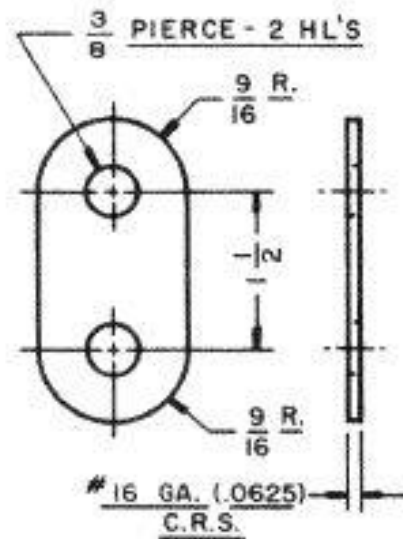


قالب های برش گام به گام طراحی و ساخت

فصل اول: مقدمه ای بر طراحی قالب

ویرایش اول

زمستان ۹۳



CHANGES	NAME OF SCHOOL, OR COMPANY AND ADDRESS	
	NAME LINK	ASS'Y A-5004
	DRAWN BY J.R.P.	CUSTOMER GEM TOOL
	DATE 8-15-61	ORDER PL-78006
	CHECKED BY M.L.	SHEET 1 OF 1
	DATE 8-17-61	A B C D E R
	APPROVED BY G.S.	*
	DATE 8-20-61	
	SCALE - FULL	DRG. NO. D-1000

Figure 1.1 A typical part drawing.

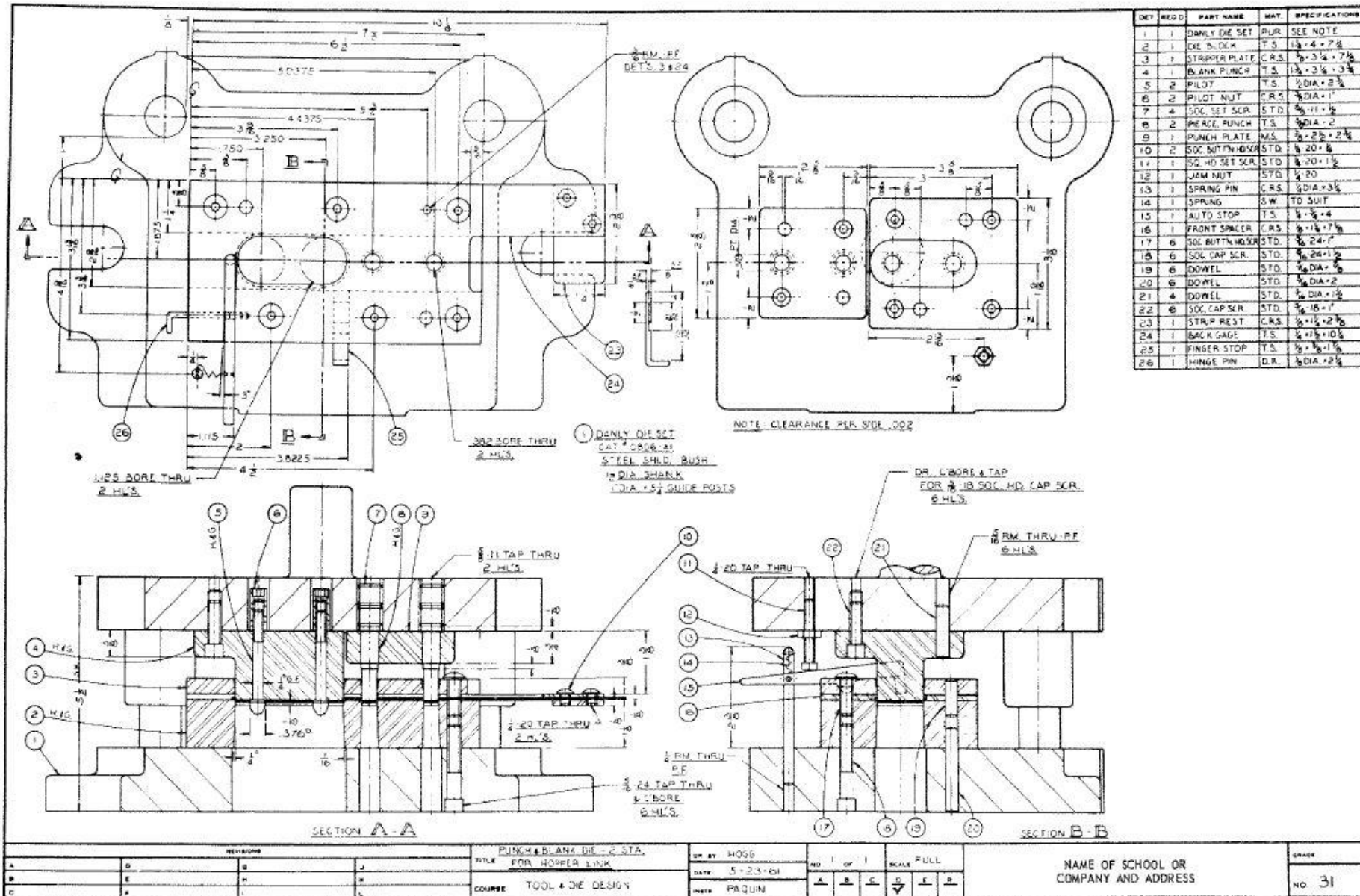


Figure 1.2 A complete die drawing.

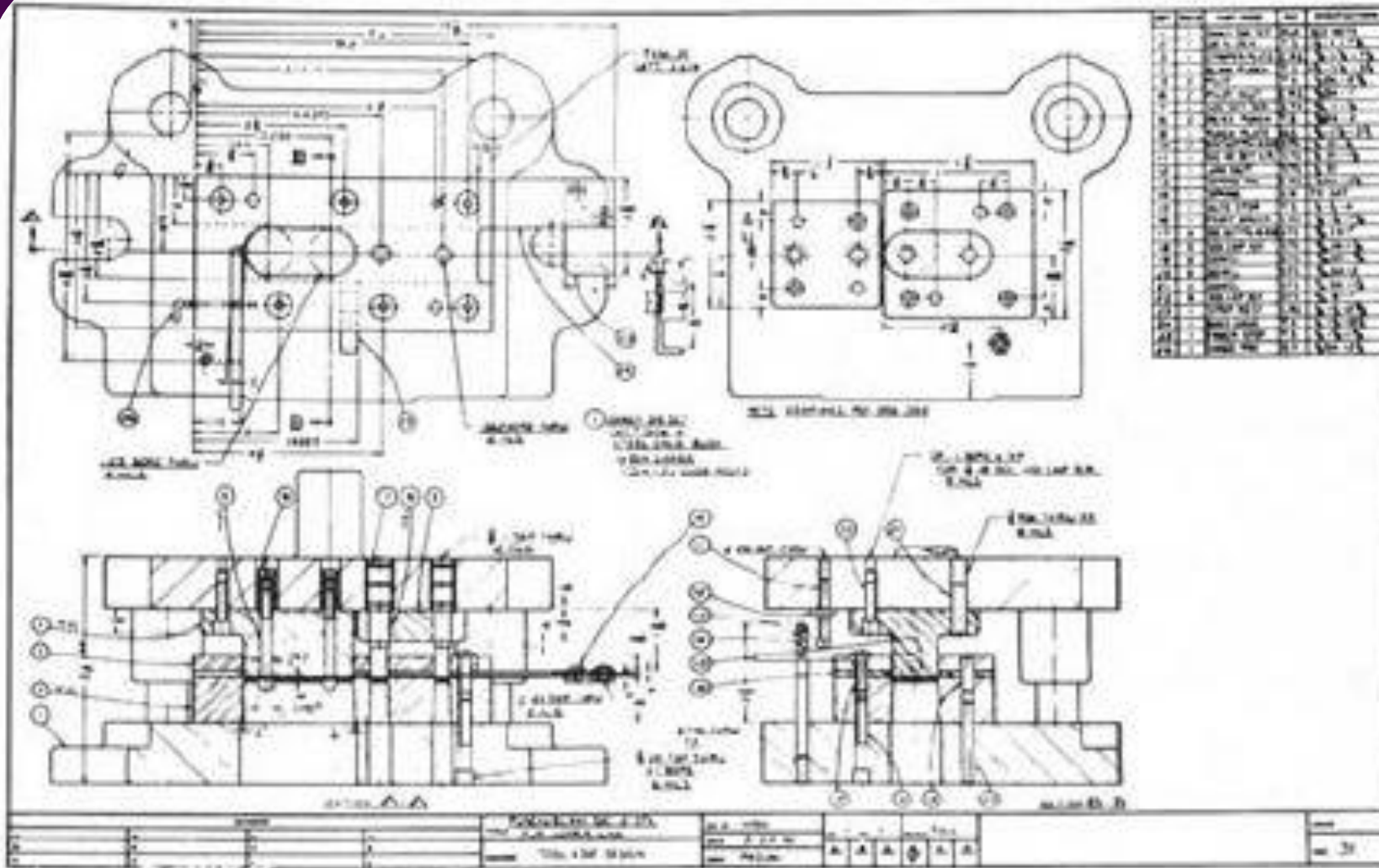


Figure 1.3 A typical blueprint.

27	4	SOC. CAP SCR.	STD.	$\frac{3}{8}$ - 16 x $1\frac{1}{2}$
26	1	FRONT SPACER	C.R.S.	$\frac{1}{8}$ x $\frac{3}{4}$ x $4\frac{5}{8}$
25	4	BUTTON HD. SOC. CAP SCR.	STD.	$\frac{3}{8}$ x 16 x $\frac{7}{8}$
24	2	DOWEL	STD.	$\frac{3}{8}$ DIA. x $1\frac{3}{4}$
23	2	DOWEL	STD.	$\frac{3}{8}$ DIA. x $\frac{7}{8}$
22	1	JAM NUT	STD.	$\frac{1}{4}$ - 20
21	1	SQ. HD. SET SCR.	STD.	$\frac{1}{4}$ - 20 x $1\frac{3}{4}$
20	2	DOWEL	STD.	$\frac{3}{8}$ DIA. x $1\frac{1}{4}$
19	4	SOC. CAP SCR.	STD.	$\frac{3}{8}$ - 16 x $\frac{7}{8}$
18	2	DOWEL	STD.	$\frac{3}{8}$ DIA. x $1\frac{1}{2}$
17	4	SOC. CAP SCR.	STD.	$\frac{3}{8}$ - 16 x 1
16	2	RIVET	C.R.S.	$\frac{1}{8}$ DIA. x $\frac{3}{8}$
15	1	STRIP REST	C.R.S.	$\frac{1}{8}$ x $\frac{3}{4}$ x $1\frac{1}{2}$
14	1	BACK GAGE	T.S.	$\frac{1}{8}$ x $\frac{3}{4}$ x $8\frac{1}{8}$
13	2	PIERCE PUNCH	T.S.	$\frac{3}{4}$ DIA. x $1\frac{7}{8}$
12	1	PUNCH PLATE	M.S.	1 x 2 x $2\frac{1}{8}$
11	1	BLANK-PUNCH	T.S.	$1\frac{1}{2}$ x 2 x $2\frac{1}{2}$
10	1	STRIPPER	C.R.S.	$\frac{3}{8}$ x $2\frac{1}{2}$ x $4\frac{5}{8}$
9	1	DIE BLOCK	T.S.	$1\frac{1}{4}$ x $2\frac{3}{4}$ x $4\frac{5}{8}$
8	1	DOWEL	STD.	$\frac{3}{16}$ x DIA. x $\frac{1}{2}$
7	1	FINGER STOP	T.S.	$\frac{1}{8}$ x $\frac{3}{8}$ x $2\frac{1}{8}$
6	1	SOC. CAP SCR.	STD.	*10-24 x $\frac{1}{4}$
5	1	SPRING	S.W.	TO SUIT
4	1	SPRING PIN	C.R.S.	$\frac{1}{4}$ DIA. x $2\frac{5}{8}$
3	1	HINGE PIN	D.R.	$\frac{1}{8}$ DIA. x $1\frac{7}{8}$
2	1	AUTO STOP	T.S.	$\frac{1}{4}$ x $\frac{1}{2}$ x $2\frac{1}{4}$
1	1	DIE SET	PUR.	SEE NOTE
DET.	REQ'D	PART NAME	MAT.	SPECIFICATIONS
NAME OF SCHOOL OR COMPANY AND ADDRESS				
ASSEMBLY 2 STA. P. & D. FOR - "HOPPER LINK"		TYPE 40-BL		
DRAWN BY J. R. P.		CUSTOMER TELECHRON		
DATE APR. 25, 1961		ORDER 49268		
CHECKED BY C. H. H.		SHEET 1 OF 2		
DATE 4-27-61		A B C D E F		
APPROVED BY R. S.		●		
DATE 4-28-61		DRG. NO. D-1000		
SCALE-FULL				

Figure 1.4 A typical bill of material.

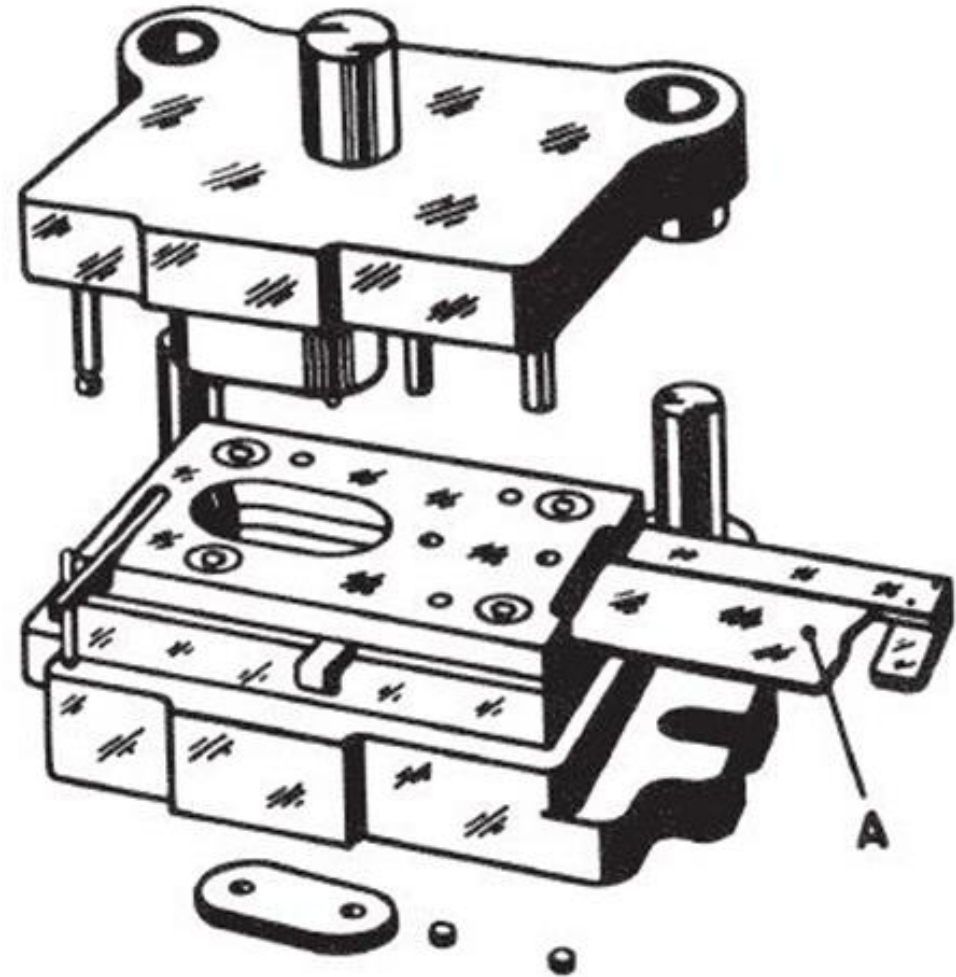


Figure 1.5 A pictorial view of an entire die.

