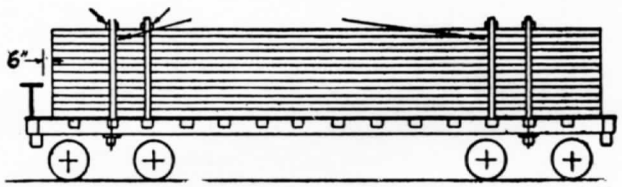
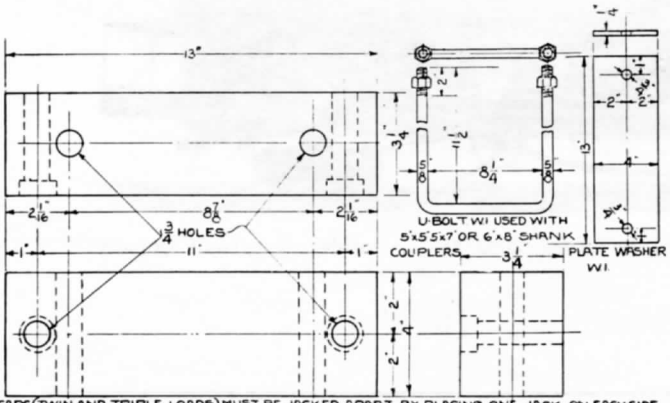


FIG. 1—LIMITS OF PROJECTION OF LADING ON SINGLE CARS WHICH DOES NOT REQUIRE THE USE OF AN IDLER.



CARS (TWIN AND TRIPLE LOADS) MUST BE JACKED APART BY PLACING ONE JACK ON EACH SIDE OF COUPLERS, SEPARATING THE CARS UNTIL THE COUPLERS ARE PULLED OUT TO THE FULLEST EXTENT, THEN INSERTING METAL BLOCKS WITH PLATE WASHERS TO COMPLETELY FILL THE SPACE BETWEEN THE HORNS OF COUPLERS AND END SILLS. SPACING BLOCK MAY BE MALLEABLE IRON, STEEL CASTING, FORGINGS OR BUILT UP OF METAL PLATES SECURELY RIVETED TOGETHER.

FIG. 3—METAL SPACING BLOCKS FOR TWIN OR TRIPLE LOADS.

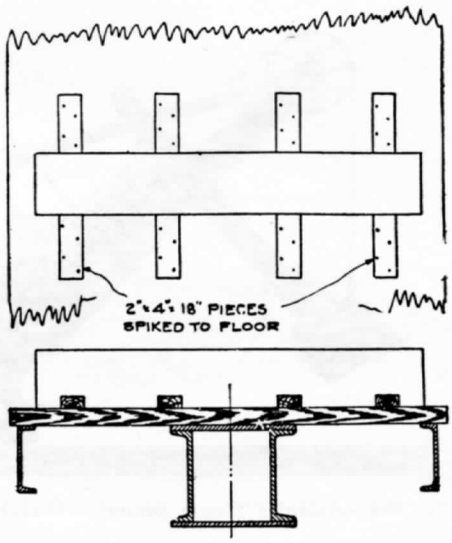


FIG. 2—MANNER OF BLOCKING BEARING-PIECE FOR LUMBER, LOGS, TELEGRAPH AND TELEPHONE POLES, PILING, PROPS AND SIMILAR MATERIAL.

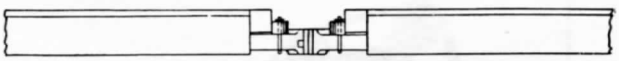


FIG. 4. ELEVATION SHOWING APPLICATION OF SPACING BLOCKS.

