МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ

Федеральное государственное автономное образовательное учреждение высшего профессионального образования
«Национальный исследовательский ядерный университет «МИФИ»
Технологический институт-филиал НИЯУ МИФИ

Среднее профессиональное образование

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«____»_____ _____

Задания для самостоятельной работы студентов

по дисциплине
Иностранный язык (английский)

для специальностей: **151901 Технология машиностроения**
210112 Электронные приборы и устройства
270802 Строительство и эксплуатация зданий и сооружений

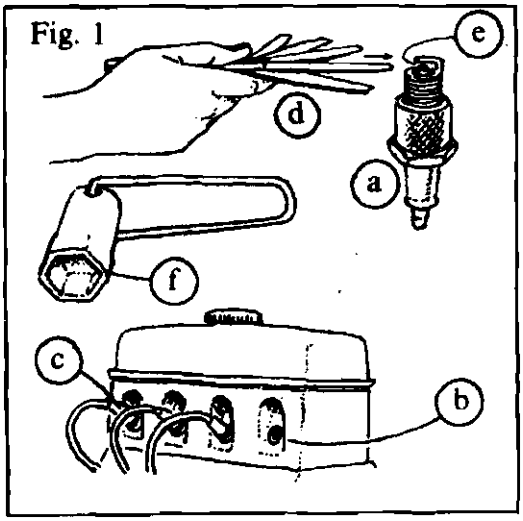
г. Лесной 2012 г.

Переведите тексты на русский язык

How to check a spark plug

1 Remove the *cover.*
2 **Place the** *spanner* **over the** *spark plug.*
3 Rotate the plug anti-clockwise until it is loose.
4 Remove the plug from the *socket.*
5 Examine the *gap* **and check that it is clean.**
6 Insert the *gauge* **in the gap.**
7 Check that the gap is between 0.65 and 1.00 mm wide.
8 Replace the plug in the socket.
9 Rotate the plug clockwise until it is hand-tight.
10 Place the spanner over the plug and give a quarter turn clockwise.
11 CAUTION: DO NOT OVERTIGHTEN THE PLUG.
12 Replace the cover.

1 What are these objects called? (Look at the words in italics in the passage.)



How to put up a shelf

1 Draw a horizontal straight *line* **on the wall.**

2 Place the *shelf* **on the line.**

3 **Place the brackets under the shelf.**
4 **Mark** *holes* **on'the wall and on the shelf.**
5 Make holes in the wall and in the shelf. Use a *drill.*
6 Insert *plugs* **in the holes in the wall.**

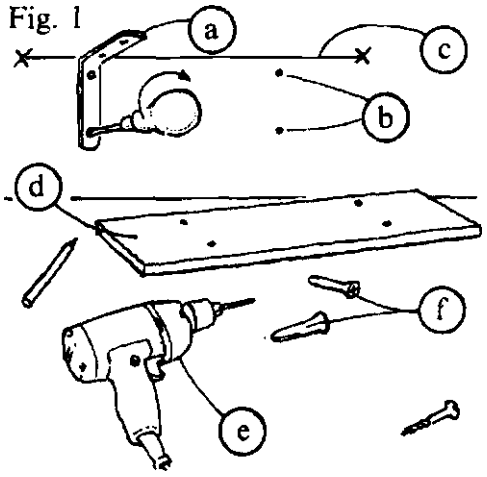
7 Screw the brackets to the wall.
8 **CAUTION: DO NOT OVERTIGHTEN THE SCREWS.**

9 Place the shelf on the brackets.
10 Move the shelf from side to side until the holes in the *bracket* **are under the holes in the shelf.**

11 Screw the shelf on to the brackets.

12 Check that the shelf is tight.

Fig. 1



1 What are these objects called? *Example:*

(a) This is called a *bracket*

How to drill a hole in a steel plate

(NOTE: Before you touch the drilling machine, check that the power is off.) First, you insert the *key* in the *chuck.* Then you rotate the key clockwise until the yaws are open. Next, you insert the *bit* between the jaws. Finally, you rotate the key anticlockwise until the jaws are closed. Before you use the drill, make sure that the bit is tight.

B 1 Mark the hole on the *plate.*
2 Put the plate into a *vice* on the *table.*
3 Move the table and the vice until the bit is over the mark.
4 Tighten the table and the vice.
5 Switch on the power
6 Lower the bit and drill the hole carefully.

