

July 7, 1970

A. QUENOT

3,518,768

TRYSQUARES

Original Filed Sept. 12, 1967

2 Sheets-Sheet 1

FIG. 1

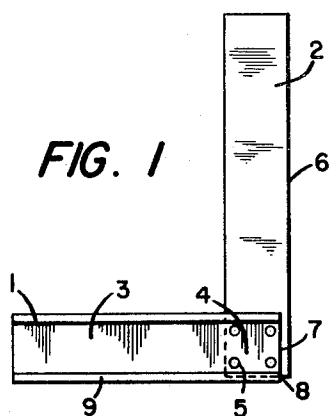


FIG. 2

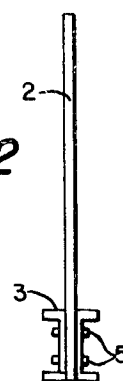


FIG. 3

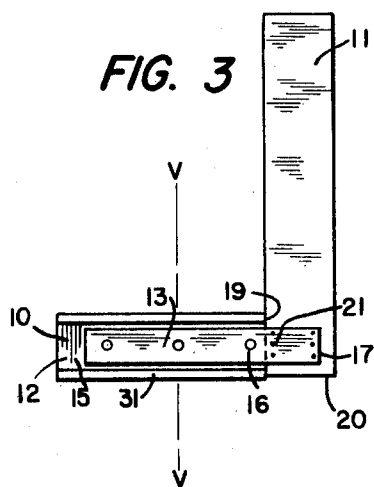


FIG. 4

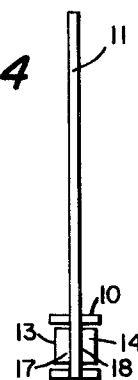


FIG. 5

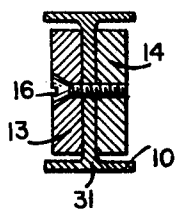


FIG. 6

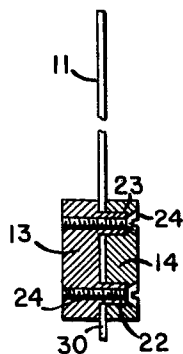
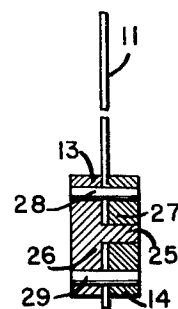


FIG. 7



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TRYSQUARES

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2 Sheets-Sheet 2

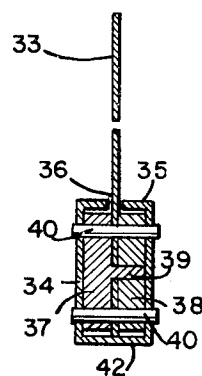
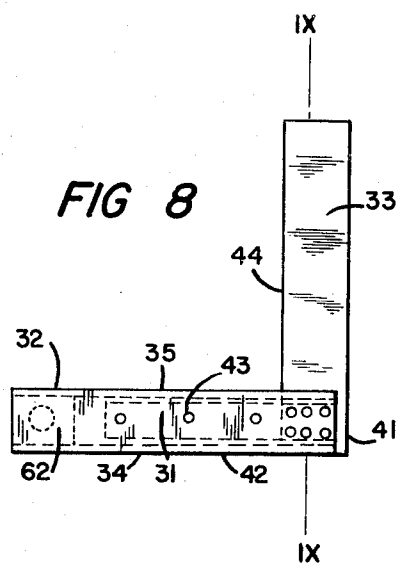


FIG. 9

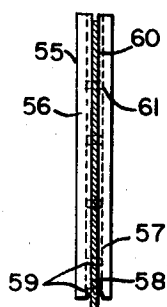
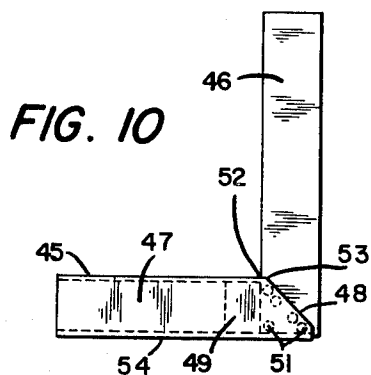


