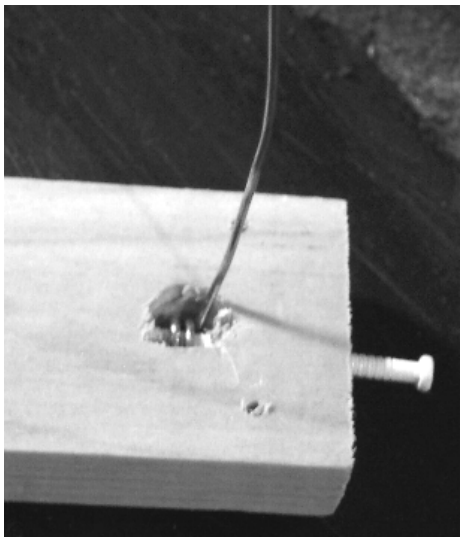
**How to modify an Atlas switch machine to operate as an under the table switch machine.**

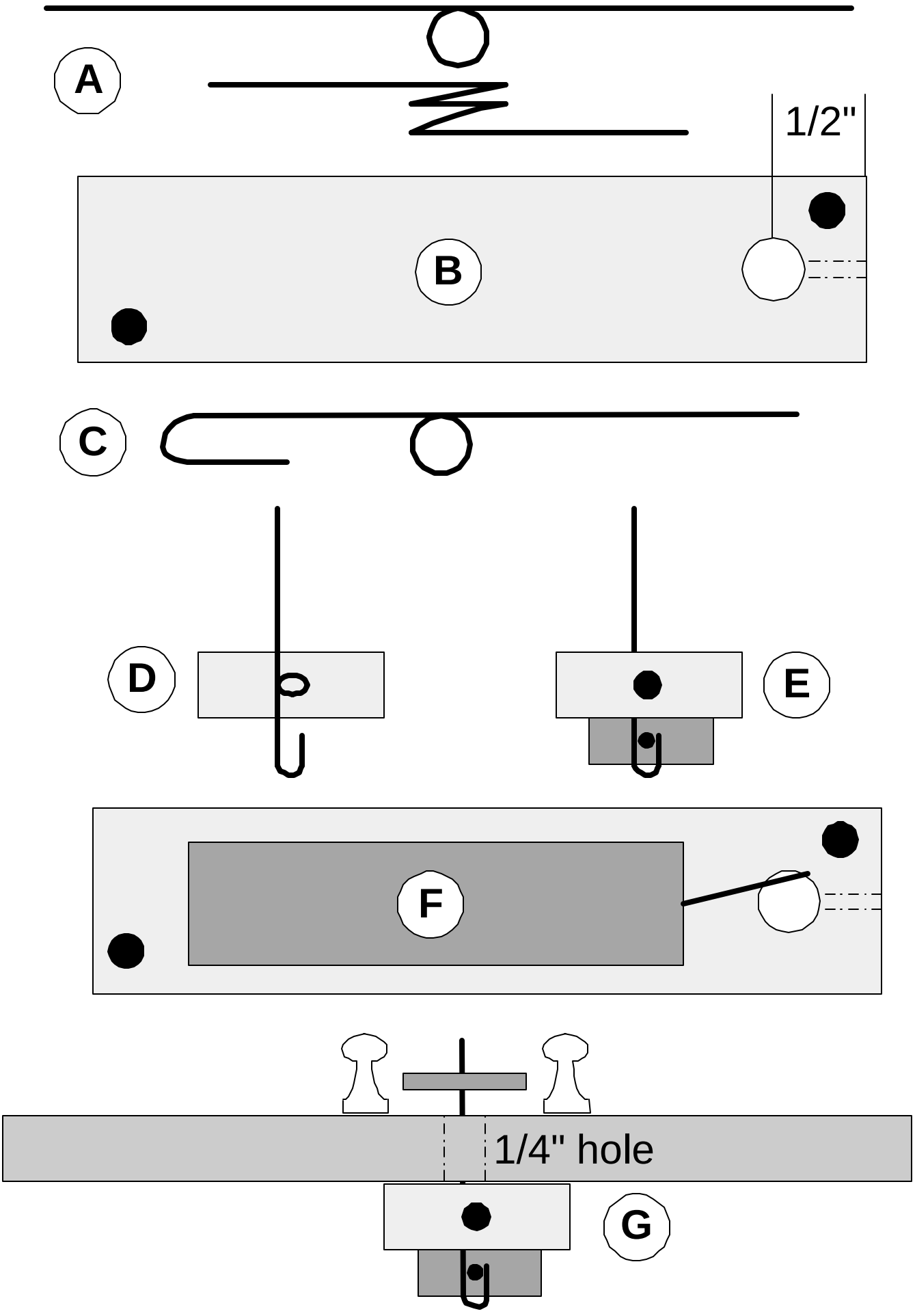
**All you need is a few finishing nails, metal paper clips, scrap wood, small wood screws and a drill.**

**Procedures:**

1. **Cut a piece of 3/8” or 1/2" thick wood to 1-1/2” wide by 6” long.**
2. **Drill a 1/2" diameter hole 1/2" from one end and centered side-to-side as indicated by the white circle in detail B of the drawings.**
3. **Drill a hole slight smaller then the diameter of the finishing nail through the end of the block and into the 1/2" hole as shown by the dotted lines in detail B.**
4. **Drill two holes for your mounting screws as indicated by the black circles in detail B of the drawings.**
5. **Use a pair of pliers (needle nose pliers work best) to completely straighten a metal paper clip.**
6. **Make the action lever by bending the paper clip twice around a finishing nail tightly as indicated in detail A of the drawings. The two turns give width to the lever and will keep the clip from ‘wobbling’ during operation.**



7. **Bend one end of the lever over as indicated in detail C of the drawings. Bend it far enough it will engage the Atlas action lever (as shown in detail E) but do not let it rub against the wood.**
8. **Insert the lever into the 1/2" hole (as indicated in detail D of the drawings) and insert the finishing nail (as indicated in detail E) through the hole (drilled in step 3) to hold the lever in place.**
9. **Attach the Atlas switch machine to the block with the screws provided with it. Locate the machine as shown in details E and F.**
10. **Examine your turnout (the track switch) and locate the part that moves the track side to side. It has a hole in the center of it. I call this the points tie (see detail G).**
11. **Drill a 1/4” hole tie (as indicated by the dotted lines in detail G) through your layout base and roadbed (under the track turnout) being careful not to drill through the points tie.**
12. **Position the assembly under the turnout with the clip protruding through the hole in the points tie (as indicated in detail G). This is the most difficult part of the operation and you might need two people for it.**
13. **Screw the assembly into place and wire it up.**
14. **Trim the part of the clip extruding above the points tie with nippers.**
15. **Test the operation. You can bend the clip to get positive locking in both directions.**


A
1/2"
B
C
D
E
F
1/4" hole
G