AN ROINN OIDEACHAIS M.118

LEAVING CERTIFICATE EXAMINATION, 1981

TECHNICAL DRAWING - COMMON LEVEL - PAPER II

MONDAY, 22 JUNE, 9.30 - 12.00

N.B. ANSWER EITHER SECTION A OR SECTION B

SECTION A (ENGINEERING)

ALL DIMENSIONS ARE IN MILLIMETRES

INSTRUCTIONS

(a) All questions to be attempted.
(b) Drawings and sketches should be in pencil unless otherwise stated.
(c) Where dimensions are omitted they may be estimated.
(d) Credit will be given for neat orderly presentation of work.
(e) Candidates should work on one side of the paper only.
(f) The Examination Number should be written on each drawing sheet used.

1. Details of a pulley/shaft assembly are given in Fig. 1, with the parts list tabulated below:-

INDEX	PART	REQUIRED
1	Casting	1
2	Shaft	1
3	Pulley	1
4	Bush	2
5	Collar	1
6	Washer	1
7	Hex Nut	1
8	Pin Ø4 x 60	1

Make the following drawings of the assembled parts in first or third angle projection:-

(i) A sectional elevation as indicated by plane X-X.
(ii) A half plan view projected from (i).

The solution should include the title PULLEY/SHAFT ASSEMBLY, the ISO symbol for the type of projection used and four leading dimensions. (110 marks)

2. An exploded view of a machine support is shown in Fig. 2.
Sketch freehand, on the plain drawing paper supplied, the following views of the assembled parts.

(i) A sectional end elevation, on S-S, looking in the direction of arrow X.
(ii) An elevation, looking in the direction of arrow Y.

The sketch should be in good proportion to the dimension given and should include a projection symbol and the title, MACHINE SUPPORT. (40 marks)

3A. Two views of a casting are shown in Fig. 3. Using the tracing paper supplied, trace in ink, directly from Fig. 3, a sectional elevation of the casting. The section should be taken at the cutting planes C-C as viewed in the direction of the arrows.

OR

3B. An assembly drawing of a spiral step clamp is shown in Fig. 4.
Make a full size, fully dimensioned, working drawing of Part A; dimensions should be taken from the scale shown in Fig. 4.
The drawing should be in orthographic projection and should include all necessary information. (50 marks)

SECTION B (BUILDING)

INSTRUCTIONS

(a) Answer four questions.
(b) All questions carry equal marks.
(c) Construction lines must be shown on all solutions.
(d) Write the number of the question distinctly on the answer paper.
(e) First or third angle projection may be used.
(f) All measurements are given in millimetres.

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1. Fig. 1 shows the elevation and plan of a monument. Draw a perspective view of the monument when the station point (spectator) is as shown, the picture plane touching the corner X and the horizon line 2000 above the ground line.

Scale 1 : 20

2. Fig. 2 shows the cross-section of a reinforced concrete stair step. The position of the next step above is also shown. The rise for each step is 150 and the width of tread is 275. The length of the step is 600.
Draw the given cross-section and draw an isometric view of the step.

Scale 1 : 5

3. The elevation and plan of a pier coping are shown in Fig. 3. Find the true shape of surface A and find the dihedral angle between surfaces A and B.

Scale 1 : 5

4. Fig. 4 shows the elevation and plan of the outline of a kiosk. Draw the given views and show the shadows cast when the direction of the light is as shown.

Scale 1 : 50

5. The elevation of a semi-elliptical oblique arch in a stone wall 500 thick is shown in Fig. 5. The arch is angled at 60° to the face of the wall. The joint lines for the stones in the arch are normal to the curve. Draw the elevation, project the plan and find the development of the soffit of the arch.

Scale 1 : 10

6. (a) Fig. 6 shows the outline plan of a roof for a house. The pitches of the roof surfaces are indicated on the drawing. Draw the given plan and develop the surfaces A, B and C.

Scale 1 : 100.

(b) The dihedral angle between two roof surfaces X and Y whose wall plates are at right angles to each other is 120°. If surface X has a pitch of 30° find the pitch of surface Y.

