
Important-Read Before Using These Plans

The plans, suggestions and instructions for making the projects included in this book were prepared by students as entries in The James F. Lincoln Arc Welding Foundation Award Programs. The material has been edited and some of the drawings improved, but neither the projects nor drawings and instructions have been reviewed for accuracy or safety. The Foundation will welcome the comments of persons who, in making a project, uncover an error or fault. This will permit correction in the next printing of the book.

The projects are included because they appear to be interesting, and, in some respects, propose novel applications. However, since the Foundation has not tested the material, nor verified the computations or other aspects described, The James F. Lincoln Arc Welding Foundation cannot, and does not, assume responsibility for the accuracy of the plans or safety of the projects. The projects are submitted for such use as may appear feasible, but those making the projects must assume full responsibility for the results of their efforts to make or use the projects described.

The name of the student, school and teacher that produced the material is shown, if available, for each project. Further information about a project, if needed, should be sought from the teacher involved.

Award Programs Participation

The projects described in this book represent the range of entries submitted in The James F. Lincoln Arc Welding Foundation's Award Programs both as to type and size of project, and the nature of the descriptive information included. Students make many similar projects each year, yet relatively few of these are submitted to the Foundation in competition for cash awards. The reason for this may be that teachers have not used the opportunities afforded by the Program as incentives to student endeavor.

The planning, design and execution of a project, and then the preparation of a written and illustrated description of how it was accomplished provide a student with: (1) involvement with something of his or her own choosing and desire; (2) a challenge to complete the work successfully, using many different shop skills that are applicable to industry and business; (3) an experience in report writing and communications that is as important in business as other skills; (4) the satisfaction and recognition that come from participating in a national competition.

The Foundation annually sponsors Award Programs for secondary and post-secondary students. To learn more about current Award Programs and obtain a copy of the appropriate rules brochure, go to *jfff.org*.

Pitching Screen



Author: Chad Hanebrink
 Instructor: Robert Daiber
 School: Triad High School
 City & State: Troy, IL

I designed this pitching screen to be large (8' by 8') and durable. With four wheels, it is also mobile.

Instructions

1. Weld A to inside of the end of C at a 90 degree angle. (see Fig. 1)
2. Weld B to inside of the end (opposite A) of C at a 90 degree angle. (see Fig. 1)
3. Weld D to ends (opposite of C) of A & B at a 90 degree angle. (see Fig. 1)
4. Cut both ends of I, J, E, and L at a 45 degree angle.

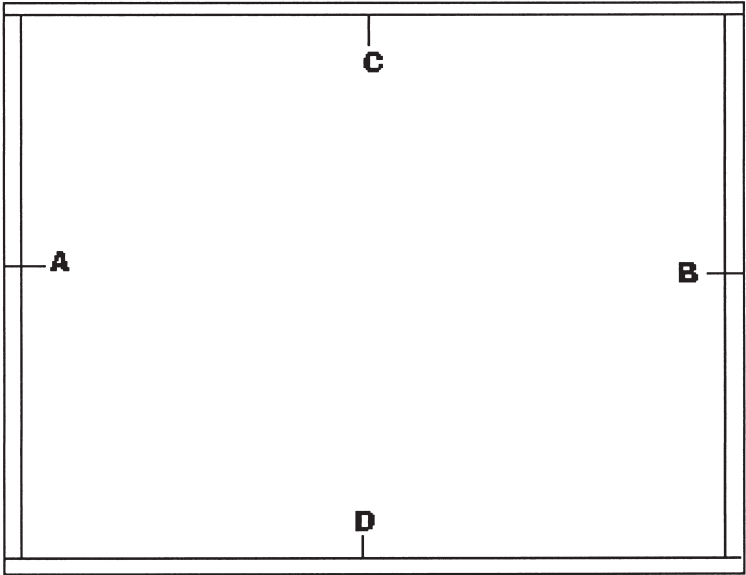


Figure 1

Bill of Materials	
<i>Qty</i>	<i>Description</i>
82'	B-line channel
12"	1/2" round stock
16"	1/4" plate steel
4	lawnmower wheels
4	cotter pins