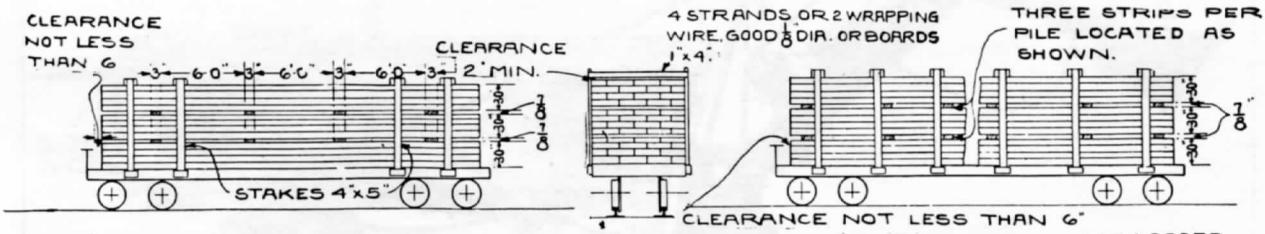


FIG 5 MANNER OF SECURING LUMBER OR TIMBER LESS THAN THE LENGTH OF THE CAR LOADED ON FLAT OR GONDOLA CARS HAVING SIDES LESS THAN 30" HIGH.

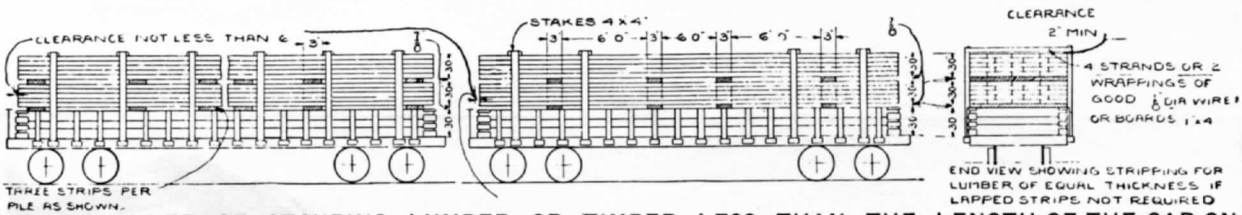


FIG. 6—MANNER OF SECURING LUMBER OR TIMBER LESS THAN THE LENGTH OF THE CAR ON GONDOLA CARS HAVING SIDES 30 HIGH AND OVER.

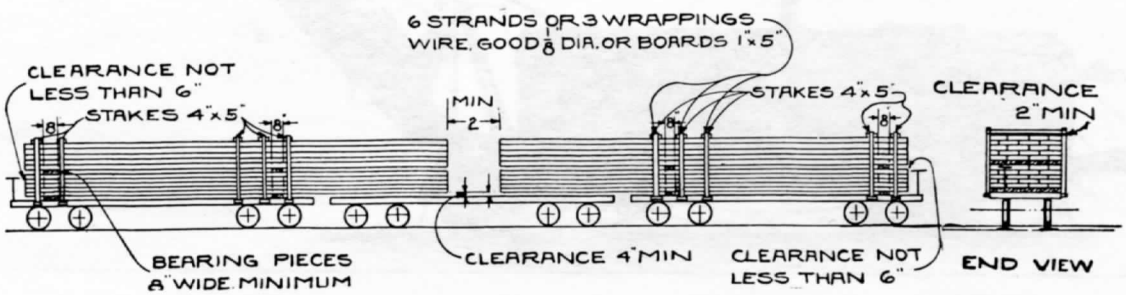


FIG. 7 MANNER OF SECURING SINGLE OVERHANGING LOADS OF LUMBER OR TIMBER ON OPEN CARS.

