

# قالب های برش گام به گام طراحی و ساخت

فصل ششم: روش طراحی نوار تغذیه

ویرایش اول

زمستان ۹۳

### SINGLE-ROW MATERIAL LAYOUTS

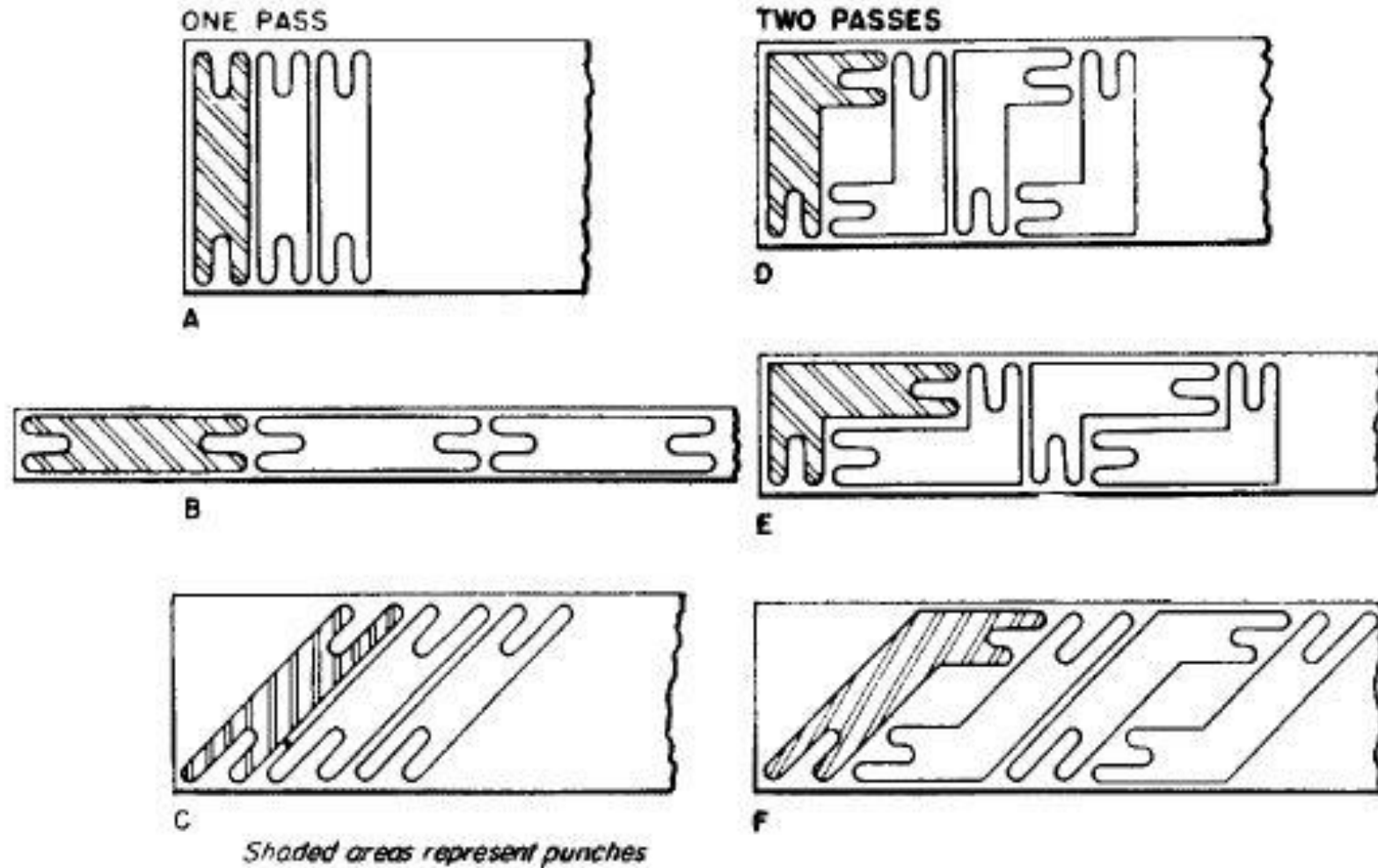
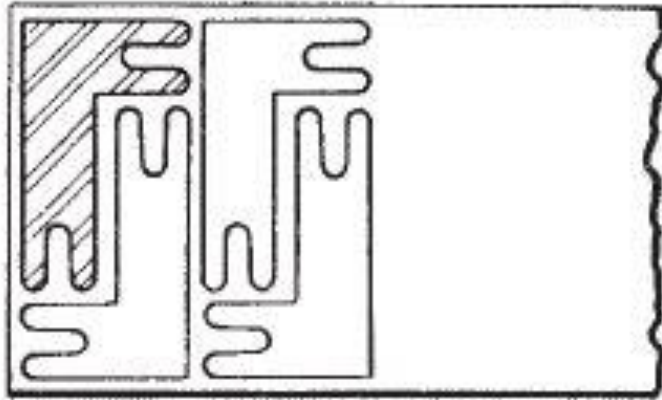


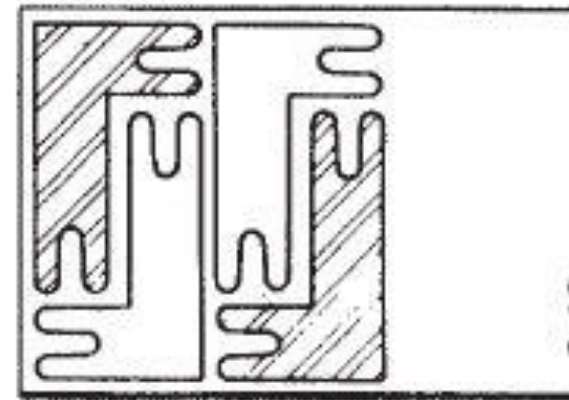
Figure 6.1 Various ways in which blanks can be positioned.

TWO PASSES

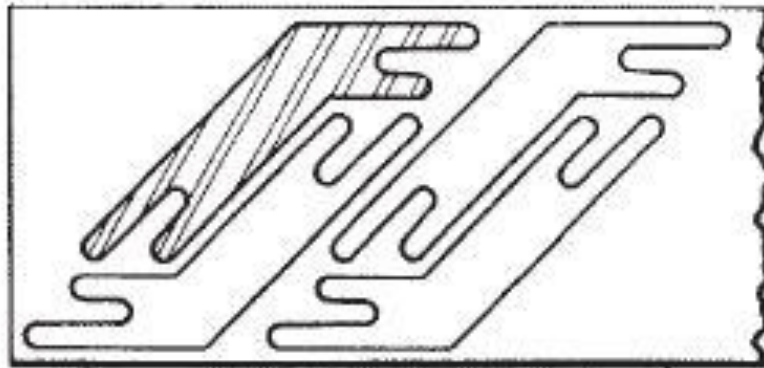


A

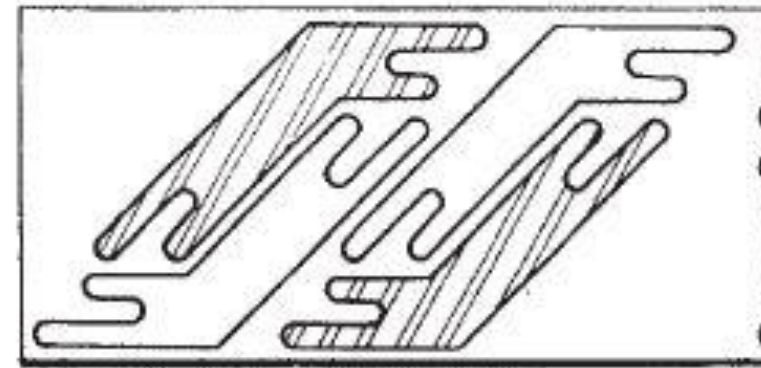
ONE PASS



C



B

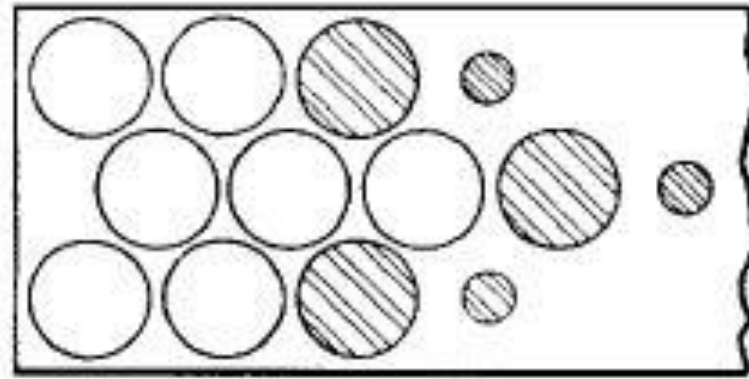


D

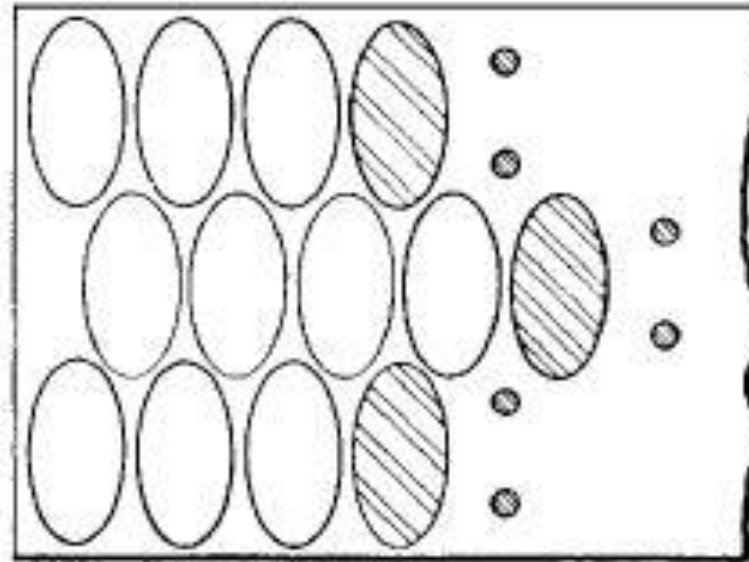
*Shaded areas represent punches*

Figure 6.2 Double-row blank layouts.





A



B

Figure 6.3 Triple-row blank layouts.

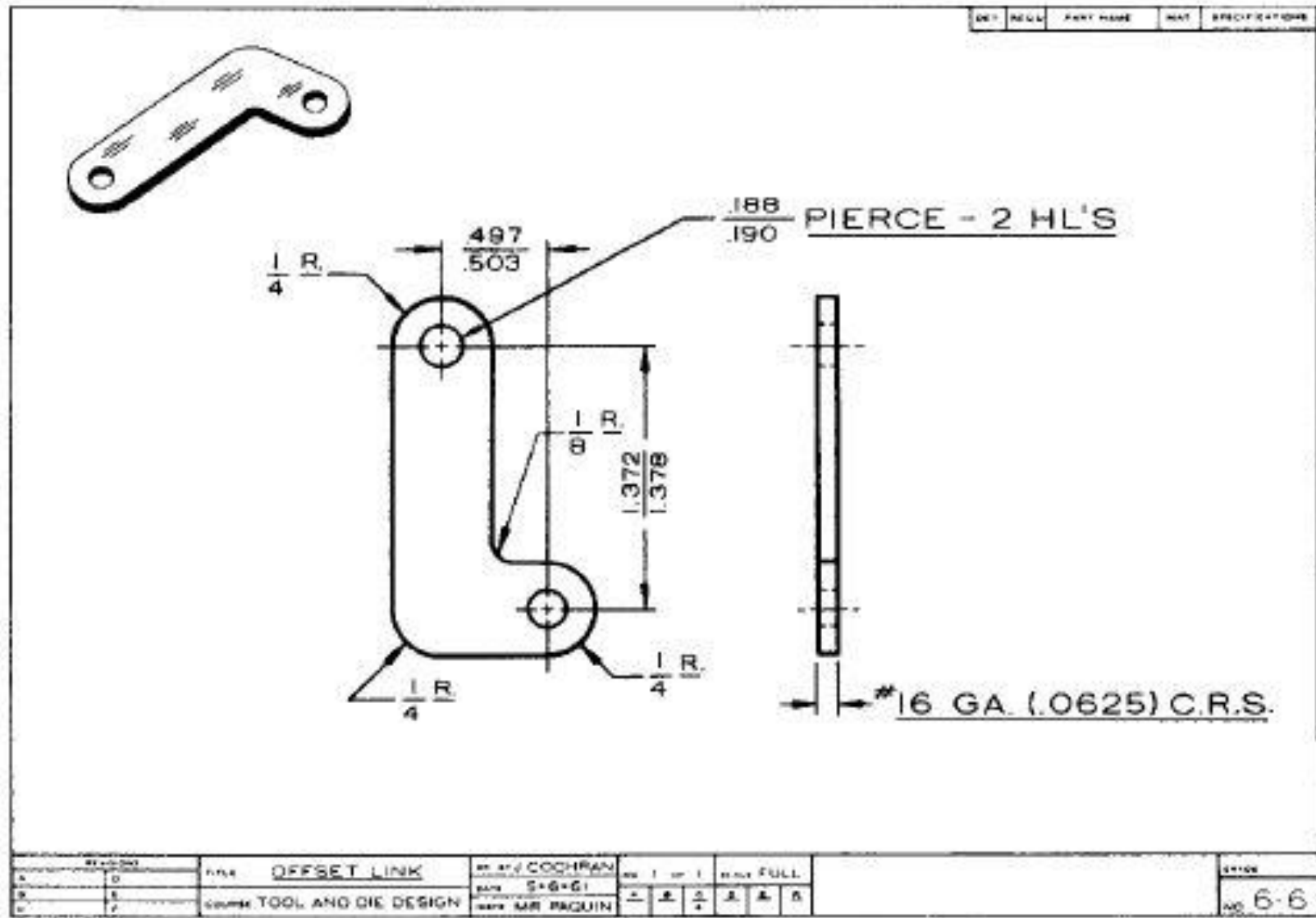


Figure 6.4 Typical part print.

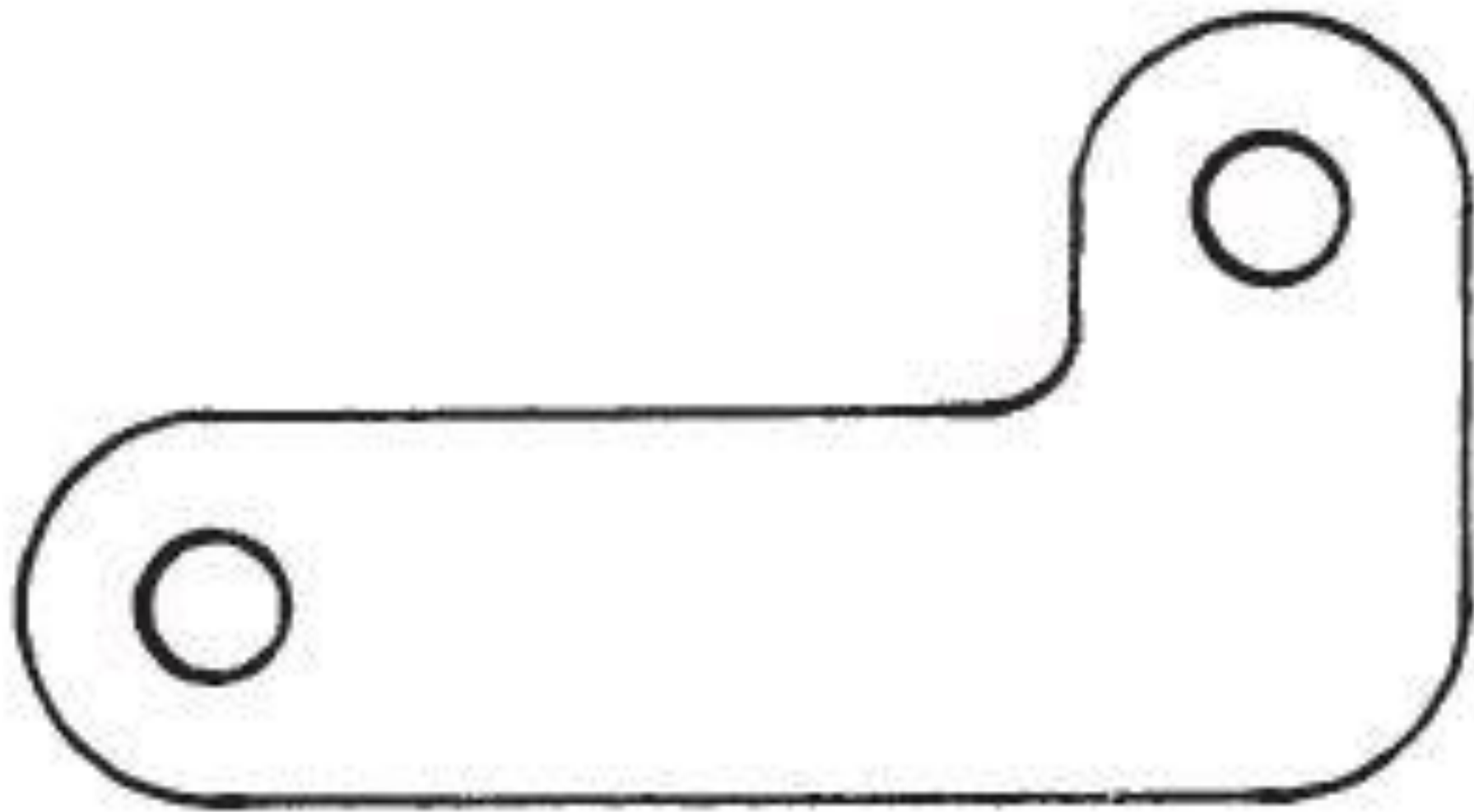


Figure 6.5 Part layout on paper.

