HOBBIES WEEKLY

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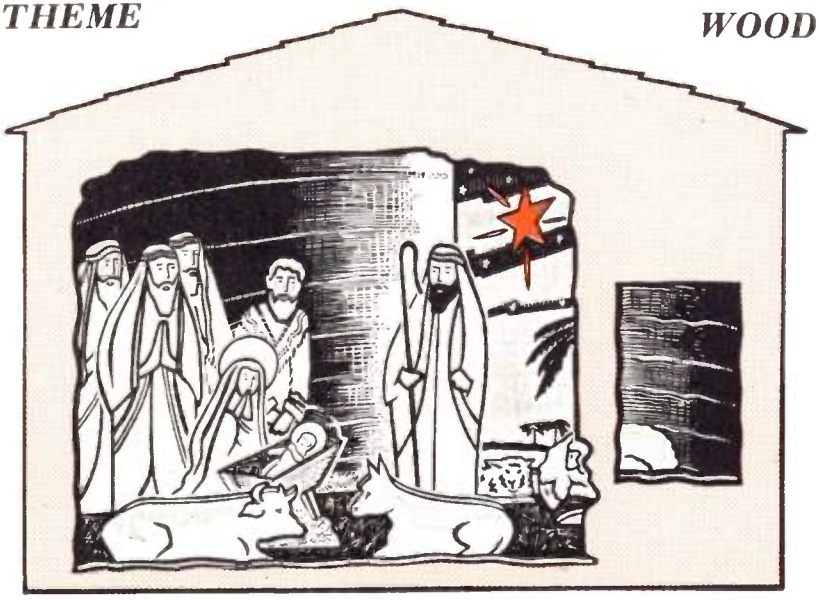
IN THIS ISSUE

All correspondence should be addressed to the Editor, Hobbies Weekly, Dereham, Norfolk

CHRISTMAS THEME

MODEL IN WOOD



THE NATIVITY SCENE

MANY readers like to construct a Nativity scene for Christmas, and we have produced this early to give them plenty of time for making and painting.

It is small enough to stand on the sideboard or in a window, and the construction is so simple, that it can easily be enlarged as required.

The front (A) is cut from ¼in. wood or plywood to the measurements shown. Cut out the interior pieces first and then the outline, using a fine fretsaw to give a clean edge. The top and bottom pieces (B) and (C) are also cut from ¼in. wood and are glued behind the front. Fretpins may be added for additional strength.

Painting details

The backpiece is cut from thin card and is painted brown to represent timber. Use brown poster paint or water colour and line in pencil to represent the grain. Straw is indicated by yellow at the bottom.

The scene through the open door is painted in shades of blue to give the illusion of a night sky. The star should be bright yellow to stand out from the blue.

After painting, the backpiece is glued round pieces (B) and (C), using elastic bands to hold it in place until the glue is dry. Continue by painting the front brown, leaving it plain or lining to represent timber. Paint the top of piece (B) light brown or yellow.

● **Continued on page 82**

● **Patterns on page 83**

Take Care of Your Watch

THERE are many good quality makes of watches on the market nowadays with price ranges within the average person's means. However, no matter what type of watch you possess, if you do not look after it properly, you have no one but yourself to blame for poor time-keeping..

When buying a watch, always go to a proper watchmaker or jeweller; a reputable dealer will always stand by the watches he sells. The choice of watch is purely a matter of personal taste. Generally speaking, the performance of a watch is related to its size. The larger a watch the more accurate it can be because the working parts can be made with greater precision.

'Dummy' Jewels

Don't judge a watch primarily by the number of jewels it contains. Watch jewels are inexpensive to buy and their value lies in the work they do and not in what they cost. The jewels are necessary because they are used as bearings to minimise the wear caused by friction of the moving parts. There are, however, many cheap watches on the market which are fitted with 'dummy' jewels to increase their sales value. These are usually inserted at points where they do no good at all but no reputable dealer would risk his reputation by selling watches of this nature.

The case of a watch should be strong enough to give adequate protection to the delicate mechanism inside. The majority of watchcases are made from stainless steel but in the more expensive types of watches gold and silver are often used. Some cheap quality watches, however, are sometimes advertised as gold-cased but these are normally made from very thin metal which yields when thumb pressure is applied to the back. Such cases do not give proper protection.

Ensure also that the case closes tightly and that a fair amount of pressure is required to open it. If your watch is fitted with a screwed back then make sure that the threads are cut clean and that the back piece screws properly 'home'. Listen carefully to the tick for a few minutes and this should be clear, distinct and regular.

For experts only

Like any other piece of machinery, a watch requires to be kept clean and well oiled but don't attempt to do this yourself. Cleaning and oiling should be done by experts so it will pay you to let your jeweller do this work for you. Many amateurs believe that a watch can be cleaned merely by removing the back and blowing into the works. This should never be done because your breath, being heavily ladened with water vapour, could easily start rust forming inside.

Equally as bad is the person who lays the works of a watch down on top of a sheet of blotting paper soaked in paraffin. The vapour from the paraffin temporarily loosens any dirt and thick oil but in a few days time the watch will be clogged up again. A thorough cleaning and oiling at least once a year is a 'must' for all watches.

Fluff, dust, steam and moisture are the principal enemies of a watch. No matter how well fitting your watchcase may be, steam and moisture will eventually penetrate inside and cause havoc. Therefore, do not wear your watch in a steamy bathroom or kitchen. Some people have been known to wear their watches when taking a bath and when swimming simply because their watches are 'waterproof'. This is certainly asking for trouble because only a few special makes of watches are able to stand up to such conditions for limited periods only and these are usually rather expensive. Always remove your watch when going to bed because the fluff from the bedclothes could easily find it's way inside.

A good quality watch should be able to stand a fair amount of vibration but if you are doing some heavy hammering then it is advisable to remove your watch. This advice also applies to readers who play golf. Also, try and get into the habit of winding up your watch at regular intervals. First thing in the morning is the best time because a tight spring will enable your watch to cope with all the stresses and strains encountered throughout the day.

First aid

Never expose your watch to sudden changes of temperature, otherwise you run the risk of breaking the main-spring. For this reason, therefore, do not lay your watch on top of a cold dressing table when going to bed. Always place it on a table mat.

If your watch should accidentally fall into water then act quickly. Immerse the whole watch into a bath of very thin oil and rush it to your jeweller who will deal with the water before it has time to cause any damage. Also, if your watch glass falls out, place the watch into a box and take it to your jeweller. Don't wrap it up in paper or cloth otherwise you may damage the exposed hands.

A watch is a delicate piece of machinery so treat it with due respect and care and it will not let you down. (F. K.)