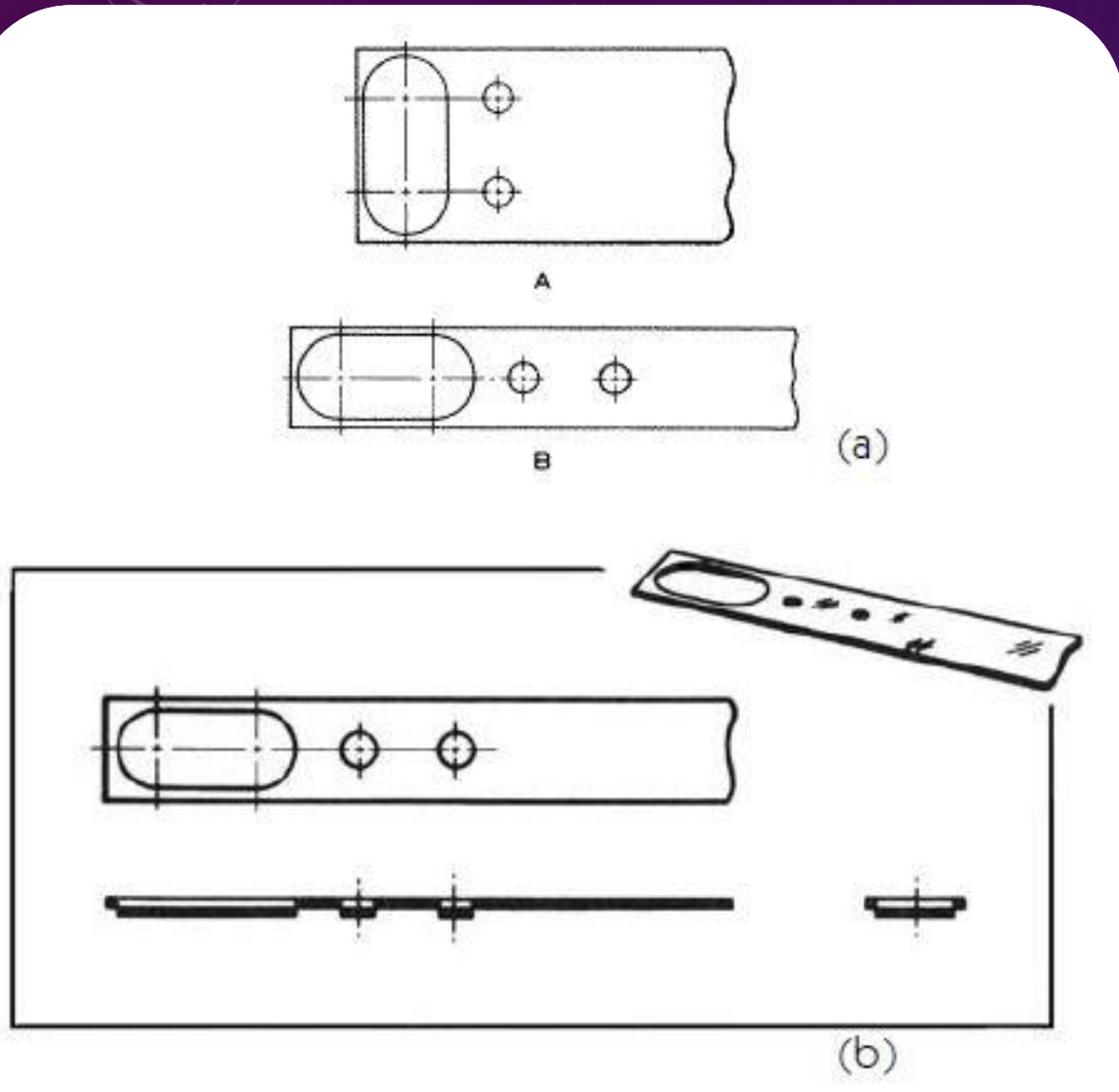
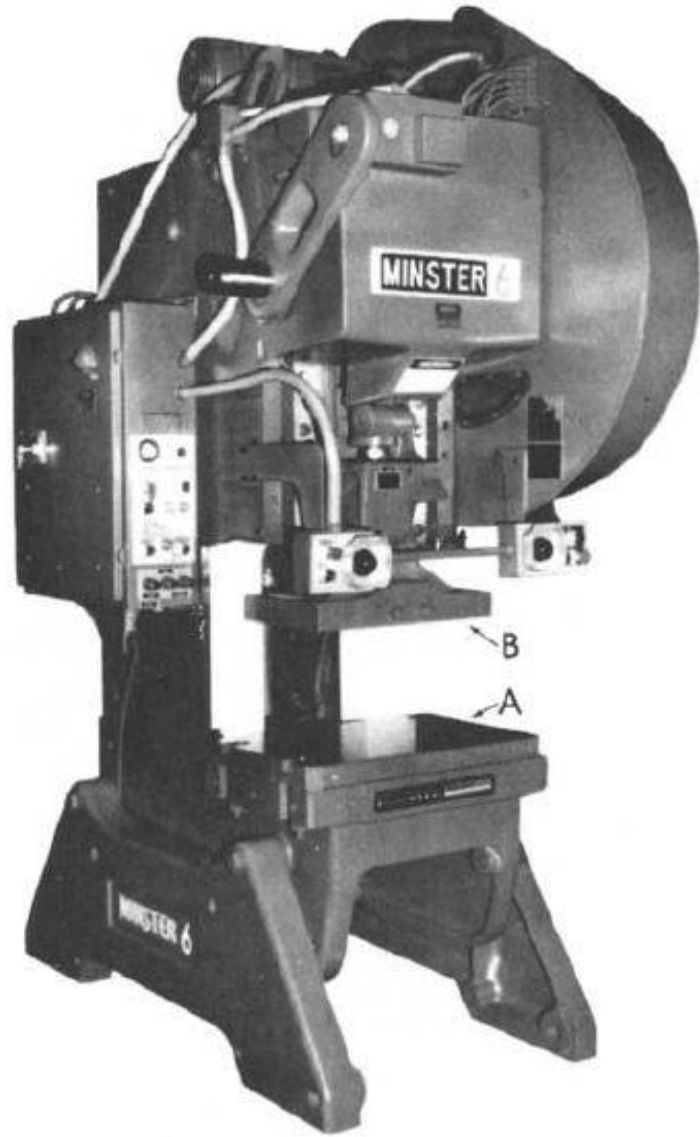


Figure 1.6 Scrap strips: (a) Typical scrap strip layouts and (b) Three views of the scrap strip.

and (b) Three views of the scrap strip.



Minster Machine Co.

Figure 1.7 A typical punch press.

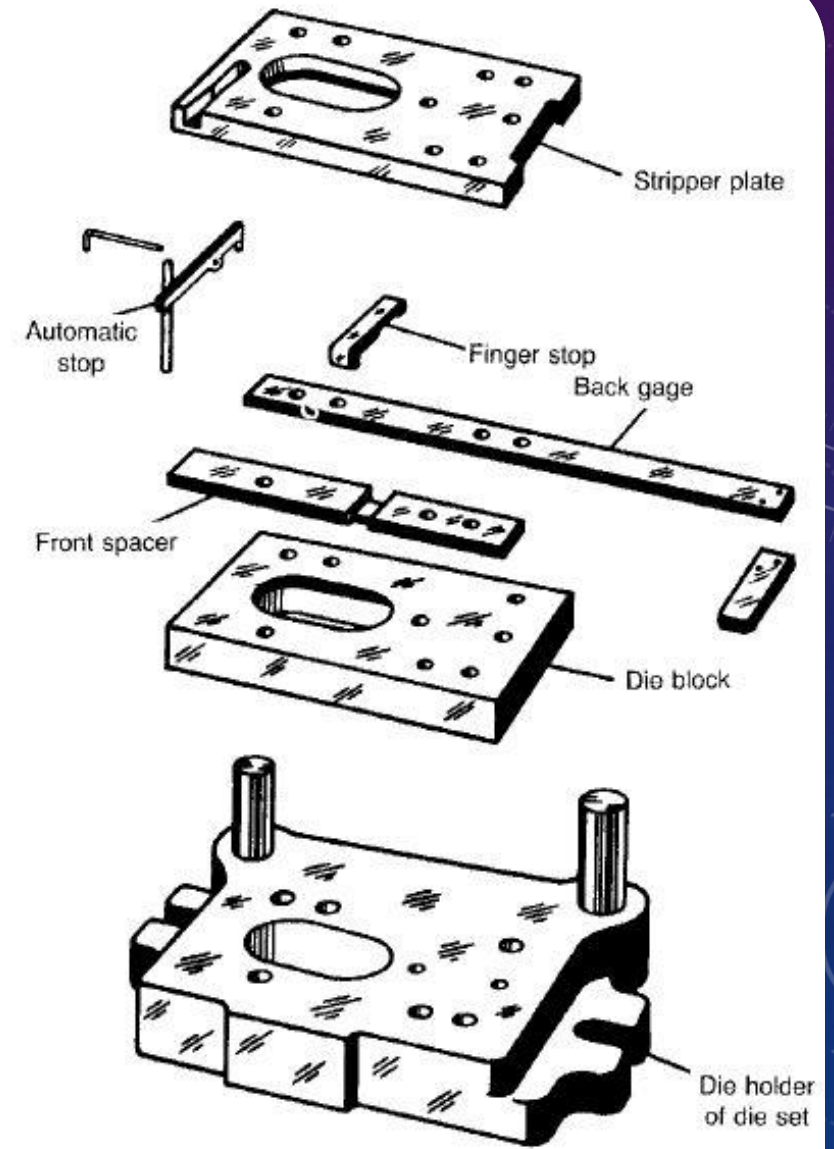
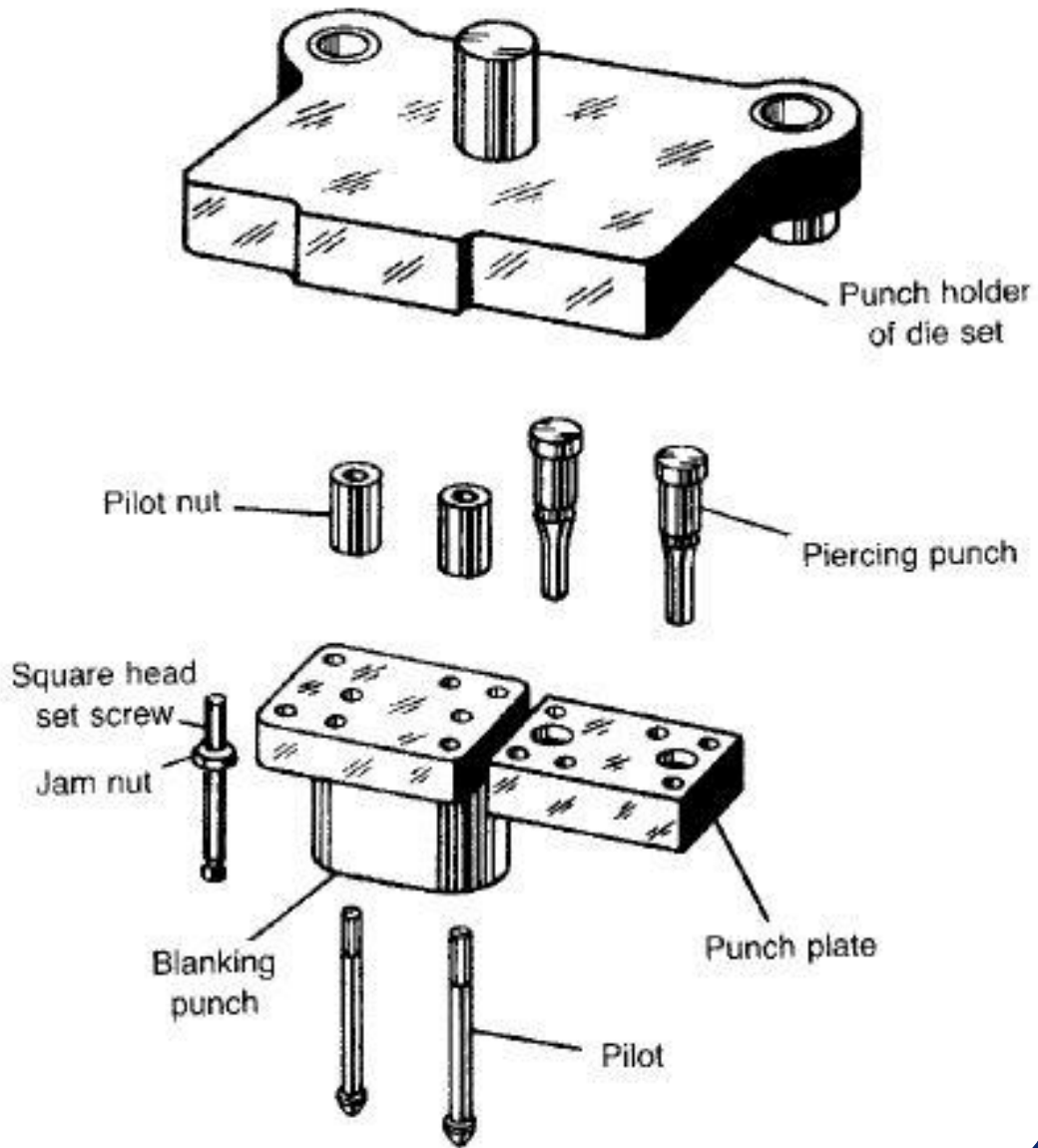
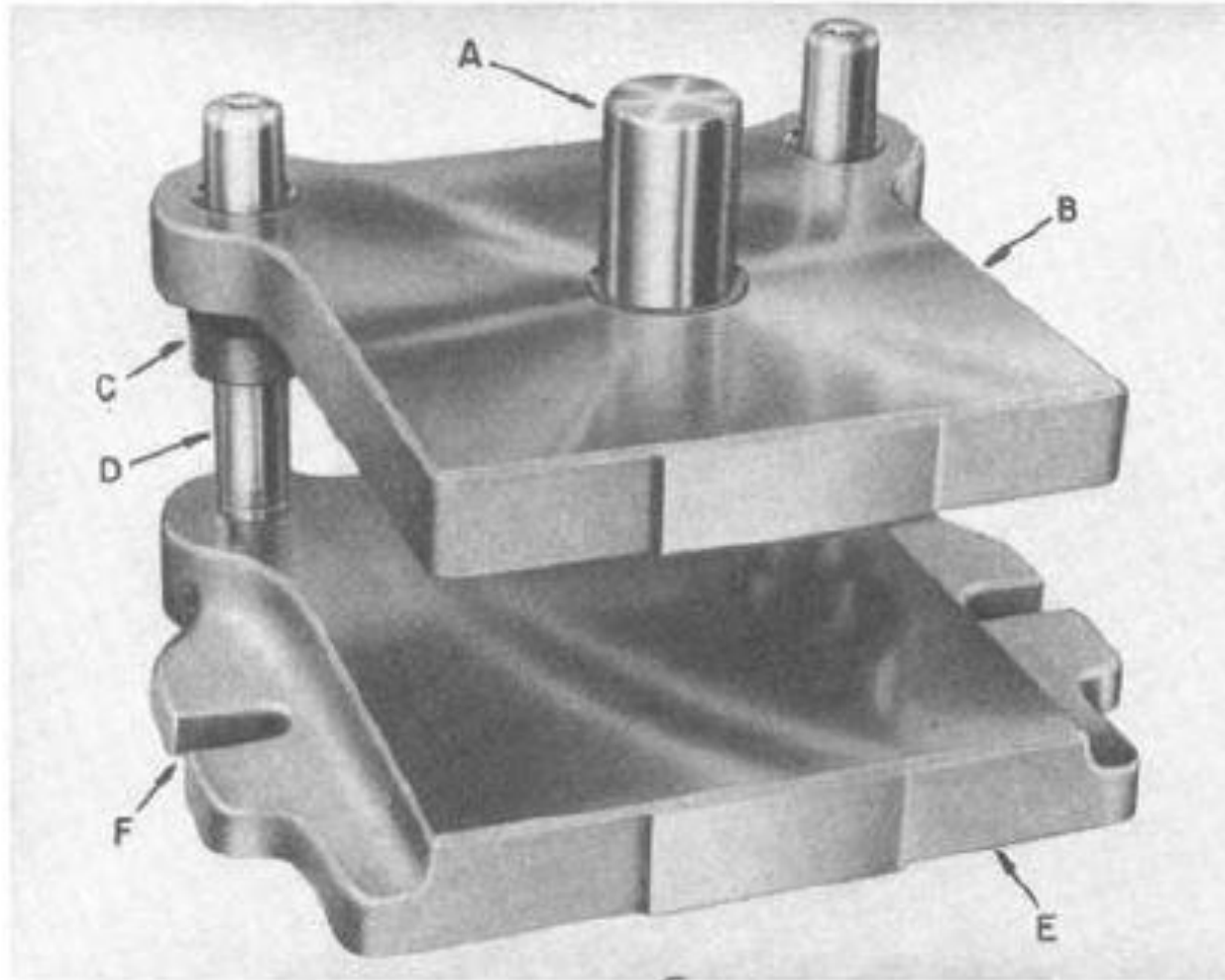


Figure 1.8 An exploded view of the die shown in Figure 1.5.