Drilling machine

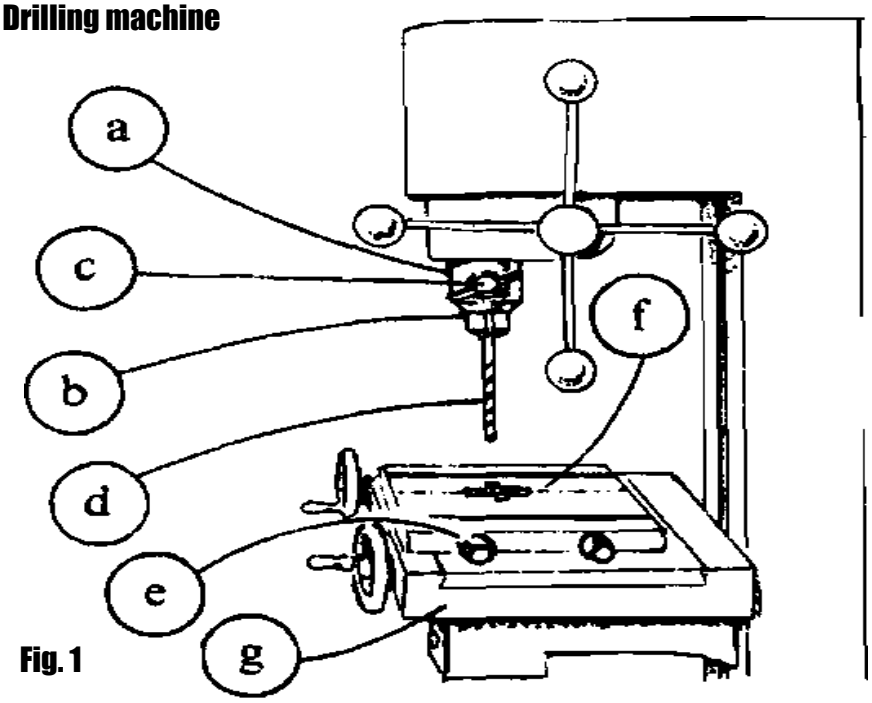
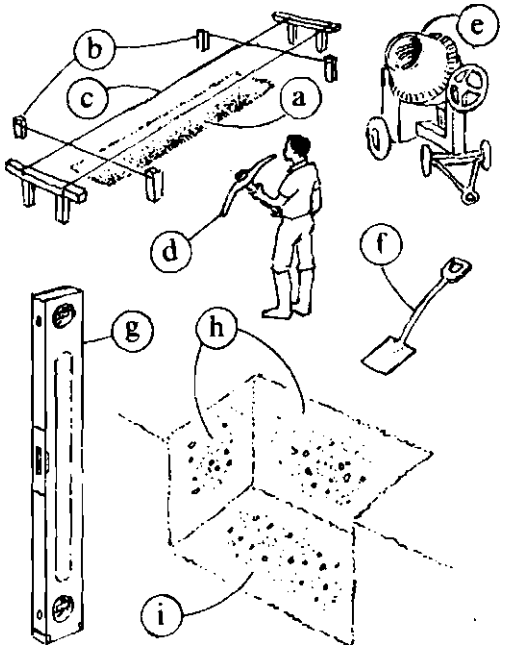


Fig. 1

How to prepare a foundation for a brick wall

1 Mark out the *trench* **with lines and** *pegs.*
2 **Dig out the trench with a** *pickaxe* **and** *shovel* **until it is about 150 mm deep and 300 mm wide.**
3 Check that the *floor* **of the trench is horizontal using a** *plumb and-level.*
4 Make sure that the *sides* **of the trench are vertical.**
5 Place pegs in the floor of the trench and stretch a *line* **between them.**
6 Check that the line is horizontal.
7 Fill up the trench evenly with *concrete* **until it is level with the line.**
8 Leave the concrete until it is hard.
9 Build the wall on the concrete.