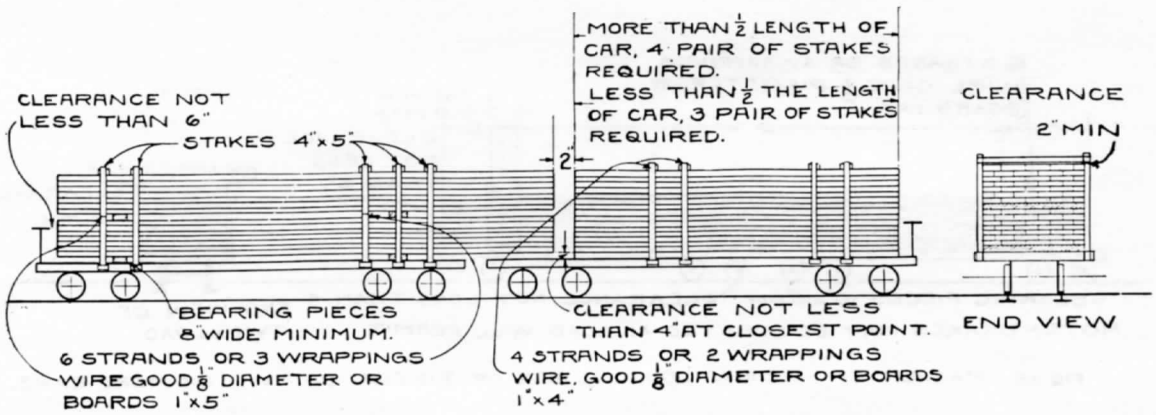


FIG. 8. MANNER OF SECURING SINGLE OVERHANGING LOADS OF LUMBER OR TIMBER ON OPEN CARS.

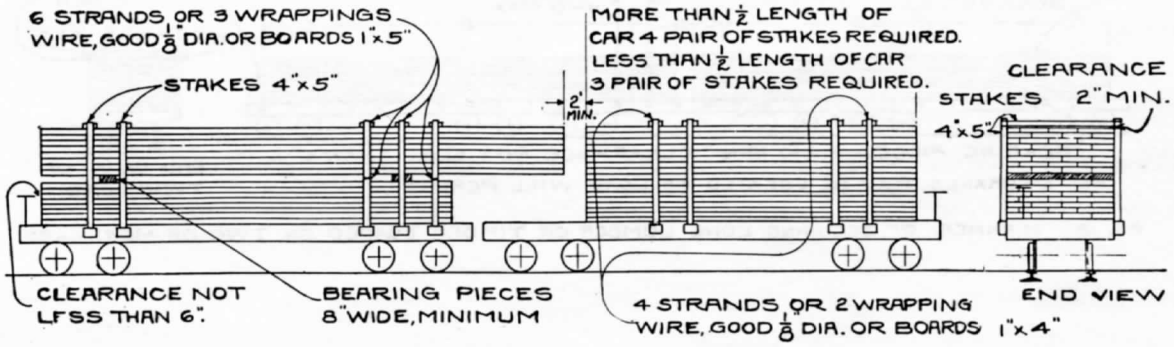


FIG. 9. MANNER OF SECURING SINGLE OVERHANGING LOADS OF LUMBER OR TIMBER ON OPEN CARS.

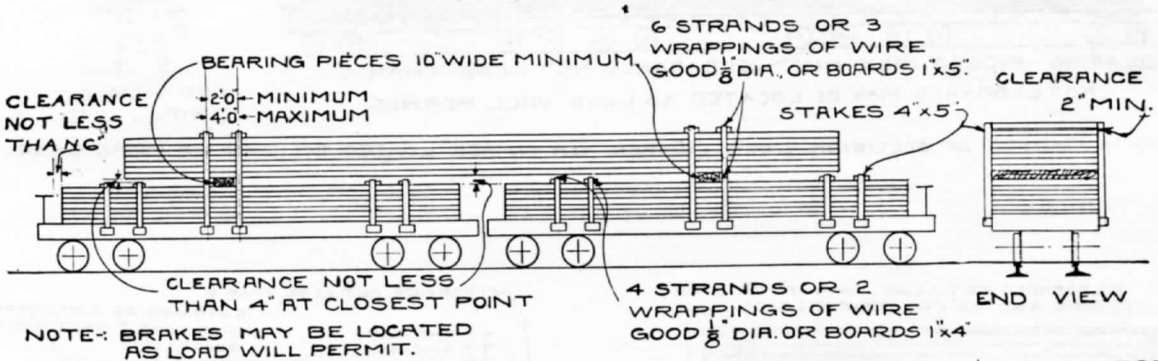


FIG. 10. MANNER OF SECURING LONG LUMBER OR TIMBER ON TOP OF SHORT PIECES ON SINGLE CARS.