7. The outline of a newel cap and portion of a stair handrail are shown in Fig. 7. The elevation of the mitre between parts A and B of the handrail is a straight line.

(a) Find the true shape of the cross-section of part B of the handrail.

(b) Find the true shape of the cross-section of the newel cap.

Scale 1 : 2

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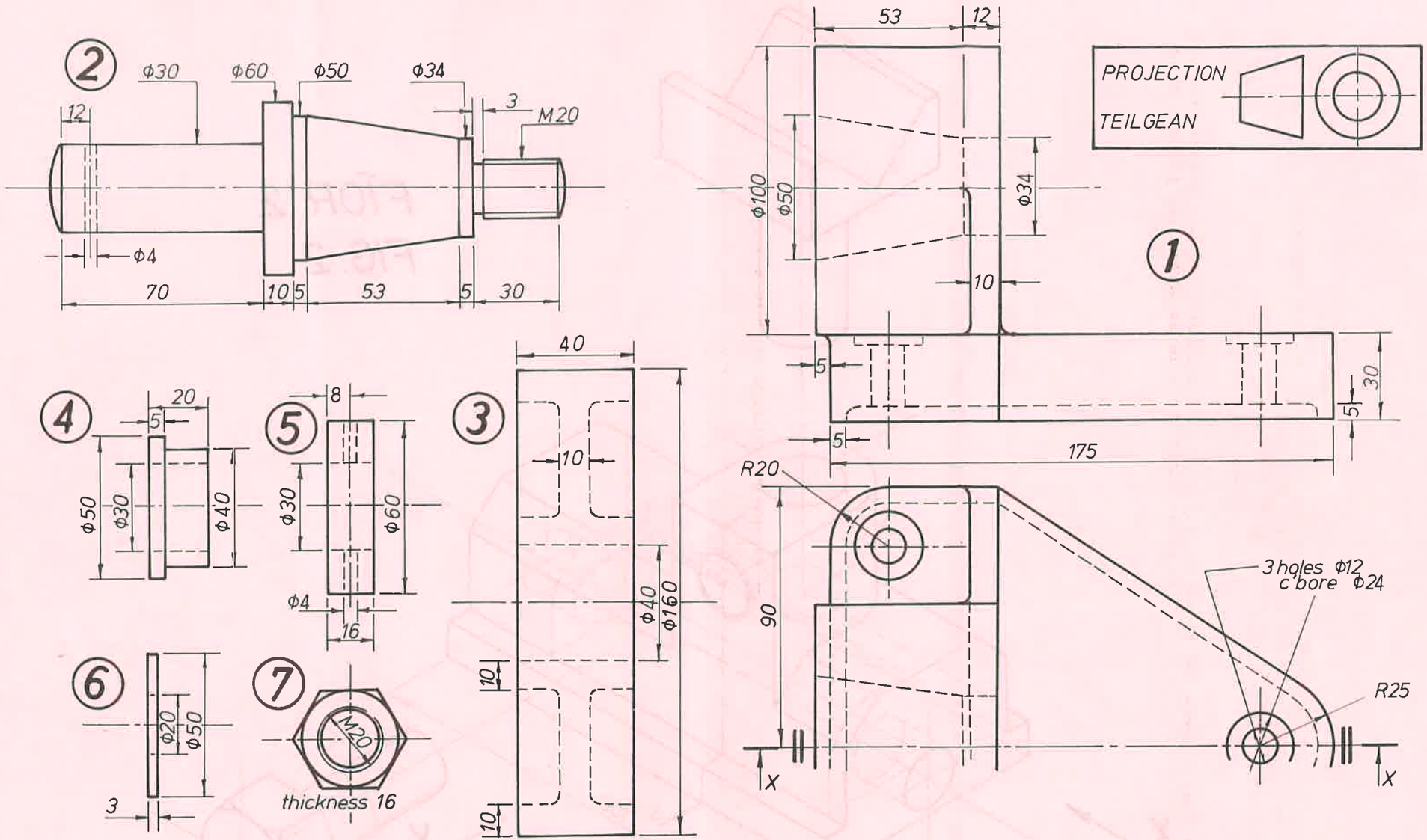
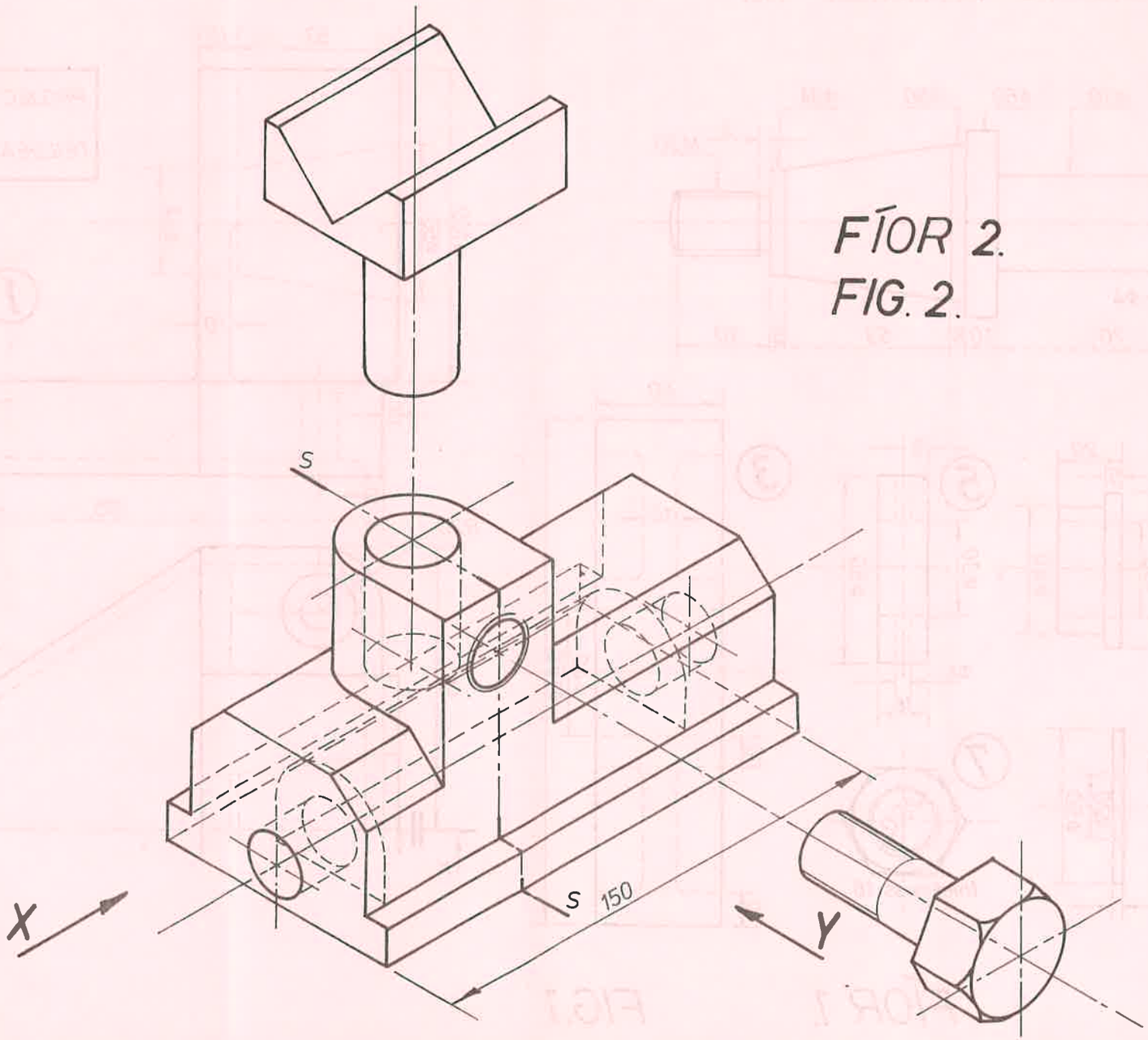


FÍOR 1. FIG.1.

FÍOR 2.
FIG. 2.