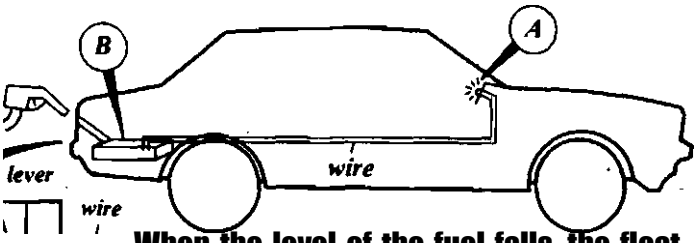
1 What are these objects called? (Look at the words in italics in the passage.)



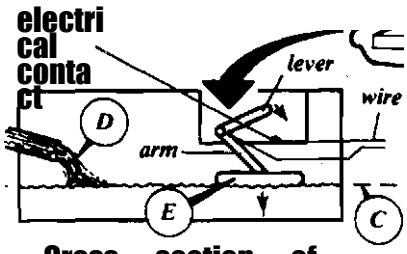
Example: **(a) This is called a** *trench.*

Fuel warning light

Many cars have a fuel warning *light.* When the level of fuel (petrol) in the *tank* is very low, this light switches on and the driver can see that he needs more petrol. How does this light work?



When the level of the fuel falls, the float moves downwards. When this happens, the arm also moves downwards and makes the lever touch an electrical contact. This switches on the fuel light in the car.



Cross section of petrol tank

When the driver sees the fuel warning light, he puts more *petrol* into the tank. This makes the fuel level rise and pushes the float upwards. When the float rises, it makes the arm move upwards and this causes the lever to move upwards also. The fuel warning light then switches off.

Water tap

When you turn the *handle* of a water *tap* clockwise, the *water* stops. When you turn it anti-clockwise, the water pours out of the tap again. How does this work?

Look at FIG. 2. The tap has a handle on the top, and inside there is a *bolt,* and a *washer.* The washer is over a *hole.*

was her

When you turn the handle clockwise, this makes the bolt move downwards. The washer then covers the hole and stops the water. When you turn the handle anticlockwise, the bolt moves upwards and the washer uncovers the hole again. This lets the water flow through the tap again.

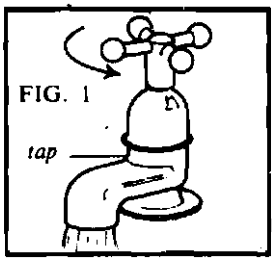
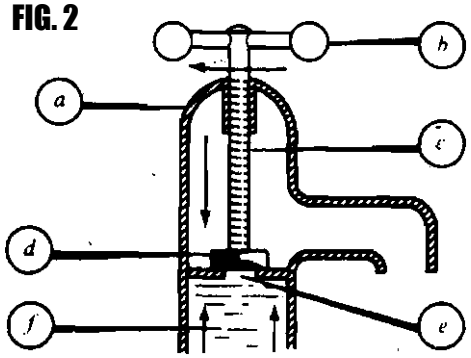


FIG. 2



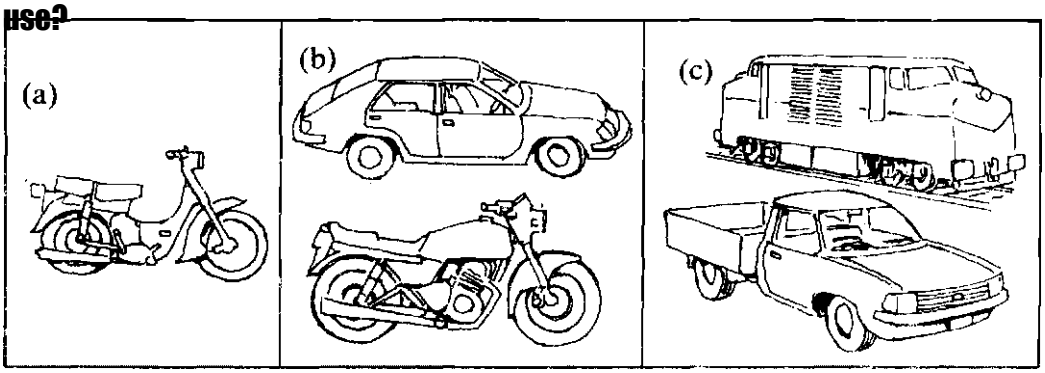
ENGINES

The two most common types of engine for land vehicles are the petrol engine and the diesel engine.