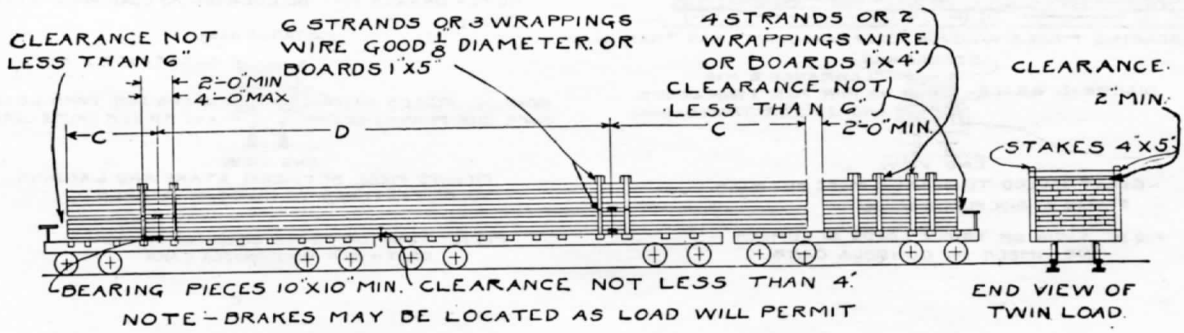


FIG. 11. MANNER OF SECURING LONG LUMBER OR TIMBER ON TWO OR MORE CARS

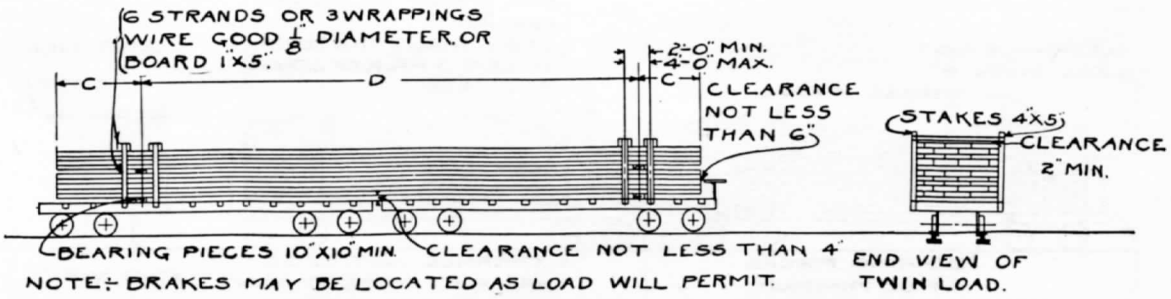


FIG. 12 MANNER OF SECURING LONG LUMBER OR TIMBER ON TWO OR MORE CARS.