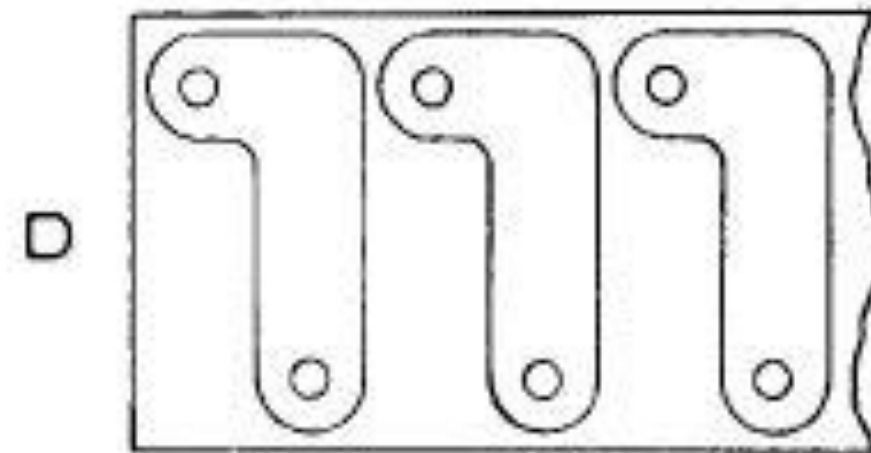
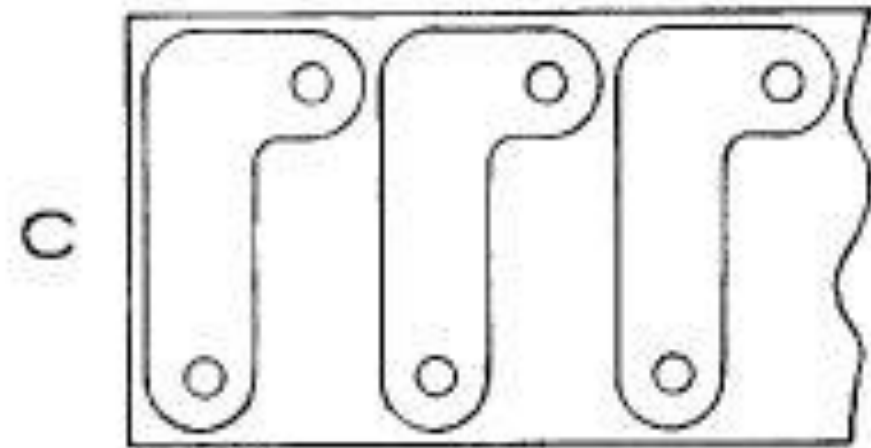
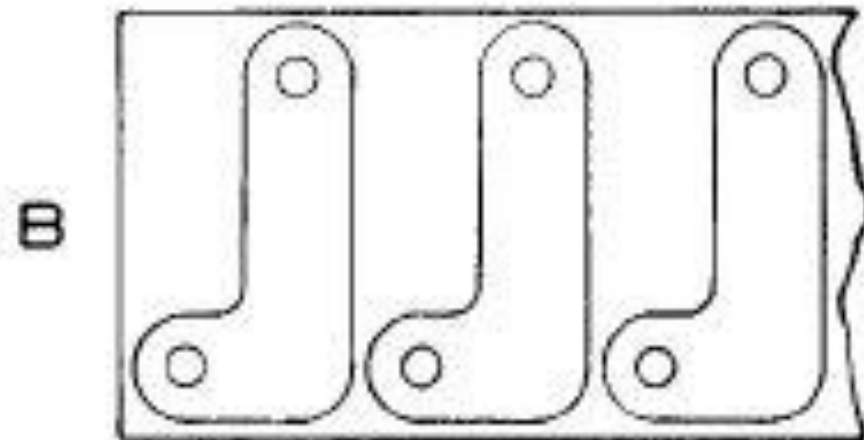
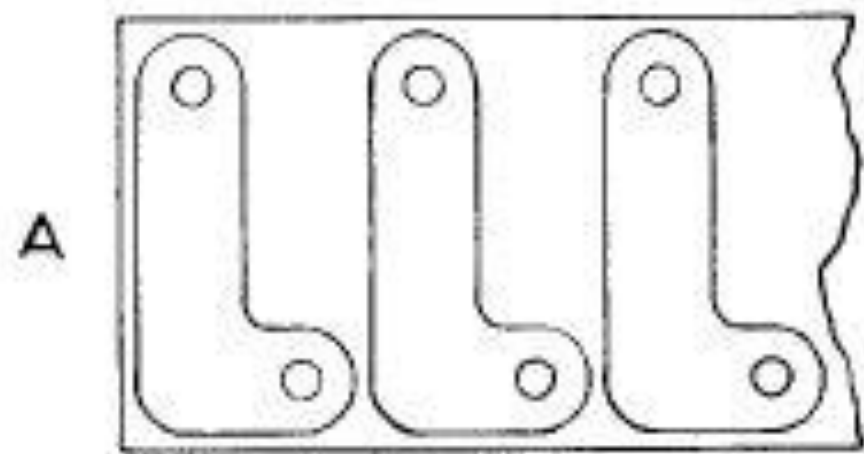


Figure 6.6 Part positioned for wide run.



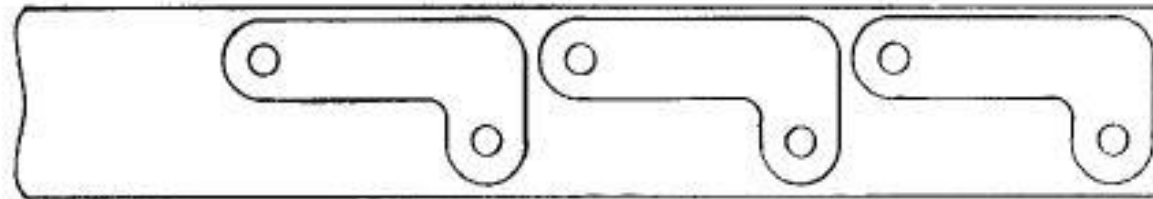
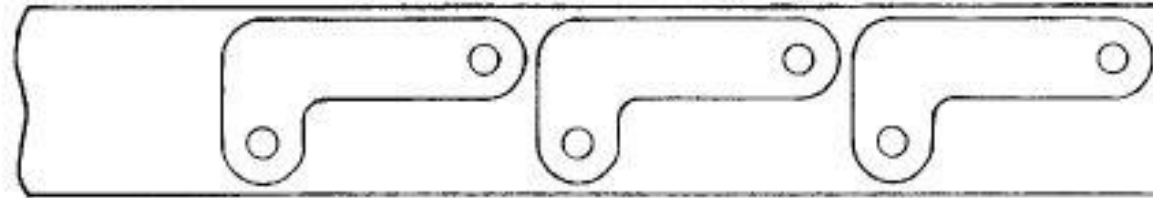
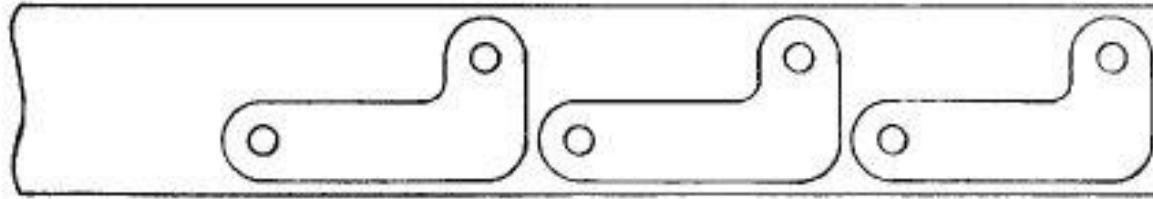
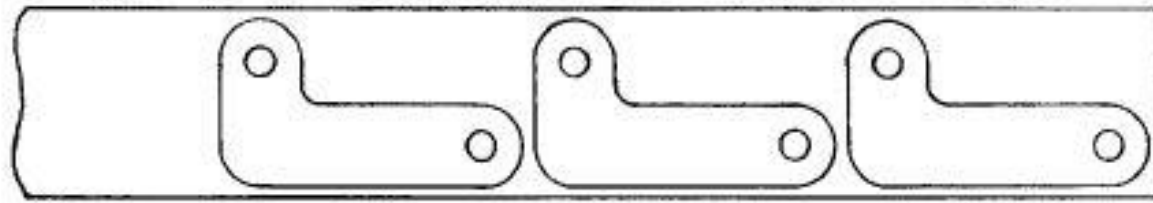


Figure 6.7 Part positioned for narrow run.



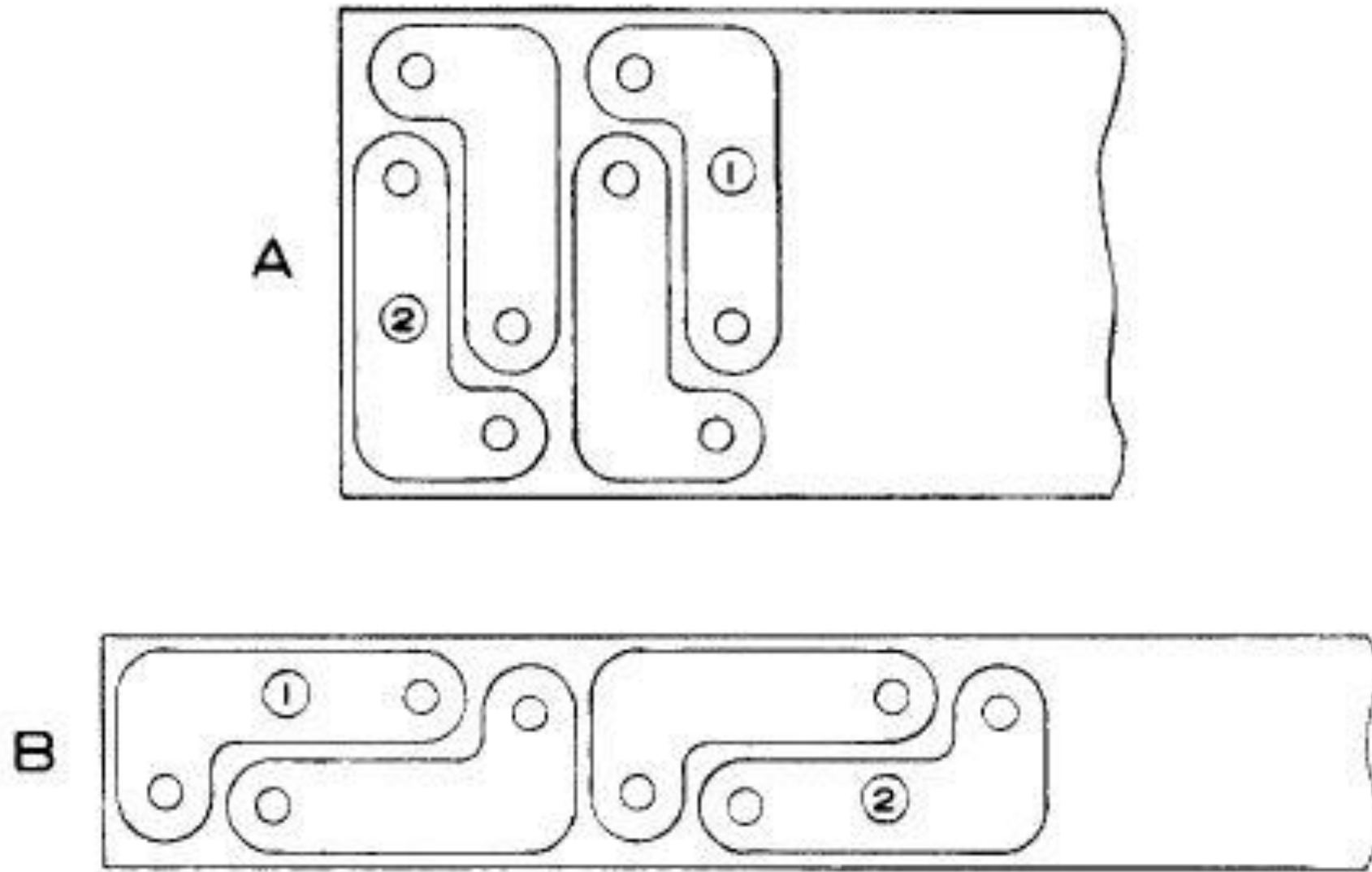


Figure 6.8 Double-row layouts.

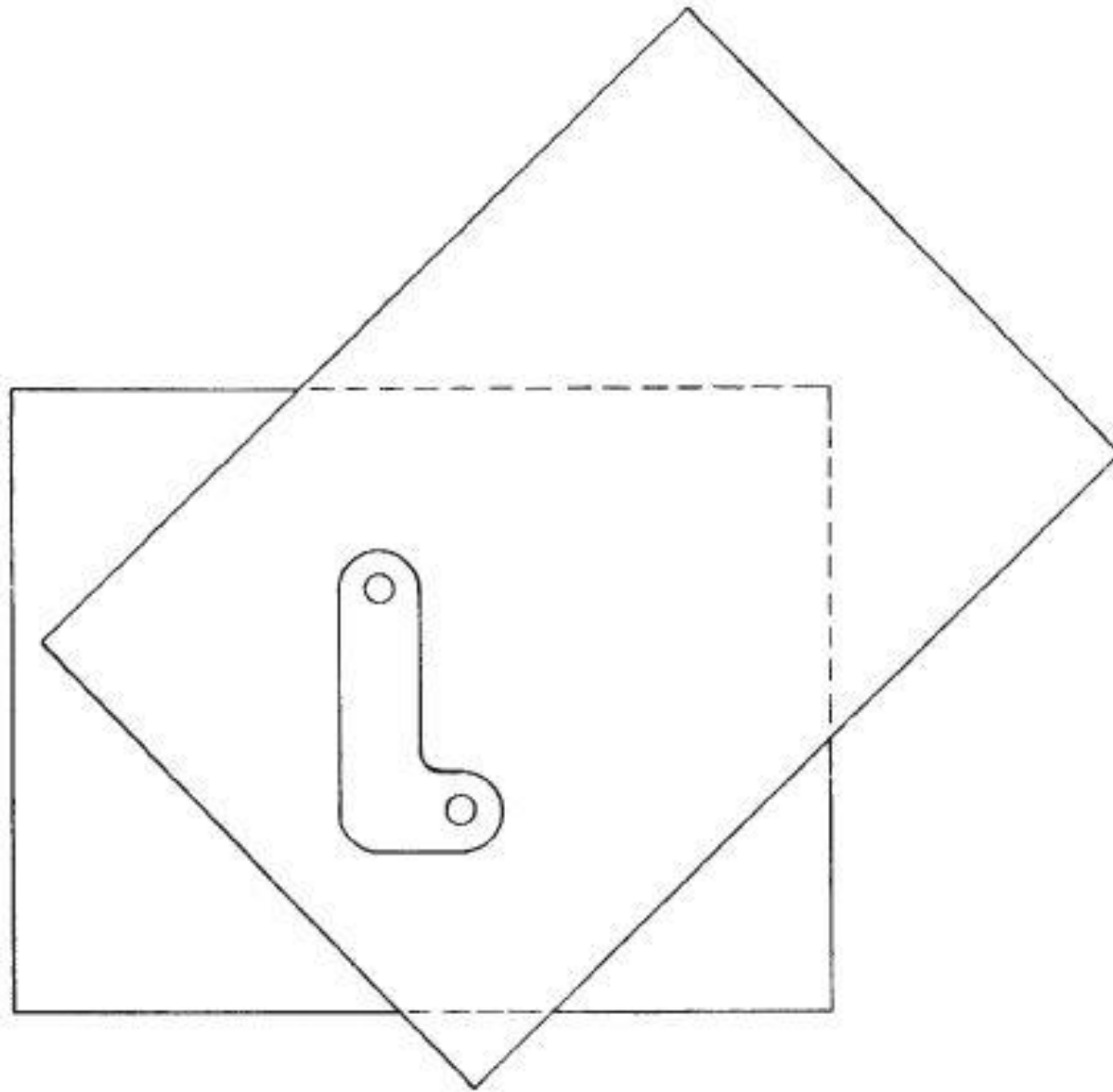


Figure 6.9 Tracing another part layout from Figure 6.5.