<i>ID</i>	<i>Description</i>
A	8' B-Line
B	8' B-Line
C	8' 1-5/8" B-Line
D	8' 1-5/8" B-Line
E	6' B-Line
F	6' B-Line
G	6' B-Line
H	6' B-Line
I	30" B-Line
J	30" B-Line
K	30" B-Line
L	30" B-Line
M	4' B-Line
N	4' B-Line
O	4' B-Line
P	4' B-Line
Q	12" round stock
R	3" round stock
S	3" round stock
T	3" round stock
U	3" round stock
V	4" x 4" plate steel
W	2" x 2" plate steel
X	2" x 2" plate steel
Y	2" x 2" plate steel
Z	2" x 2" plate steel

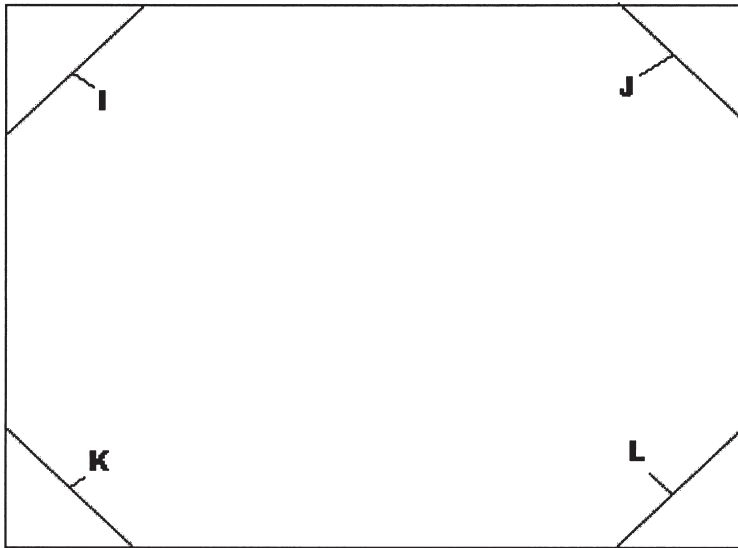


Figure 2

- | | |
|---|--|
| 5. Weld I to A and C. (see Fig. 2) | 12. Weld G to centers of J and L. (see Fig. 3) |
| 6. Weld J to C and B. (see Fig. 2) | 13. Weld H to centers of K and L. (see Fig. 3) |
| 7. Weld K to B and D. (see Fig. 2) | 14. This unit mentioned above is now called Frame. |
| 8. Weld L to D and A. (see Fig. 2) | 15. Drill 1/8" hole into one end of R. |
| 9. Cut both ends of E,F, G, & H at a 45 degree angle. | 16. Drill 1/8" hole into one end of S. |
| 10. Weld E to centers of I and J. (see Fig. 3) | 17. Drill 1/8" hole into one end of T. |
| 11. Weld F to centers of I and E. (see Fig. 3) | 18. Drill 1/8" hole into one end of U. |

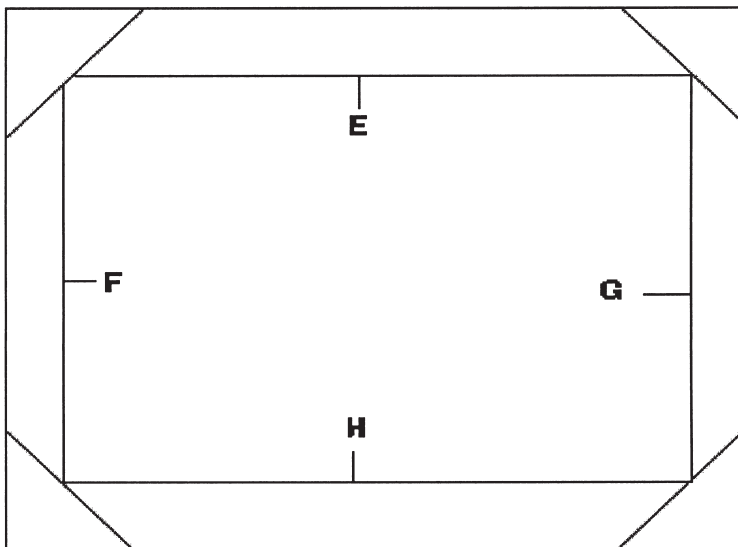


Figure 3

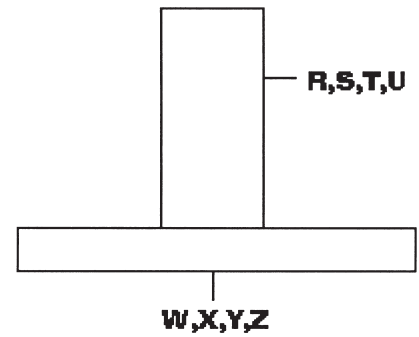


Figure 4

19. Weld R 90 degrees to center of 8'. This unit now becomes AA. (see Fig. 4)
20. Weld S 90 degrees to center of X. This unit now becomes BB. (see Fig. 4)
21. Weld T 90 degrees to center of Y. This unit now becomes CC. (see Fig. 4)
22. Weld U 90 degrees to center of Z. This unit now becomes DD. (see Fig. 4)