FIG. 11a

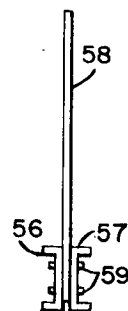


FIG. 11b

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3,518,768
TRY SQUARES

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Continuation of application Ser. No. 667,177, Sept. 12,
 1967. This application May 20, 1969, Ser. No. 827,124
 Claims priority, application France, Dec. 6, 1966,
 86,345

Int. Cl. B43 7/00

U.S. Cl. 33—112

12 Claims

ABSTRACT OF THE DISCLOSURE

A trysquare having a stock and a blade. The stock comprises a drawn metallic section having a cross sectional shape forming opposite channels with the blade disposed at one end of the stock at an angle thereto. Two inserts are received respectively in the channels and have end portions embracing a portion of the blade received between them. The inserts are secured in the channels and are secured to the blade.

This application is a continuation of application Ser. No. 667,177, filed Sept. 12, 1967, now abandoned.

The manufacture of trysquare in current use for example of metallic trysquares used in work yards poses a certain number of problems.

In effect, the two elements of the angle plate which form a right angle must be well united one to the other in order that there can be no play and that the right angle be maintained.

On the other hand, the two elements of the trysquares must be easy to assemble in order not to be too expensive.

Many solutions have already been proposed, unfortunately some of these solutions do not result in trysquares of a quality having good characteristics of rigidity and precision, and the others require a working of the branches which is too expensive.

Thus there exist trysquares formed of a scale blade fixed in the milling of a moulded piece by keys or pegs located in bosses of the piece. It is evident that such trysquares have an excessive price due to the machining of almost all the surfaces of the corner plate stud.

Consequently the invention proposes to provide a simply mounted and constructed trysquares made from currently available material and which is at once solid and accurate.

To this effect, the invention is concerned with metallic trysquares characterized by the two elements, one of which is a blade and the other is a tubular, or non-tubular, drawn section or stock united by securing means comprising made of synthetic material or moulded metal.

The invention will be better understood by referring to the following description made by way of non-limiting example and to the accompanying drawing in which:

FIG. 1 is an elevation view of a trysquare constituted by a blade held in the milling of an I-shaped drawn section. FIG. 2 is a side view of the trysquare according to FIG. 1.

FIG. 3 is an elevation view of a trysquare secured by two elements of synthetic material or moulded metal.

FIG. 4 is a side view of the trysquare according to FIG. 3.

FIG. 5 is a cross-sectional view taken along line V—V of the trysquare according to FIG. 3.

FIG. 6 is a cross section view illustrating the securing of the blade.

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FIG. 7 is a cross section view illustrating another way of securing the blade.

FIG. 8 is an elevation view of a trysquare with a tubular drawn section.

FIG. 9 is a cross-section view taken along line IX—IX of FIG. 8 for the trysquare with drawn section.

FIG. 10 shows a trysquare with a mitre joint and a tubular drawn section.

FIGS. 11a and 11b are views illustrating a trysquare formed of two drawn sections in the shape of a U, shown from the side in FIG. 11b and from above in FIG. 11a.

Trysquare 1 is constituted by the rectangular assembly of a blade 2 and of a stock constituted by drawn profile 3 in the form of an I. The blade 2 can be graduated or not. The drawn section 3 is provided with a slot 4 milled along its medial plane. Securing elements 5, which can for example be pins or rivets, maintain blade 2 in slot 4.

An edge 6 of the blade 2 can overlap by a given distance an extremity 7 of the drawn section 3. Similarly, a lower end 8 of the blade 2 is located at a level above that of a lower base on edge 9 of the drawn section 3.

On the other hand, the rear extremity 7 of the drawn section 3 can make an angle of 30°—45° or 60° relative to the base 9, or any other angle permitting the tracing of angles.

The utilization of the I-shaped drawn section from the stock permits an important saving by eliminating the need for moulding and the machining which follows it.

In effect, industry produces actually drawn sections the geometric qualities of which and whose surface are sufficiently precise to avoid all additional machining for a trysquare of average precision.

REFERRING TO FIGS. 3, 4 AND 5

The trysquare 6 comprises in the same manner as angle plate 1 a blade 11 graduated or not and an I-shaped section 12.