●Continued from page 81

The Nativity Scene

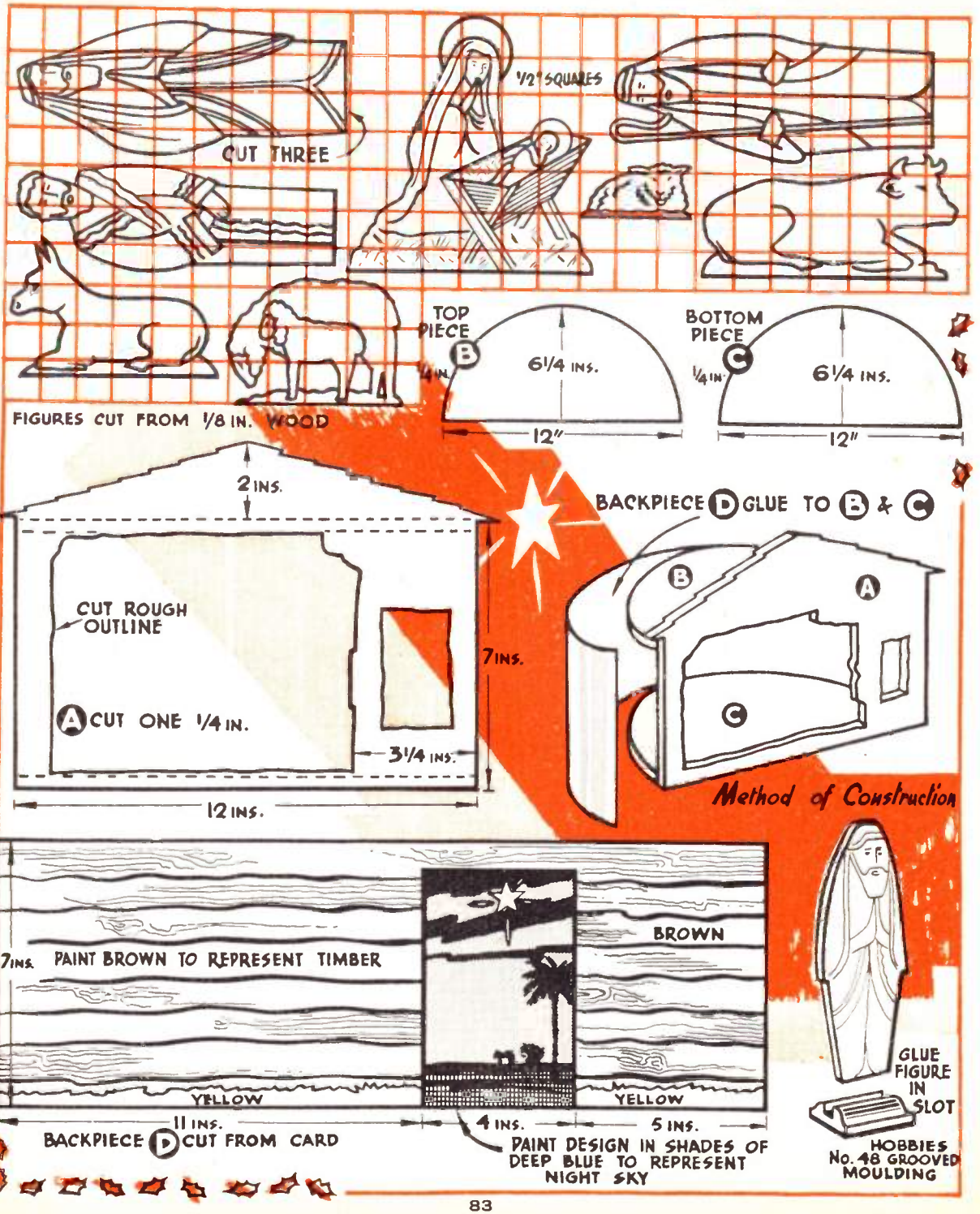
The figures must be drawn by the square method and transferred to wood. They are then cut out with a fretsaw and coloured with poster paint. If readers would rather have full-size drawings of the figures they can be obtained from The Editor, Hobbies Ltd., Dereham, Norfolk, price 1/- per set.

The figures are glued into pieces of Hobbies No. 48 grooved moulding as shown by the illustration on the pattern page.

A musical movement may well be fitted to this scene if the model is stood on a hollow base about 2ins. to 3ins. deep. The movement should be screwed in position, due allowance being made for the winder key. If desired, the movement can be made to play when lifted. The model could be further improved by adding electric light. Install a small battery in a hollow base and arrange a bulb behind the star. The star should be cut out and a piece of transparent yellow paper pasted at the back. The star will shine realistically when the light is switched on. (M.h.)

PATTERNS ON PAGE 83

PATTERNS FOR THE NATIVITY SCENE MODEL



Improving a T.R.F. Set

SUPERHET PERFORMANCE

THE tuned radio frequency (T.R.F.) set is a great favourite with radio constructors because it is simple to build and the quality can be good. However, it is indisputable that the superhet has it well beaten when it comes to power and selectivity.

By A. Fraser

Try to separate two close stations on a T.R.F. and then on a superhet. The difference will make you a superhet convert for life.

There is no reason why you should not give your T.R.F. set this much desired selectivity so characteristic of the superhet. Constructional work to achieve this is simple, as will be seen, while the cost is negligible. All that is needed is a new valve (a frequency changer) and an I.F. Transformer, and an item or two that will almost certainly be found in the spares box. The total cost at most can be 11/-. If you make your own I.F.T. (as has been described in a previous issue of *Hobbies Weekly*), the cost need only be about 8/-.

The improvement in performance which results from this alteration to the T.R.F. set is out of all proportion to the slight expenditure or work involved.

The normal T.R.F. set consists of an H.F. amplifier valve, followed by a detector type, and then an output valve. With mains powered sets a line up of EF39, EF36 and 6V6, or similar, is popular. With battery sets, 1·4 volt valves, like the 1T4, are followed by 1S4 output. With 2 volt valves, types such as the HL2 or SP2 are followed by Pen 25 or KT2, etc.

All these sorts of sets can be altered, as will be described.

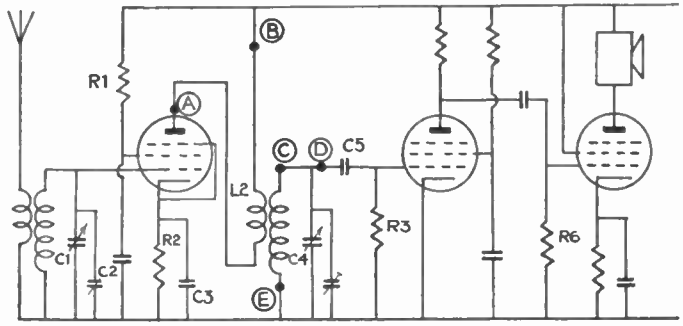
The first thing to do is to ascertain if there will be space for the Intermediate Frequency Transformer. This is the only extra space needed, and in most sets there is usually more than enough space available. If there is not enough space, then an extension can easily be made to the existing chassis with a piece of aluminium sheet. This will not need to be wider than 1½ins. — its exact width will depend on the size of the I.F.T. ((usually 1⅜in. or less).