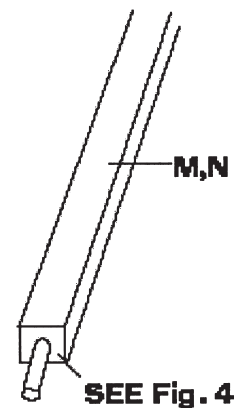


Figure 5A

23. Weld AA flat against end of M. (see Fig. 5A)
24. Weld BB flat against other end of M (see Fig. 5B)
25. Weld CC flat against end of N. (see Fig. 5A)

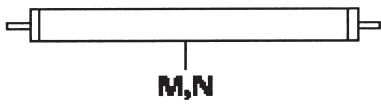


Figure 5B

26. Weld DD flat against other end of N. (see Fig. 5B)

27. Weld Frame to center of M. (see Fig. 6 and 7)

28. Weld Frame to center of N. (see Fig. 6 and 7)

29. Cut one end of O at a 60 degree angle.

30. Cut other end of O at a 30 degree angle.

31. Cut one end of P at a 60 degree angle.

32. Cut other end of P at a 30 degree angle.

33. Weld end of O that's 60 degrees to M. (see Fig. 7)

34. Weld end of O that's 30 degrees to Frame. (see Fig. 7)

35. Weld end of P that's 60 degrees to N. (see Fig. 7)

36. Weld end of P that's 30 degrees to Frame. (see Fig. 7)

37. Paint.

38. Place wheels over each axle.

39. Put cotter pins in each of the 1/8" holes in axles.

40. The pitching screen is complete.

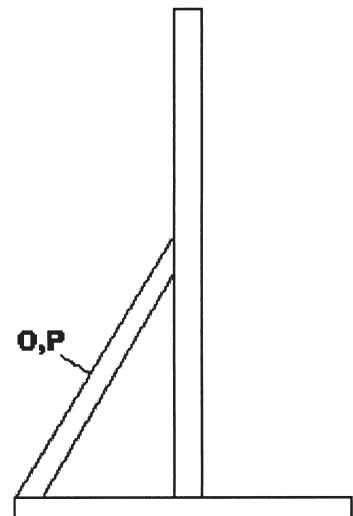


Figure 7

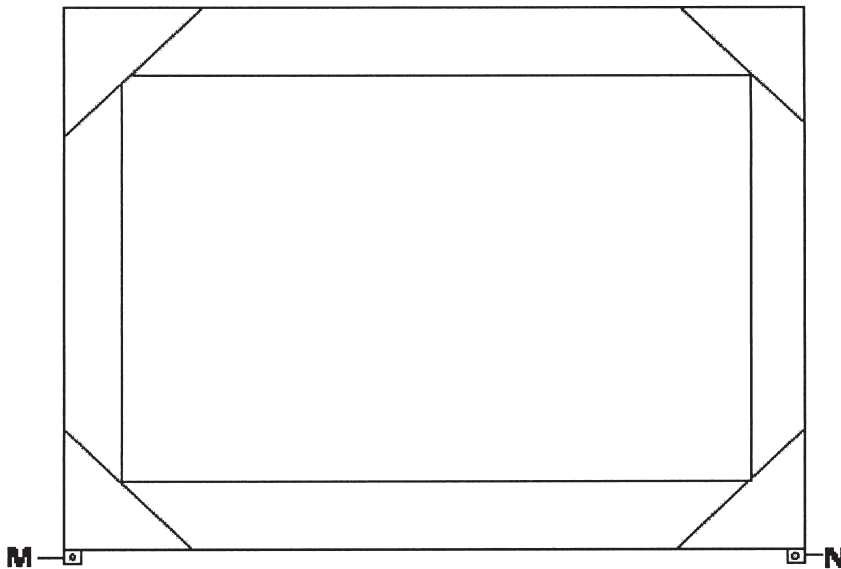


Figure 6