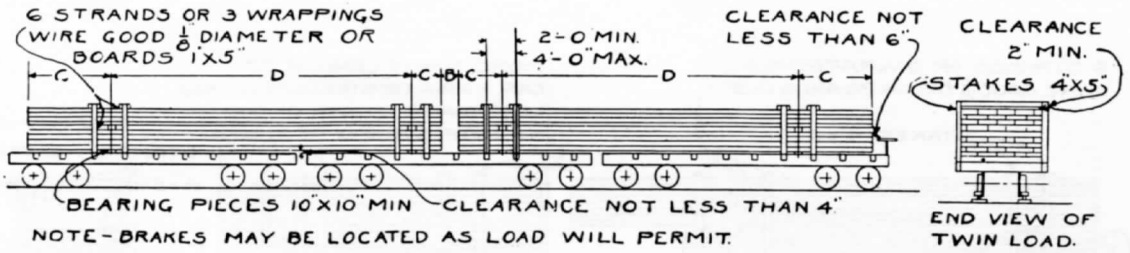


FIG 13 MANNER OF SECURING LONG LUMBER OR TIMBER LOADED ON TWO OR MORE CARS

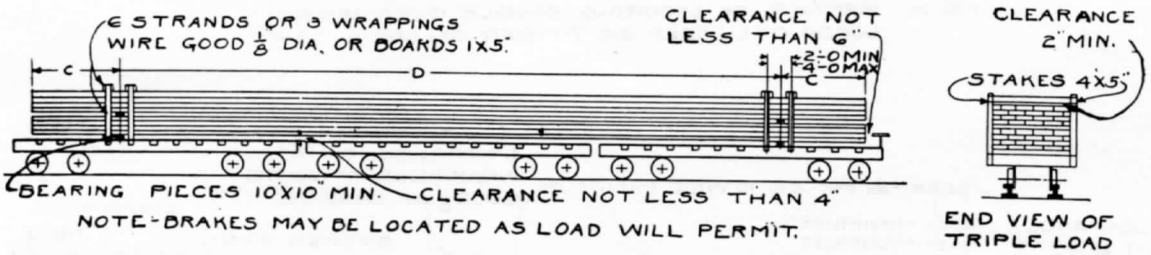


FIG 14 MANNER OF SECURING LONG LUMBER OR TIMBER LOADED ON TWO OR MORE CARS.