Danly Machine Specialties, Inc.

Figure 1.9 A typical die set.

Figure 1.9 A typical die set.

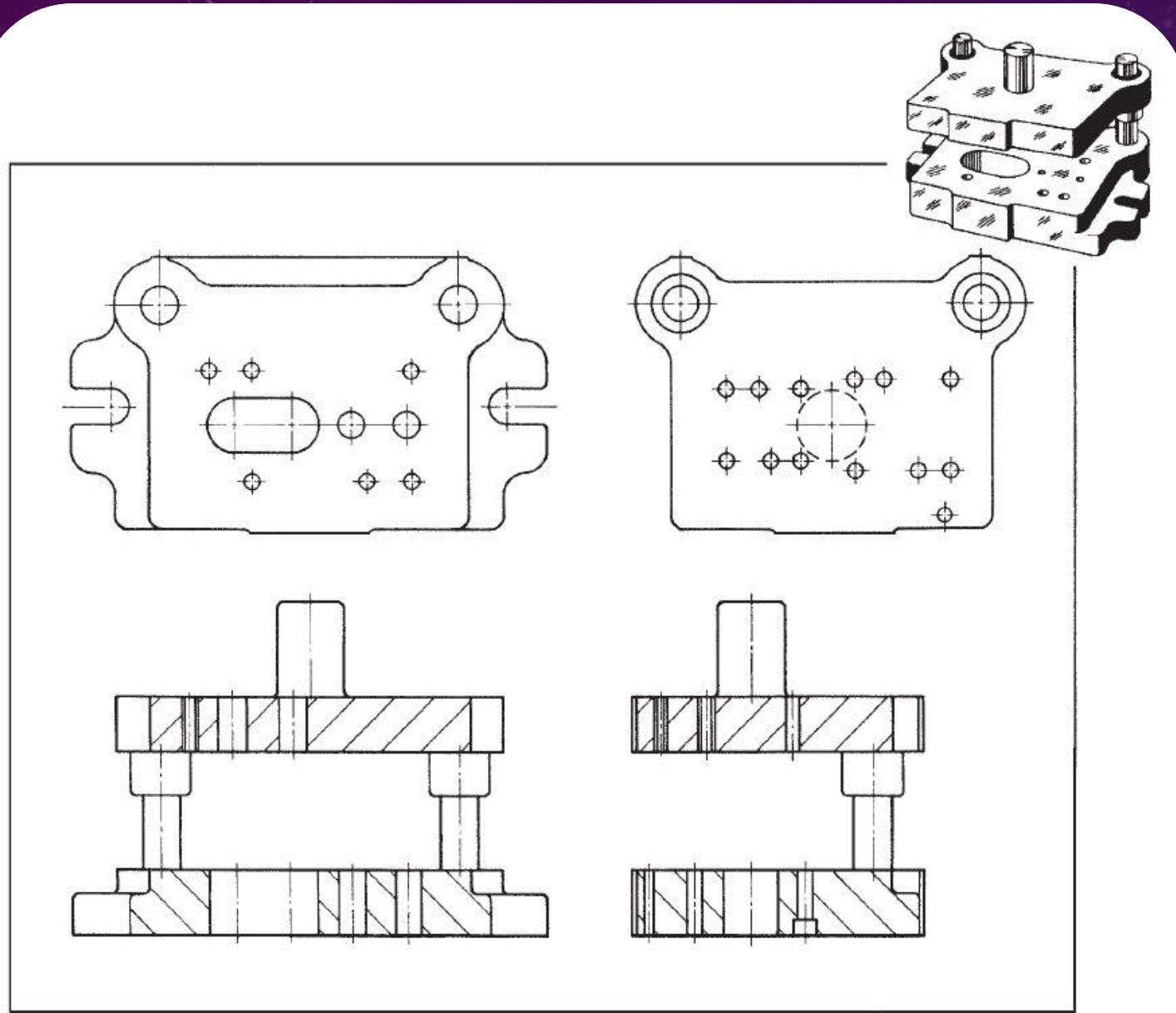


Figure 1.10 A die set.

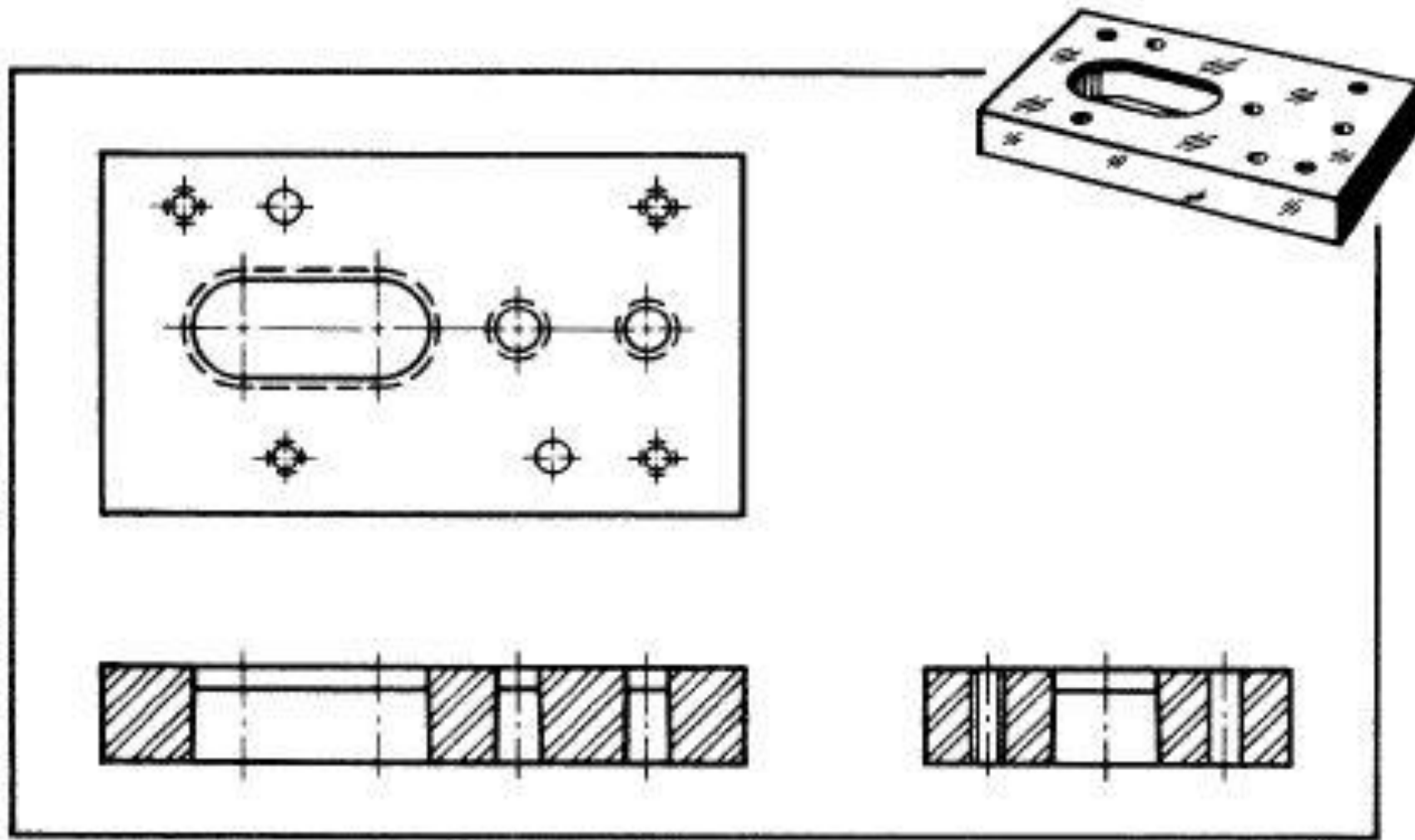


Figure 1.11 The die block.

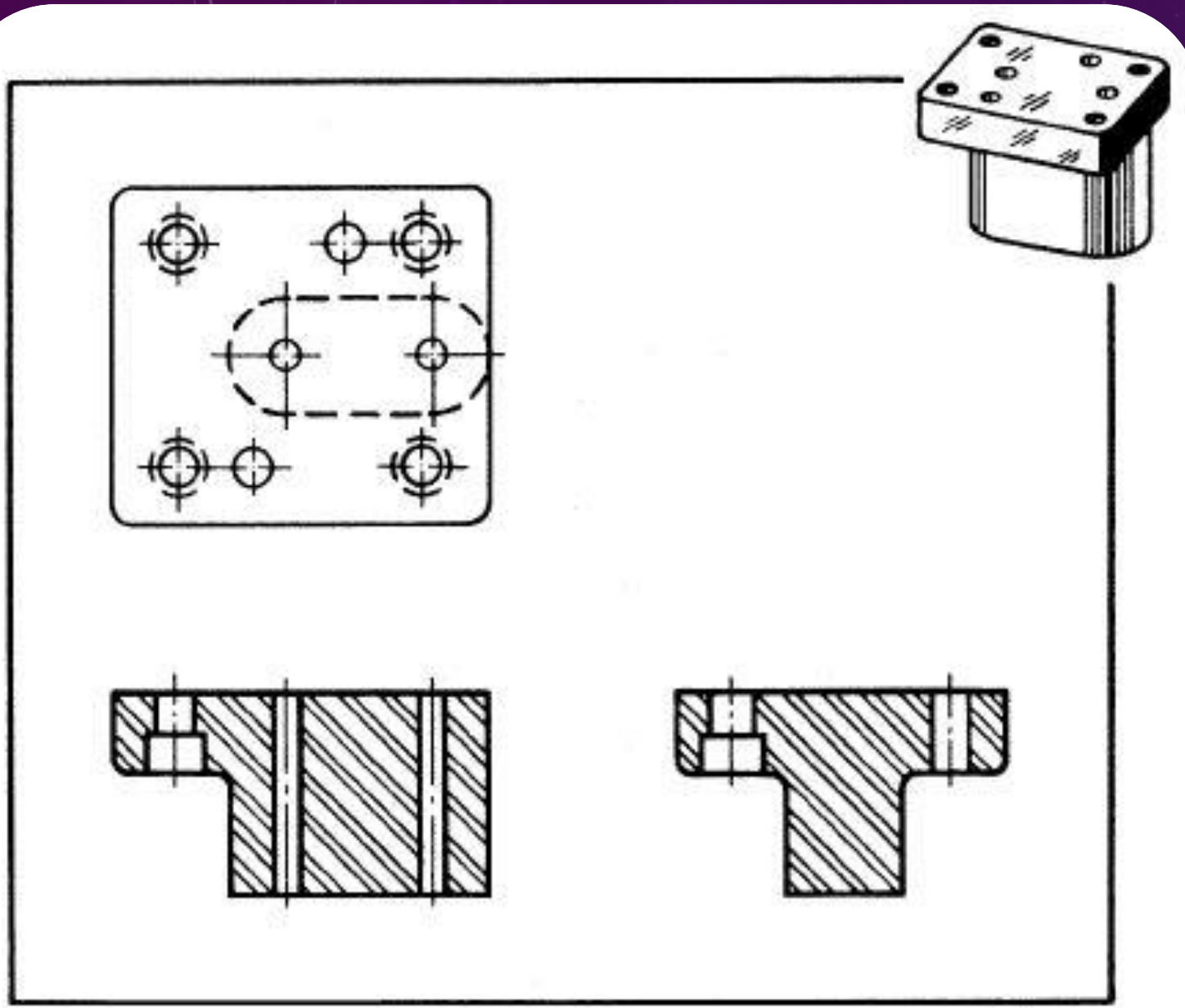


Figure 1.12 The blanking punch.

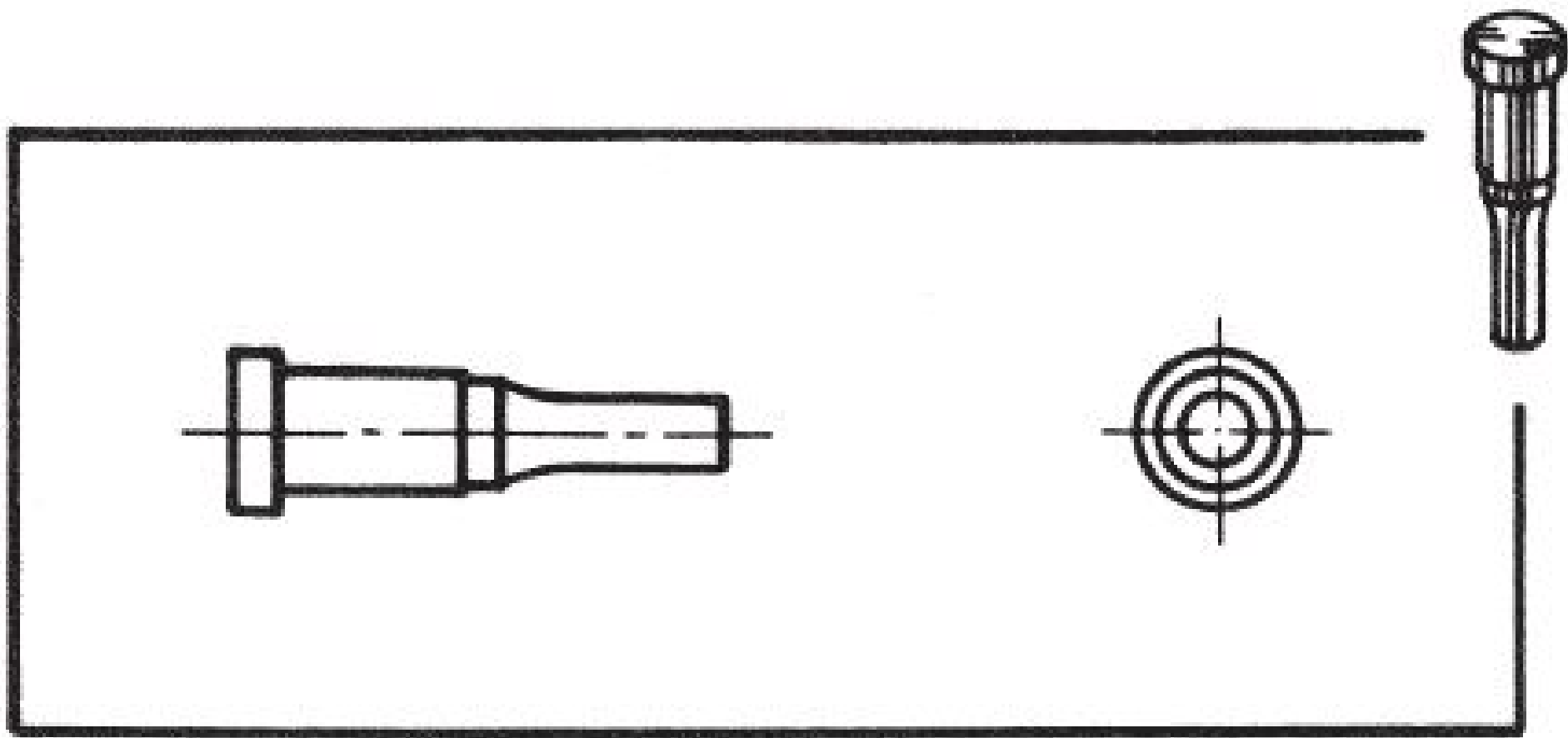


Figure 1.13 A piercing punch.

Figure 1.13 A piercing punch.