The ideal position for the I.F.T. is between the first (H.F.) valve and the second (detector) valve, but if you cannot manage this, don't worry, so long as it is somewhere near them both.

Fig. 1 shows the theoretical circuit of a typical mains T.R.F. set. The battery types are not much different. Study this in connection with your own set and then cut your circuit wiring at those points which correspond with those marked (A), (B), (C), (D), (E) in the circles.

This will leave the fixed vanes of the second section of the twin-gang disconnected, also the detector coil.

Fig. 1



Remove the coil from the chassis completely.

If there is a choke in the anode lead (as in some battery models), remove this also.

COMPONENTS LIST

6·3 volt set:
Valve 6K8
I.F. Transformer (465 Kcs.)
Oscillator Coil (Medium Wave)
R1, R4 (47K), R2 (220), R5 (27K),
C2, C3, C8 (·1), C6 (·0001), C7 (470 pfd.)

2 volt set:
Valve TP25
I.F. Transformer (465 Kcs.)
Oscillator Coil (medium wave)
R1 (47K), R4 (100K), R5 (27K),
C2, C8 (·1), C6 (·0002), C7 (470 pfd.)

1·4 volt set
Valve 1R5
I.F. Transformer (465 Kcs.)
Oscillator Coil (medium wave)
R4 (100K), R5 (27K)
C6 (·0001), C7 (470 pfd.), C8 (·1)

Remove, also, the first valve (H.F. amplifier) as this is not needed.

With a mains set of the EF39 or 6K7 type first valve, leave the valveholder intact, as it will be needed. Unsolder only the lead to the anode (tag 3) (A), also the lead joining tag 5 to tag 8.

Figure 2 shows the theoretical circuit of the altered set. The new circuitry and components are shown in heavier lines to distinguish them. The wiring can easily be carried out by following this diagram. The figures round the valve indicate the tag numbers on the valveholder. The valve needed is the 6K8.

The I.F. Transformer must be the usual 465 kcs. type and must be tuned to this frequency. New ones can be bought, in some places, already pre-aligned, but it is cheaper to buy surplus types, or to make one's own. They can then be aligned at home, if you have a signal generator. If not, get someone to do it for you. Further advice on where to buy

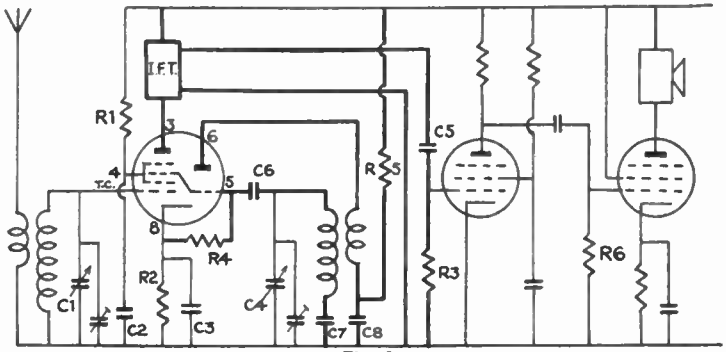


Fig. 2

cheap I.F.T.'s and where to get them aligned can be obtained by writing to the Editor, mentioning this article.

An oscillator coil is also needed to replace the detector coil that has been removed. If the set is medium wave, then the oscillator coil must be medium wave also. These can be bought, but excellent ones can be made at home very cheaply.

For this, a 5/12 in. dust-cored Alladin coil former is needed (4d. from J. E. Annakin, 25 Ashfield Place, Otley, Yorks.). Halfway down the former, fix two washers 2ins. apart. These should be ¼in. diameter and be made of varnished cardboard, wood, or plastic. Wind in eighty turns of 28 gauge enamelled copper wire, bringing out the ends where desired. Cover this winding with gumstrip, or Sellotape, and wind on another,winding of 32 gauge enamelled consisting of 20 turns. Both coils should be wound in the same direction.

The start of the larger winding goes to the variable condenser fixed vanes, while the end goes to the 470 pfd. padding condenser (C7, Fig. 2). The start of the smaller winding goes to R5 and C8, while the end goes to the valveholder tag 6 (oscillator anode).

When wiring up the I.F. Transformer, note that the primary winding is connected between HT + and anode (tag 3) of the valve.

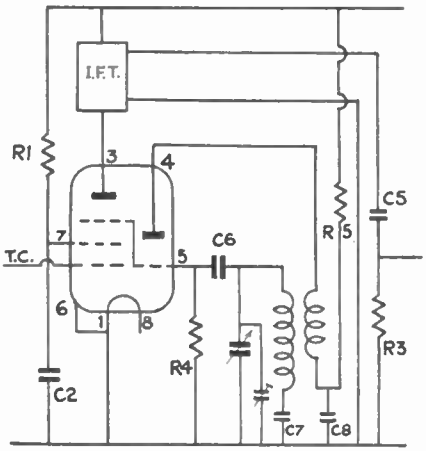


Fig. 3—2 volt version

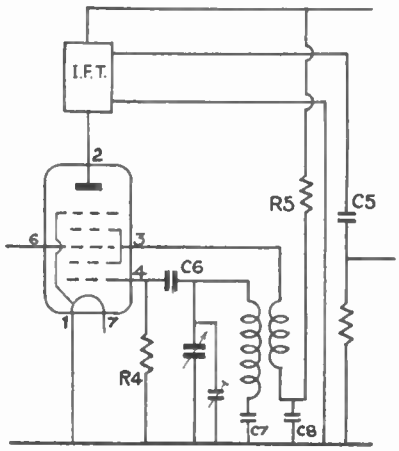


Fig. 4—1·4 volt version

Of the secondary winding of the I.F.T. one end goes to earth (chassis), while the other goes to C5, to the detector valve.

Where the detector is of the anode bend type, then this lead from the I.F.T. will go direct to the grid of the detector valve (usually the top cap). This lead may be of the screened kind, with the outer metal sheath earthed.

With the mains version we are dealing with, R6 may be replaced with a variable control of 1 Meg. or ½ Meg. This is the simplest method of volume control in this case.