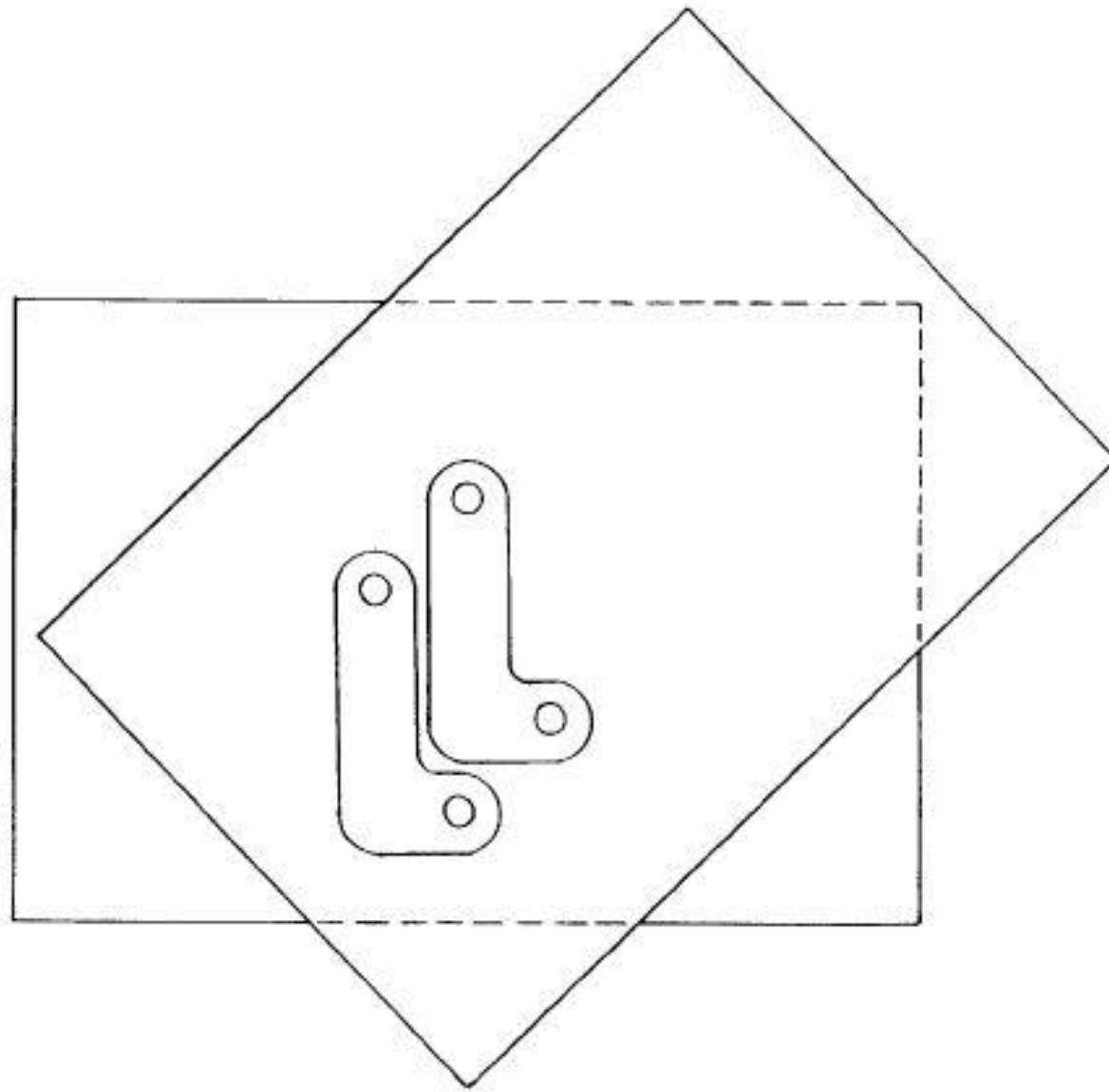


Figure 6.10 Moving the tracing to the best nesting position.

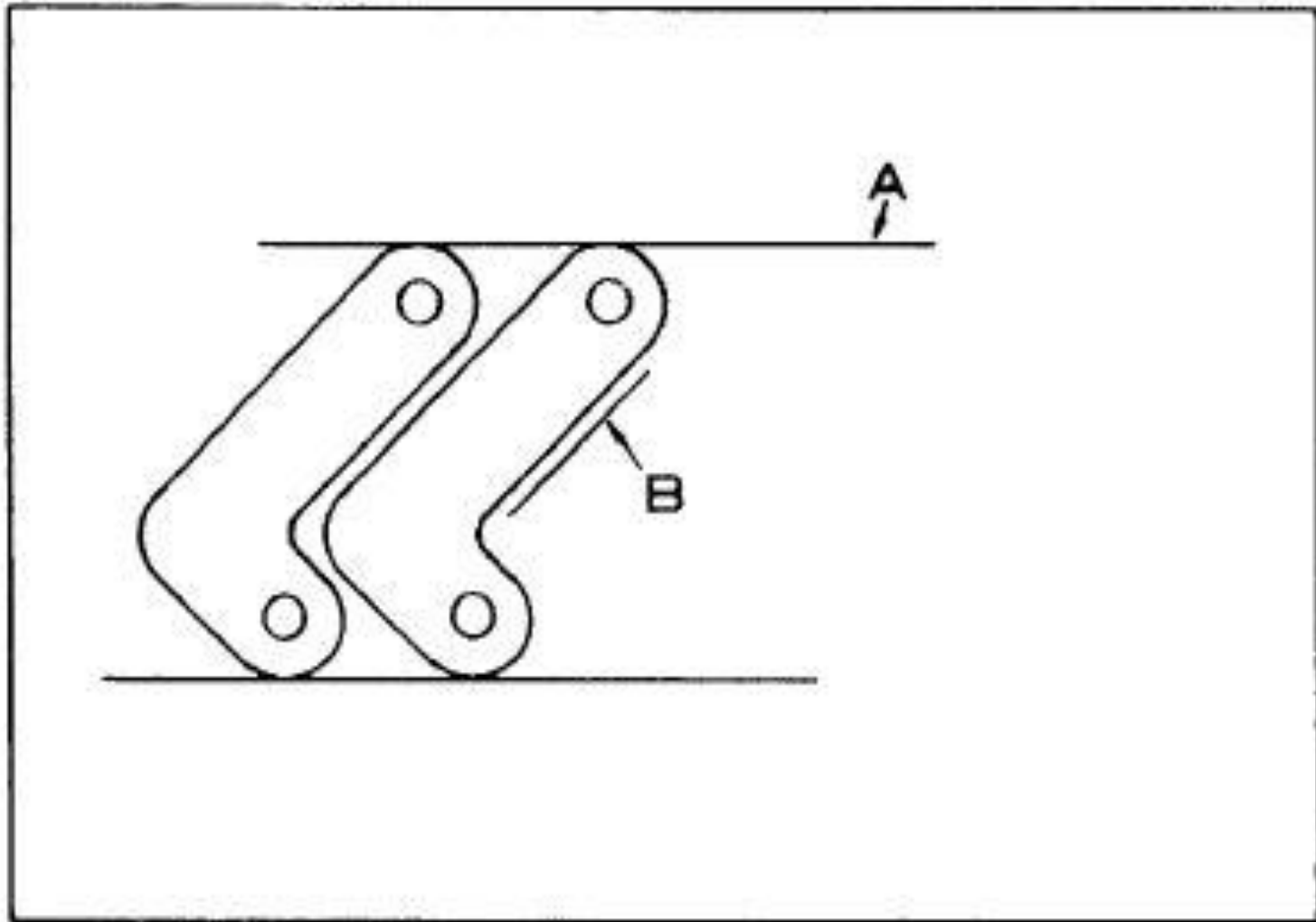


Figure 6.11 Corrected layout.



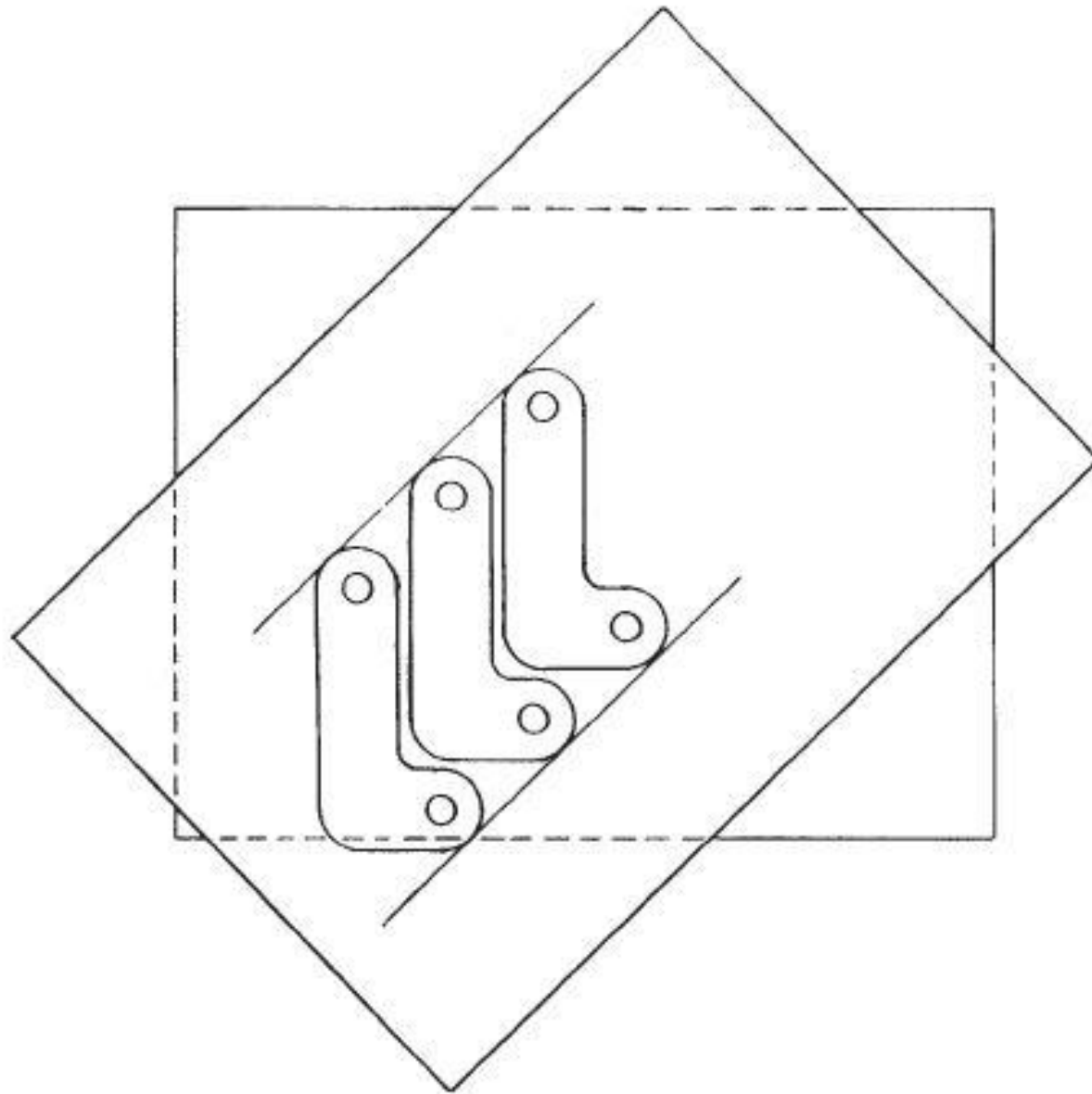


Figure 6.12 Drawing the third blank.

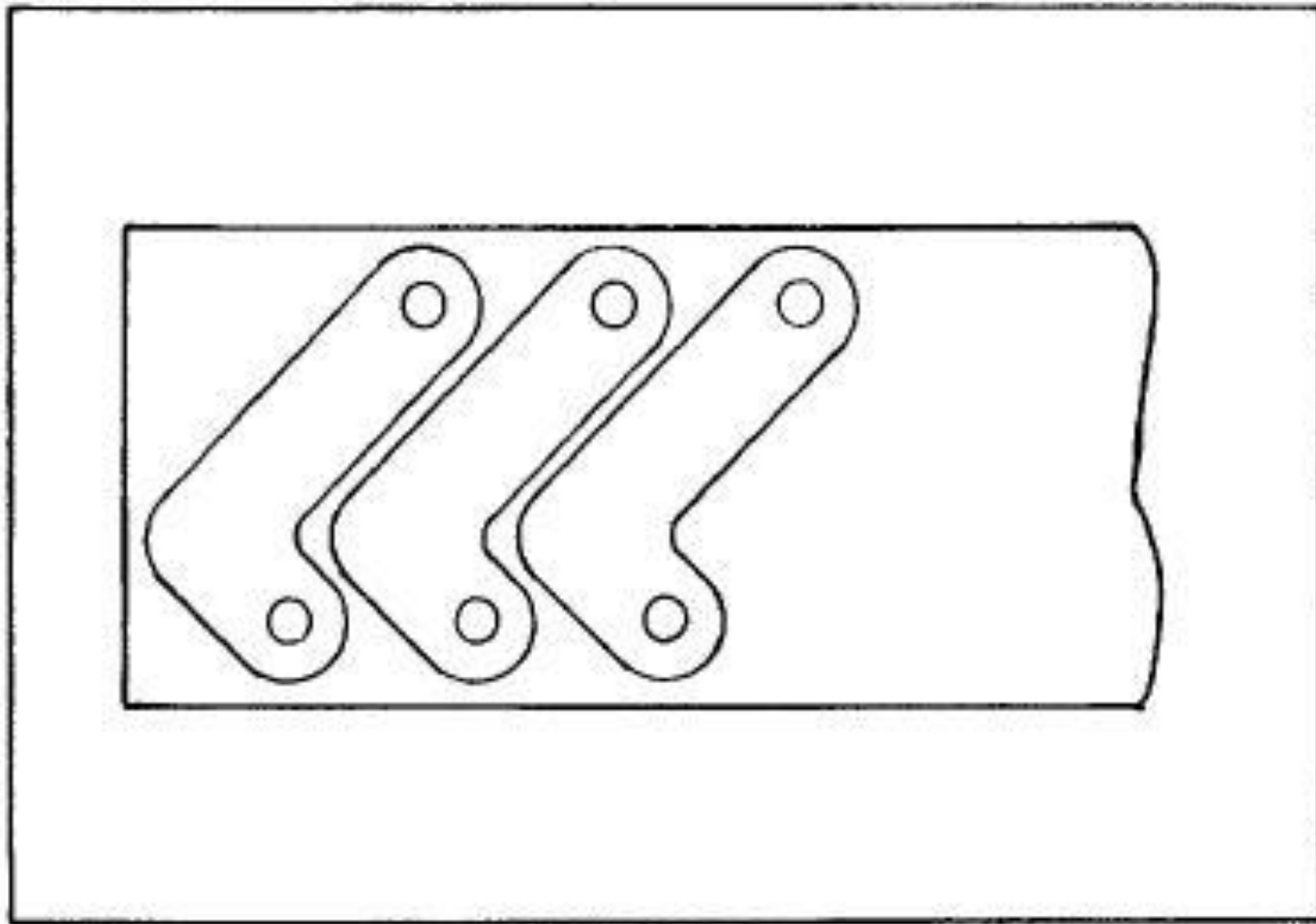


Figure 6.13 Completed layout.

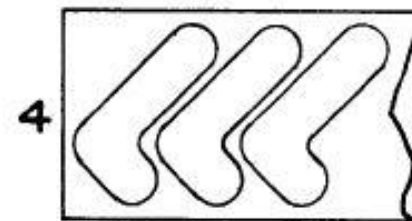
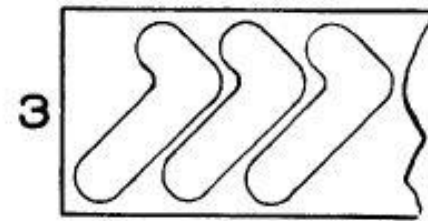
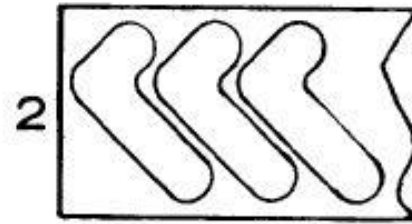
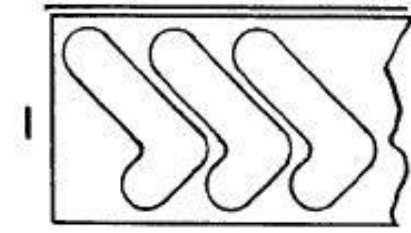


Figure 6.14 Four ways in which the strip can be run through the die.