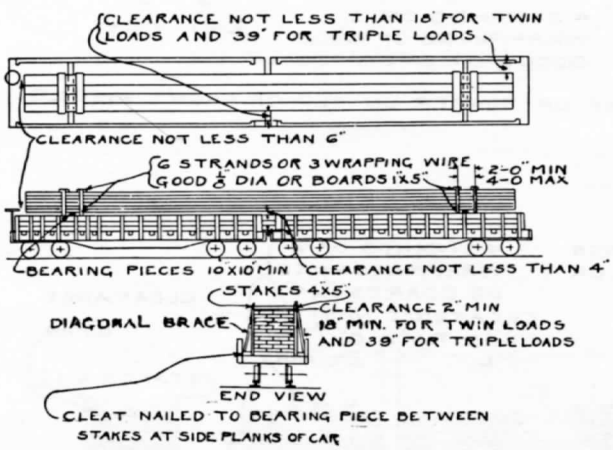


FIG. 15 TWIN OR TRIPLE LOADS OF LUMBER OR TIMBER ON GONDOLA CARS

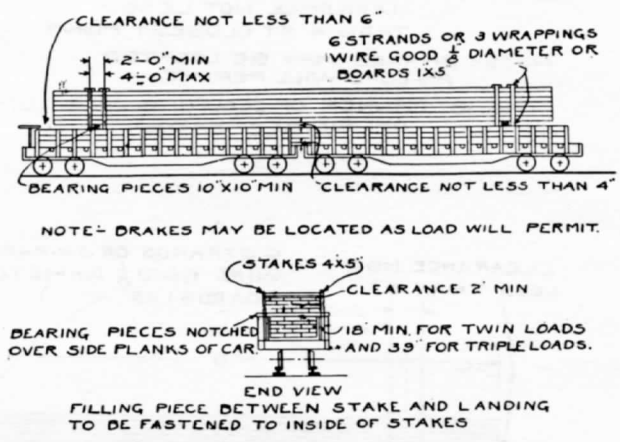


FIG. 16 TWIN OR TRIPLE LOADS OF LUMBER OR TIMBER ON GONDOLA CARS

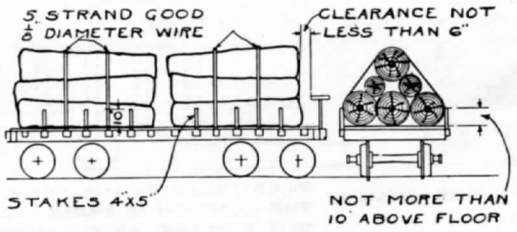


FIG. 17 MANNER OF SECURING LOGS LESS THAN THE LENGTH OF THE CAR LOADED ON FLAT CARS

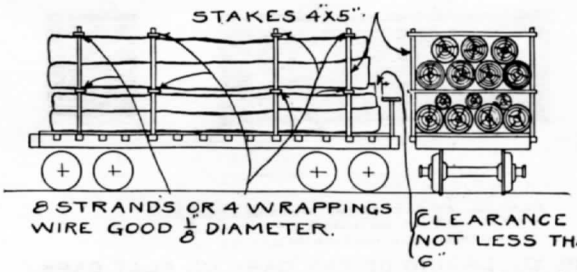


FIG. 18 MANNER OF SECURING LOGS, PILING, PROPS AND TELEGRAPH POLES LESS THAN THE LENGTH OF CAR LOADED ON FLAT CARS

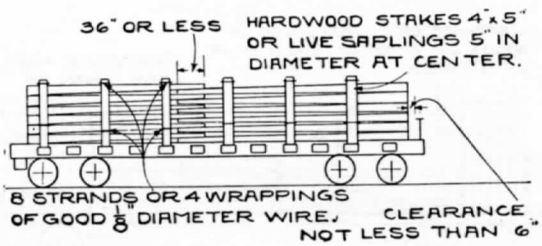


FIG. 19. MANNER OF SECURING POLES INTERLACED LOADED ON FLAT CARS.

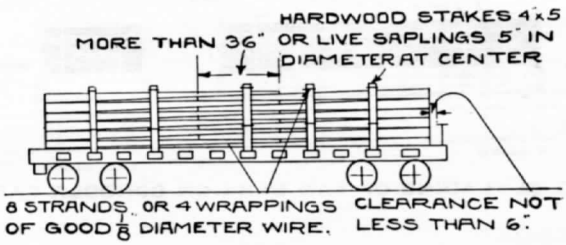


FIG. 20 MANNER OF SECURING POLES INTERLACED LOADED ON FLAT CARS.