When the wiring is completed, the set can be tuned. We assume the I.F.T. has already been aligned (if not, get this done). Set the dial pointer to the Third Programme, then screw in the iron core of the oscillator coil until the programme is heard. Next, turn the dial pointer to the Light Programme on 249 metres. Adjust the trimmer (C4) on the oscillator section of the gang until this programme comes through. Then adjust trimmer (C1) on the aerial section of the gang for maximum output. Repeat all these adjustments until no further improvement is possible.

The constructor will quickly note the vast improvement in selectivity when he tries out the set.

Where the first H.F. valve in the original set is not an International Octal type, then the valveholder would have to be taken out and replaced by an I.O. kind, to fit the 6K8 valve.

Those who have a battery T.R.F. set will, of course, need a battery type of Frequency Changer, the 6K8 being of no use here. With the 2 volt battery set, the valve needed will be the TP25, or similar. With 1·4 volt sets, the IR5 is necessary. Theoretical diagrams of each valve are given, and the wiring can easily be worked out from these. It will be noticed there is no screen resistor or condenser in the case of the IR5.

Both battery types are aligned in exactly the same manner as described in the case of the mains set just dealt with.

In the battery valves there are no automatic bias resistors on the cathodes. This only applies with the 6K8. In this last case, if the original H.F. valve was an EF39 or 6K7, then there will be no need to alter the bias resistor (R2) and condenser C3, nor the screen resistor and condenser (R1 and C2).

DISNEY'S SEVEN DWARFS

THESE replicas of the Walt Disney models contained in the Snow White and Seven Dwarfs set are from rubber moulds of Happy, Sneezy, Grumpy, Dopey, Doc, Bashful and Sleepy produced by Seamer Products (Sculptorcraft) Ltd. They stand 6ins. high and make good ornaments for gardens, rockeries and as book-ends and general ornamentation in the home. They are 7/6 each.

Beauty in the home

Old-World Spinning Chair

Described by H. C. King

UNTIL the middle of the last century, many country houses had a spinning wheel with which fleeces were spun into yarn as a cottage industry. Later, the spinning of wool was a hobby among women, and even today many wheels are still in use. The spinner sat on a low seat like a stool with a long narrow back. They were often beautifully carved and are now valued rather for their beauty than their utility.

The spinning chair shown here is an ideal item for the hall or an odd corner of a room and is quite easy to make. One Hobbies furniture panel, No. S.12, is sufficient for all the parts. It is 36ins. by 10ins. by ¾in. and costs 13/6 (by post 2/3 extra)

Marking out the panel

Reference to Fig. 1 will show how the parts can be cut economically from the furniture panel. It will be seen that all sizes are ⅛in. over finished dimensions to allow for trimming up.

A piece 10⅛ins. long is cut off the end of the board to make the seat. A strip 5ins. wide is cut off one side of the remainder for the back, while the remainder is more than enough for the legs and seat rails. The former are 13ins. long and taper from 1¼ins. wide at the bottom to ¾in. wide at the top. Both seat rails finish 1⅞ins. wide, the front one being 9½ins. long and the rear one 5ins.

The seat

Before any marking out of the seat is done, the ends of the piece of wood must be trued up to size with a plane, working from each corner alternately. After sawing and planing the wood to shape as shown at Fig. 2, the back edge is bevelled to the slope of the chair back. As will be seen at Fig. 3, a line is drawn ⅛in. from the edge on the underside. The edge is then planed to this line.

The chair back

Cutting this part to shape is merely a matter of sawing off most of the waste and finishing with a plane. The two holes on the centre line are bored carefully with a joiner's centre bit. Starting from the front, boring is continued until the point of the bit appears at the back. The hole is then completed from the back, and any roughness removed with a fine half round file. The sizes of the holes are not critical but ideals are 1½ins. for the top one and ¾in. for the lower.

Between the holes, but stopping short of them, a ⅛in. wide groove is cut with a gouge. As this is rather a tricky job, it is a good idea to practise on a piece of waste wood first. The notches along the edges of the seat and back can be cut from alternate ends with a chisel, and finished off with a file and glasspaper.

The seat rails and legs

The 9½in. front seat rail should be taken first and the two front corners cut off 1¼ins. each way as shown in Fig. 2.

● **Continued on page 87**

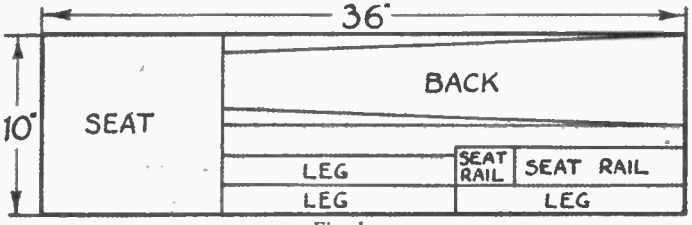


Fig. 1

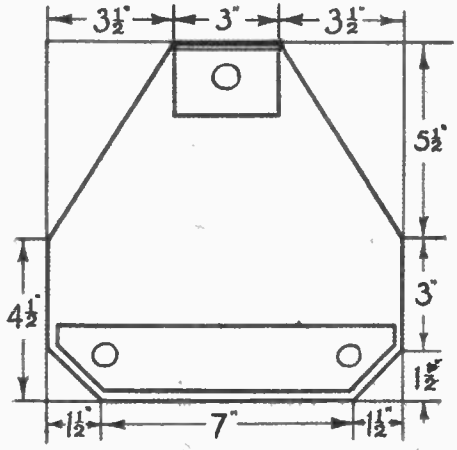


Fig. 2

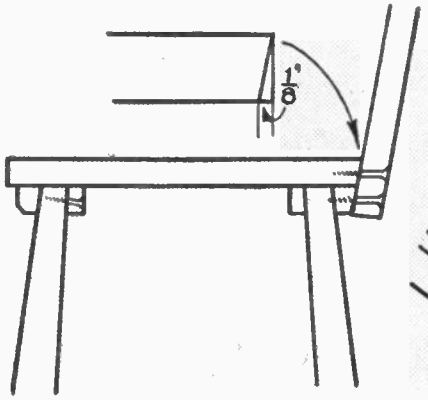


Fig. 3

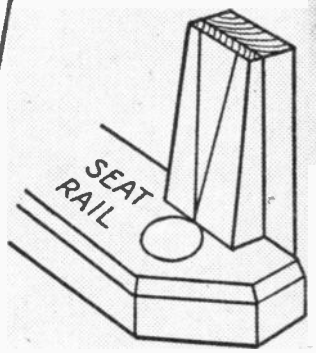


Fig. 4

How it is done

RELEASING THE RING

HERE is a trick which you may try on your friends and the only apparatus required is a piece of string approximately 24ins. long and a ring of some description. The problem is to release the ring from the string while the latter is retained on two fingers.