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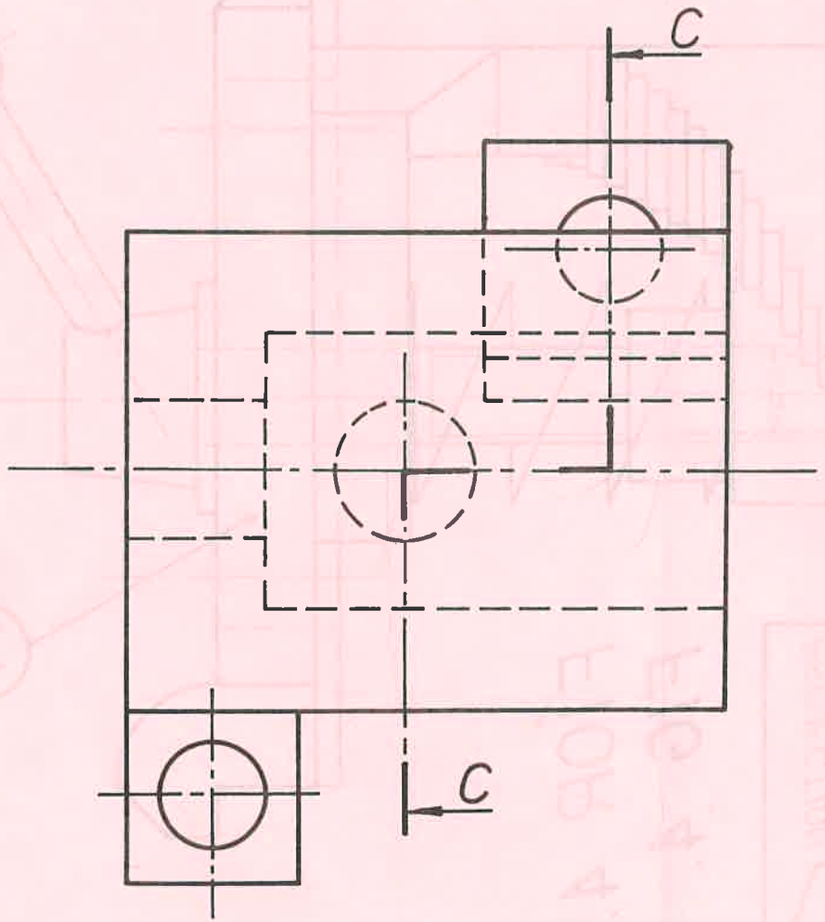

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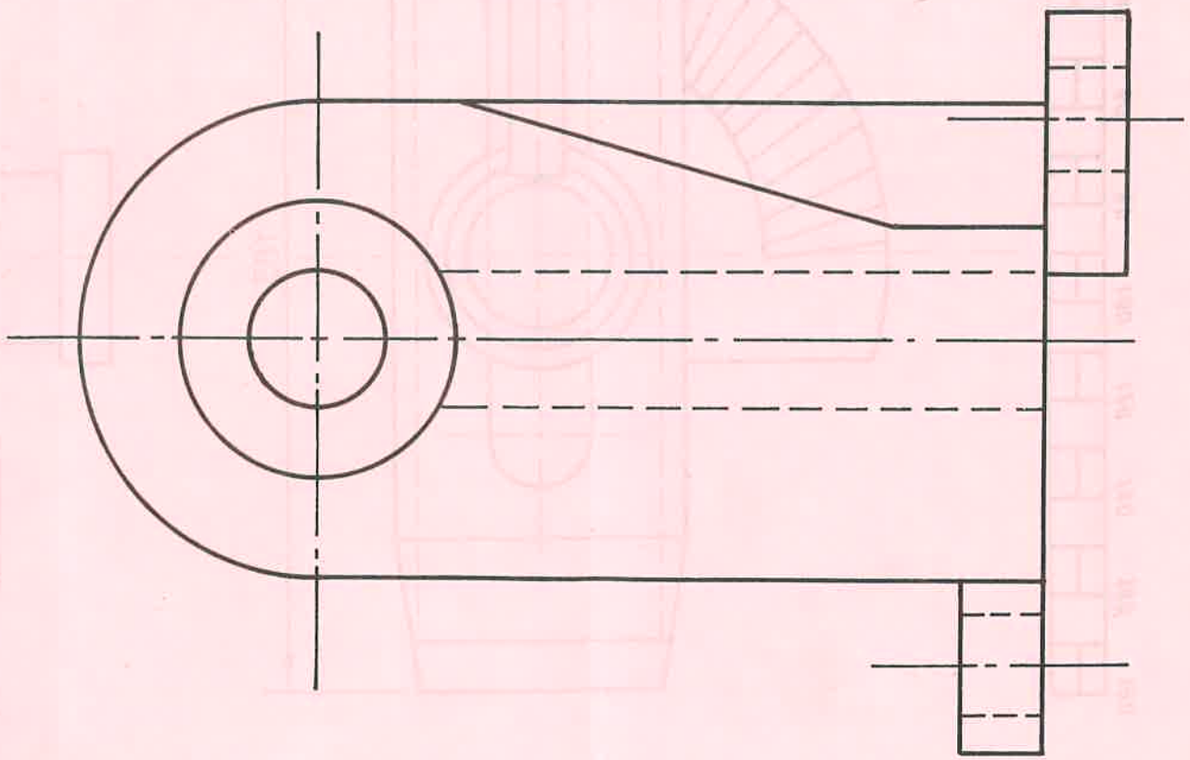