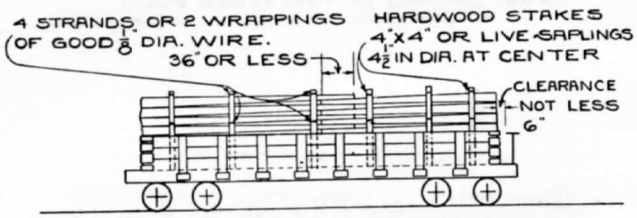


FIG. 21. MANNER OF SECURING POLES INTERLACED LOADED ON GONDOLA CARS

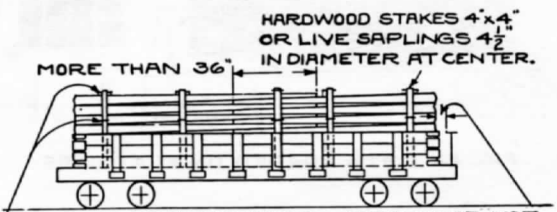


FIG. 22 MANNER OF SECURING POLES INTERLACED LOADED ON GONDOLA CARS

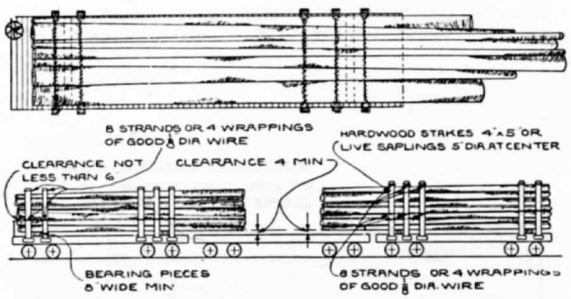


FIG. 23 SINGLE OVERHANGING LOADS OF DIFFERENT LENGTHS OF LOGS, PILING, PROPS, TELEPHONE OR TELEGRAPH POLES

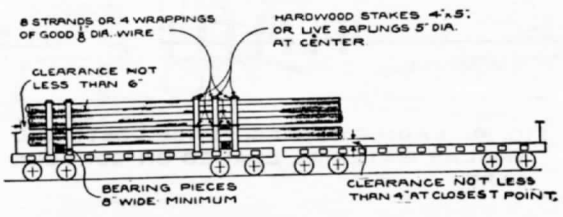


FIG 24. SINGLE OVERHANGING LOADS OF UNIFORM LENGTH OF LOGS, PILING, PROPS, TELEPHONE OR TELEGRAPH POLES.