Petrol engines are usually lighter and smaller than diesel engines. This makes them cheaper, and this is why most cars and motorbikes use petrol engines. Petrol engines are also less noisy than diesel engines. They usually go faster. On the other hand, diesel engines use less fuel and last longer than petrol engines, and this is why larger vehicles such as trucks and trains use them. They are also safer than petrol engines, because their is less danger of fire.

There are two main types of petrol engine—4-stroke and 2-stroke. All cars and larger motor-cycles use 4-stroke engines. But most smaller motorbikes use 2-stroke engines. These are lighter and smaller than 4-stroke engines, and are therefore cheaper.

1 What types of engine do these vehicles use?

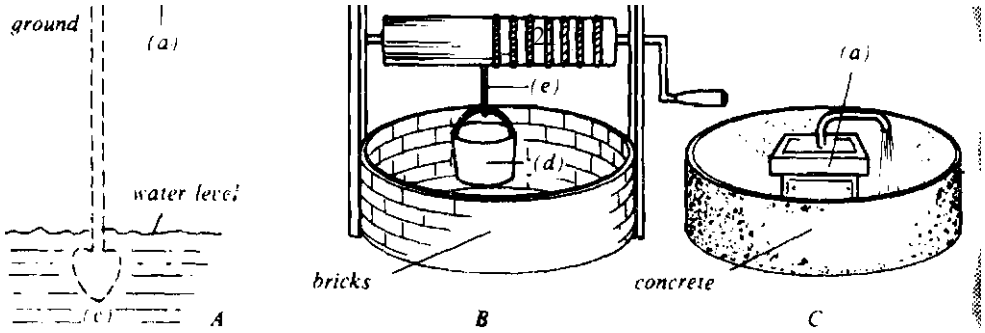


WELLS

Look at the three types of wells in FIG. 1. Well A is the simplest of the three. It consists of a *pipe,* a *point* and a *pump.* You hammer the pipe into the ground until the point is below *water level.* The pipe is usually less than 10 mm wide and less than 20 m long. The width of the *hole* is the same as that of the pipe. Well B is the cheapest because it has no pump. It uses a *bucket* and *rope.* The hole is usually more than 1 m wide. Well B is usually about the same depth as Well A.

The best (and most expensive) well is C. The hole is usually less than 0.3 m wide, and the pipe has the same width as the one in Well A. The depth is usually more than 20 m. Well C uses a pump.

FIG 1



What are the objects in Fig. 1 called?

How to weld (Electric Arc)

1 **Hold the *screen* in front of your eyes.**
2 **Hold the *electrode* at 80° to the surface of the plates.**
3 **Make sure that the *tip* of the electrode is less than 3 mm from the *plate.***
4 **Strike an *arc* between the tip and the plate.**
5 **Move the electrode steadily backwards in a straight line (see FIG.).**

FIG. I

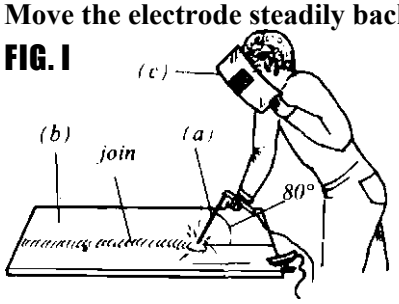
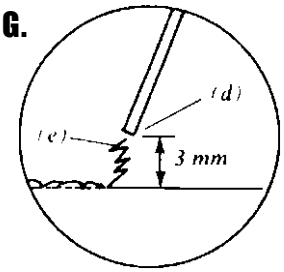


FIG. 2



What do the letters in FIG. 1 and FIG. 2 refer to?

How to mix concrete by hand

Concrete is made from cement, aggregate and a small amount of water. The aggregate is both coarse (e.g. stones and gravel) and fine (e.g. sand). The coarse aggregate, fine aggregate and cement are usually in the ratio 4:2:1.

1 Put two shovelfuls of sand into a *wheel-| barrow*

2 Ȧdd a shovelful of cement.