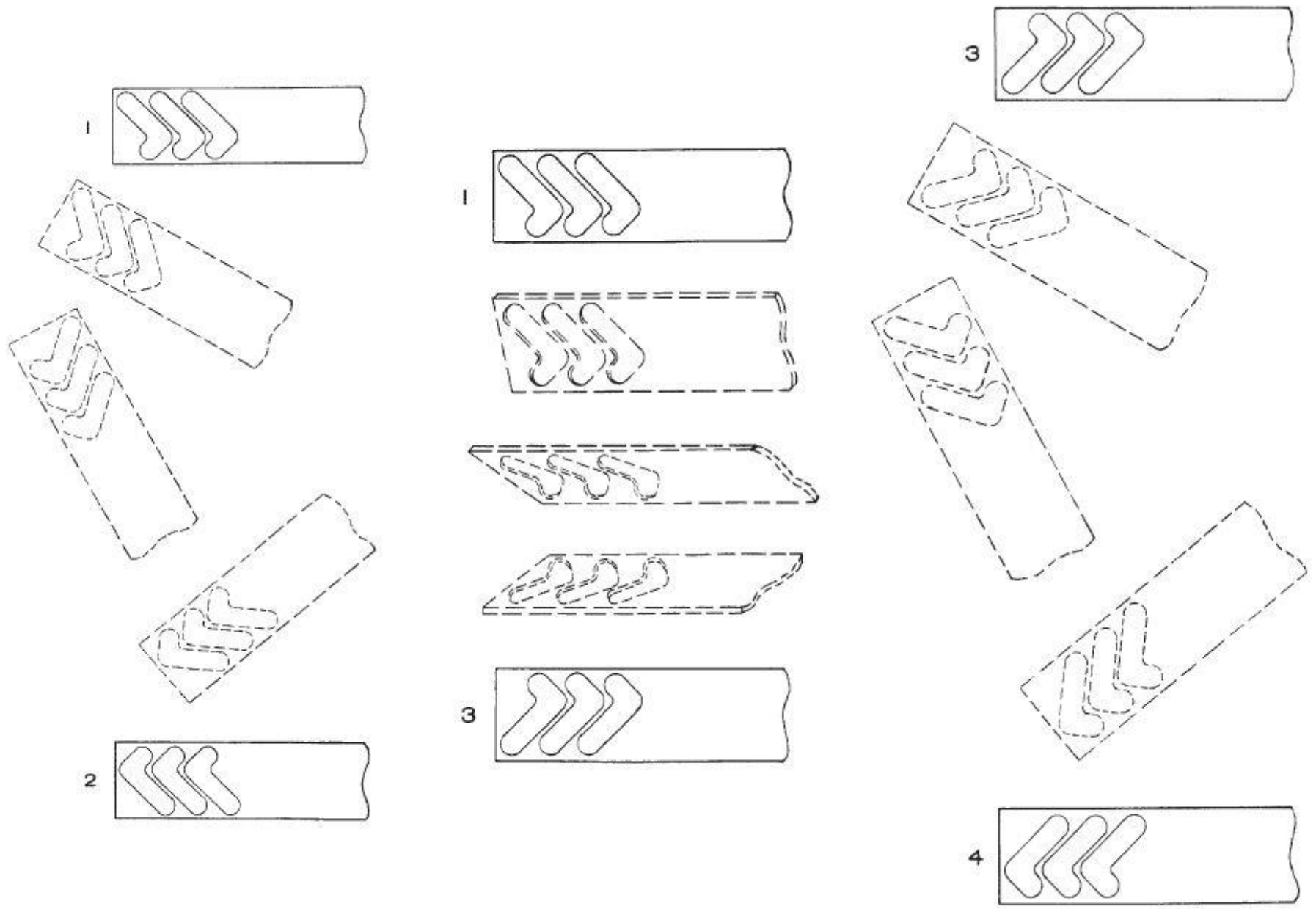


Figure 6.15 Ways of rotating the strip to obtain the various running methods.



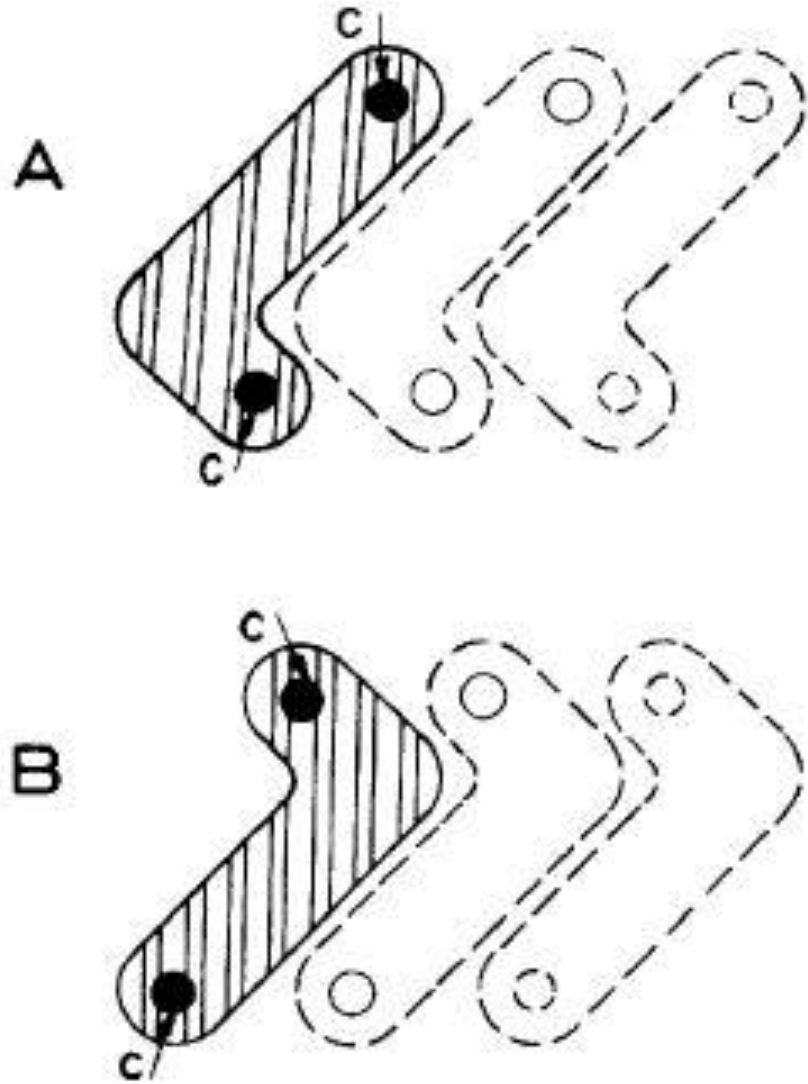
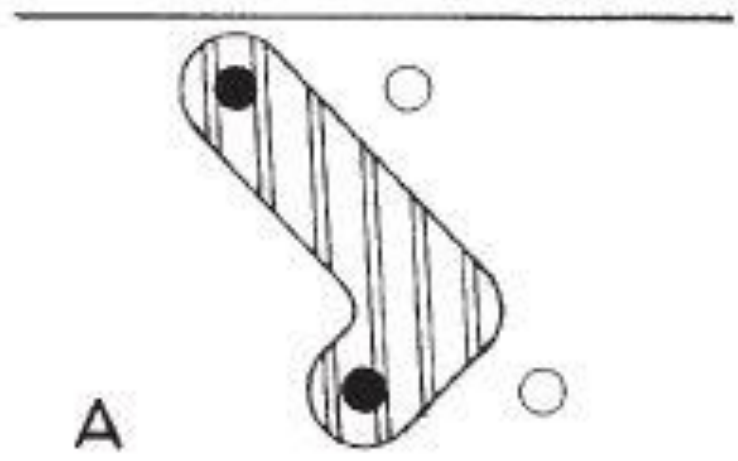
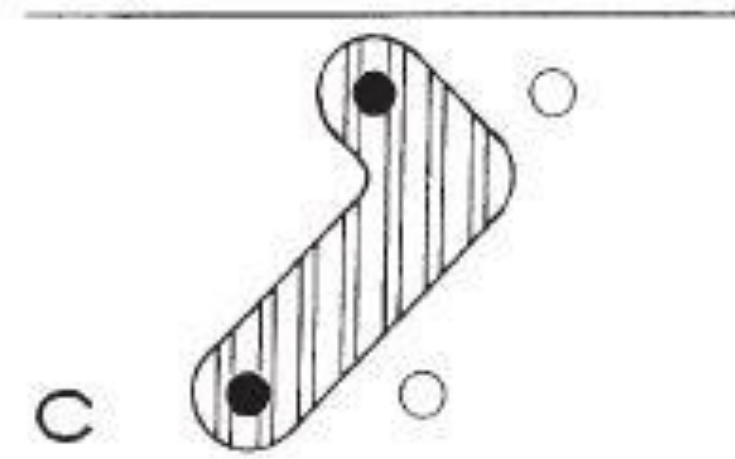


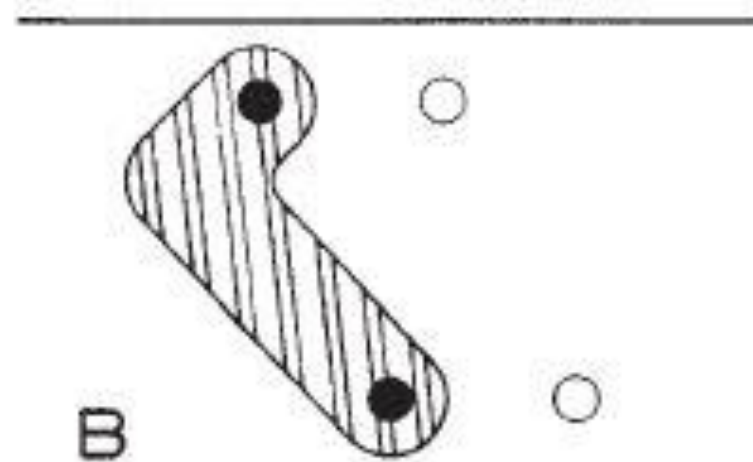
Figure 6.16 Use of the layout for making the piercing and blanking punch layout.



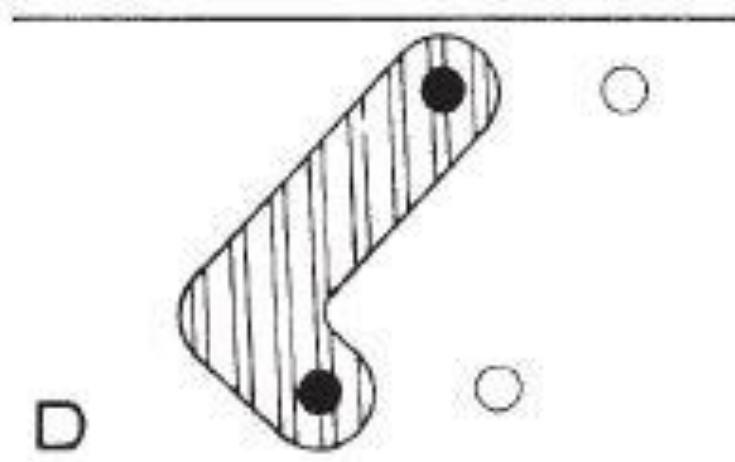
A



C

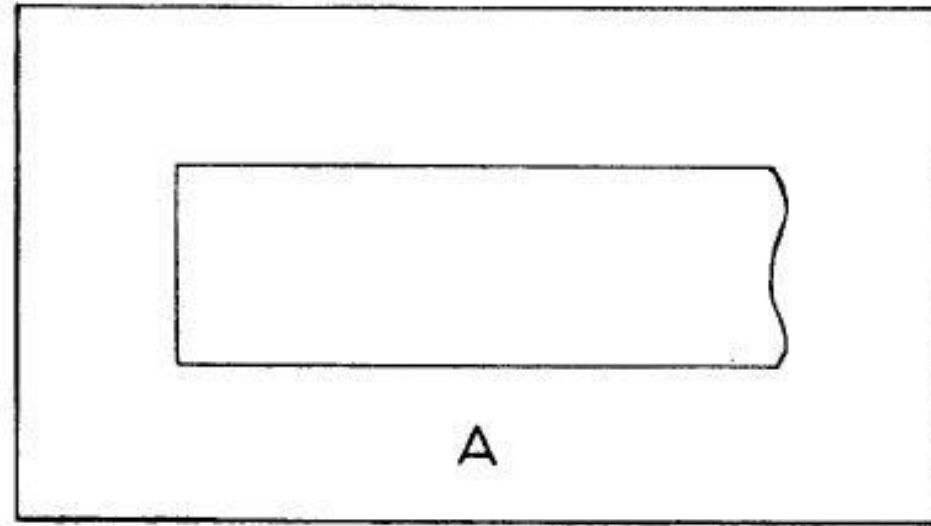


B

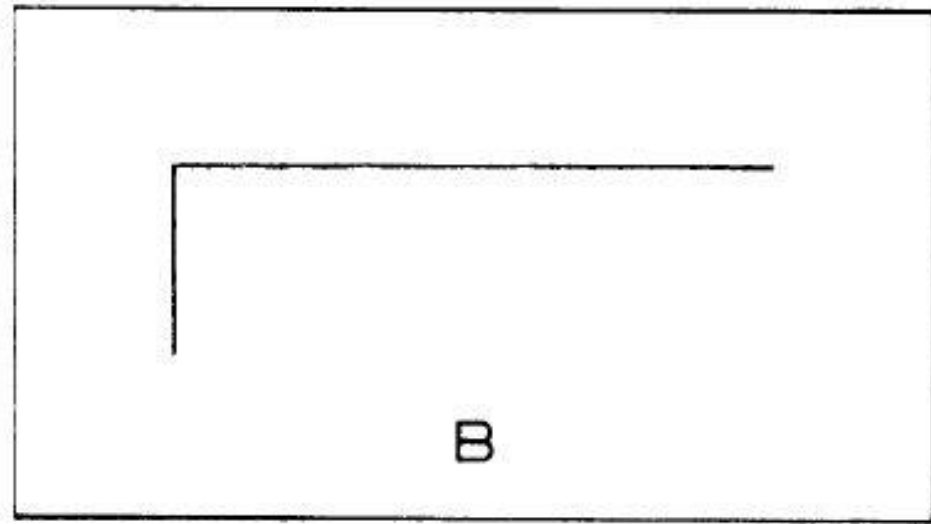


D

Figure 6.17 Four piercing and blanking punch layouts traced from Figure 6.13.



A



B

Figure 6.18 Drawing the trial scrap strip.

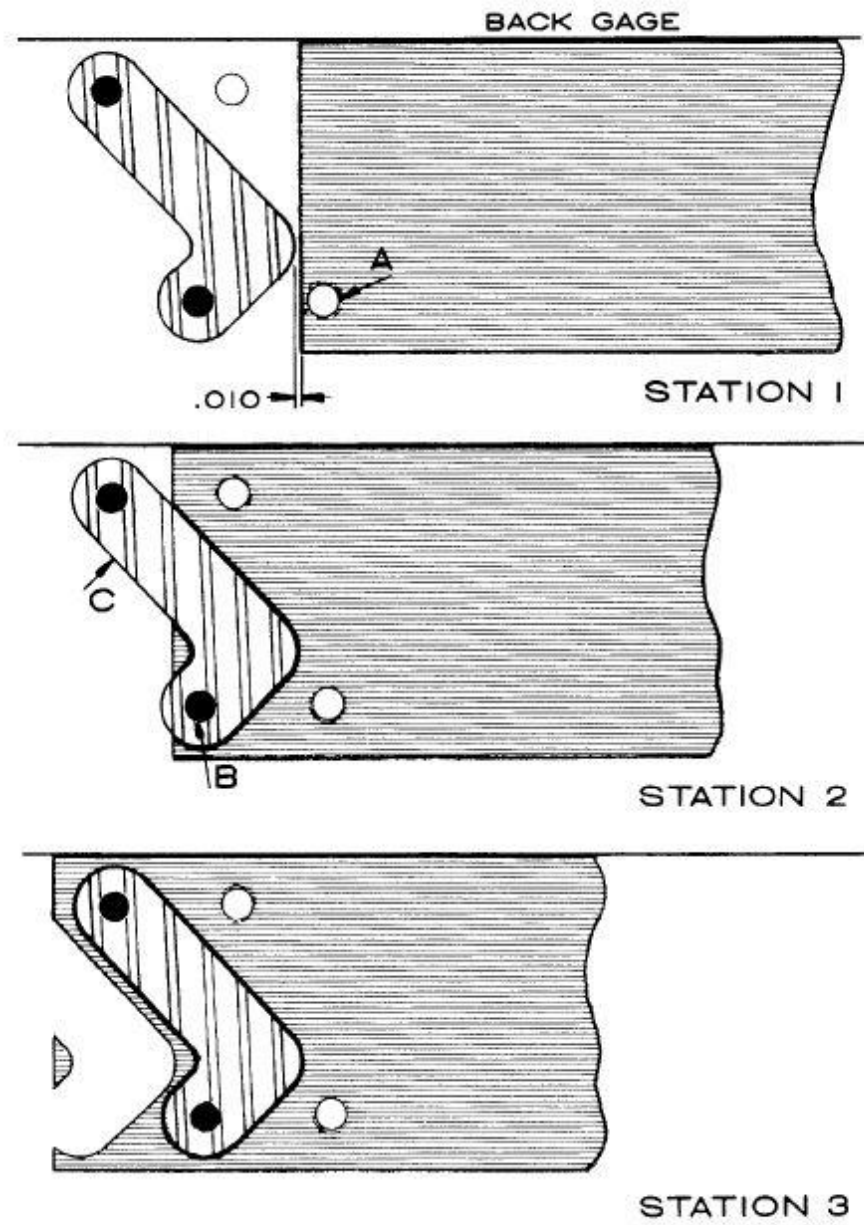


Figure 6.19 Testing the scrap strip for the first layout from Figure 6.14.