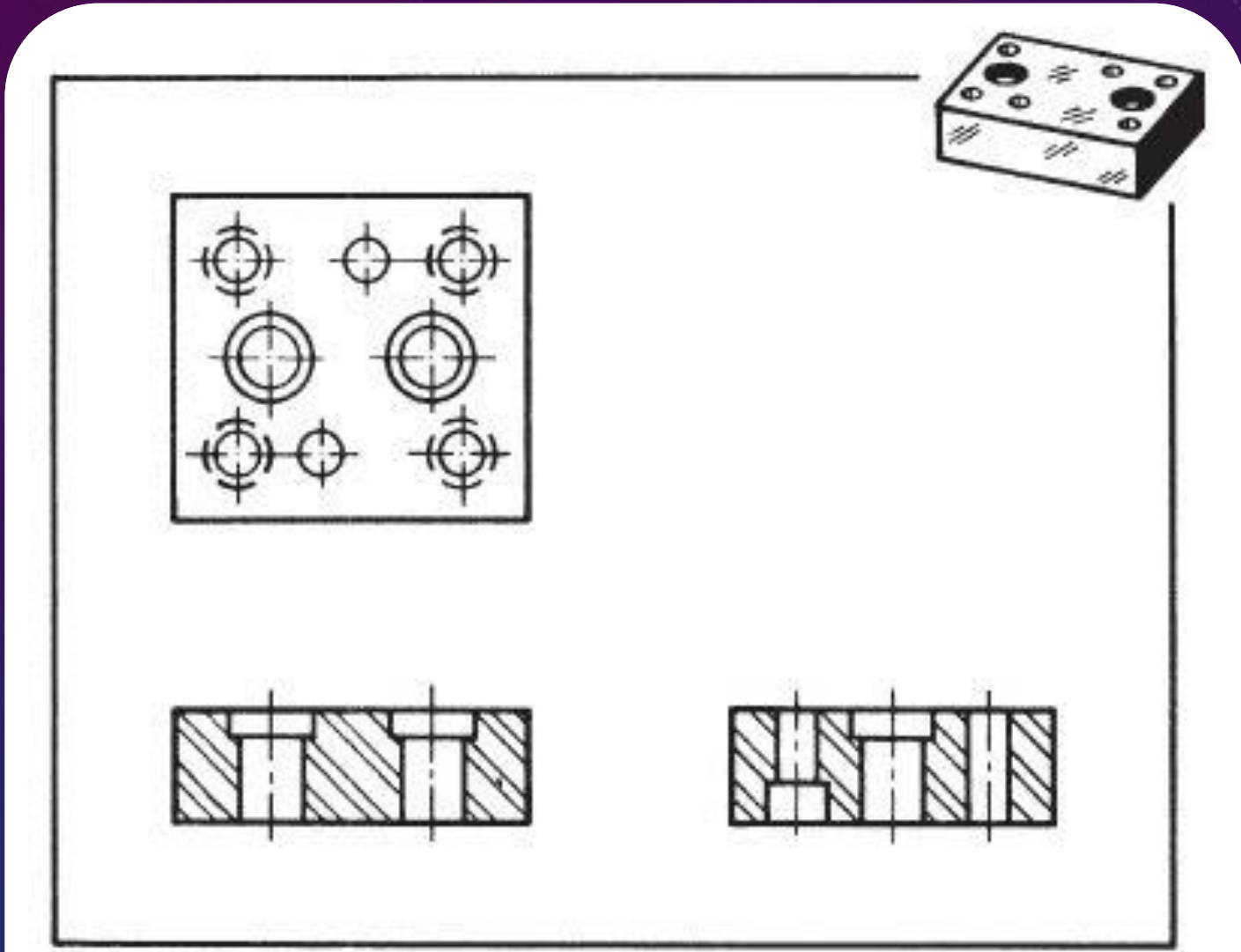


Figure 1.14 A punch plate.

Figure 1.14 A punch plate.

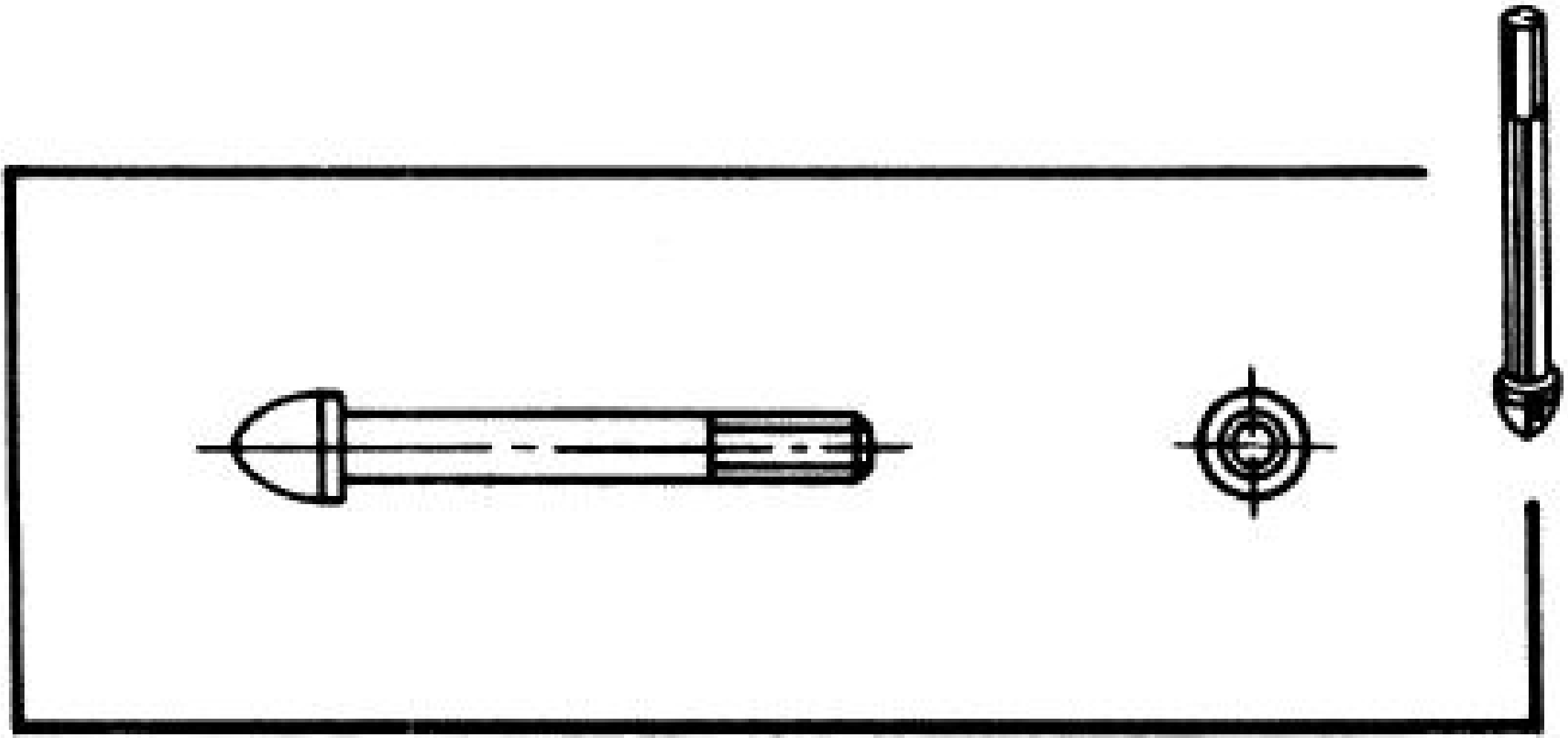


Figure 1.15 A pilot.

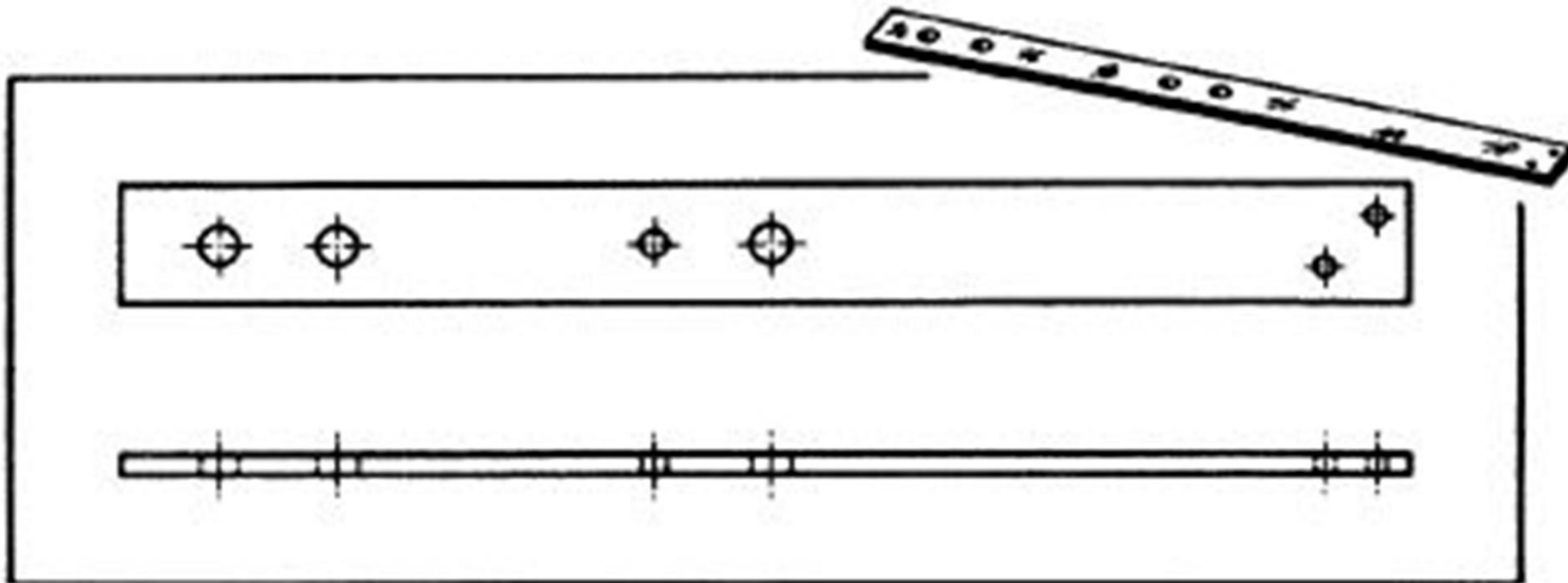


Figure 1.16 The back gage.

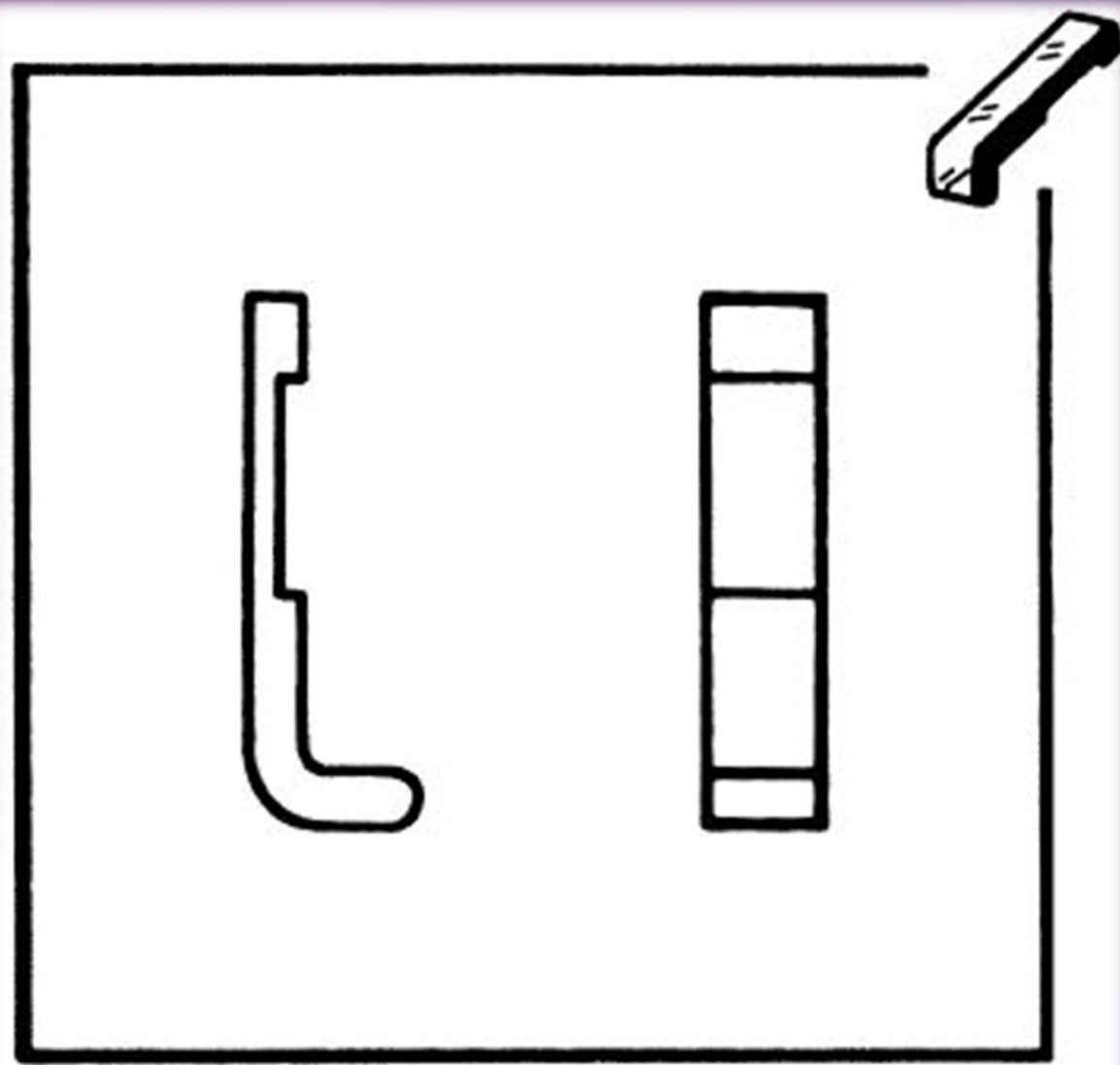


Figure 1.17 A finger stop.

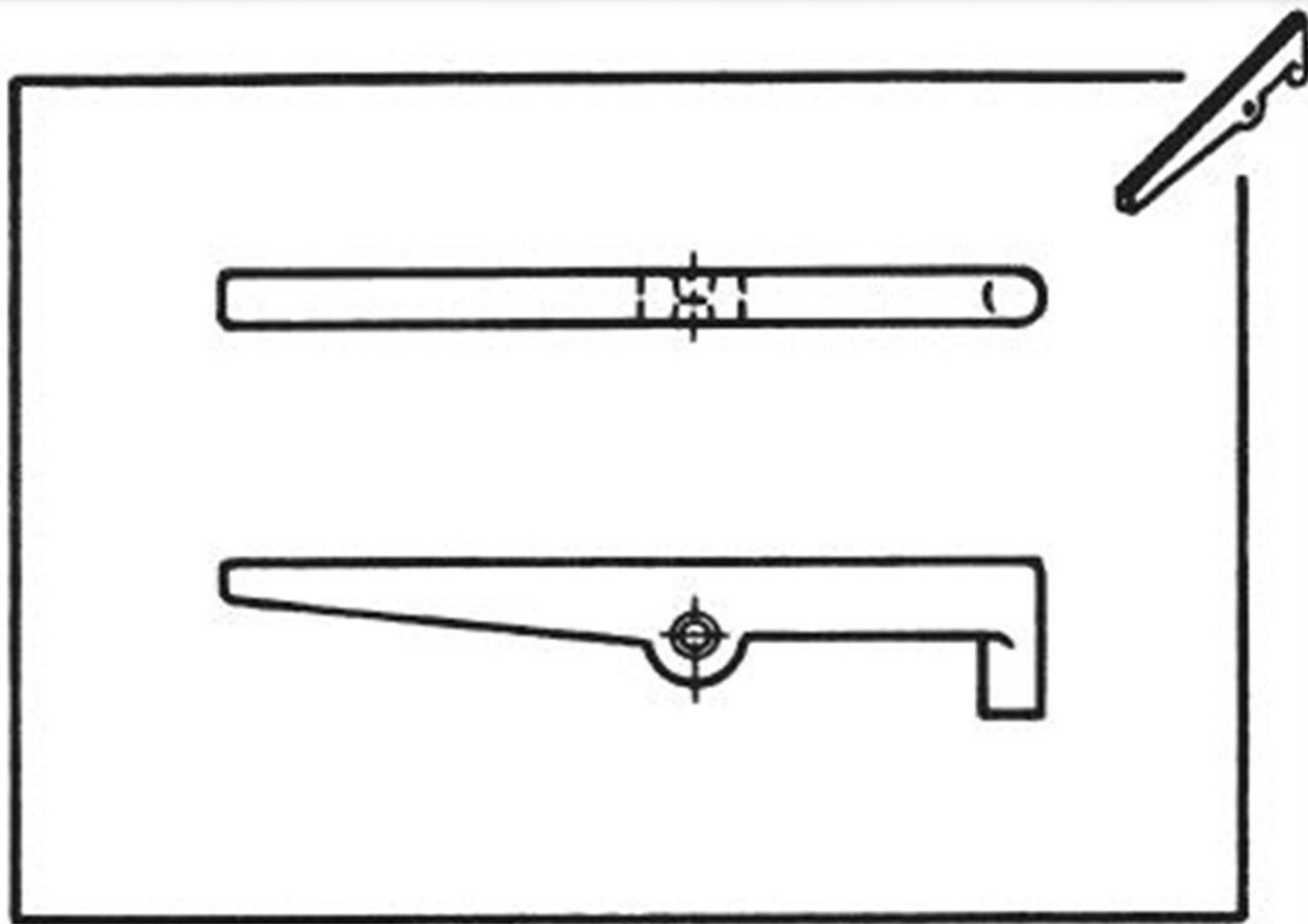


Figure 1.18 An automatic stop.