3 Mix these thoroughly with a *shovel.*

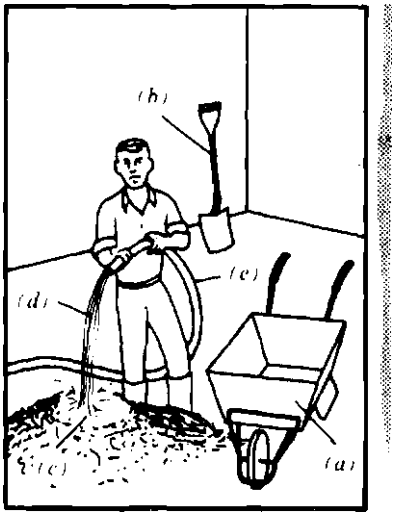
4 Add four shovelfuls of gravel. Mix thoroughly.

5 Make a *hollow* in the middle. Add a little

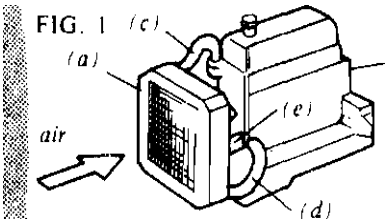
water with a *hose.* CAUTION: Do not add all of the water—only a little.

6 Mix the materials thoroughly.

7 Add more water and mix again until the concrete is the correct thickness.



A car cooling system



Most car engines are cooled by water. The water flows around the *engine* and then passes through the *radiator.* It then passes through the water pump and around the engine again.

Here are the stages:
1 Water flows around the engine. The engine is cooled and the water is heated.
2 The hot water enters the radiator through the top hose.
3 It flows down through the radiator. Here it is cooled by air.
4 The cool water leaves the radiator through the bottom hose. The water is pumped around the engine again.

FIG 2

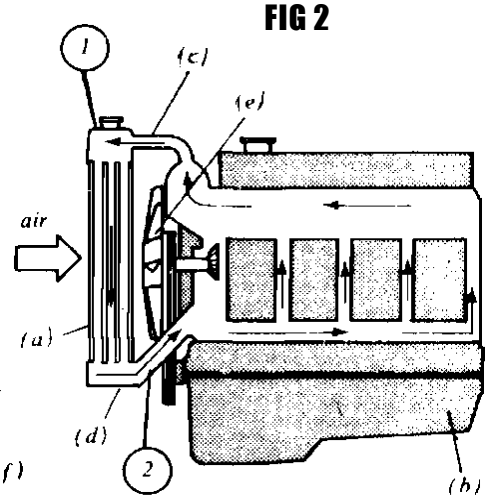
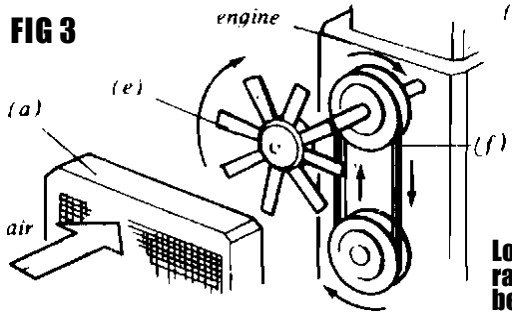
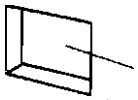


FIG 3



Look at FIG. 3. Air is pulled through the radiator by a fan. This fan is turned by a belt, which is driven by the engine.

How to install a socket



1 The *recess* and the *channel* (see FIG. 1) are marked out with a pencil.

2 The *plaster* is cut away using a hammer and a *chisel.*

3 The *brickwork* is removed by drilling holes in it and then cutting it away with the hammer and chisel.

4 The *box* is inserted in the recess and screwed into place.

5 The *cable* is placed in the channel.

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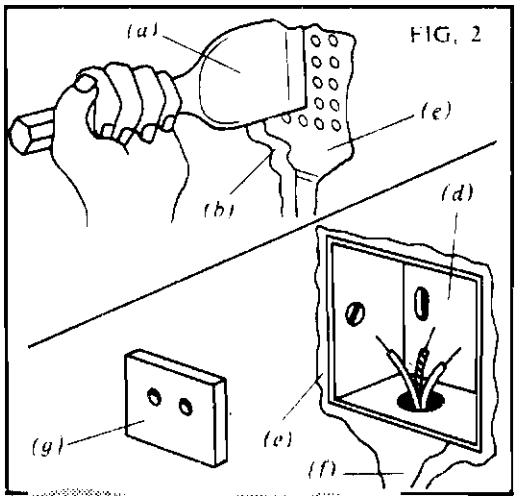