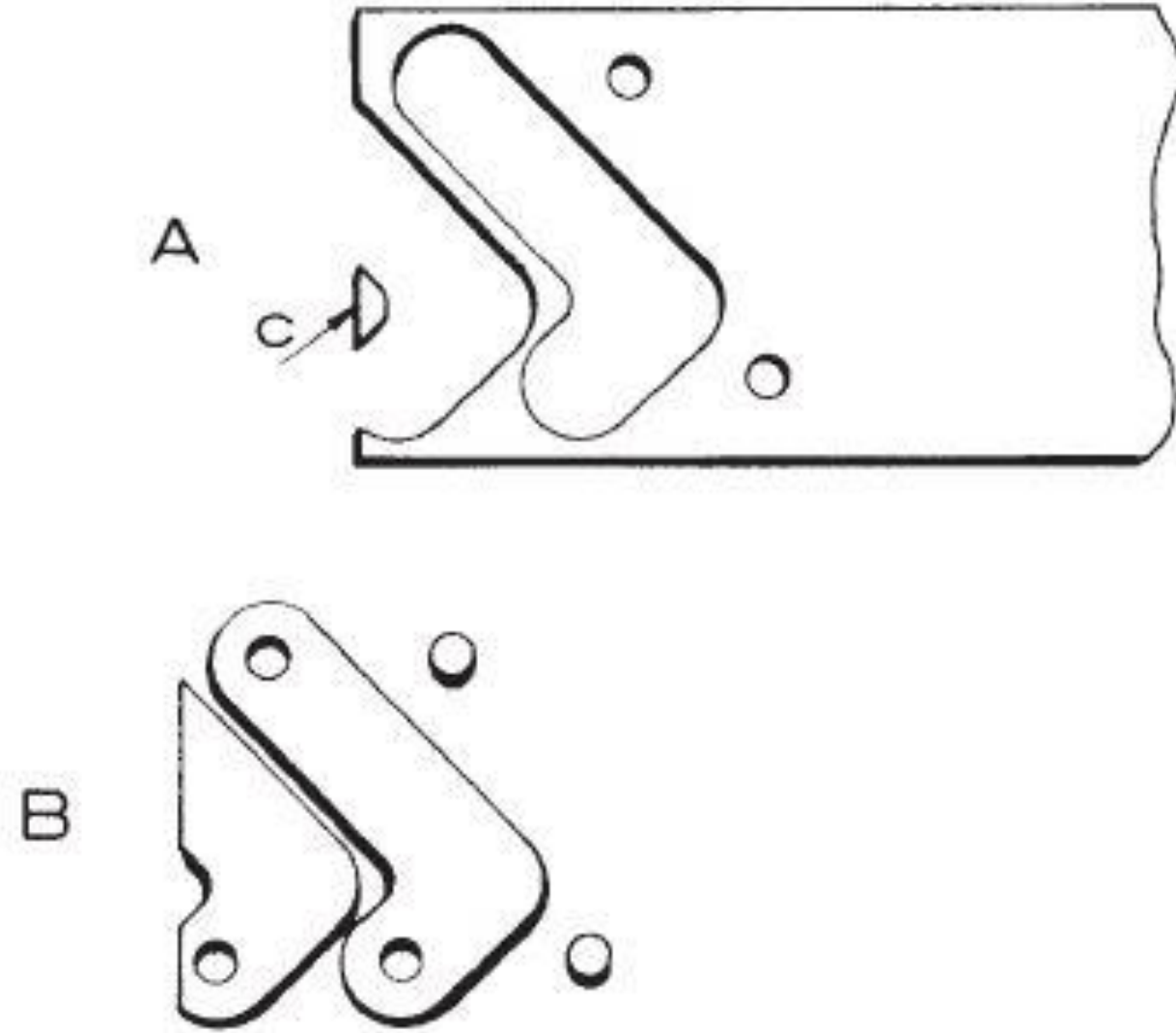
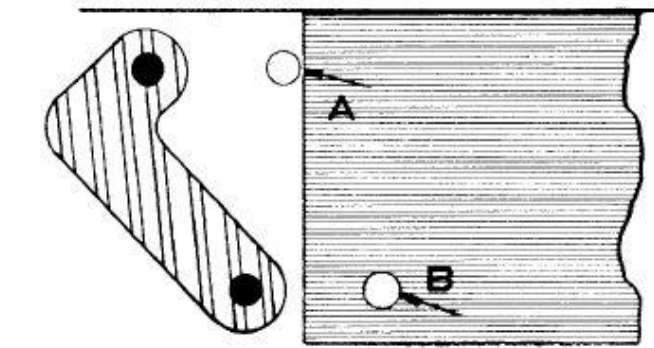
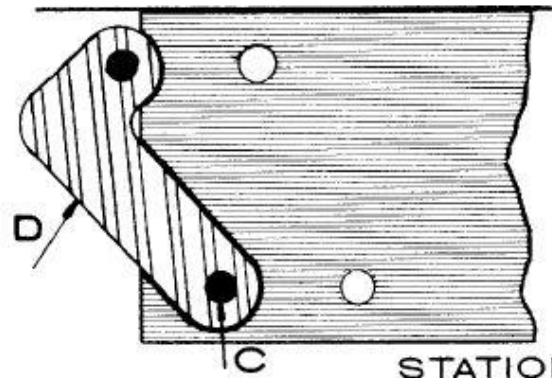


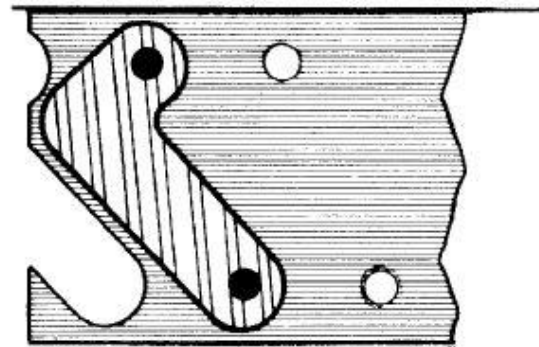
Figure 6.20 The resulting scrap strip (A) and parts removed (B) in testing the first layout.



STATION 1



STATION 2



STATION 3

Figure 6.21 Testing the scrap strip for the second layout from Figure 6.14.

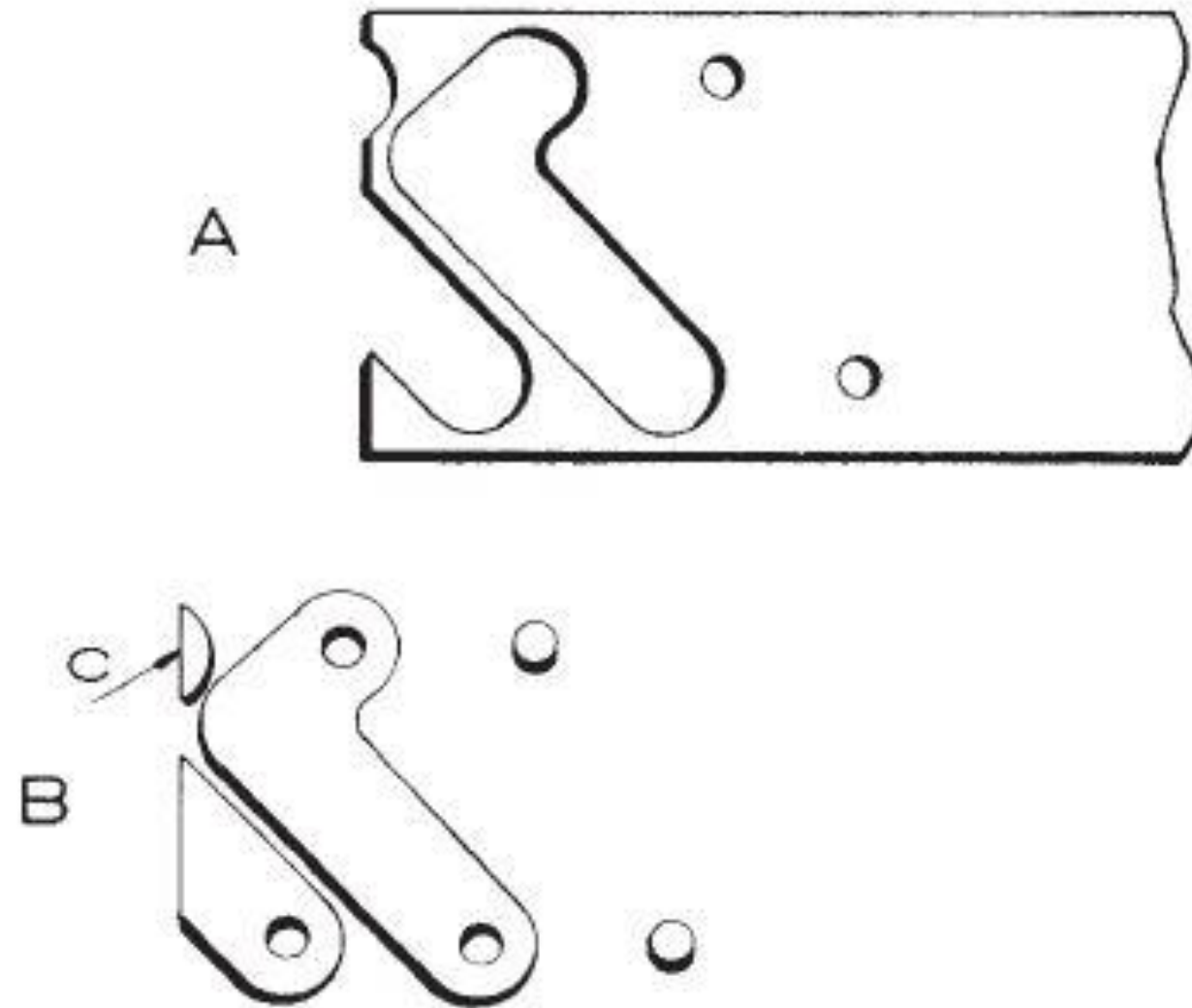


Figure 6.22 The resulting scrap strip (A) and parts removed (B) in testing the second layout.



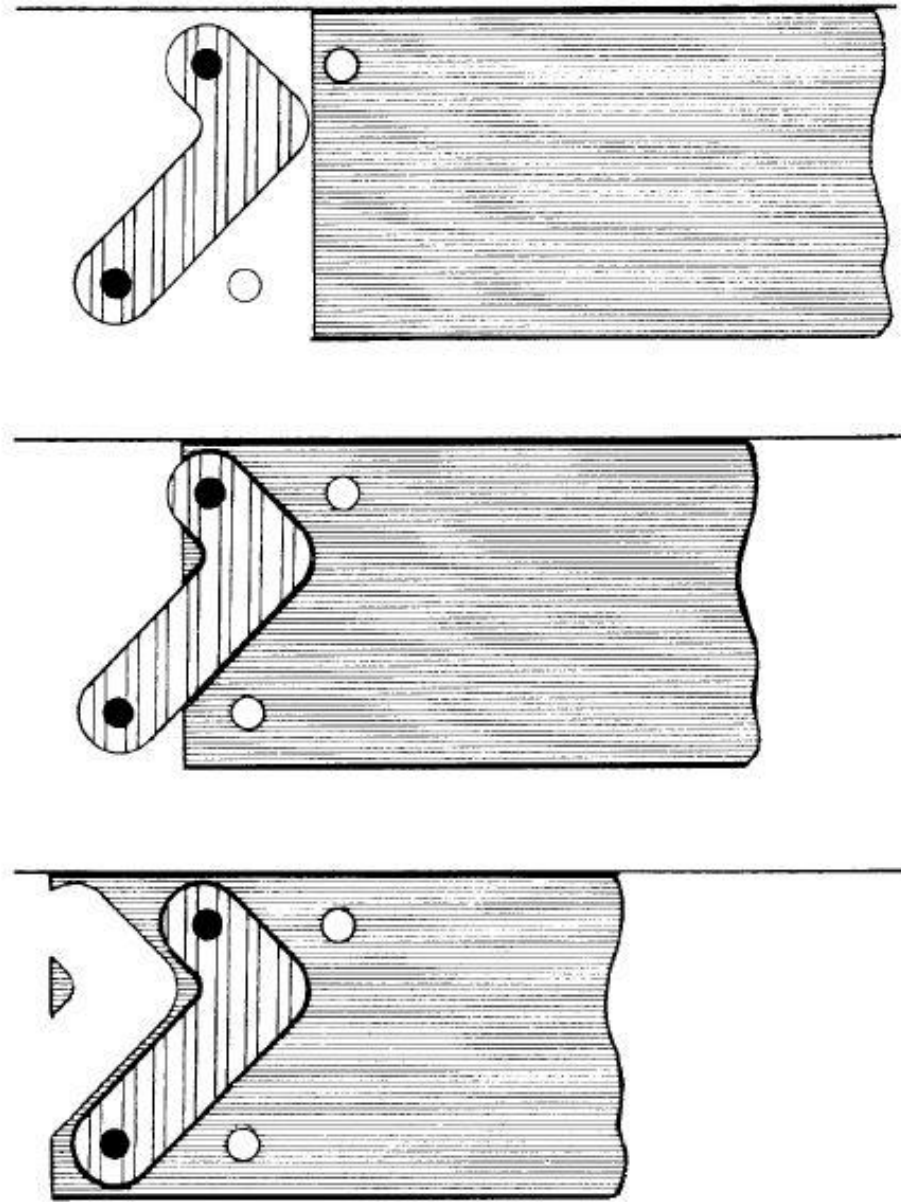


Figure 6.23 Testing the scrap strip for the third layout from Figure 6.14.



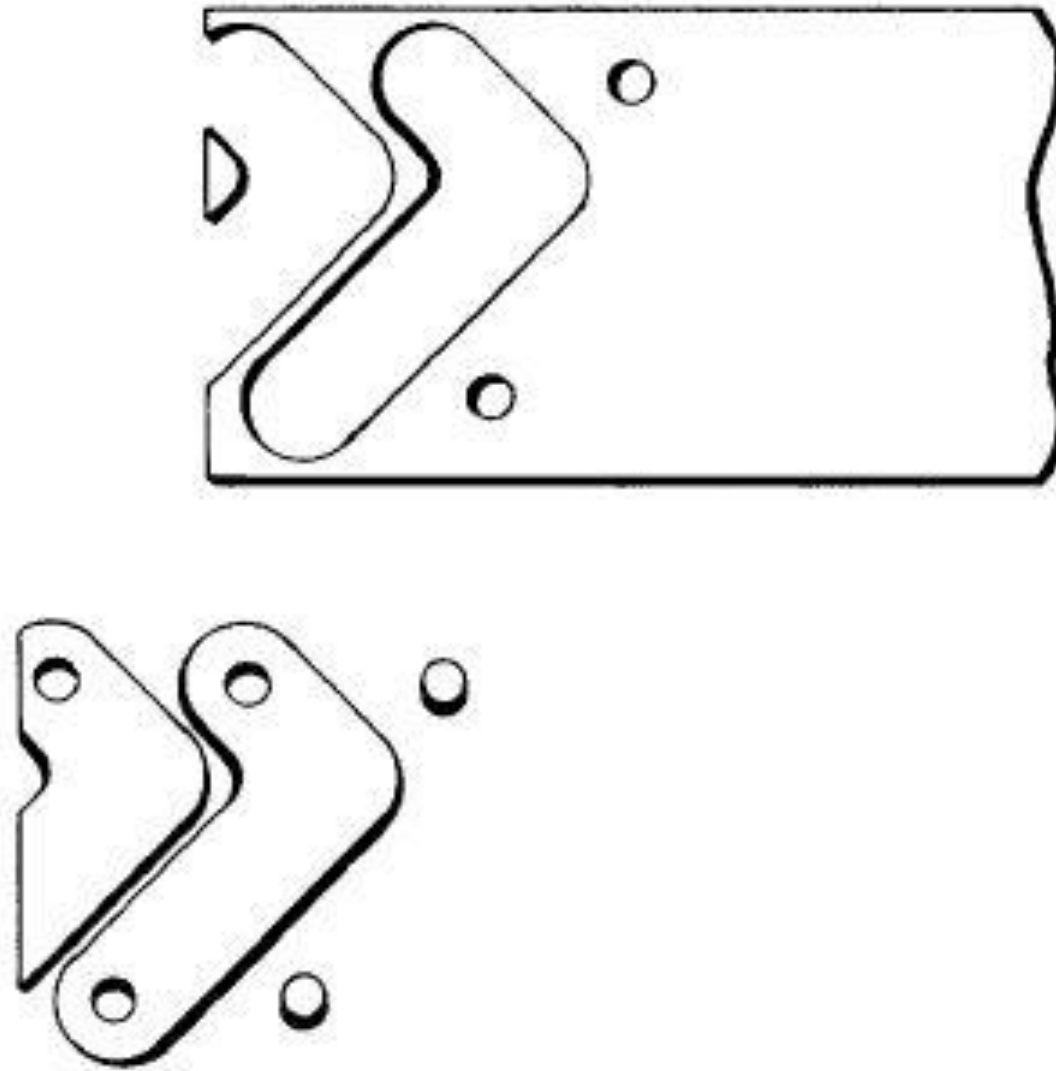


Figure 6.24 The resulting scrap strip and parts removed in testing the third layout.