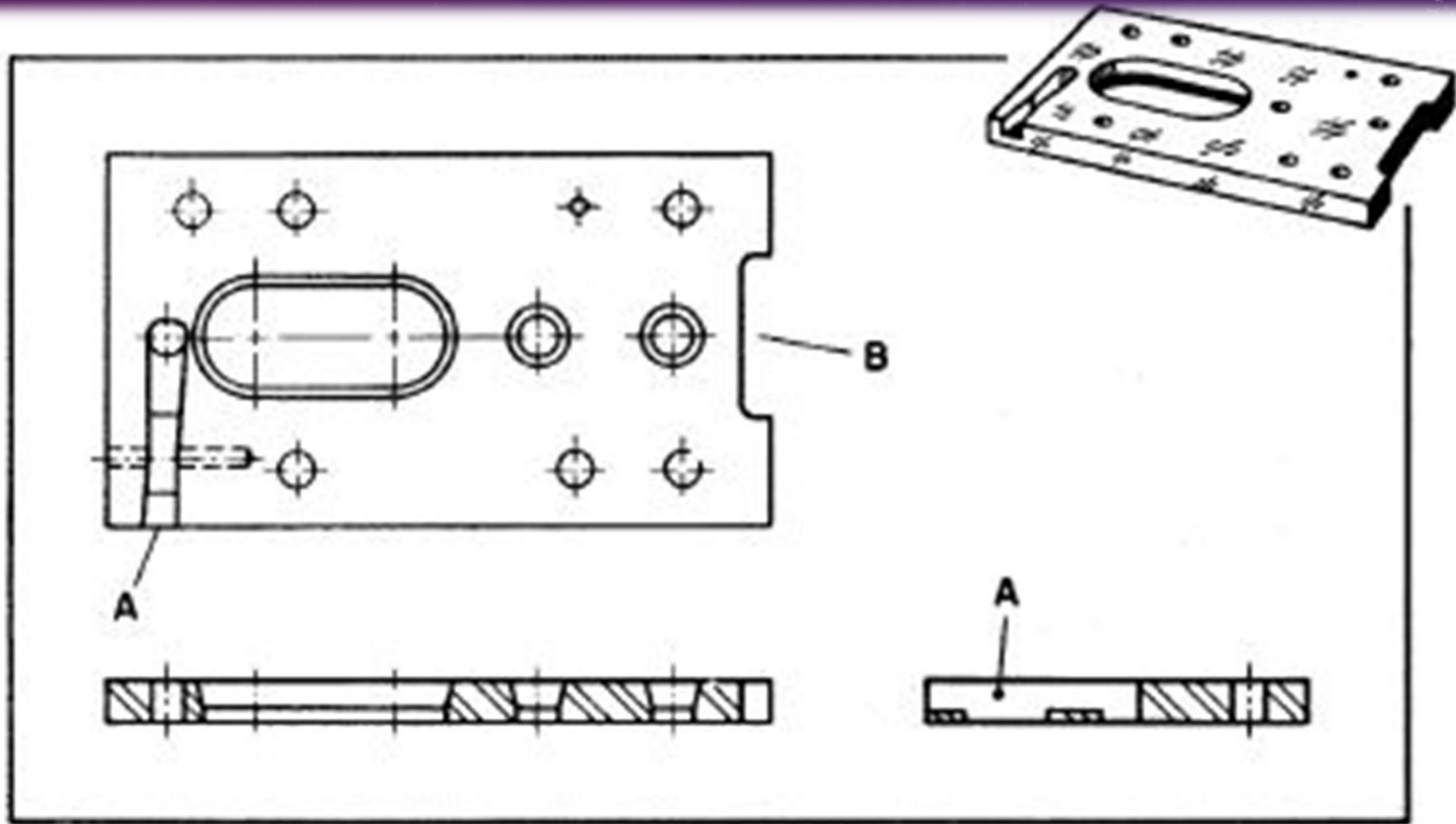


Figure 1.19 The stripper plate.

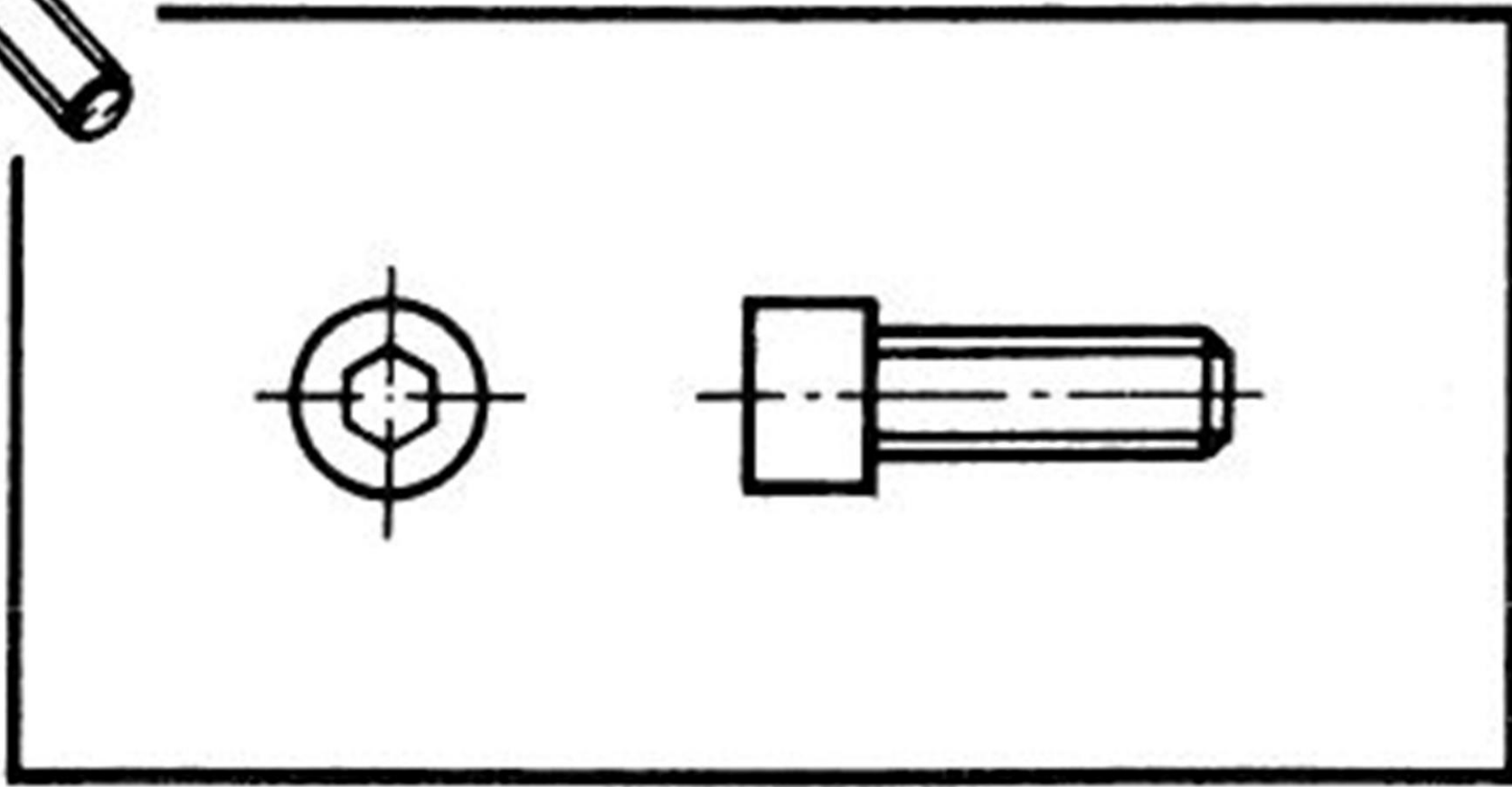


Figure 1.20 Socket head cap screw for use as a fastener

NAME OF SCHOOL OR COMPANY AND ADDRESS

ROUTE SHEET

PART NAME: Housing Cover NO OF PARTS: 800,000 DATE: Feb. 15, 2005

PART NO: 10568 DRG. NO. 1225 PROD. ENG. J. White

SHEET NO. 1 OF 1

OPER. NO.	OPERATION	MACHINE	DEPT.	TIME (HOURS)	SET UP (HOURS)
5	Shear sheet into strips	Bliss Squaring Shears No. 37	30	.0001	—
10	Blank	Federal Press No. 33 No. 442	25	.0001	—
15	Form	Federal Press No. 44 No. 337	25	.0002	—
20	Wash and ship to stores	Truck			

Figure 1.21 A typical route sheet.

NAME OF SCHOOL OR COMPANY AND ADDRESS

TOOL OPERATION SHEET

PART NAME: Housing Cover

DATE: Feb. 16, 2005

PART NO: 10568

APPROVED BY: J. White

OPER. NO.	OPERATION	TOOL NAME	TOOL NUMBER	INSTRUC-TIONS	DEPT. NO.	EQUIPMENT NAME & NO.
5	Shear sheet into strips				30	Bliss Squaring Shears Shop No. 37
10	Blank	Blanking Die	T-3073	Des.	25	Federal Press No. 33 Shop No. 442
15	Form	Forming Die	T-3074	Des.	25	Federal Press No. 44 Shop No. 337
20	Wash and ship to stores	Truck				

Figure 1.22 A typical tool operation sheet.

NAME OF SCHOOL OR COMPANY AND ADDRESS			
DESIGN ORDER NO.			
102			
TO: Tool Design Department		DATE: Feb. 18, 2005	
DESIGN: Forming Die			
FOR: Forming Lower Flange			
PART NAME: Housing Cover			
PART NO. 10567		TOOL NO. T-3074	
USED IN No. 20 Bliss Press		SHOP NO. 406	
DEPARTMENT Press		NO. 22	
NUMBER OF PARTS REQUIRED 800,000			
COMPLETED		CANCELLED	
REASON			
SIGNED:			

Figure 1.23 A typical design order.

① DANLY DIE SET
CAT. NO. 0603-A1
1½ DIA. PUNCH SHANK
STEEL SHL'D. BUSH.
1" DIA. X 5 GUIDE POSTS

Figure 1.24 A typical die set note.

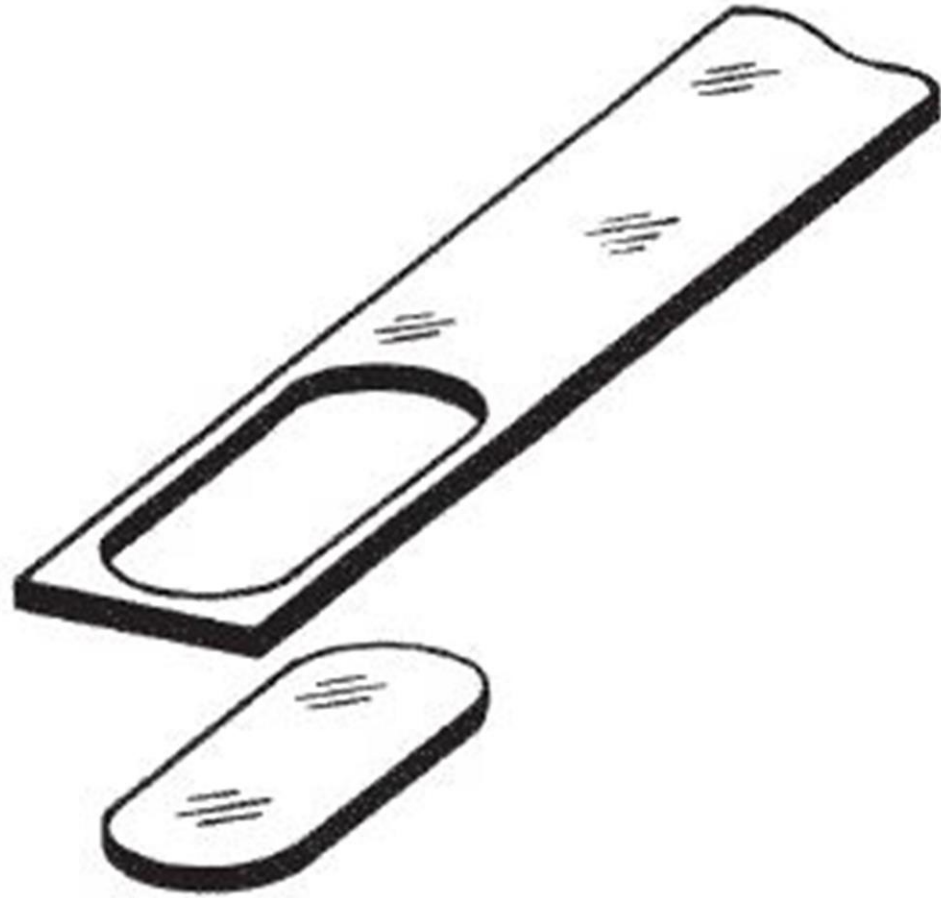


Figure 1.25 A blank and the strip from which it is been cut.

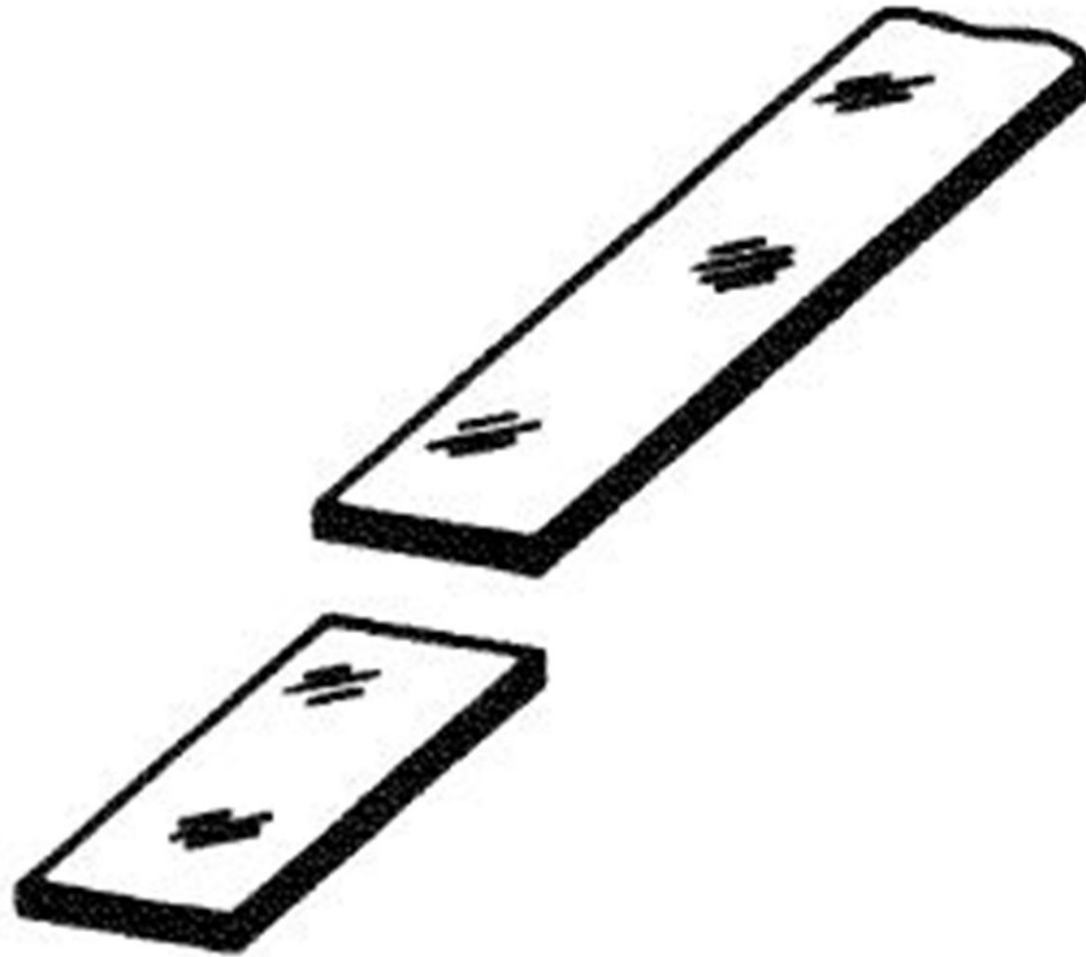


Figure 1.26 Part separated from strip in cut-off operation.