Two elements 13 or 14 for example parallelepipedal in shape made preferably of a synthetic material or moulded metal are fastened on either side of a core 15 of the drawn section 12 by means of securing elements for example screws 16 or pins, connecting through said core 15, by means of to punch holes, elements 13 and 14 together.

Rear extremities 17 and 18 of these elements 13 and 14 overlap an extremity 19 of the drawn section 12 in order to receive a base of the blade 11. The blade 11 is maintained between the two elements 13 and 14 by fastening elements 21, for example, pegs or rivets.

The link between blade 11 and drawn section 12 is thus obtained by the synthetic material or moulded metal pieces 13 and 14. This type of fastening requires no milling of the drawn section for the passage of the blade. It permits, moreover, the use of drawn sections the core of which is thinner than that of section 12 of FIG. 2, due to the elimination of this milling. Core 15 and blade 11 can be of different thicknesses. In this case the difference in thickness will be compensated by shoulders in the moulded pieces 13 and 14.

The molded pieces 13 and 14 are knurled to facilitate the gripping contribute to the improvement of the aesthetic appearance of the trysquare assembly.

The rear extremities 17 and 18 of these elements 13 and 14 are not necessarily perpendicular to the lower edge 31 of the drawn section 12 and can form with this edge an angle of 30°—45° or 60° or any other angle.

REFERENCE IS MADE TO FIG. 6

In order to obtain a facile and precise mounting of the blade 11 between two elements 13 and 14, various solutions can be employed.

Thus element 13 can comprise cylindrical or non cylindrical studs 22 which engage in a corresponding opening

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23 of element 14. Screws 24 allow to fasten elements 13 and 14 by passing through studs 22.

REFERENCE IS MADE TO FIG. 7

In a modification of the fastening of the blade 11 between elements 13 and 14, element 13 is provided with one or several projections 25 which pass through several corresponding holes in blade 14, penetrating in one or several openings 27 of the element 14.

Elements 13 and 14 additionally have holes 28 and 29 in front of which are disposed fastening means, for example, pins (not shown).

Naturally, in the preceding examples, blade 11 can be mounted in different ways. It can be located in drawn section 12 as shown in FIG. 3. It can also penetrate more or less deeply in section 12, because a slot is cut therein and milled in a manner similar to the other slot 4. A lower extremity 30 of blade 11 can be on the level of the lower edge 31 or shifted relative thereto.

The accuracy of fabrication of the drawn sections can be used to secure thereto one or several air bubble level in order to make a combination instrument.

REFERENCE IS MADE TO FIGS. 8 AND 9

Trysquare 32 is illustrated in FIGS. 8 and 9 consisting of a blade 33 and a tubular drawn stock 34 preferably of rectangular cross-section. This stock 34 can comprise on its upper surface 35 a slot 36 through which passes a blade 33.

It is evident that slot 36 can be of any length as long as it allows the rear edge of blade 33 to overlap. The slot 36 can also be omitted and blade 33 can be located completely out of the drawn section 34.

The blade 33 is maintained between two elements 37 and 38 of moulded synthetic material or of injected metal, by means of cogs 39 and pins 40, which may be fluted and which pass through the tubular section 34, elements 37 and 38 and the blade 33. Naturally, any other assembly can be used.

The blade 33 can comprise at its lower portion a stop 41 which bears on the rear face of a base 42 of section 34.

The elements 37 and 38 which can overlap an edge 44 of the blade to a greater or lesser extent by penetrating deeper in the tubular section, can also be secured inside the drawn section 34 by securing elements 43, such as screws or by being made as a force fit in the section.

In this last case pins 40 cannot go through section 34 in order to pass through only the elements 37 and 38 of the blade 35. In this case tubular section 34 may not have a slot and may stop perpendicular to the inner edge 44 of blade 33.

REFERENCE IS MADE TO FIG. 10

The try-square 45 made from a blade 46 and a tubular drawn section 47 whose ends are cut off to form a right angle. The rear extremity 48 of the drawn section 47 is inclined relative to the main portion thereof.

A blade 46 is gripped between two elements, 49, for example an element of synthetic moulded material or injected metal. Securing elements 51, for example pins, maintain the blade 46 and two elements secured together.