FIG 3.

PROJECTION

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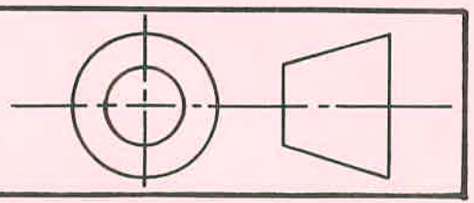
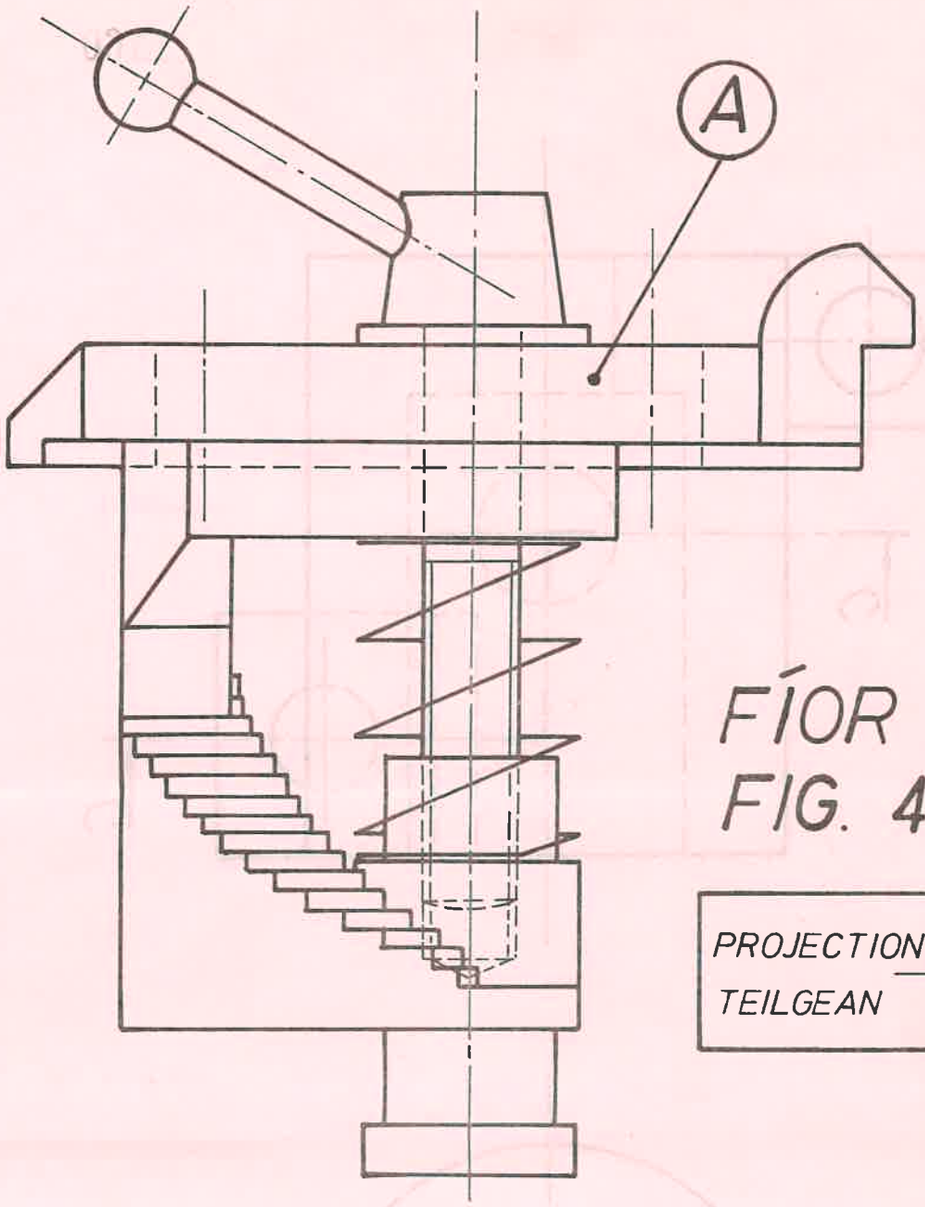