FIG. 2

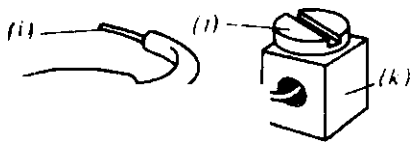
PIG I

6 **It is then pulled through the hole in the box.**

7 **The cable channel is covered. This is done by filling it with plaster, which is then painted or papered.**

8 **The** *socket* **is connected to the cable by inserting each** *wire* **in the** *terminal* **and tightening the** *screw* **(see FIG. 3).**

9 **The socket is screwed to the box.**



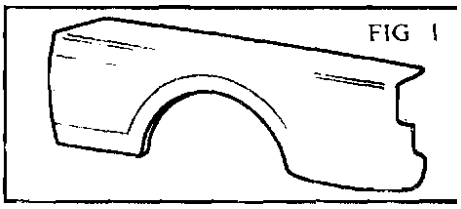
1 What are the objects in the diagrams called?

Example: (a) This is called a chisel, (b) This is called plaster.

Making a car panel

4(A) Reading comprehension

FABRICATION



**This panel (FIG. 1) fits onto- the front right-hand side of a car. It is made by three methods. **

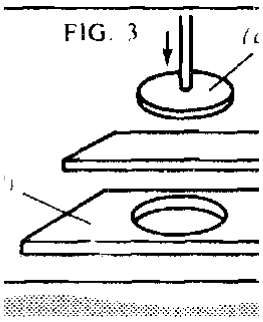
4(A) Reading comprehension

First, *sheet steel* is made. This is done by pushing a piece of steel between two *rollers* (see FIG. 2), which squeeze the metal and make it longer and thinner. This method is called ROLLING. Not all metals can be rolled. For example, iron cannot be rolled because it is too brittle. But steel can be rolled because it is tough and malleable enough.

Next, the steel is cut into a flat shape (see FIG. 3). **This is done by placing the** i **sheet onto a *die,* and then cutting a hole in it with a *punch.* The method is called \ PUNCHING. The steel can be cut easily because it is now very thin.**

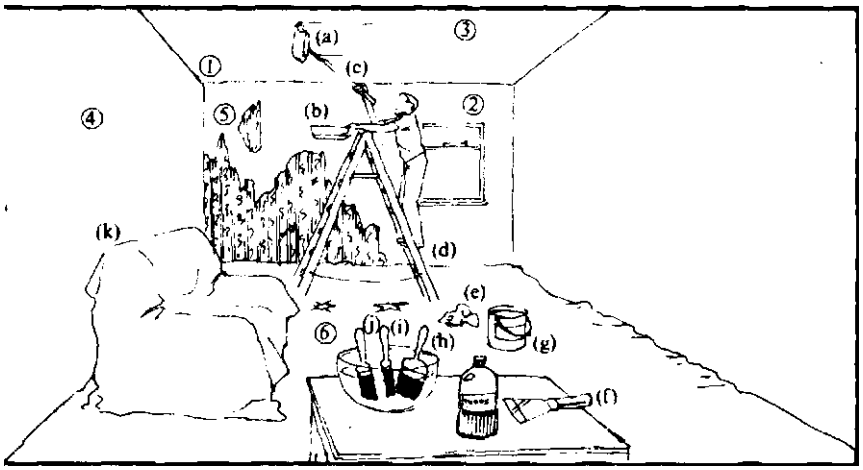
Finally, the sheet steel is bent and pressed into a rounded shape (like in FIG. I). This is done by putting the sheet onto a die and then bending the sheet around the die with a *press* (see FIG. 4). This method is called PRESSING. It is not] difficult to press sheet steel because it is thin and malleable. ,

4(A



1 What are the objects in the diagrams called?

PAINTING EQUIPMENT



First, you need paint brushes. There are three main types: broad, narrow and angled. Use the *broad brush* for broad flat areas such as walls. Use the *narrow* one for corners. And use the *angled* one for window frames and difficult angles.

Next you need a *roller* for painting flat surfaces smoothly. Use a long *extension* on the handle for reaching high places, such as ceilings.You will also need a tray for holding the paint and the roller.
Next, you need a paint *pot* for holding the paint and the brush. Make sure that the mouth of the pot is wide enough for the widest brush, and that it is small enough to carry.

