or grooves into which the relatively soft material or the striking face can flow after a few blows in use to firmly lock the striking face in position against accidental unscrewing (this being the case where the material or the striking face **14** is relatively soft as compared with the material of the insert **12**).

Various combinations of metal or plastics material inserts with metal or other material striking faces may be used to achieve hammers suitable for particular uses.

In the form shown in FIG. 21, instead of the insert being of solid form it comprises a tube **19** of metal or plastics material, the ends of which are internally threaded at **20** to receive the externally threaded bosses **15** on the replaceable striking faces **14** (one only being shown).

In both these embodiments (FIGS. 1 and 2), the insert **12** or **19** is simply a push fit in the tubular head **10** of the hammer and is actually held in position when the striking faces are screwed in, but also serving to hold the striking faces in position. Thus it is a simple matter to

change one insert for another of different weight or material when it is desired to change the characteristics of the hammer according to the type of work with which the hammer is to be used.

In a further embodiment, shown in FIG. 3, where the insert is in the form of a tube **21**, a "dead-blow" effect may be achieved by providing an amount of metal shot **22** or similar material within the tubular insert and providing two externally threaded plugs **23** which can be screwed into the insert from the ends thereof to form closures and seal the metal shot within the head. In this case, the replaceable striking faces **14** are detachably secured to the head in the manner described in the previous embodiment of FIG. 2.

In a further embodiment, shown in FIG. 4, similar to that of FIG. 3, instead of providing separate plugs to retain the metal shot **22** within the head, the repleaceable striking faces **14** themselvest act as the plugs to seal the ends of the tubular insert **21** and retain the shot in position.

In both forms of FIGS. 3 and 4 also, the insert **21** may be made in different materials and loaded with different amounts of shot or the like, and, being only a push fit, can be removed and replaced with an insert of different loading characteristics.

To extend further the possible uses of the hammers of the type specified, particularly in the domestic and educational field, it is desirable to be able to provide at least one of the striking faces with a hard face (e.g. steel, a hard aluminium, zinc alloy or brass) for doing jobs such as nailing, normally performed by the conventional form of carpenter's hammer, which has one or two permanent striking faces of steel.

From the above described embodiments it will be appreciated that various forms of hammer can be made up from the basic design of head by selecting the appropriate form of insert and the one or two detachable striking faces. For example, a relatively light weight hammer can be provided by having the head and handle made integrally in plastics material with detachable plastics material striking faces but with a solid metal insert so as to give the required amount of weight behind the blow, such that a comparatively light weight hammer of this type may be used for jobs normally requiring all metal hammers.

I claim:

1. A hammer comprising a handle and a head formed integrally in one piece with the handle at one end thereof, said head being of straight tubular form and of uniform cross sectional area, and a straight elongate insert which is a close sliding fit within the tubular head and which is of an axial length shorter than the head, said insert having, at an end thereof, an axially extending internally threaded opening, and a replaceable striking face having an externally screw threaded peg which is secured within said internally threaded opening, and the opening being disposed axially within the tubular hammer head when the insert is in position in the head so that there is an annular portion of the tubular head projecting beyond the end of the insert, the replaceable striking face having an annular shoulder of an external diameter substantially equal to the internal diameter of the head surrounding said axially extending peg, such that said annular portion of the tubular head surrounds said annular shoulder when the striking face is secured to the insert which is in position within the head.

2. A hammer according to claim **1** wherein the insert is in the form of a tube fitting within the tubular head and having each of its ends internally threaded and adapted to receive, in threaded engagement therewith, an externally threaded boss on a repleaceable striking face.

3. A hammer according to claim **2** wherein there is provided lead shot, or other form of shot or granular material, within the tubular insert, the ends thereof being sealed by the replaceable striking faces.

4. A hammer according to claim **1** wherein the insert is in the form of a tube having an internally threaded portion at each end thereof and having a quantity of lead shot or other shot or granular material contained therein and retained by plugs screwed into each end of the tubular insert, the replaceable striking faces having axially extending externally threaded stems for screw threaded engagement with the ends of the tubular insert.

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U.S. Cl. X.R.

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