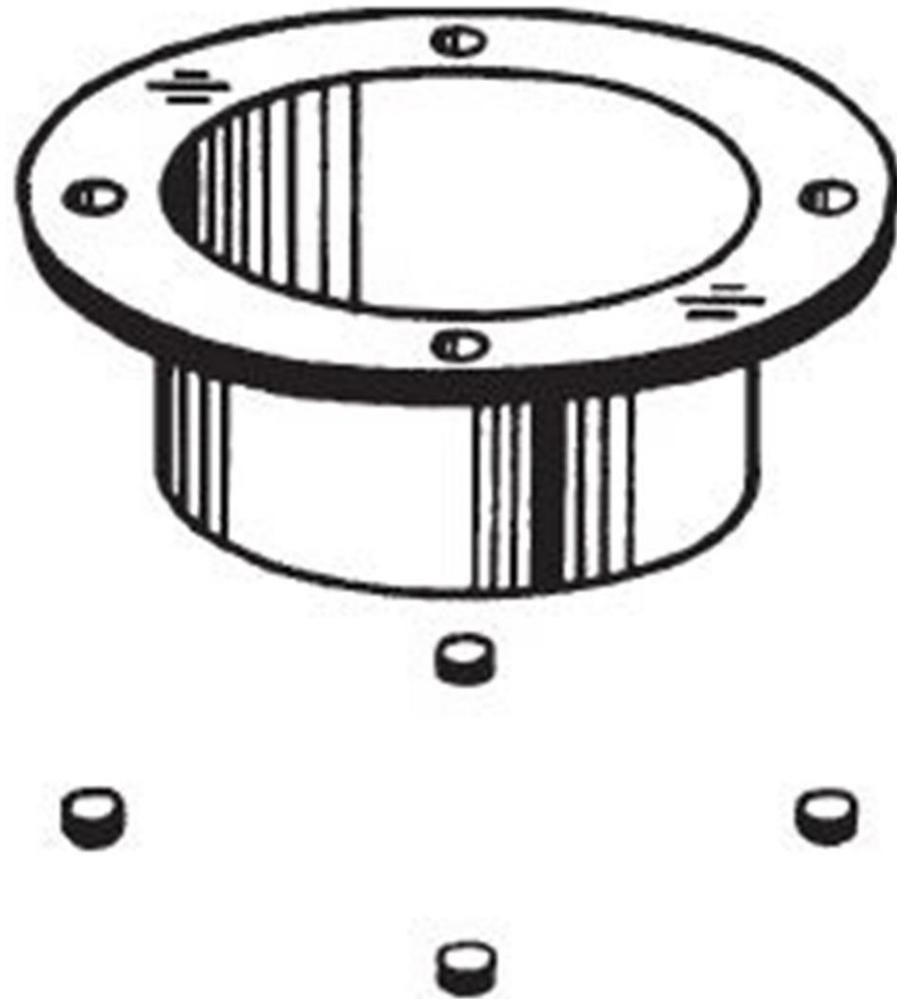


Figure 1.27 Holes pierced in a previously drawn part



Figure 1.28 Part is blanked and pierced simultaneously in a compound die.

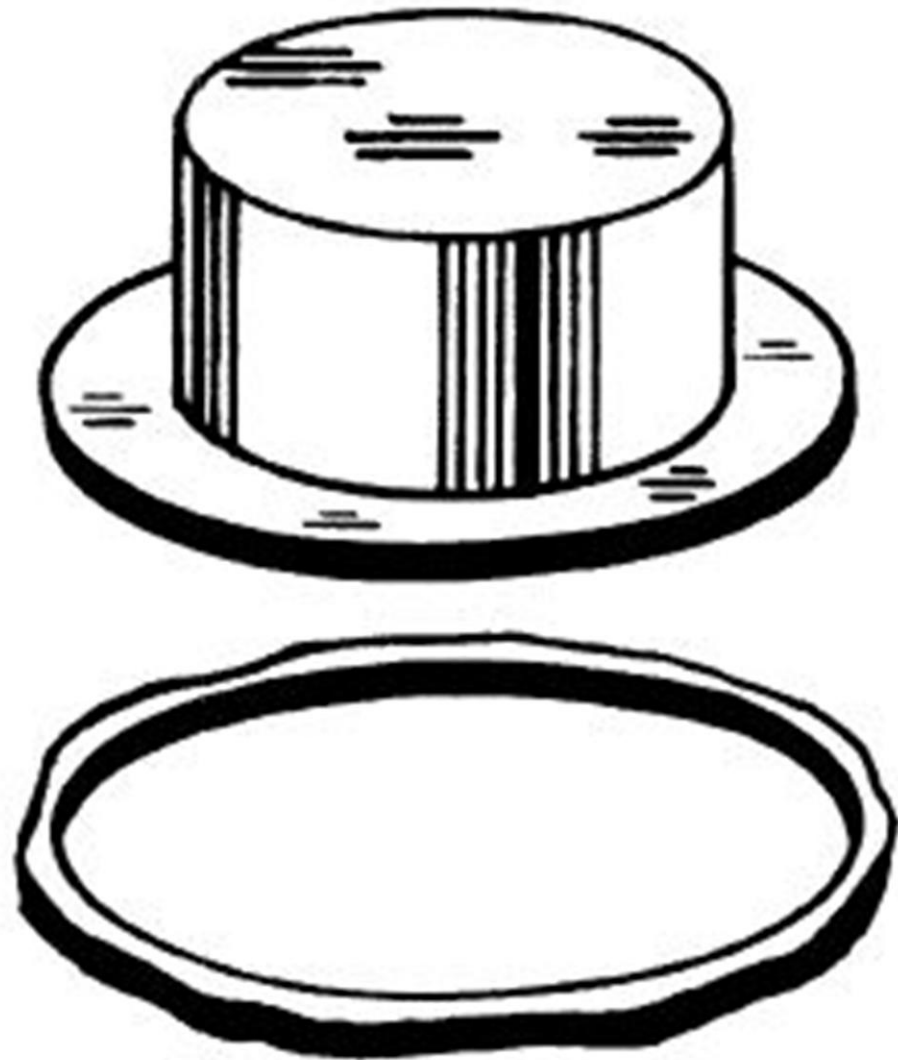


Figure 1.29 The result of trimming in a trimming die.

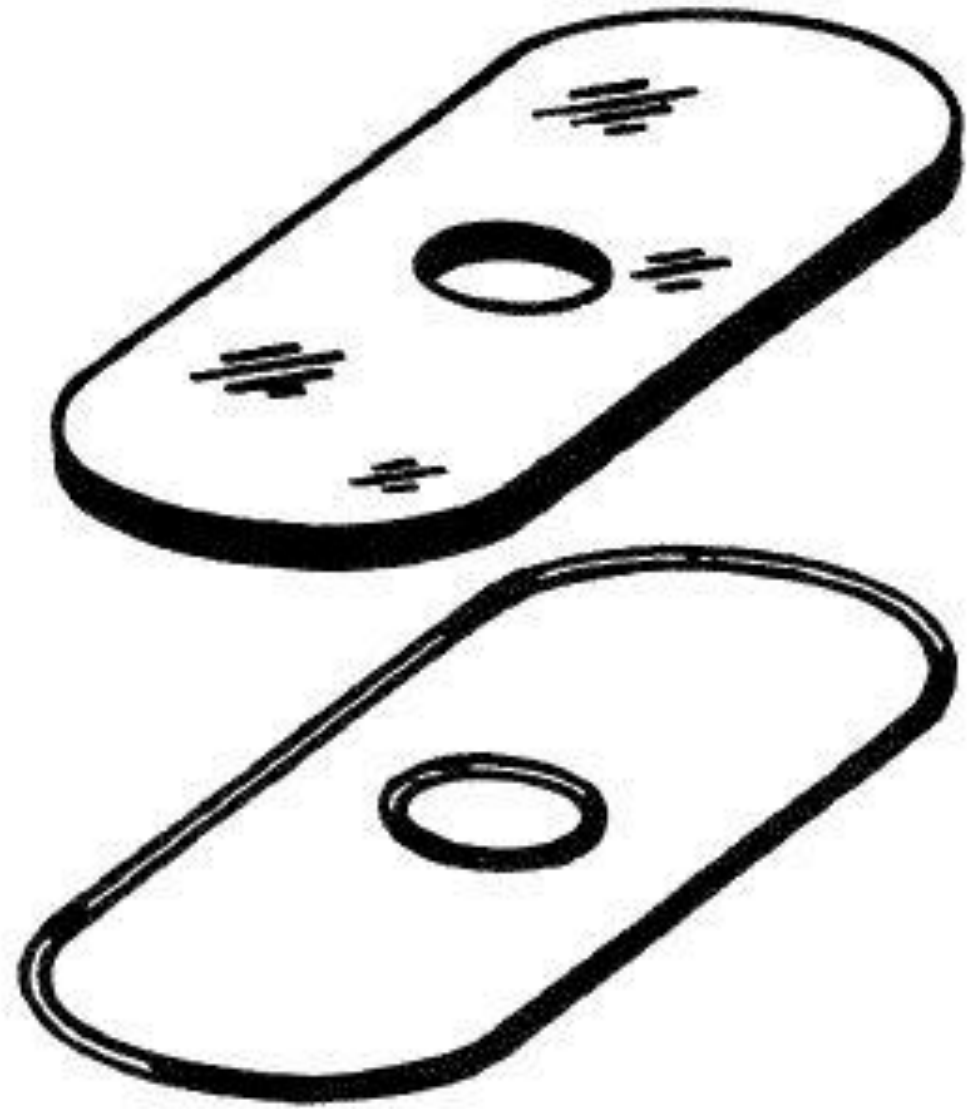


Figure 1.30 The result of shaving in a shaving die.

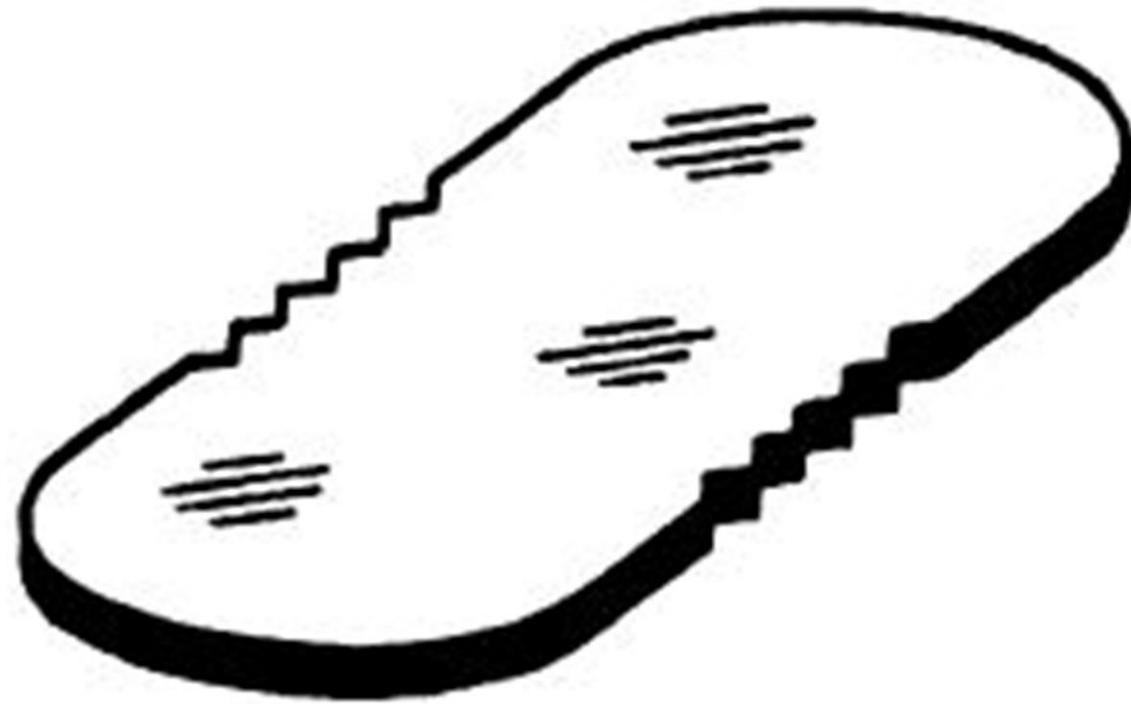


Figure 1.31 Serrations applied in a broaching die.

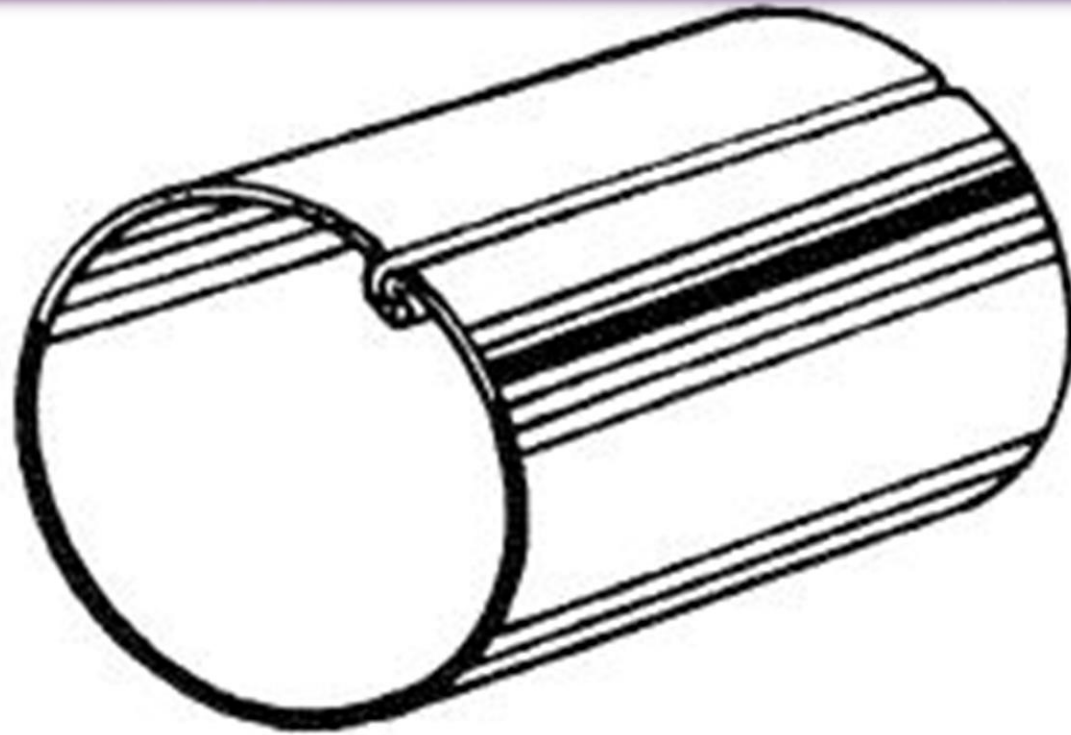


Figure 1.32 The seam on this part is done as a secondary operation in a horn die.