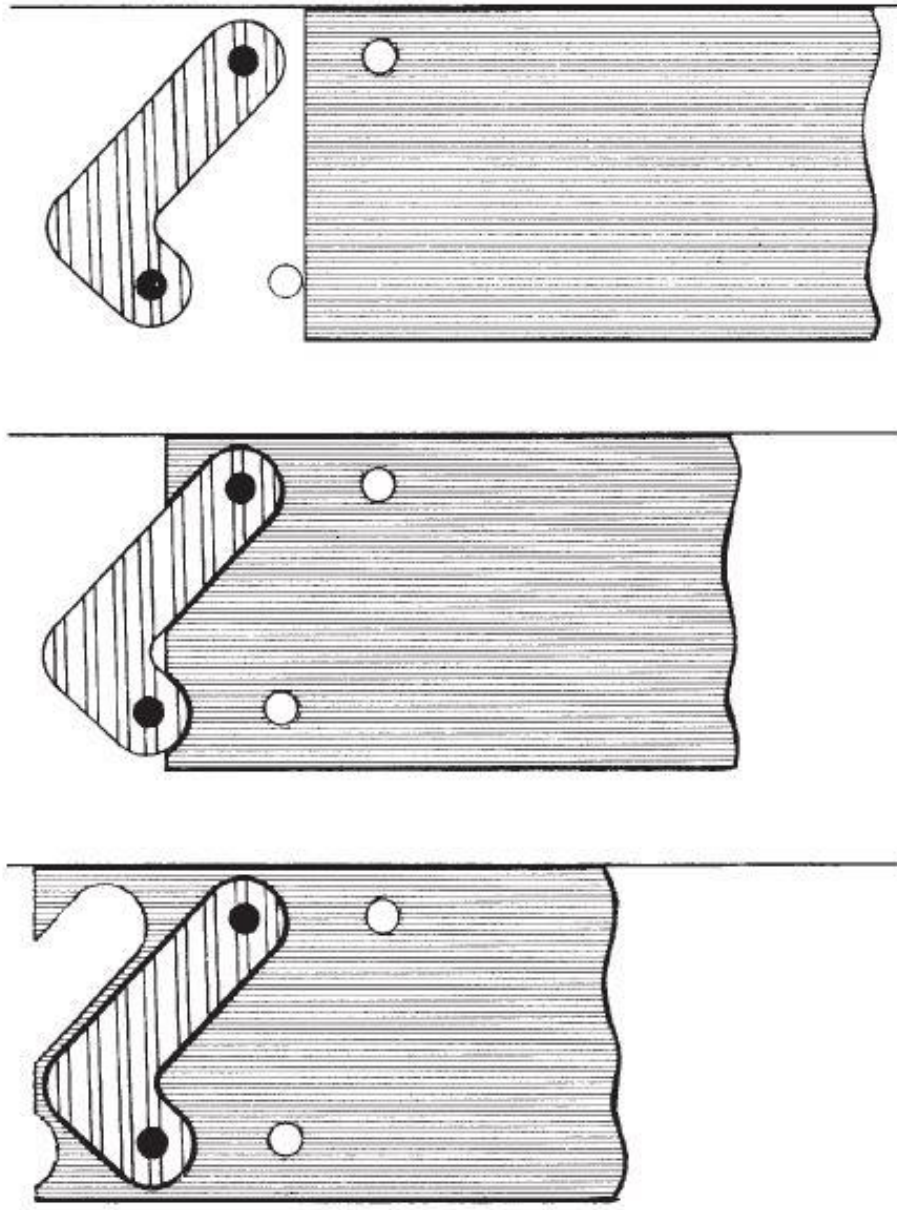


Figure 6.25 Testing the scrap strip for the fourth layout from Figure 6.14.

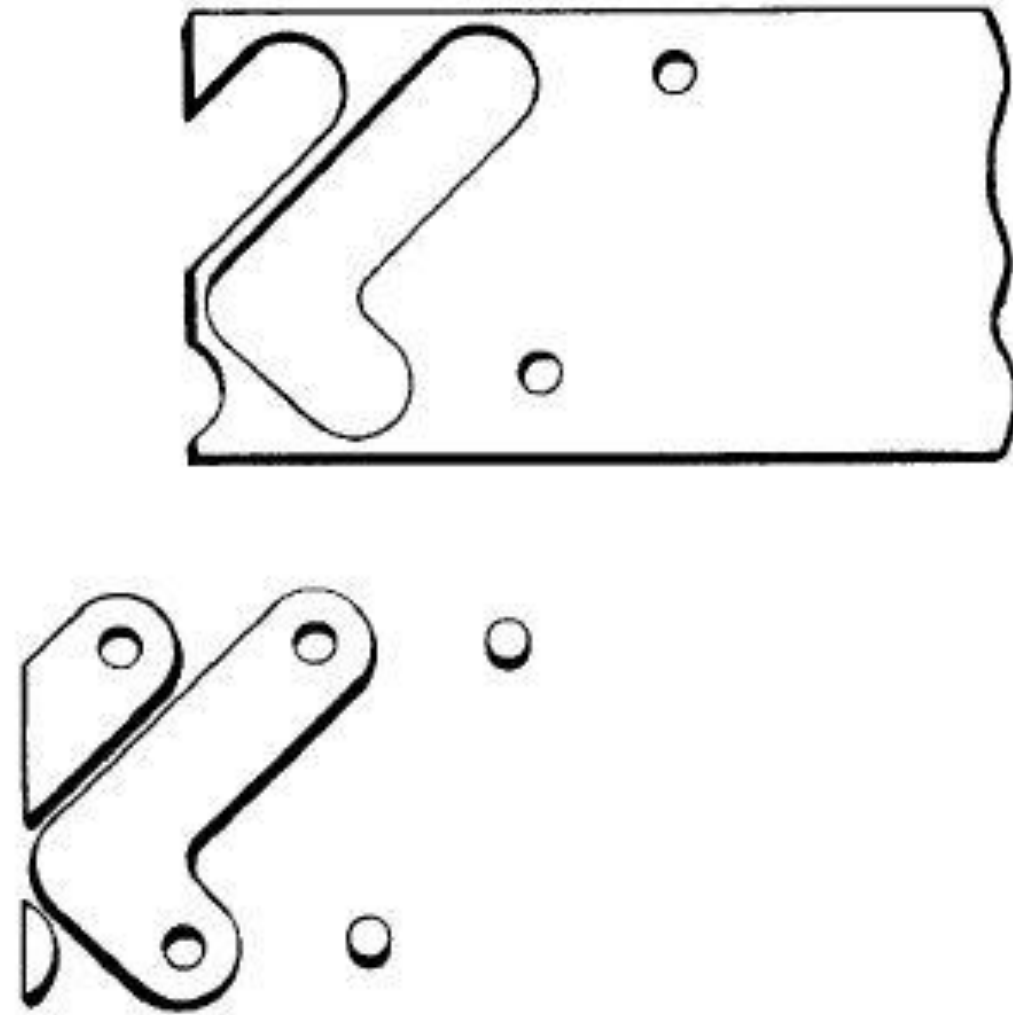


Figure 6.26 The resulting scrap strip and parts removed in testing the fourth layout.

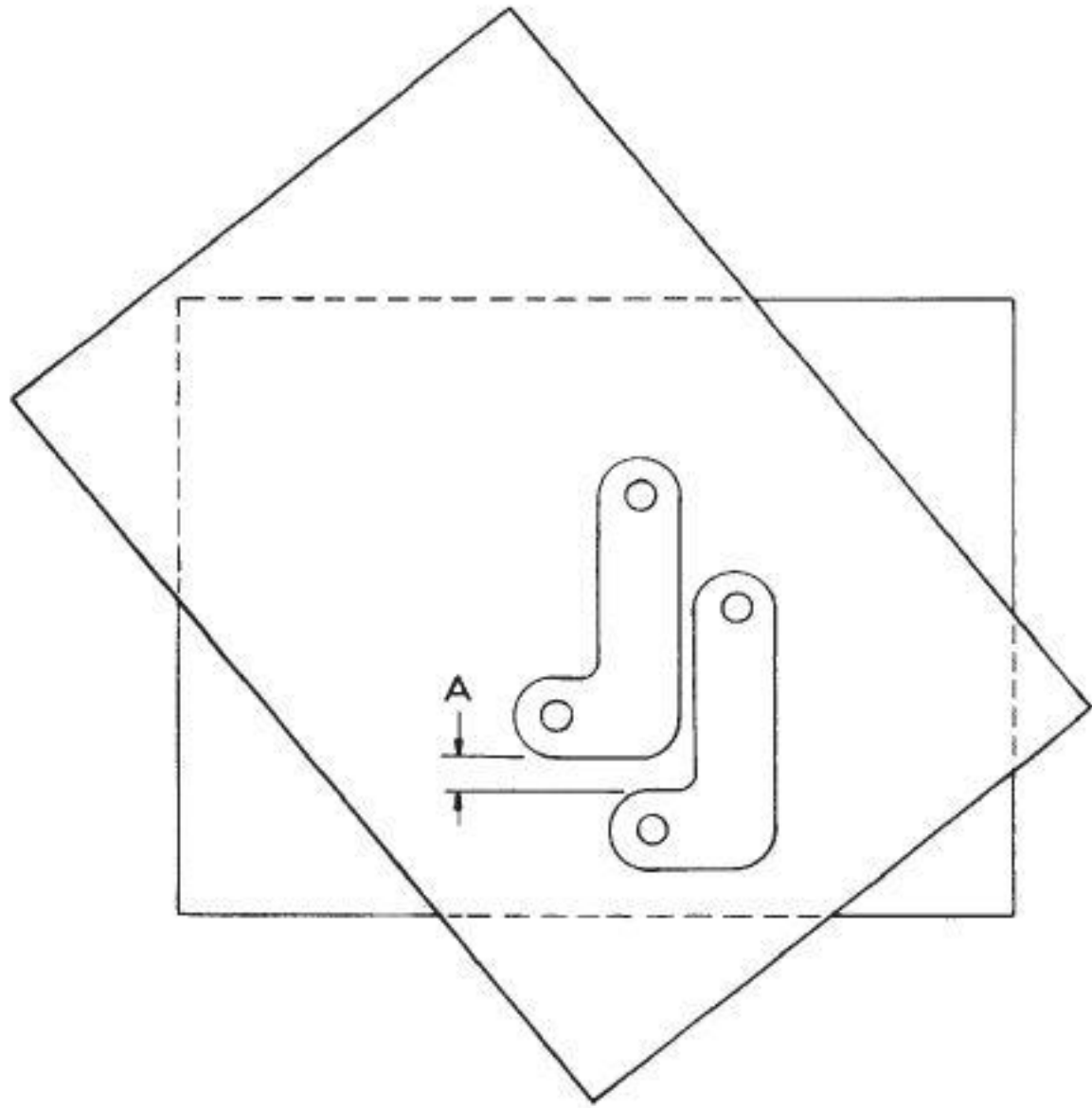


Figure 6.27 Tracing a new layout that allows for a greater space at **A**.



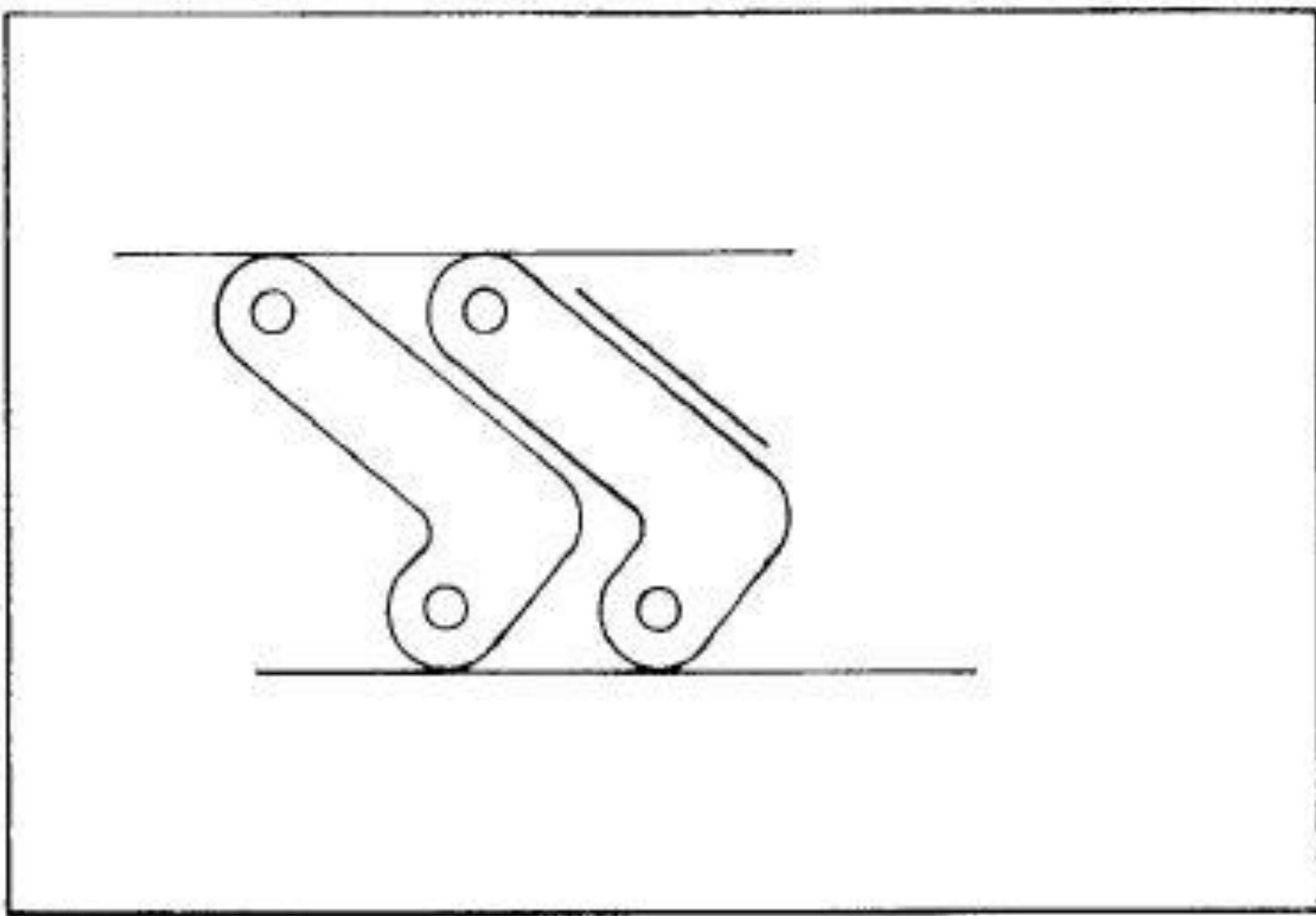


Figure 6.28 Corrected outlines.

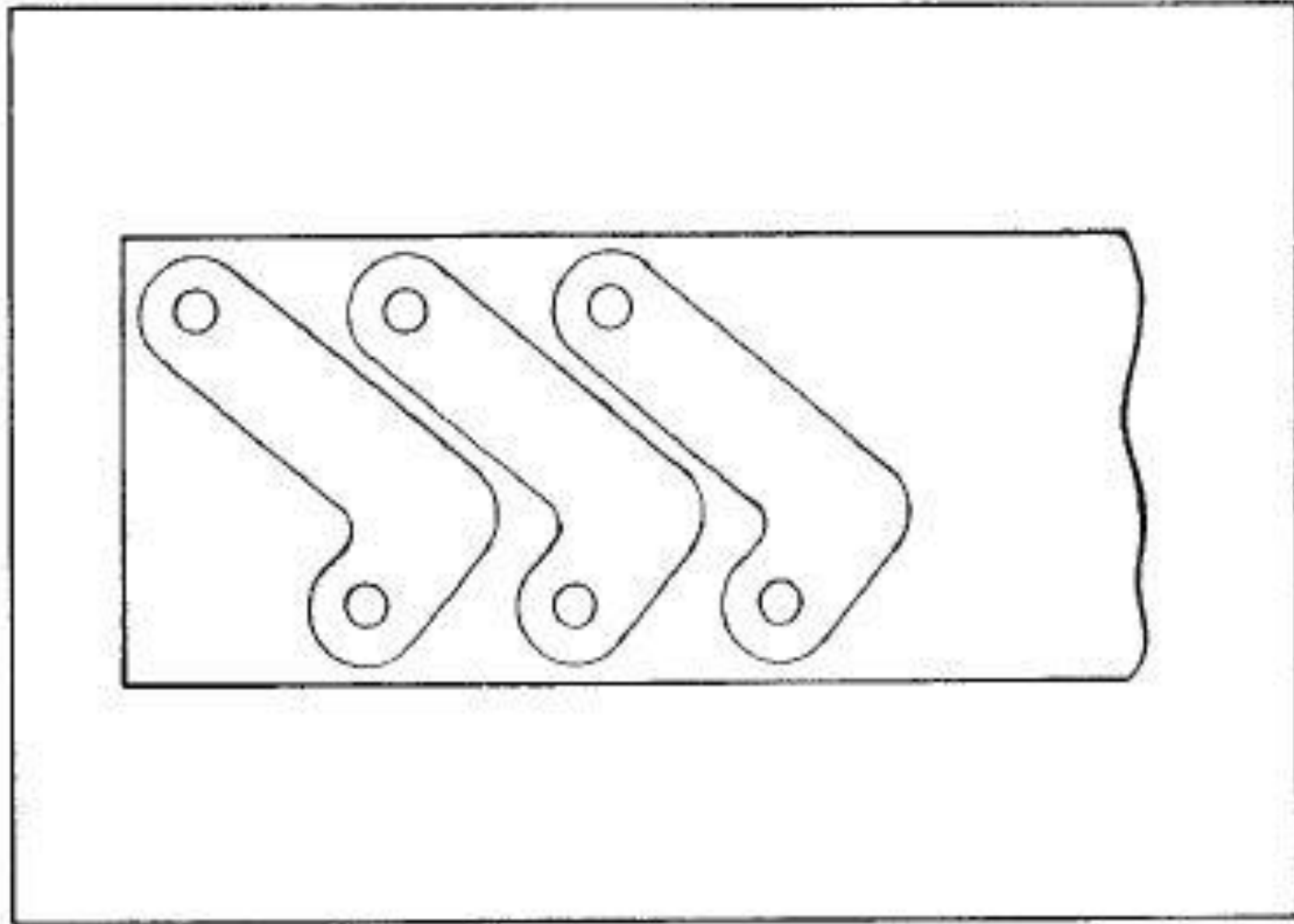


Figure 6.29 Completed new layout.