Take piece of string, knot and thread on the ring as shown in Fig. 1, placing the cord on your friend's first fingers of both hands. The string has not to be removed from the fingers to remove the ring, but by following these instructions, making the various loops in the correct order, you will find it releases itself after the last operation.

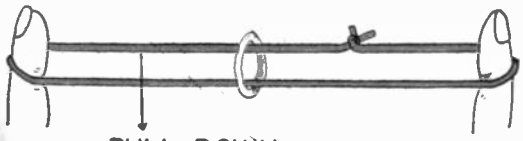
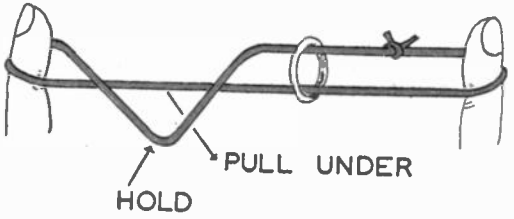


Fig. 1

The drawings have been prepared so as to indicate quite clearly that there is a front and back cord and all the diagrams represent the performer's viewpoint. You will also note that the ring has been placed centrally at the start and the knot is arranged on the back cord and towards the right. This is so as not to interfere with the subsequent looping.

Take hold of the back or knotted cord at the left hand side, pulling forward and downwards, and holding with the left hand during the next few operations. The result of this is shown in Fig. 2, and it will be seen that the cord has now come forward over the front cord. The front cord is now taken between thumb and finger pulled under the loop held in the left hand and finally looped over the left hand forefinger (your friend's right forefinger). This should make the two cords appear as in Fig. 3, but note that the left hand still retains hold of the original loop made at the first operation.

Fig. 2



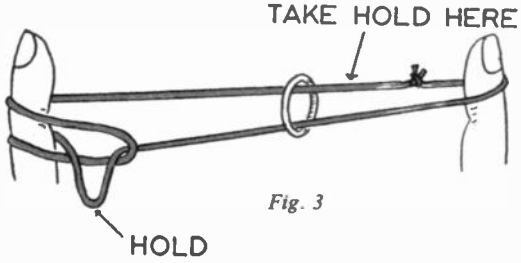


Fig. 3

We now reach the final stage where it is better to allow the ring to move towards the left. Take hold of the cord on the right side of the ring as you face it in the position shown in Fig. 3, again looping round your friend's forefinger on your left hand side and on releasing the loop held by the left hand the ring will fall away quite freely.

Remember that the first two loops are made on your left hand side of the ring, the last from your right side of the ring, while all loops are made on to the forefinger on your left hand side. Any small ring or washer may be used with success but it will be as well to practise the trick a few times before presentation. (S.H.L.)

● **Continued from page 86**

An Old-World Spinning Chair

A ¼in. bevel all round the lower edges will make the job much neater. The 3in. back seat rail has square ends, but its back edge is bevelled to match that of the seat. Fig. 3 makes this quite clear.

The boring of the holes for the legs needs some care. If the guide shown at Fig. 4 is cramped to the edge of the rail, the bit can be kept at the correct angle. The two lines on the sloping face of the guide are one for each of the front legs to give a sideways as well as forward splay. The back leg, of course slopes backwards only.

Starting from about 3ins. from the top, each leg gradually becomes round. This can be done with a plane, but it is important to test them in the seat rails frequently to ensure a tight fit. The lower ends of the legs are left as they are until after the chair is assembled.

Assembling

A start is made with the seat rails. These are positioned carefully under the seat and fixed with glue and 1¼in. by No. 8 screws. The rear one must be absolutely flush with the seat back.

The back comes next and here we use glue and 1½in. by No. 8 screws, making sure that it is vertical when sighted from the front. Two screws should go into the seat and two into the rails.

The legs are the last of the parts. They are glued into their sockets, but for extra security a thin screw can be driven into each, through the edges of the rails. The chair can now be turned the right way up, and the bottom ends of the legs finished off. By laying a pencil on a scrap of wood, a line can be drawn round each leg parallel with the floor. The waste is now sawn off to this line. To make a neat finish and to prevent splitting, the sharp edges should be taken off with a file and glasspaper.

Now that construction is complete, the work can be given a clean down with fine glasspaper, followed by thorough removal of all dust.

As spinning chairs were almost always dark in colour, a coat of Jacobean 'Swifto' stain is indicated. Wax polish will give the ideal sheen for such an article, but if a full gloss is required, the worker cannot do better than use 'Reward' French Polish.

Tone pictures

Black and White Studies

By S. H. Longbottom

EVERY photographer knows that sensitised paper darkens after exposure to light and subsequent development in the usual solutions. And the preparation of a test strip before printing a photograph reveals that differing exposure periods produce varying tones from white to black.

This knowledge may be used to our advantage in picture making, whether or not you possess a camera or enlarger, and all kinds of studies in black and white may be made for bookmarks, greeting cards and similar novelties. In a way, the pictures may be regarded as a form of silhouette, made on paper with the aid of suitable masks.

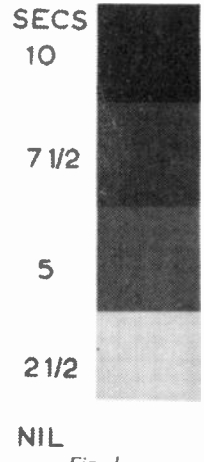


Fig. 1

We can lay masks or shapes on the paper, respectively producing dark or light tones, we can combine the two for all kinds of effects, or we can even include part of a photographic negative, using an electric light for these tricks of tone.

You may create your own pictures by interpreting ordinary coloured pictures in terms of black and white, merely by cutting out the masks. Alternatively, you may buy stencils, use paper doylies and similar objects.

Another interesting method which you may like to try is the preparation of a picture on transparent greaseproof paper, shading out various parts with a pencil. Using this latter method, it would be quite simple to write a greeting in indian ink, place over the sensitized paper with a cut out stencil on top and the lettering would then be shown in white.

Using direct light of low wattage, it is possible to produce a sample scale of tones suitable for our purpose and this will be noted in Fig. 1. A card was placed over the paper to produce the white section, while the rest of the paper was exposed for 2½ seconds; the covering paper was then moved upwards an inch and another exposure made for 5 seconds; similarly for the other exposures making the different tones.

With a lower powered light we could produce even more tones than is required for these pictures, but frequently it is better to have as much control as possible. If you use an enlarger a piece of slightly fogged negative placed in the film carrier would have the effect of reducing the light, provided there is no image on the film which would show in the final picture.

It will be seen that in order to control the tones it is important to produce a scale on normal grade bromide paper, or contact paper, exposing one inch at a time for periods of 2½ or 5 seconds throughout the strip. Mark the different exposures at the side as shown in our example, noting the type of paper on the back for future reference, and you are then ready to make a picture.