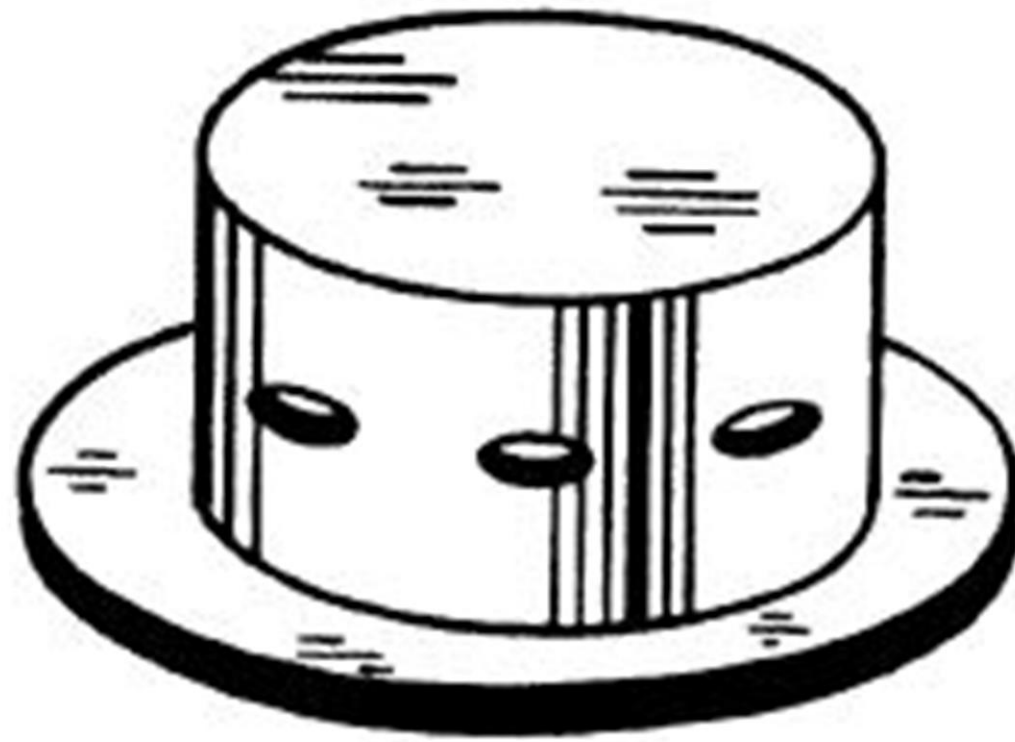


Figure 1.33 The holes are pierced simultaneously in a side cam die.



Figure 1.34 Stamping bent in a bending die.

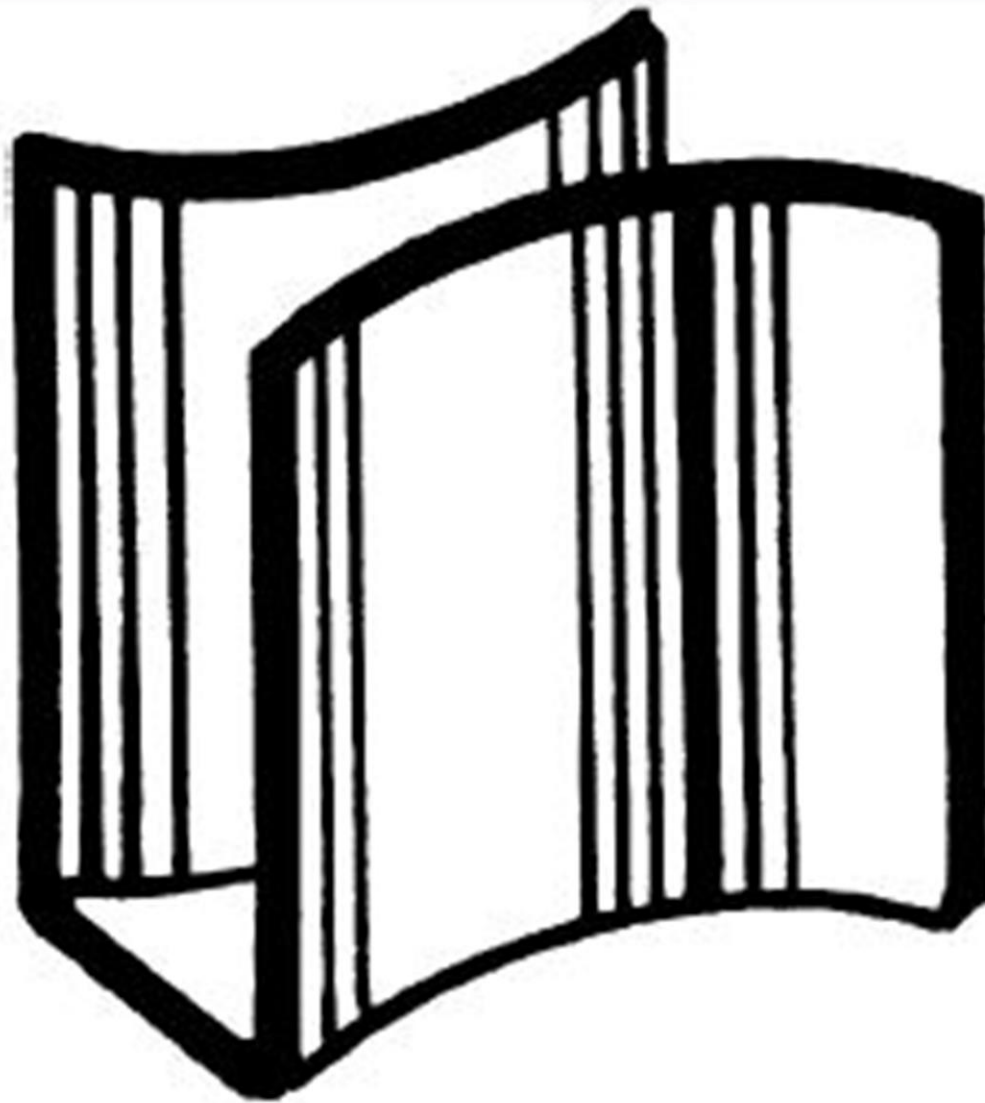


Figure 1.35 Stamping formed in a forming die.

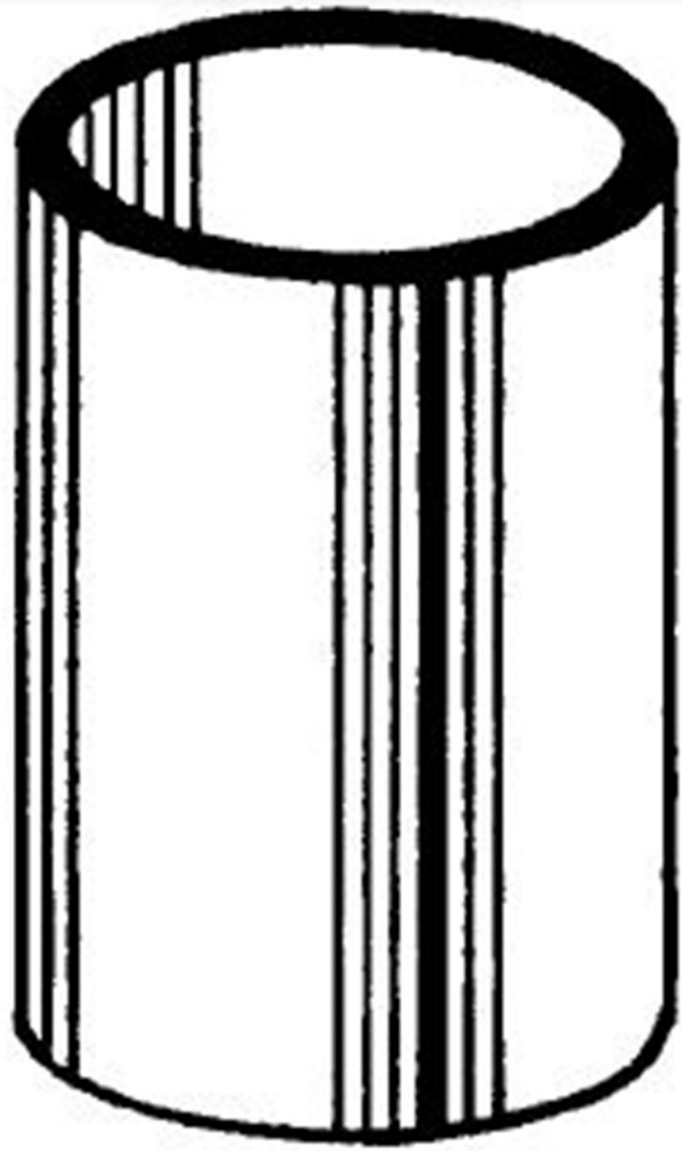


Figure 1.36 Shell drawn from a flat sheet.

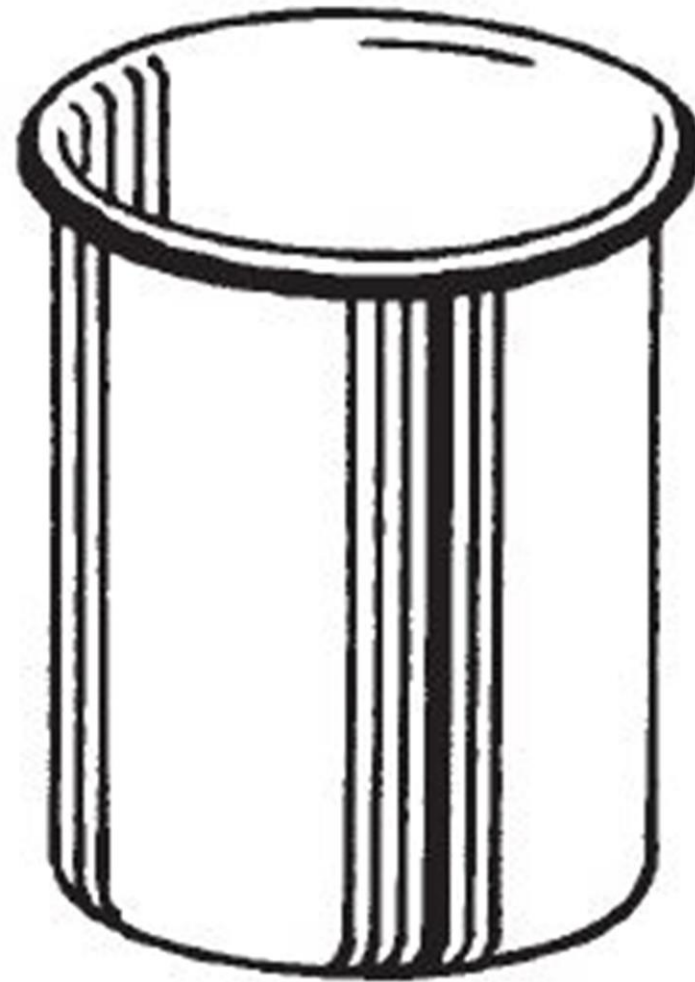


Figure 1.37 Lip on this drawn shell produced in curling die.

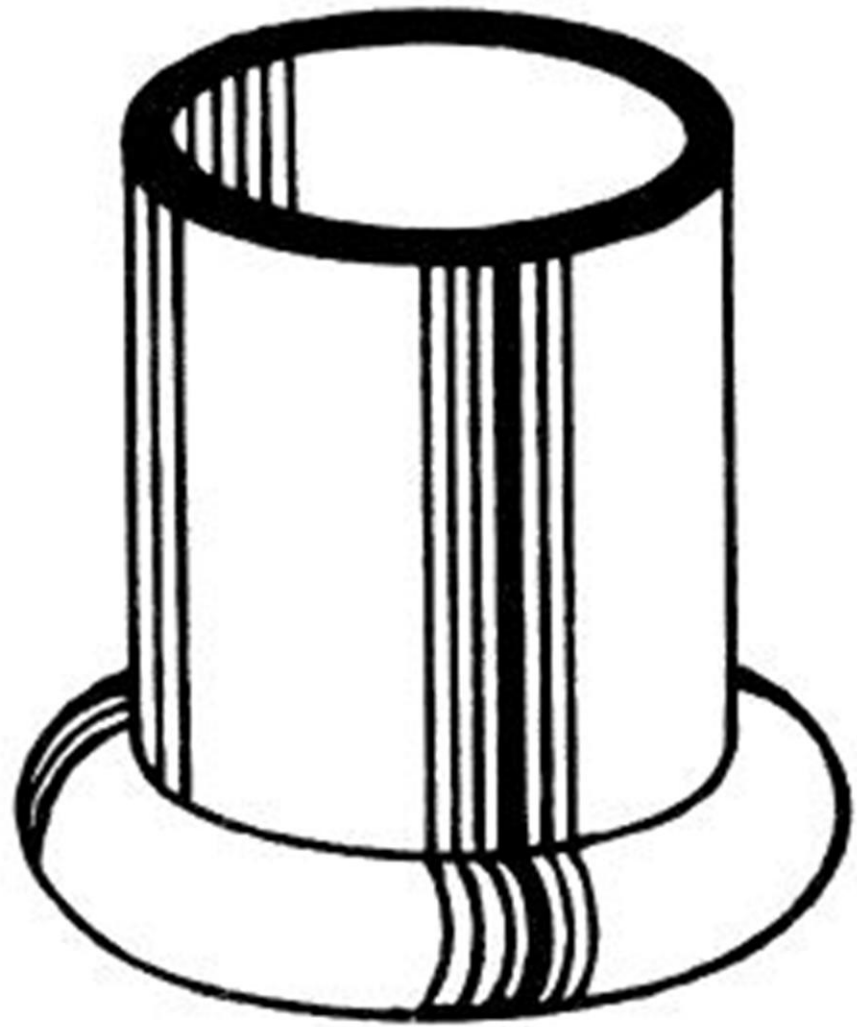


Figure 1.38 Bulge in this drawn shell produced in bulging die.

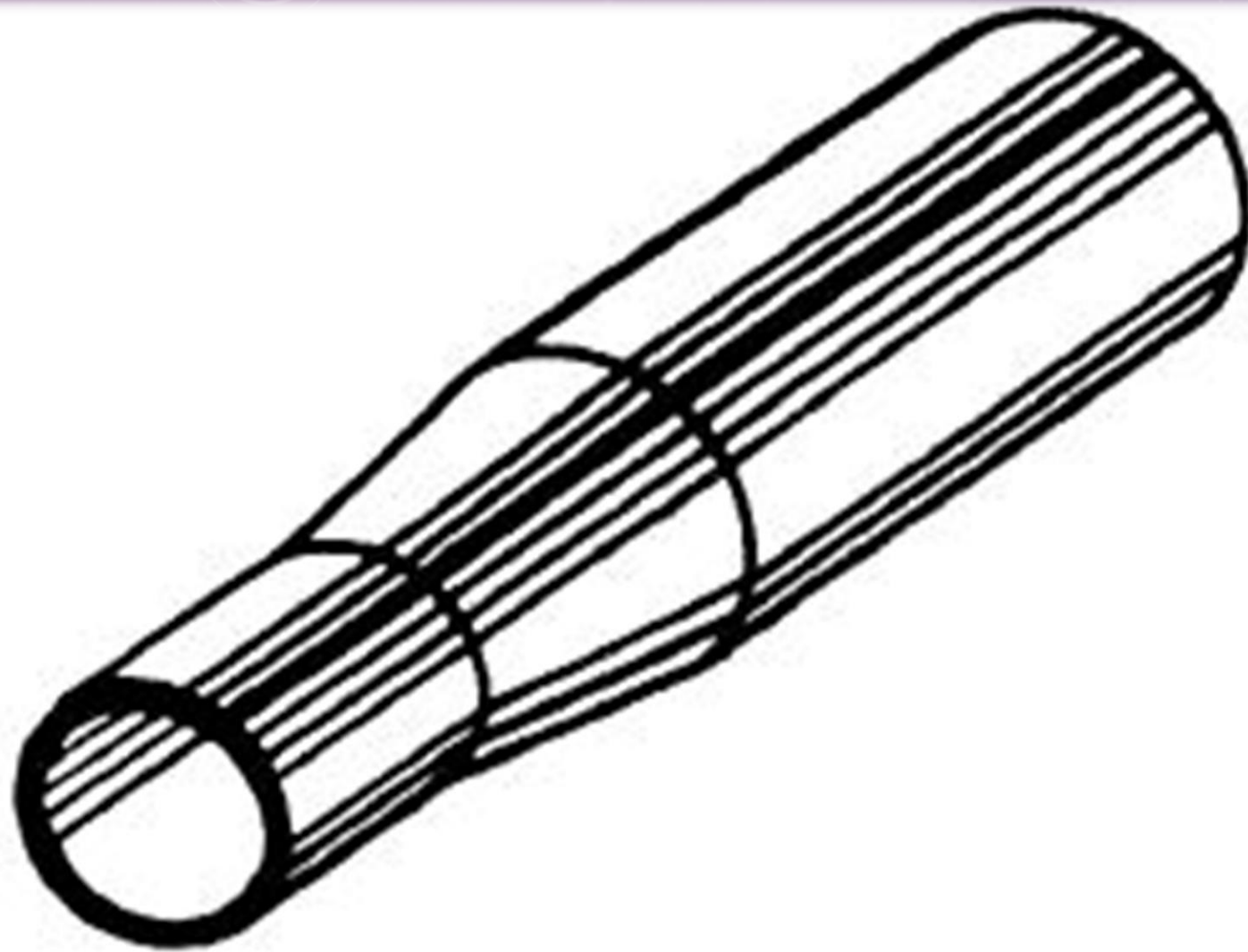


Figure 1.39 Drawn shell that has been swaged.