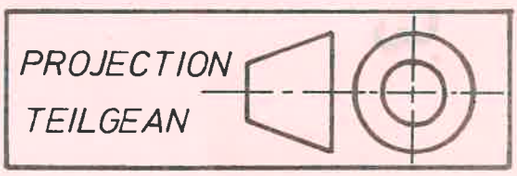
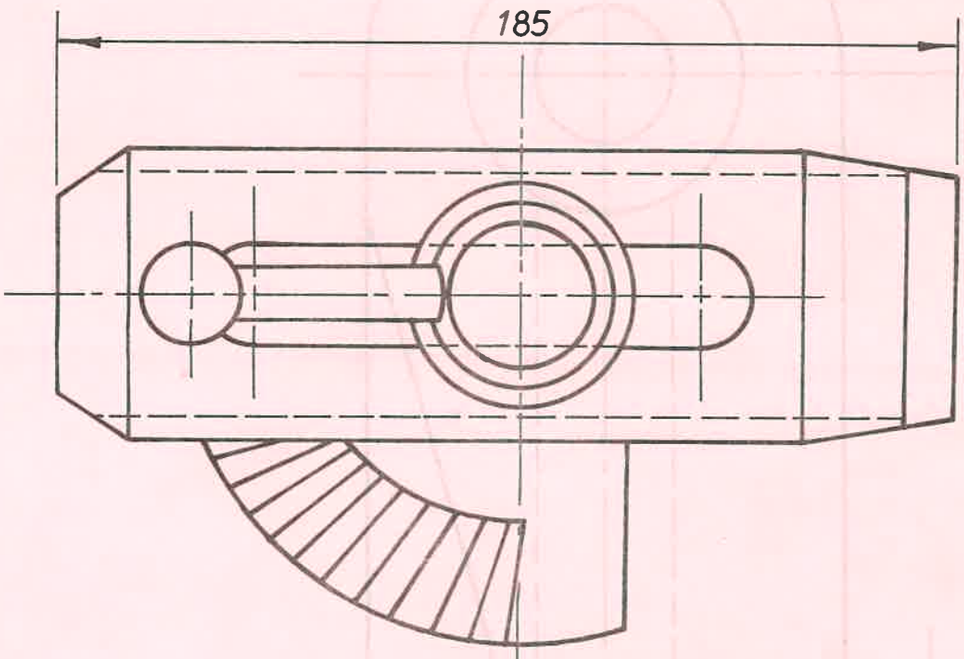
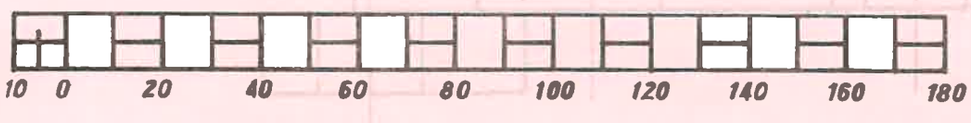




FÍOR 4.
FIG. 4.