Turning to Fig. 2 you will recognize the outline of some buildings against the night sky, with birds flying homewards. This type of study, involving three tones, is extremely simple to make, only requiring the preparation of a mask made from opaque paper.


Fig. 2

The outline is first sketched, including the birds, then cut out with an extremely sharp knife, for clean lines are essential. The shape should be saved for it may form the basis for another picture. A piece of sensitized paper is laid on the darkroom bench, where a ruby coloured safelight must be the only illuminant, with the cut out mask placed on top. This mask must be held down with weights so as to give perfect contact with the paper or the outlines will be blurred. An exposure to the white light is then made for a length of time necessary to produce a dense black — note that this time may be more than shown on your scale, but not less. Small pieces of paper representing windows were positioned for making Fig. 2 to shield the paper from the light and you will appreciate that any kind of shape can be laid on the paper to make a white space.

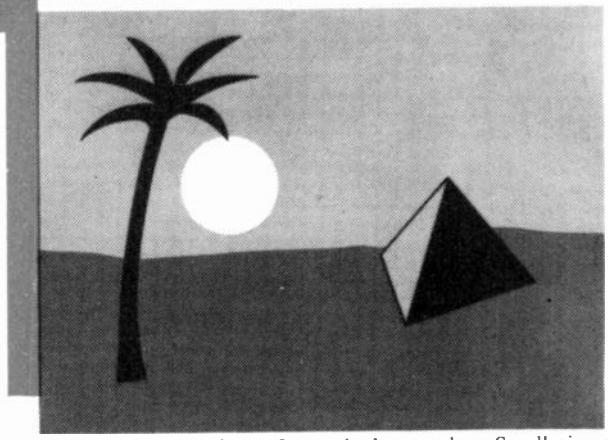


Fig. 3

We have a more complicated type of

● Continued on page 89

A serviceable tool

ROD-DRILLING SIMPLIFIED

DRILLING holes in circular metal rods and tubes or dowel rods can be a difficult and often tiresome business. You may want to put a pin through a shaft of a model engine or something similar but how do you set about it ? How do you make sure that the hole is central and true? It is often a job to get a drill started especially if the rod is at all smooth.

The simple little tool described here will solve all these problems and enable you to do the job in a very efficient manner and in a quarter of the time. A piece of mild steel is just the thing, but if you find this too difficult to make then a piece of hard brass will do. Being a much softer metal than steel it will of course not stand up to such hard wear, but if care is taken in using it quite a long life should be possible.

Where accuracy is not so important, especially for larger work, a really hard wood such as boxwood will make quite a serviceable tool. It would in any case be a good idea to make a model in wood first.

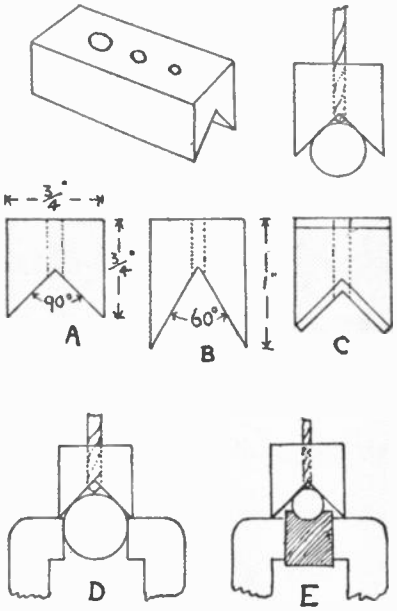
Accuracy essential

It is most important when setting out and cutting a V-slot to get it accurate. If the sides of the V are of different lengths or the holes are not drilled upright and enter the V exactly at its point then the tool will not be true.

The angle of the V should be between 90° and 60°, the more acute angle being the more accurate. A longer drilled hole also makes for truer working but this need not be carried too far.

A very useful size to make the tool for general work is 2in. long and ¾in. square for a 90° V as at (A), but when this is 60° (B) then the height should be increased to 1in.

Three different sized holes are shown



but if more are needed then the tool must be made somewhat longer. It will however be more difficult to cut the V slot in a longer piece of metal. Use a hacksaw for this and finish off with a file — a flat one for the 90° right angle and a triangular one for the more acute shape, the angle being just right for this.

When drilling the holes start from the point of the V, then you will be sure to get them central. For the larger sizes it is best to start with a small pilot hole and open it out afterwards with the correct size drill. Do this operation slowly and be very certain that the drill is perfectly upright in all directions.

Face with metal

When the tool is made of wood it will last much longer without wearing if it is faced with metal strips as at (C). This method is easier to make and perhaps just as efficient as the all metal one. Use a flat strip at the top and a piece of angle metal on the other side, fastening them with a small screw at each end.

A slight countersink to the top of each hole is an advantage as it enables oil to be easily applied to the job without removing either drill or V block.

Grip the rod lightly in the jaws of a vice with the points of the V just resting on the top as shown at (D). If however, the rod is small then a block of wood with a groove in the top is held in the vice for the rod to rest on similar to (E) and will hold everything securely. (A.F.T.)

● **Continued from page 88**

Black and White Studies

picture in Fig. 3 where four tones were used, a good example of how your own ingenuity can produce a pleasing picture. A stencil was prepared with the tree and pyramid cut out. Half of the latter remained in position during the first exposure which resulted in a black tree and half of the pyramid in dense black. The other half of the pyramid mask was kept in position with a small weight while a second mask covered the sky portion. This gave one tone exposure to the foreground. Finally a coin was placed in the sky section — which so far had received no exposure to the light — the half pyramid mask removed and a further one tone exposure given to the whole.

You will observe that this final exposure to the whole has the effect of adding another tone to the fore-ground, but cannot affect the blacks in any way. Moreover, it must be appreciated that having exposed for the black parts laying on further shapes — in this instance the coin — does not detract from these parts.

It will be seen that these pictures are made by working backwards, each tone darkening in turn with the additional exposures to light, but care should be taken with the timing. The light source should not present any difficulties for a torch can be used most successfully providing it is maintained at a constant height above the sensitized paper and illuminates the entire area. A table lamp fitted with an on/off switch will also be found satisfactory while the enlarger will prove equally suitable.

There is no need to adhere to oblong masks for it is most interesting to experiment with circular pictures, using a plate or saucer for cutting out. You may also be able to find one or two oddments about the house to provide suitable shapes. These could include small charms in the form of cats or dogs and most suitable for street scenes. The moon can always be represented by a coin or cut to a crescent shape with the aid of two coins as in Fig. 2.

If desired, details can always be added by means of pen and indian ink.