These two elements can be replaced by a single moulded piece (not shown) provided with a median slot for the passage of the blade 46.

The drawn section 47 comprises in its upper rear part a short slot 52. It may also be without a slot and in this case the inner edge of the blade 46 passes by extremity 53 of the upper surface of the drawn section or the blade 46 is nicked in order to allow the penetration of edge 53 of the drawn section.

Similarly the lower extremity of the blade 46 can be placed level with the lower surface 54 of drawn section 47. In this case the surface 54 comprises a slot (not shown) or the blade is unhookable at its extremity.

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In the embodiments with tubular drawn sections, the slot made in the upper part of the drawn section can be cut without milling to a sufficient width to allow the passage of the synthetic material members.

REFERENCE IS MADE TO FIG. 11

Trysquare 55 is constituted by U-shaped drawn sections 56 and 57 placed back to back. A blade 58 is secured between these two drawn sections by means of securing means 59, for example pins or rivets.

There is inserted between drawn sections 56 and 57 a core 60, for example of synthetic material or moulded metal, preferably having the same thickness as the blade 58. Fastening elements 61 secure the two sections on to the other. Naturally it is possible to make other types of try-square from two U-shaped sections by using or not using synthetic material elements similar to elements 13 and 14.

The try-square can comprise various improvements, for example one or several graduated air bubble level containers (not shown) or a linear measuring tape 62. In this case the overall length of the try-square in which the tape is housed is advantageously a number easy to add to the withdrawn part of the tape.

What I claim and desire to secure by letters patent is:

1. A try-square comprising a stock and a blade, said stock comprising a drawn metallic section having a cross sectional shape forming opposite channels, said blade being disposed at one end of said stock at an angle thereto, two inserts received respectively in said channels and having end portions embracing a portion of said blade received between them, means securing said inserts in said channels of said drawn metallic section, and means securing said end portions of said inserts to said portion of said blade.

2. A try-square according to claim 1, in which said inserts are of molded synthetic material.

3. A try-square according to claim 1, in which said inserts are of molded metal.

4. A try-square according to claim 1, in which said drawn metallic section is I-shaped in cross section with a central plane web portion and opposite flange portions defining between them, said channels on opposite sides of said web portion, said blade being disposed in the plane of said web portion.

5. A try-square according to claim 1, in which at least one integral stud on one said insert passes through a hole in said blade and is received in an aligned hole in the other of said inserts.

6. A try-square according to claim 1, in which said drawn metallic section is of rectangular tubular cross section with opposite side walls, a top wall and a base defining said opposite channels in which said inserts are received.

7. A try-square according to claim 6, in which said top wall is formed at one end with a slot in which said blade is received.

8. A try-square according to claim 6, in which a tape measure is disposed inside an end portion of said rectangular metallic section opposite the end at which said blade is disposed.

9. A try-square according to claim 6, in which the ends of said side walls of said rectangular metallic section adjacent said blade are disposed at an angle of forty five degrees to the length of said metallic section.

10. A try-square comprising a stock and a blade, said stock comprising a drawn metallic section of I-shaped cross section with a central web portion and opposite flange portions defining between them channels on opposite sides of said web portion, said blade being disposed at one end of said stock at an angle thereto, and two inserts received in said channels and having end portions embracing a portion of said blade received between them, means securing said inserts to said drawn I-shaped sec-

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tion, and means securing said end portions of said inserts to said portion of said blade.

11. A try-square comprising a stock and a blade, said stock comprising a drawn metallic section of rectangular tubular cross section with upper and lower walls and opposite side walls, said blade being disposed at one end of said stock at an angle thereto, and two inserts received in said tubular stock and having end portions embracing a portion of said blade received between them, means securing said inserts in said stock, and means securing said end portions of said inserts to said portion of said blade.

12. A try-square according to claim 11, wherein said inserts are shorter than said tubular metallic section so as to leave a hollow portion at the end of said tubular metallic section opposite the end at which the blade is

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disposed, and in which a linear measuring instrument with a tape is disposed in said hollow, said tape being extensible in line with said stock.

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HARRY N. HAROIAN, Primary Examiner