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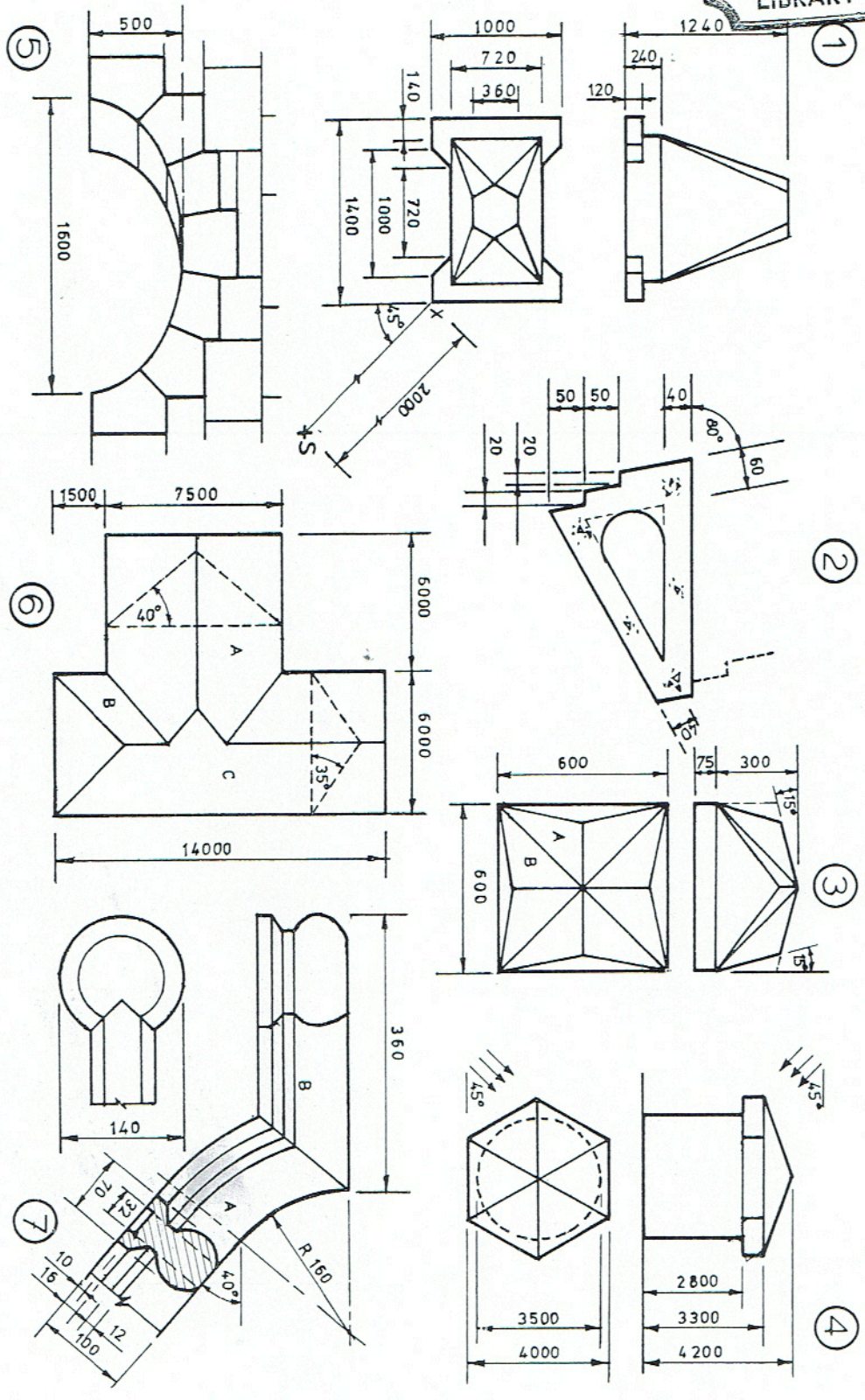
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