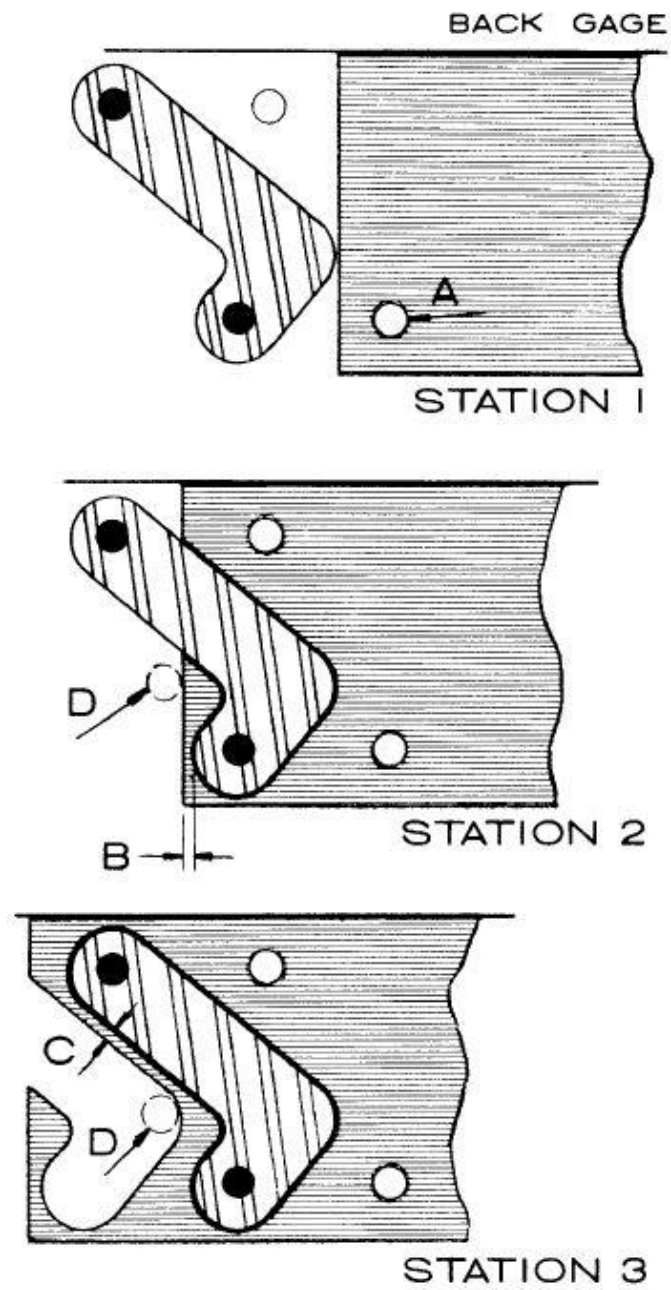


Figure 6.30 Testing the new scrap strip layout.

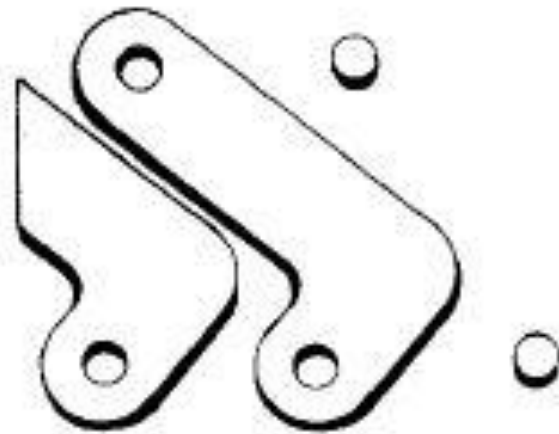
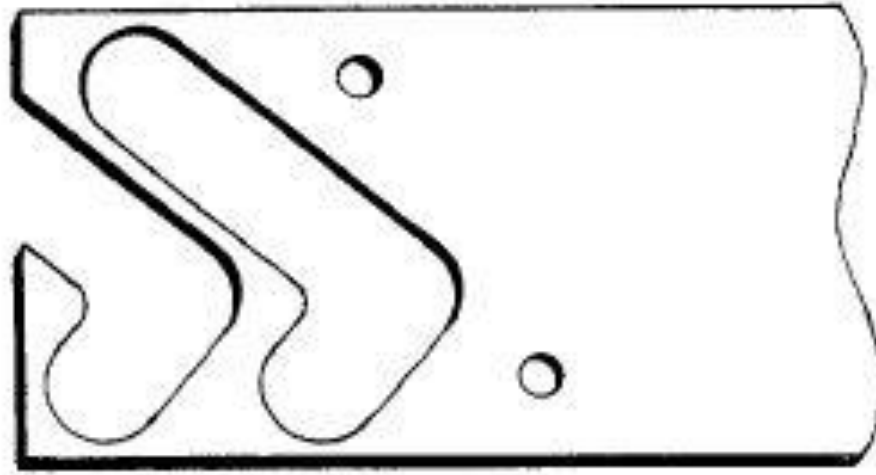


Figure 6.31 The resulting scrap strip and parts removed in testing the new layout.



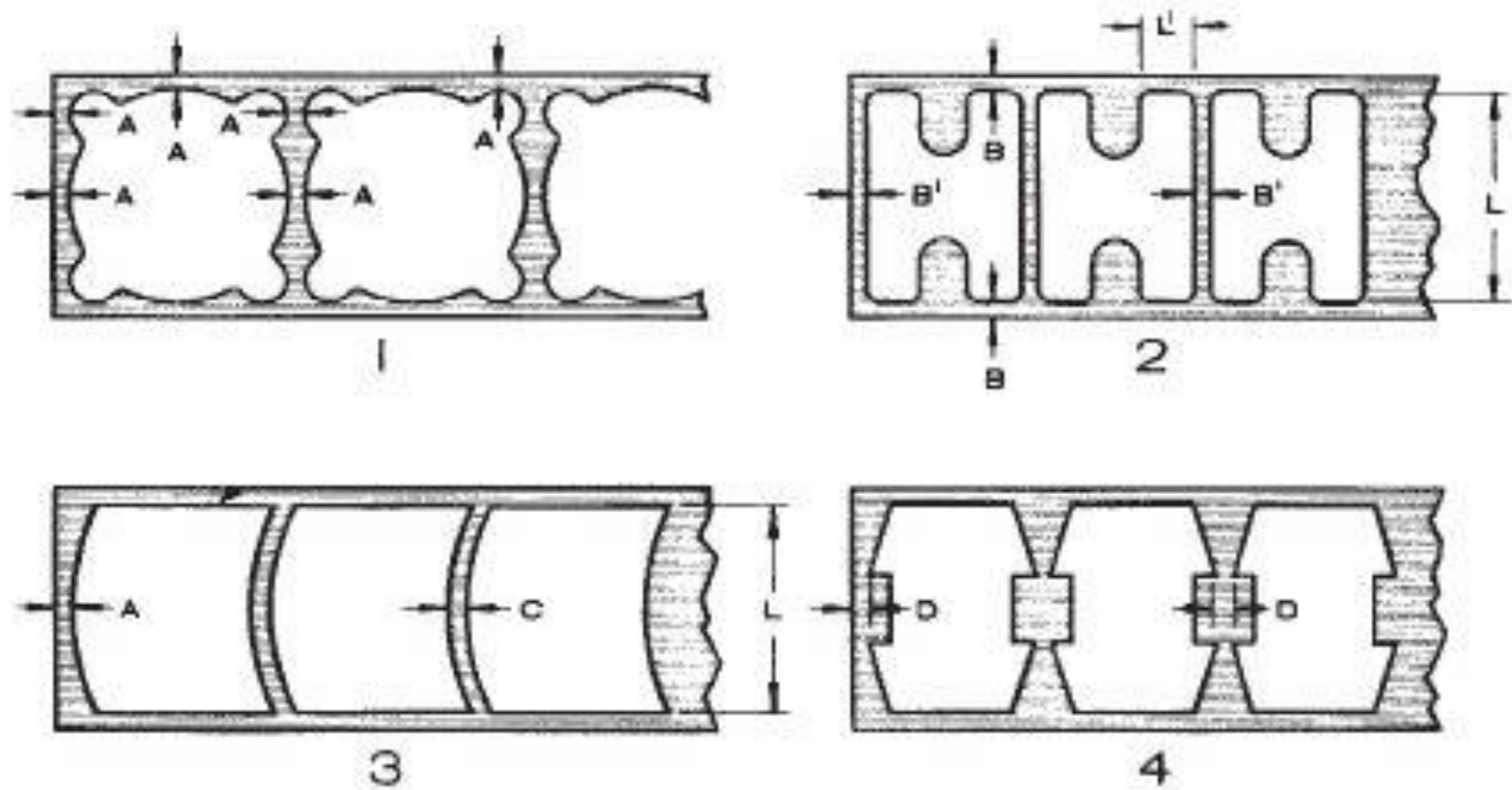
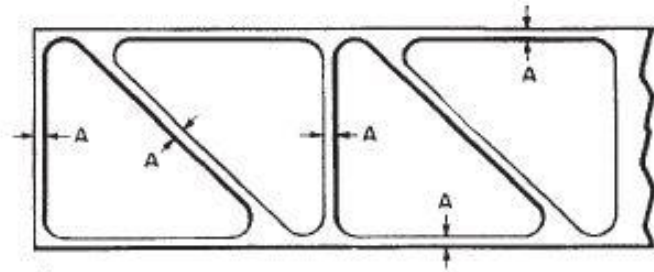
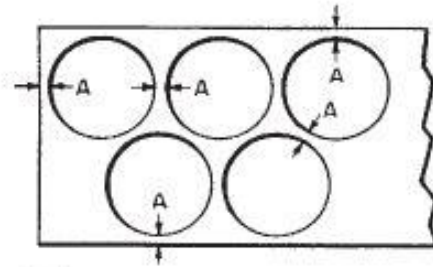


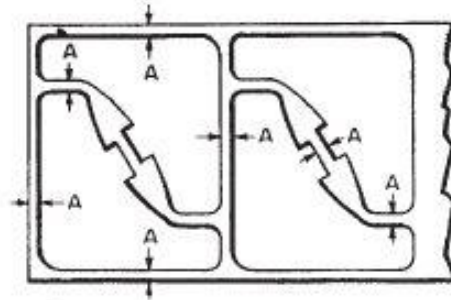
Figure 6.32 Four classifications of blank peripheries aid in determining scrap strip allowances for one-pass layouts.



**A** Single-row layout intended for two passes through die:  $A = 1\frac{1}{2}T$

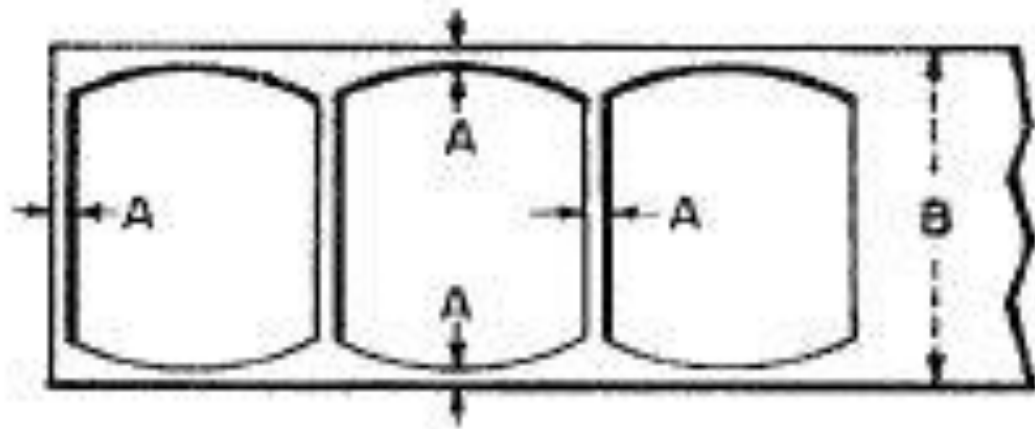


**B** Double-row layout of blanks with curved outlines:  $A = 1\frac{1}{4}T$



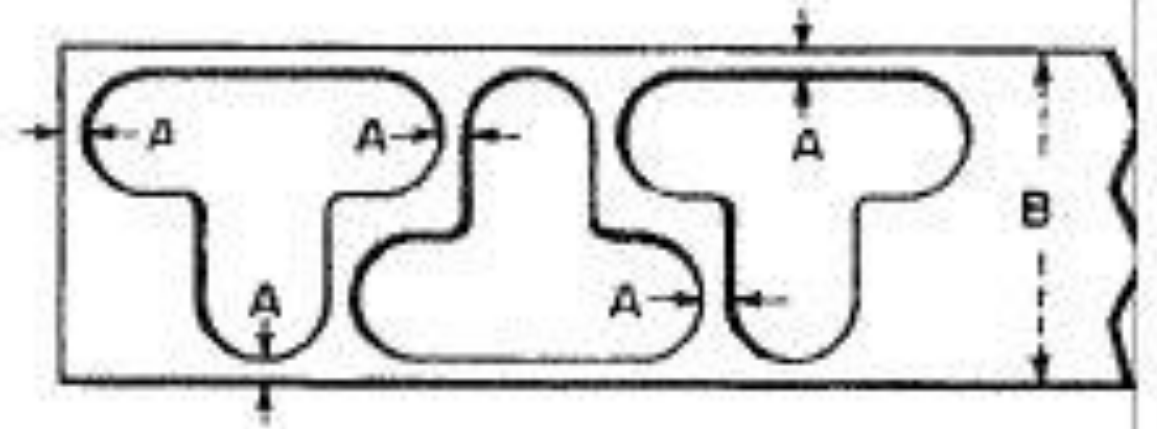
**C** Double-row layout of parts with straight and curved outlines:  $A = 1\frac{1}{4}T$

Figure 6.33 Scrap strip allowances for two-pass layouts.



ONE-PASS LAYOUT

Strip Width $B$	Space $A$
0 to 3 in.....	1/32 in.
3 to 6 in.....	1/16 in.
6 to 12 in.....	3/32 in.
Over 12 in.....	1/8 in.



DOUBLE-PASS LAYOUT

Strip Width $B$	Space $A$
0 to 3 in.....	1/16 in.
3 to 6 in.....	3/32 in.
6 to 12 in.....	1/8 in.
Over 12 in.....	5/32 in.

Figure 6.34 Minimum scrap-strip allowances.



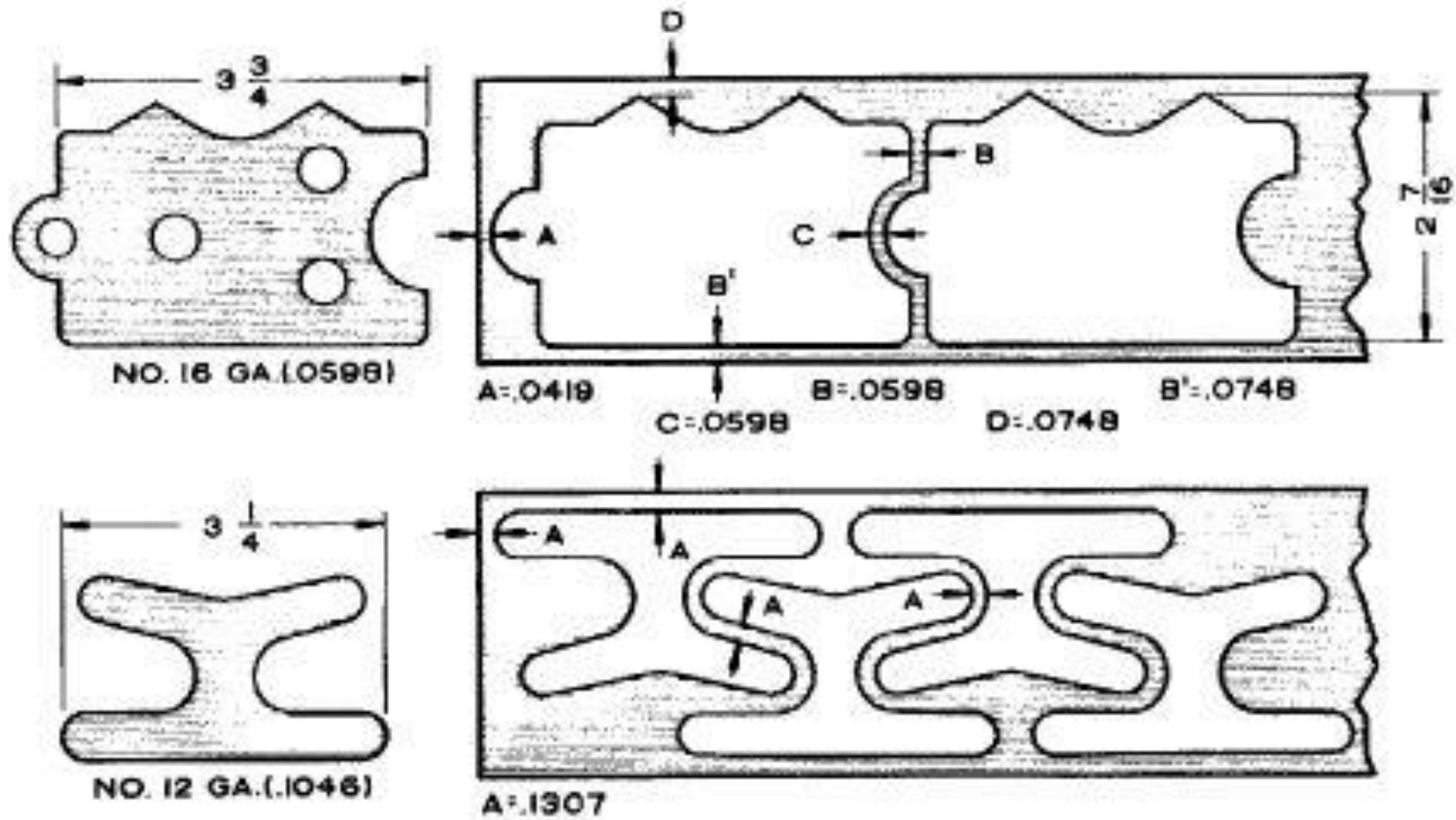


Figure 6.35 Application of allowances for two representative parts.