After exposing to the light the paper is developed in the usual manner, rinsed, fixed and washed, and as stated, the pictures may be used for all kinds of novelties. Even though produced without a camera, these pictures are real photography, that is, painting in tones of black and white.

Next Wednesday's issue of 'Hobbies Weekly' will contain a free design for making a novel Windmill Money Box — Make sure of your copy.

RAILWAY THEMES

By R. Cantwell

TRAINS and railway equipment are featured in some form or another on most countries' stamps. There is plenty of scope here for theme notes, many of which can be obtained from railway employees or officials, and your stamps will illustrate them.

Always carry a note-book when travelling by train, for this is an opportunity to gather information on a subject having a wide range of interesting facts. The following briefs will, no doubt, be found useful.

Communication Cord: In the earliest form of communication between driver and guard, a travelling porter was seated on the back of the engine tender to warn the engineman of anything untoward happening on the train, or of any signals from the guard. Later this method was followed by one in which a cord was threaded along the coaches. This communicated with a large bell or whistle on the engine.

Nowadays the pulling of the cord by a passenger turns the discs or arms on the extremities of a horizontal rod at the end of the coach and opens a connected valve which partially applies the train brakes, thus warning both driver and guard. The turned discs show the coach involved, and neither the discs nor the slack chain can be re-adjusted, without the aid of the railway staff.

Wheel Testing: Both passenger and goods trains are examined at their principal stopping points by train examiners, known as 'wheel-tappers'. But tapping the tyres with a long-shafted hammer to discover if any flaws or fractures have developed, is only part of their duties. They are also responsible for detecting hot axle box bearings, shortage of lubrication grease and oil, and defects in the brake and steam-heating apparatus, axles, wheels, springs, carriage interior fittings, lighting, etc. Being part of the important measures ensuring safety in railway operation, the carriage examiner's job is a very responsible one.

Mail Transport: Upwards of forty million bags of mail are handled annually by the railways in this country, and some eighty 'travelling Post Offices' are in regular service.

To enable mails to be set down at points at which the train may not be stopping, nets are provided alongside the track to catch the bags which have been swung out on the side of the coach. Also, a net swung out from the coach receives the mail bags which have been hung on special pick-up posts adjacent to the track. When not in use the collecting net is folded flat against the side of the vehicle.

Four trains (Travelling Post Offices) are run entirely for postal purposes. Two travel between Euston and Aberdeen, and two between Paddington and Penzance. The T.P.O. during its run between Aberdeen and London deals each night with nearly a quarter of a million items. The average number of bags of mail received, opened, sorted and despatched over the entire run by the staff of about 50 men is 1,040, and the average number of bags despatched is 920.

Distinguishing Locomotive Types: A combination of figures and (sometimes) letters is used to describe locomotive types. The symbol gives the total number of wheels under the engine and also their relative arrangements. Tender wheels are not included. For a tank engine the letter T is added. The first numeral refers to the number of small carrying wheels in front of the driving or coupled wheels, which are shown as the second figure in the group. The third numeral refers to the small carrying wheels behind the driving or coupled wheels. Thus we may have 4 – 6 – 2T (tanker). Some wheel arrangements have names also, such as 'Pacific' for a 4 – 6 – 2 locomotive.

Engines with tenders are used for working over long distances. Tank engines are used on suburban and shunting operations. Express passenger engines are fitted with large-diameter coupled wheels; engines for mixed traffic, i.e., passenger or goods, have medium-diameter coupled wheels and goods engines have still smaller ones. Articulated (connected by joints) locomotives have two or more independent sets of cylinders, wheels and rods, fed by steam from one boiler.

Some appropriate stamps:

Belgium 1934 — 'Goliath' — set of 3, 2/4 used. 1935 Railway Centenary — set of 9, 3/- used. 1942, 30 cent red — Engine Driver — 1d. used; 1 franc green — Platelayer — 3d. mint; 30 franc violet — Railway Porter — 4d. used. Brazil 1954, 40 cent red — Early Locomotive — 3d. mint. Canada 1951, 4 cent black — Mail Trains, 1851 and 1951 — 6d. used. France 1951, 12 franc + 3 franc violet — Interior of Postal Sorting Wagon — 10d. mint. Germany 1941, 25 pf. blue — Railway Station — 4d. used, etc., etc., etc.

Yes! There are hundreds of railway stamps, and you will need a separate album or exercise book to mount them in.

SOLUTION TO PRIZE CROSSWORD

The following is the correct solution to the Prize Crossword published in our special birthday number of 2nd October.

Across: 1. Hobbies, 6. Or, 8. Er, 9. Pyruma, 10. Cos, 12. Kit, 13. Acid, 15. Do, 16. Lady, 17. Demi, 19. Eg, 21. Meccano. 23, Noted, 25. Up, 26. B.O.P., 27. Ot, 28. At, 30. Royal Board, 32. Le, 33. Is, 34. Lease, 35. Foyles.

Down: 1. HQ and General, 2. Beck, 3. Broil, 4. Spray, 5. Croid, 6. O.M., 7. Raleigh Press, 11. Stated, 14. Demob, 18. Tap, 20. Go, 21. Metals, 22. Cut off, 24. Toy, 28. A.B., 29. Dray, 31. Lee, 33. i.e.

Winners have been notified and prizes despatched.

MAINLY for MODELLERS

MAKING UP SAILS

By 'Whipstaff'

IN this, our second article on the subject, we are concerned with the making of fabric sails and for the benefit of new readers who may not have a copy of earlier articles, I will start by listing the terms we use in making our sails.

The top edge of the sail is known as the head, the sides are the leeches, and the bottom edge is the foot — this is in the case of the square sails. Tabling is the hemming when sewing in the bolt ropes, and cringles are the side loops of rope. Reef bands are two rows of stitching across the sail half the width of the sailcloth strip apart, to represent the strips of cloth.

The sails being made of strips of canvas, usually 2ft. wide, we imitate these by rows of fine stitching spaced at a distance apart to suit the scale of our model, i.e., in a scale of $\frac{1}{8}$in. to 1ft. a distance of $\frac{1}{4}$in. apart is correct.

If the selvedge of the material being used is utilised for the head of the sail, this will avoid the neccessity of hemming the top of the sail.

Choice of material

For making fabric sails I have found that Irish lawn is the better material for the smaller models, say $\frac{1}{8}$in. to 1ft. For larger models linen tracing cloth, with the dressing boiled out and then the cloth ironed, will be more suitable.