Next, you need a *stepladder* for climbing up to the job, a *scraper* for scraping off old paint and paper from the walls, *cloths* for covering the furniture, and *rags* for cleaning paint off the floor.

Finally, you need *turpentine* for cleaning the paint brushes and rollers.

1 What are the objects in the picture called? (Note: look at the letters (a), (b), (c), etc.)

Welding-Safety Rules

CAUTION: Welding can be dangerous. Any of these accidents might happen to you: (a) you could be blinded by sparks; (b) you could get an electric shock; (c) your face, body, arms, legs or feet could be burnt; (d) there could be a fire in the workshop.

PROTECTIVE CLOTHING

1 A mask or helmet must be worn in electric arc welding. (In gas welding, goggles can be used.)

FIG. 1

2 Clothes must be kept dry and clean.

3 Thick, heavy boots must be worn.
These must be made of some insulating material such as rubber.

4 Gloves, and apron and a cap must be worn.

5 Overalls must have long sleeves and no pockets or cuffs.

WORKSHOP

6 The floor must be made of concrete.

7 There must be a metal container on the floor for the sparks.

6 What are the objects in Fig. 1 called?

Use* of ladders - Safely Rules

CAUTION: A ladder can be a very dangerous tool. Any of these accidents could happen to YOU. (a) The ladder could slip on an oily floor and you could fall off; lb) the top could fall backwards; (c) a door could open and push the ladder backwards or to the side; (d) a metal ladder could touch an electric wire and give you an electric shock; (e) a ladder could fall off boxes or drums.

FOLLOW THESE RULES .

1 Metal ladders, or wooden ones with metal wires must never be used for electrical work.

2 Wet or oily floors must be cleaned before a ladder is lifted.

3 When the ladder is near a door,

3.1 the door must be locked *or* closed,

3.2 the door must be blocked open, *or*

3.3 there must be a man at the bottom.

4 The foot of the ladder must be fixed.

5 The ladder must NEVER be placed on drums, boxes, etc.

6 The top must be fixed. It should be tied to poles, etc, using hooks, chains, ropes or a strap.

Finding a fault in a car

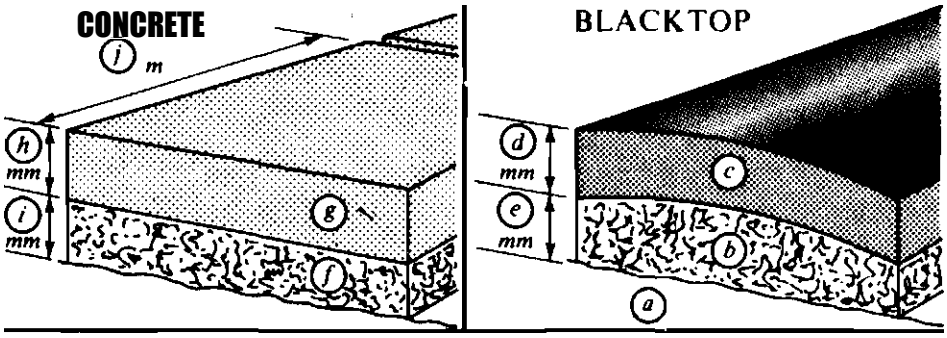
If your car doesn't start in the morning, you should check three things first: the battery, the fuel level and the spark plugs. It is easy to repair these faults. If the battery is flat, you should *recharge it.* **If this doesn't work, you should replace it If the** *petrol tank* **is empty, fill it up. If the spark plugs are dirty, clean them, and if the** *gap* **in a** *spark plug* **is too narrow or too wide, adjust it to the correct width.**

If your car still doesn't start, the *petrol pump* **may be broken, or the** *fuel pipe* **may be blocked. If the pump is broken, it must be repaired or replaced. If the fuel pipe is blocked, take it off and unblock it.**

If **there is a loud CLICK! when you turn the key, the** *starter motor* **may be jammed. If it is, you can try to release it by pushing the car forwards and backwards (in** 2nd **gear). If the car still doesn't start, the starter motor should be repaired or replaced.**

Building a road

First, the *earth* **is removed using** *bulldozers* **and** *diggers.*



Then the *ground* **is levelled. This is done by cutting the top layer until it is flat and level.**