Figure 1.40 Drawn shell that has been extruded.

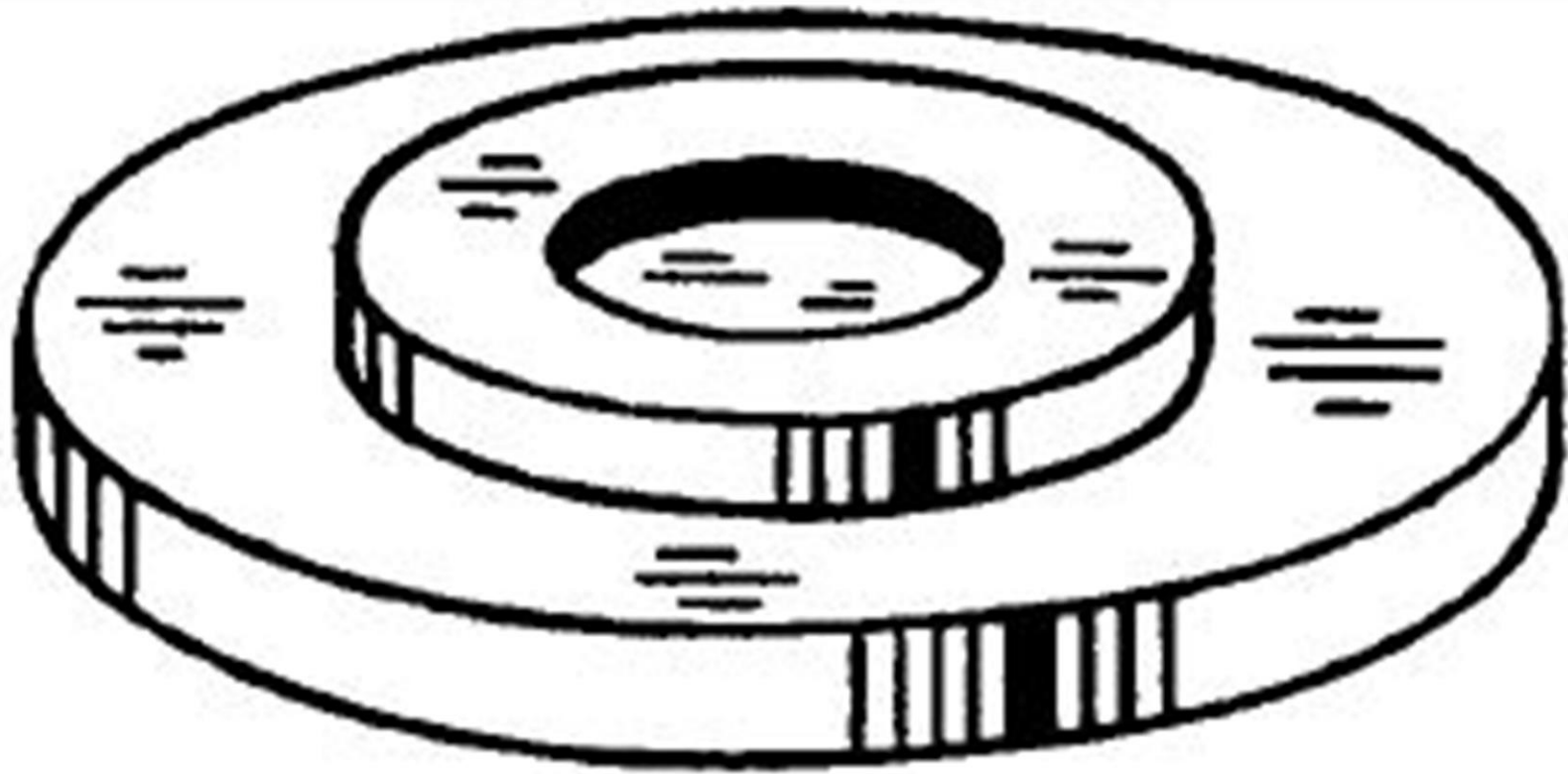


Figure 1.41 Cold-coining part in which metal flow is caused by high pressure.

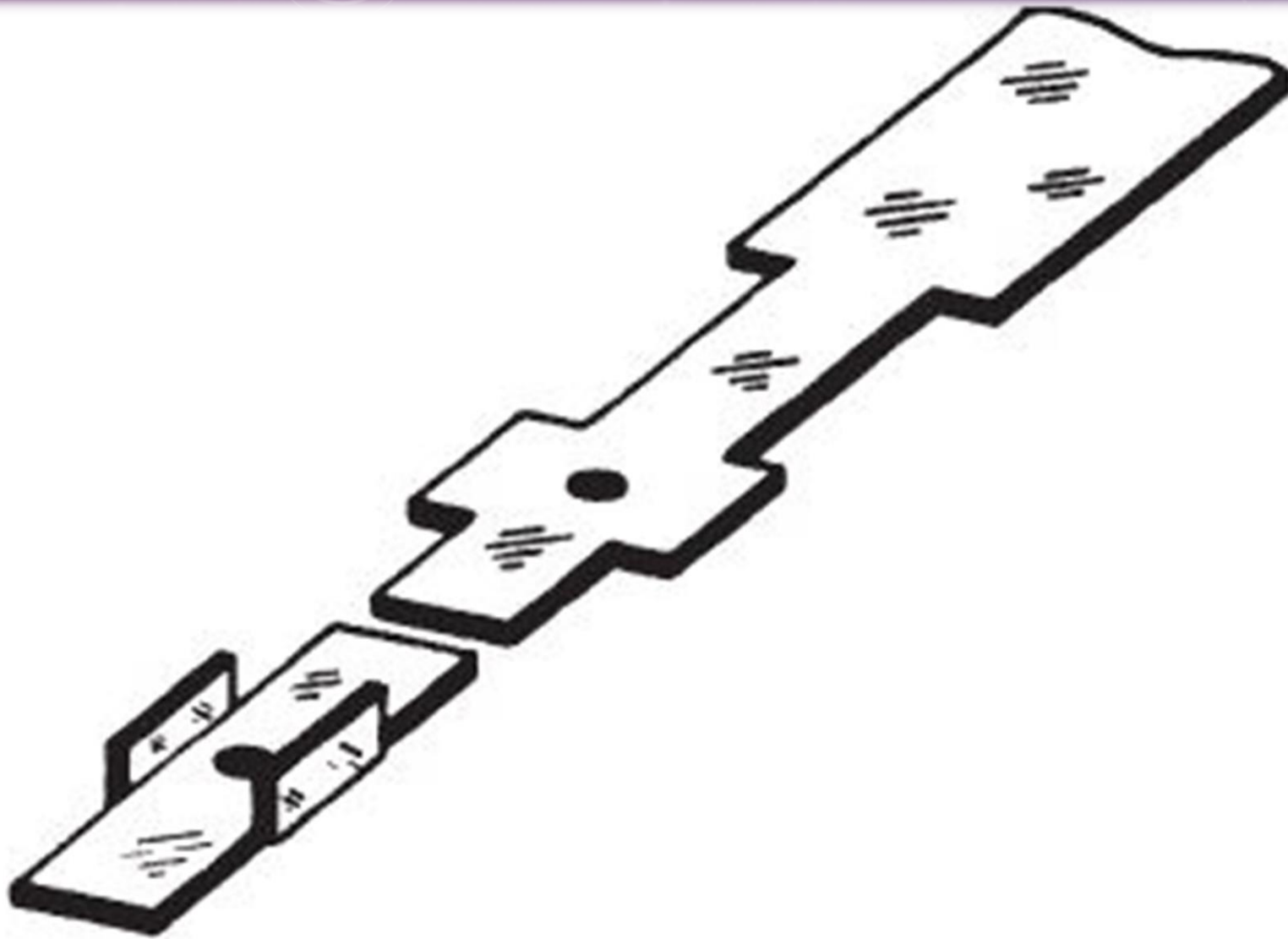


Figure 1.42 Part and strip produced in a progressive die.

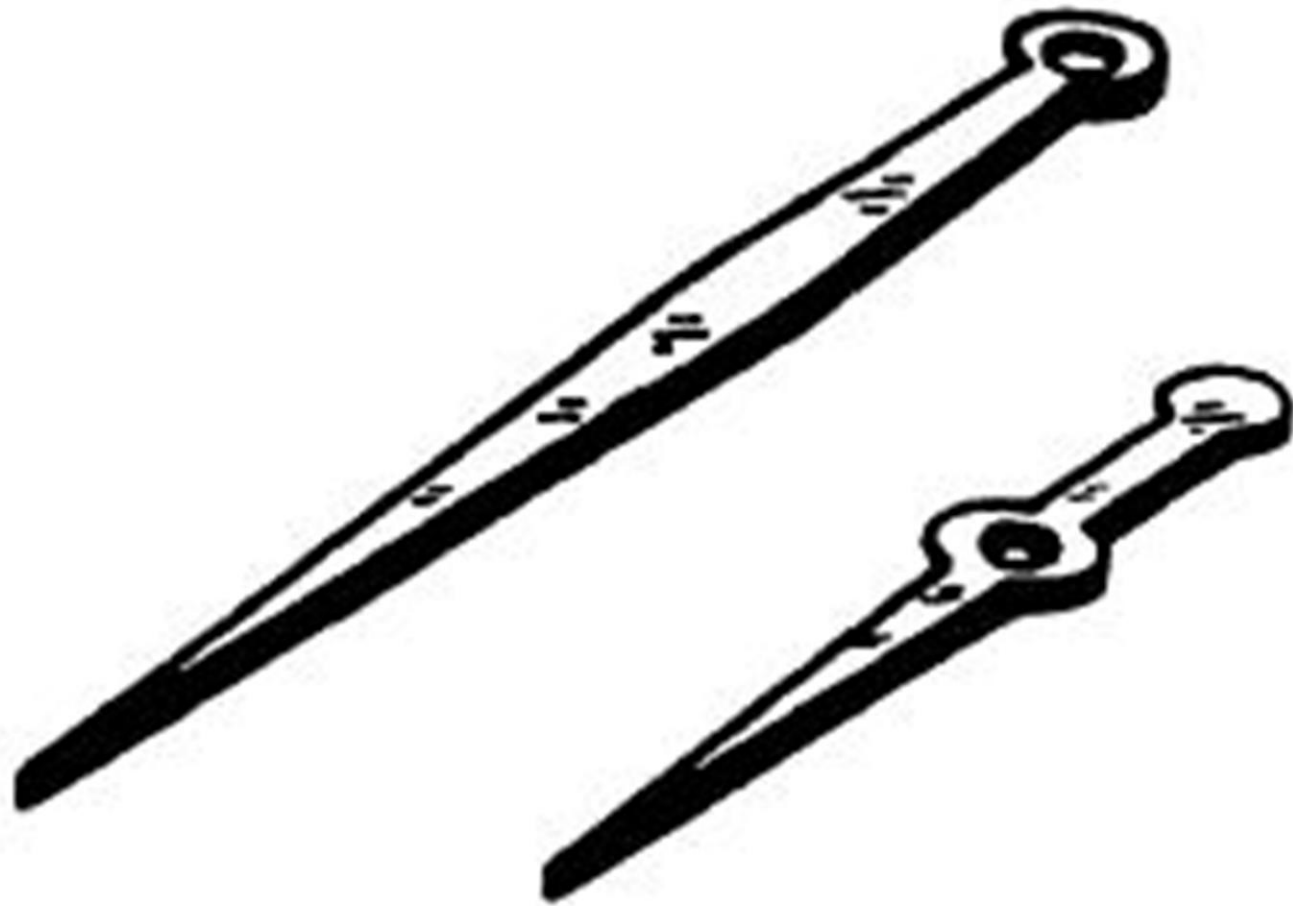


Figure 1.43 Typical precision parts produced in subpress dies.

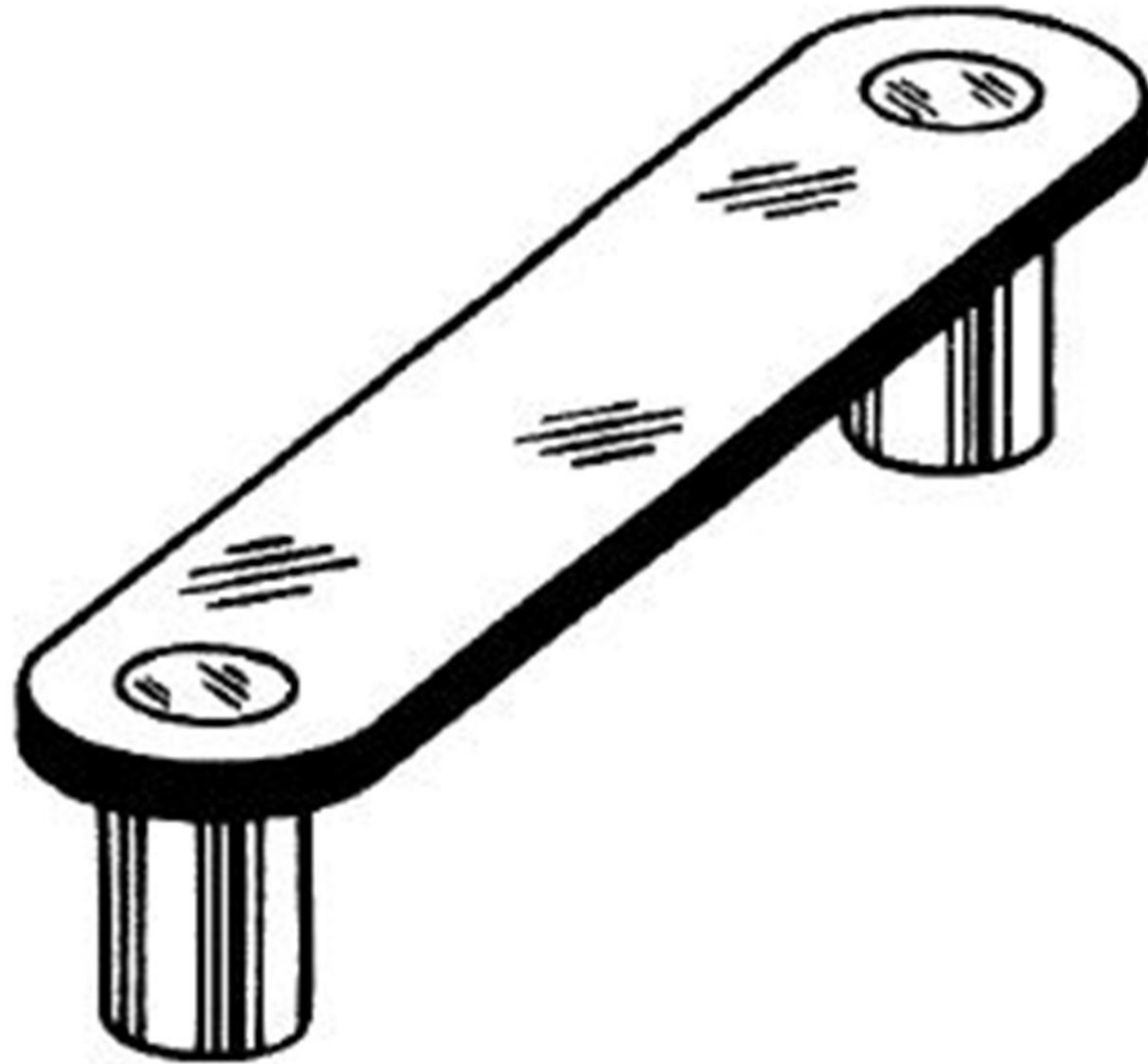


Figure 1.44 Part produced in an assembly die.

پایان فصل اول

با سپاس از توجه شما...