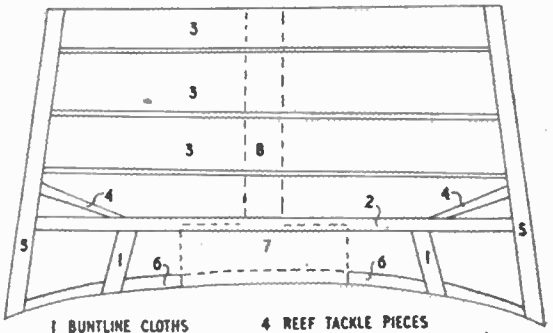
First pin out the material flat on a smooth piece of plywood and mark out the shape of the sail, making sure that on the square sails the threads of the cloth run from top to bottom of the sail. Next mark out the lines marking the joining of the bolts of canvas and, as above, run fine lines of sewing along these lines. The outside section representing the last bolt of canvas on each side of the sail will be narrower than the others when we have made the tabling or hem that encloses the bolt rope.

If you are showing the reef bands, etc, as shown on the sketch the middle bands and buntline cloths are the same width as the spaces you have sewn to show the strips of canvas. Reef bands are one third of the thickness or width. We will deal later with the jib type of sail.

Now, stitch all the necessary lines. Perhaps the lady of the house will do this on her sewing machine. It will be quicker and probably much neater. The stitching is better done on the full piece of cloth, before cutting out the sails, the stitches running past the lines outlining the sails.

The buntline cloths are next sewn on, the edges of the strip being turned under, as if making a hem. The reef band pieces are next sewn on in the same way. The upper ends of the buntline cloths are covered by the middle band which is now sewn on, followed by the reef bands. The lower ends of the buntline cloths should be left unstitched as they must overlap the foot lining in the complete sail.

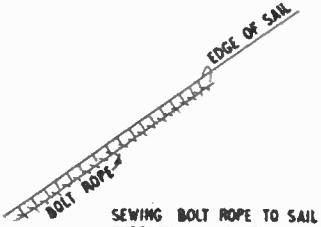
DIAGRAM OF SQUARE SAIL



1 BUNTLINE CLOTHS
2 MIDDLE BAND
3 REEF BANDS
4 REEF TACKLE PIECES
5 LEECH LININGS (CONTINUOUS)
6 FOOT LININGS

DOTTED LINES INDICATE MAST CLOTH (7) AND TOP LINING (8), IN TOPSAILS & TOPGALLANTS

CRINGLE



SEWING BOLT ROPE TO SAIL THROUGH SAIL, OVER AND THROUGH CENTRE OF ROPE

The footlining is half the width of the bolts of canvas, i.e. if your lines of sewing representing the sail cloths are $\frac{1}{4}$in. apart, your foot lining will be $\frac{1}{8}$in. wide, in the same manner the leech linings will be the full width of the bolt of canvas, i.e. in the above case $\frac{1}{4}$in.

The buntline cloths have their bottom ends sewn over the foot lining, the leech linings will cover the ends of the reef bands, middle band and foot linings, etc.

In a fully detailed model top linings and mast cloths can be fitted on the after side of the topsails and topgallants as shown in the sketch.

Now when it comes to fitting the bolt ropes, I find that it is necessary to shrink the cord used before making the bolt ropes and I do this by wetting the rope or cord sufficiently to make it damp right through, afterwards hanging it in the workshop with a weight at the end to keep it straight.

It is pinned around the edge of the sail in position, to prevent twisting and then sewn to the edge of the sail by sewing through the cord. Do not forget the corner cringles, these are made by forming a loop in the cord and binding with fine sewing thread. For some of these rigging jobs that require very fine thread, I find that fine surgical nylon thread is excellent, and can be obtained from surgical supply houses.

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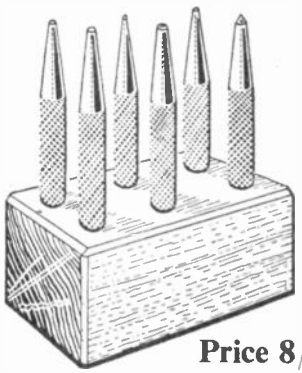

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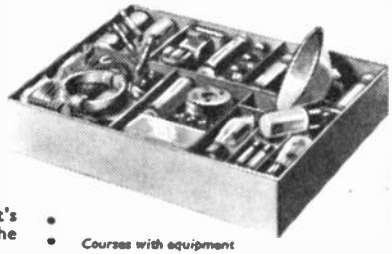

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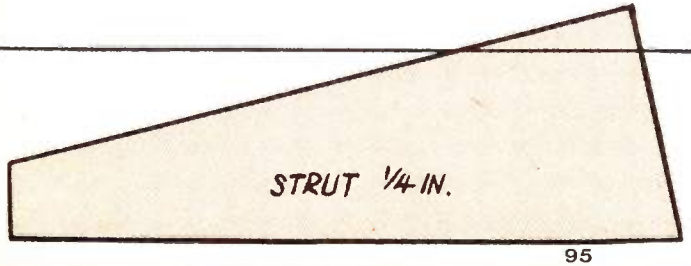
CHRISTMAS CARDS IN WOOD

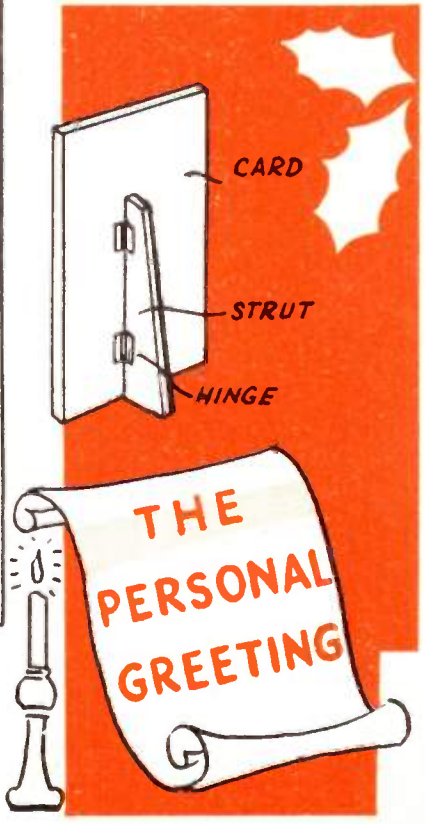


VENEER OR INLAY

A CHRISTMAS greeting card will be appreciated more if it is your own handiwork, than if it is purchased from a shop.

The design shown here can be made in knife marquetry or cut in fretsaw inlay. In both cases ¼in. plywood should be used as a baseboard and the veneers or inlay wood glued to this. In the case of fretsaw inlay four pieces of ¼in. wood are cut together and sorted out to give at least three good pictures. The veneers or inlay wood must be of contrasting colours to give the best effect.

Finish off by polishing with wax polish after fixing a small strut to the back. The strut should be hinged to facilitate packing for the post. (M.p.)



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