Next a layer of *gravel* **(approximately 300 mm thick) is spread over the ground.**

Finally the top layer is added. There are two main types: blacktop and concrete. If it is a blacktop road, layers of hot *tarmacadam* **are poured onto the gravel and pressed down using** *rollers.* **The total layer of blacktop materials is approximately 300 mm thick. If it is a concrete road, the** *concrete* **is laid on top of the gravel. The concrete slabs are usually approximately 250 mm thick and 4.5 m long.**

Accidents in the machine shop

1 A piece of metal from the grinding machine went into Mr A's right eye and cut it. Cause: He did not use the guard on the machine.
2 Mr B cut his hand on the drilling machine. Cause: He removed a piece of metal from the machine with his hand.
3 Mr C cut his finger with a saw. Cause: He held the workpiece on the bench with his hand.
4 Mr D slipped on the floor, fell against a machine and cut his head. Cause: There was some oil on the floor. Mr D walked too quickly and did not see the oil.
5 **Mr E climbed a metal ladder and got an electric shock. Cause: He placed the ladder against some electric wires.**
6 There was a fire in the storeroom. Cause: an old switch that wasn't screwed tightly to the wall caught fire when Mr F used it.
7 Mr G got an electric shock. Cause: He poured water onto the fire.

Who broke the following safety rules?

Example: **(a) Mr C broke this rule.**

(a) ALWAYS HOLD WORK IN A VICE
(b) ALWAYS WEAR GOGGLES AND USE THE/GUARD WHEN OPERATING GRINDER
(c) ALWAYS CLEAN MACHINES WITH A BRUSH - NEVER WITH YOUR HAND
(d) NEVER USE SWITCHES THAT ARE DAMAGED
(e) LADDERS MADE OF METAL MUST NEVER BE USED NEAR ELECTRICAL WIRES
(f) FIRES WHICH ARE CAUSED BY ELECTRICAL FAULTS MUST NEVER BE EXTINGUISHED WITH WATER
(e) ALWAYS KEEP WORKSHOP FLOORS CLEAN AND FREE FROM OIL

Accident Report

At about 10.40 yesterday morning. Bill and I carried the long 8 m ladder to the building site. We placed it near the scaffolding. We lifted it in the correct way:

— First, we placed the ladder on the ground at 90° to the wad. The foot was 2 m from the wall.

— Bill held down the foot of the ladder.

— I lifted the top above my head.

— I then walked slowly forward.

lifting the ladder slowly upwards. Suddenly, when the ladder was vertical in the air, a strong wind blew. The ladder moved to the right towards the scaffolding. It hit the scaffolding and then fell downwards and towards Jim (who was on a platform at the bottom of the scaffolding.) The ladder hit him and he fell against the scaffolding and cut his head.

FIG. I

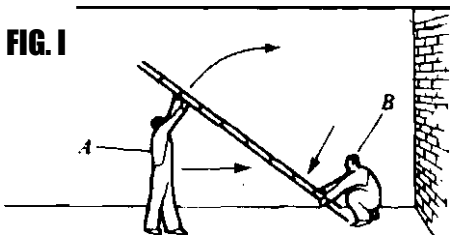


FIG i

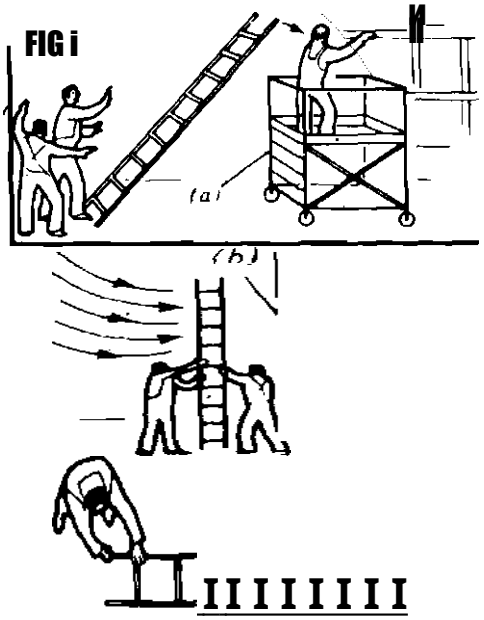


FIG 2