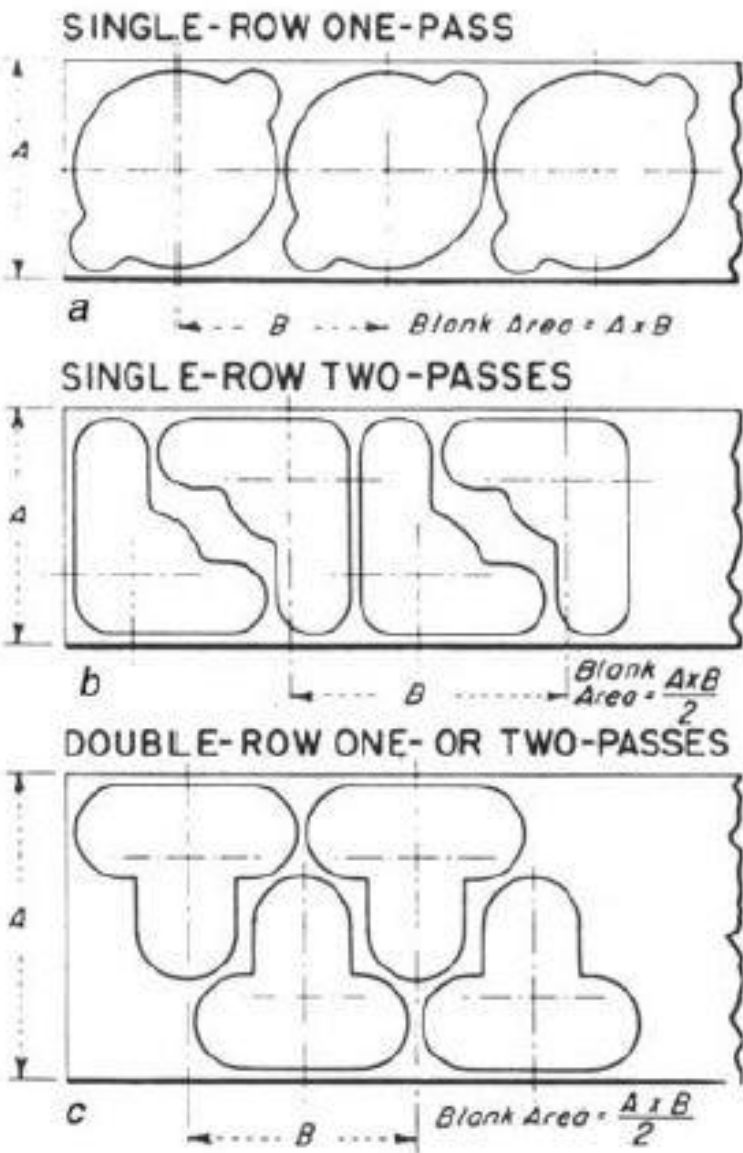


Figure 6.36 Representative illustrations for calculating blank areas.

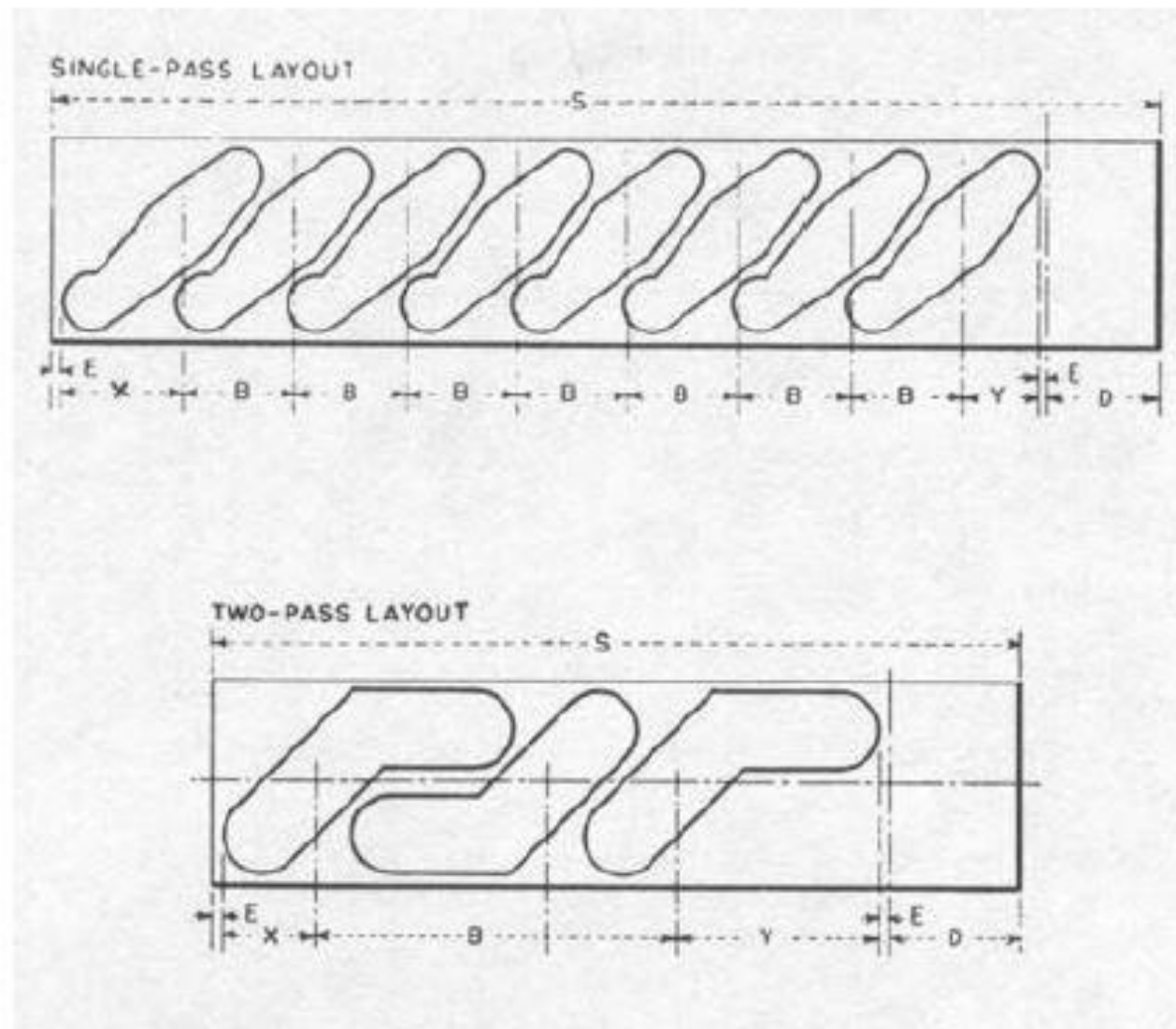


Figure 6.37 Representative illustrations for determining the number of blanks in a strip.

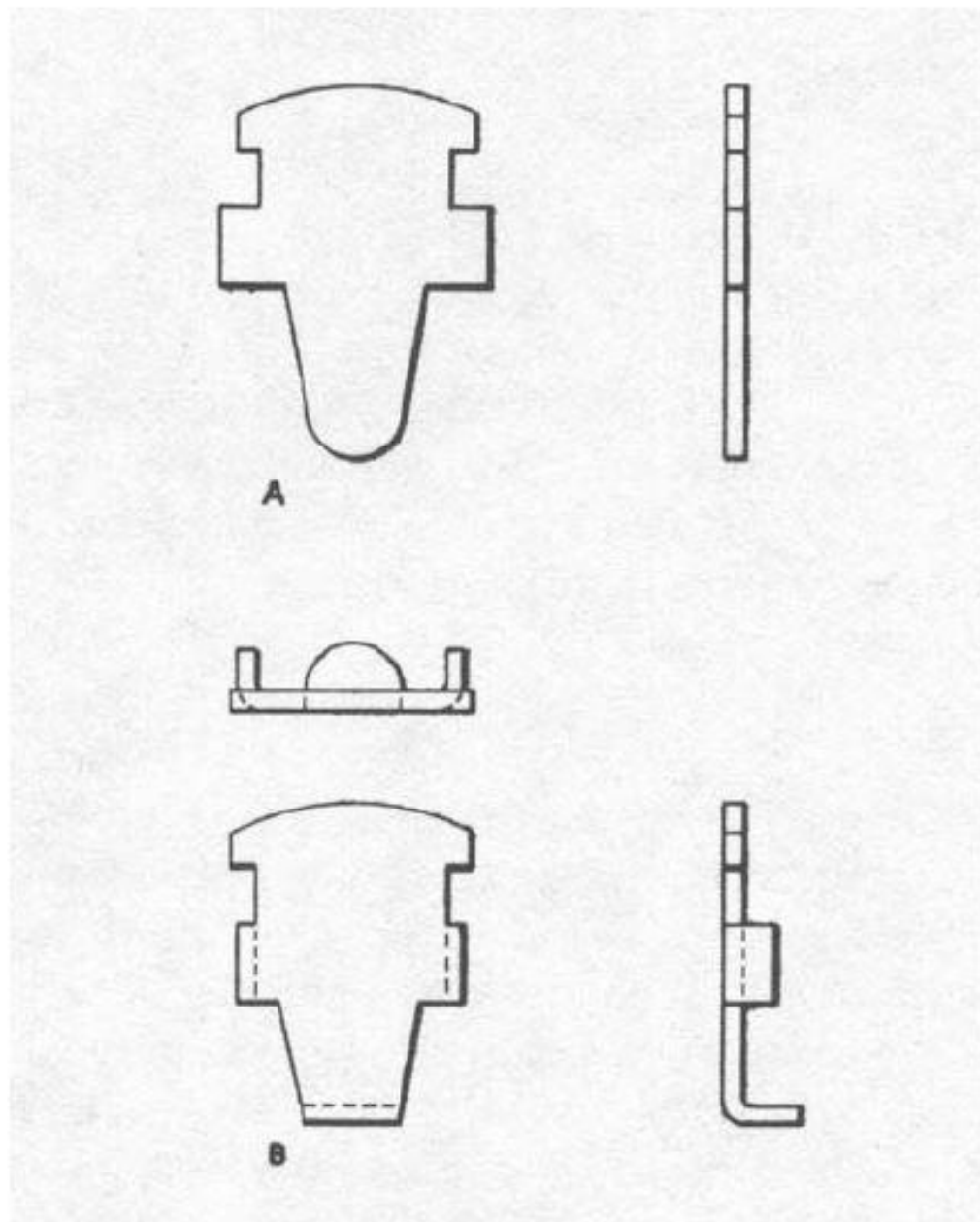


Figure 6.38 Flat A and bent B blanks.



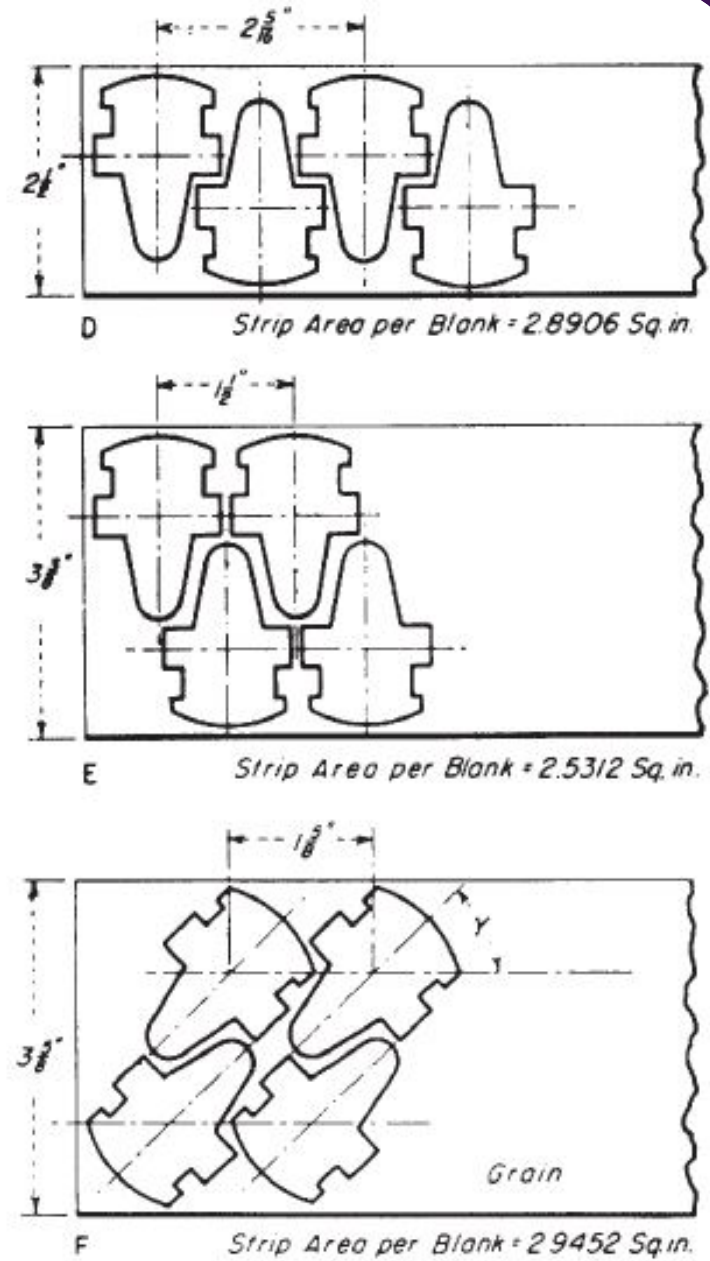
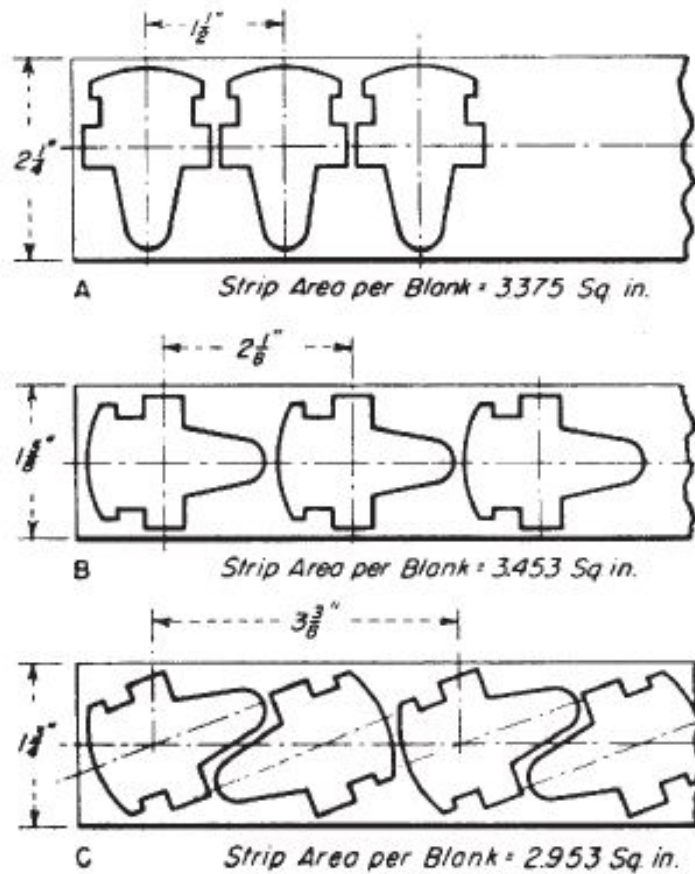


Figure 6.39 Six ways of positioning blanks.



پایان فصل ششم

با سپاس از توجه شما...