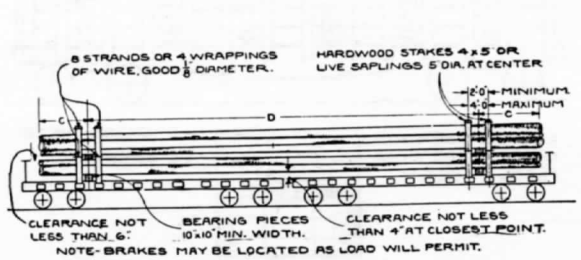


FIG. 25. DOUBLE LOADS LOGS, PILING, PROPS, TELEGRAPH OR TELEPHONE POLES

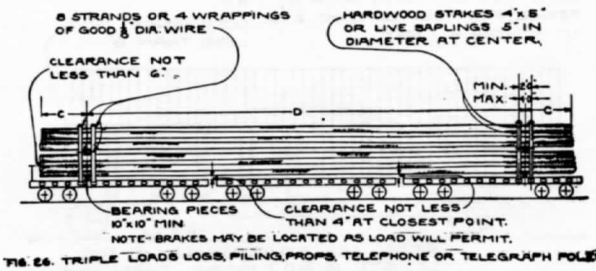


FIG. 26. TRIPLE LOADS LOGS, PILING, PROPS, TELEPHONE OR TELEGRAPH POLES

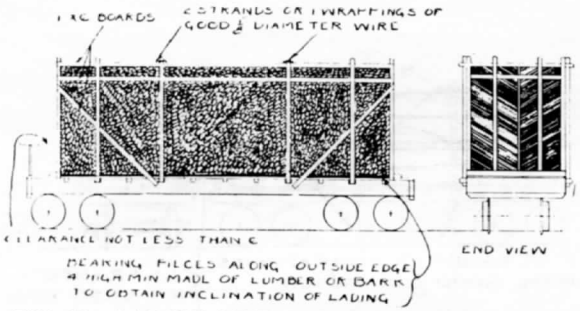


FIG. 27. LADING OF TAN BARK ON FLAT CARS

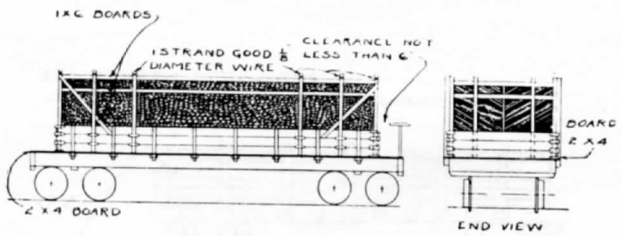


FIG. 28. LADING OF TAN BARK ON GONDOLA CARS

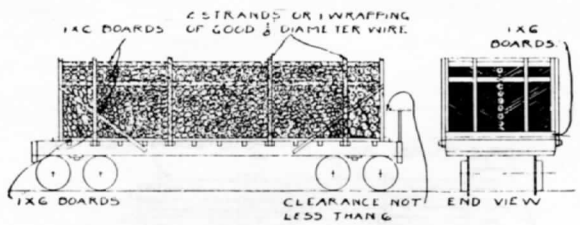


FIG. 29. LATH LOADED ON FLAT CARS

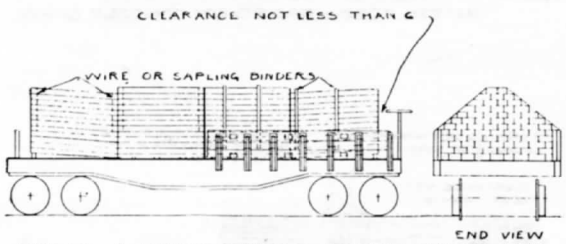


FIG. 30. LADING OF TIES, FENCE POSTS AND SIMILAR MATERIAL LOADED ON GONDOLA CARS

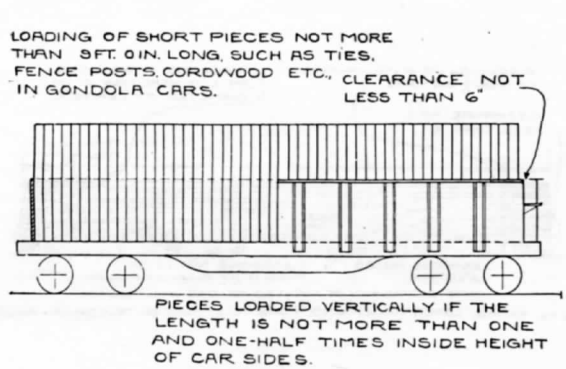


FIG. 31. LOADING OF TIES, FENCE POSTS AND SIMILAR MATERIAL ON GONDOLA CARS

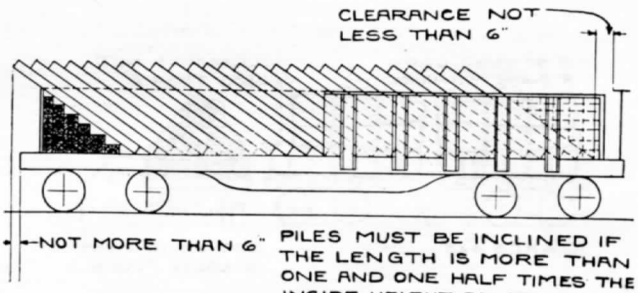
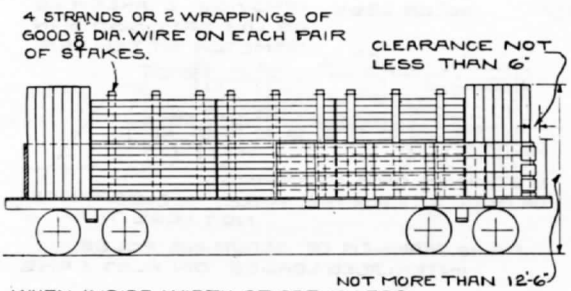
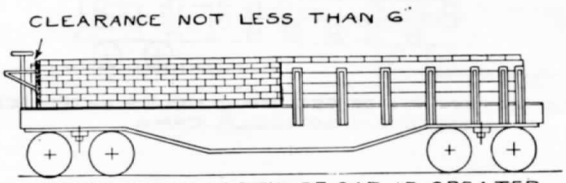


FIG. 32. LOADING OF TIES, FENCE POSTS AND SIMILAR MATERIAL ON GONDOLA CARS.



WHEN INSIDE WIDTH OF CAR IS LESS THAN THE LENGTH OF PIECES TO BE LOADED, END BLOCKING AND STAKES MAY CONSIST OF PIECES PLACED VERTICALLY.

FIG. 33. LOADING OF TIES, FENCE POSTS AND SIMILAR MATERIAL ON GONDOLA CARS.



WHEN INSIDE WIDTH OF CAR IS GREATER THAN LENGTH OF PIECES LADING MAY BE PLACED TRANSVERSELY.

FIG. 34 LOADING OF TIES, FENCEPOST AND SIMILAR MATERIAL IN GONDOLA CARS

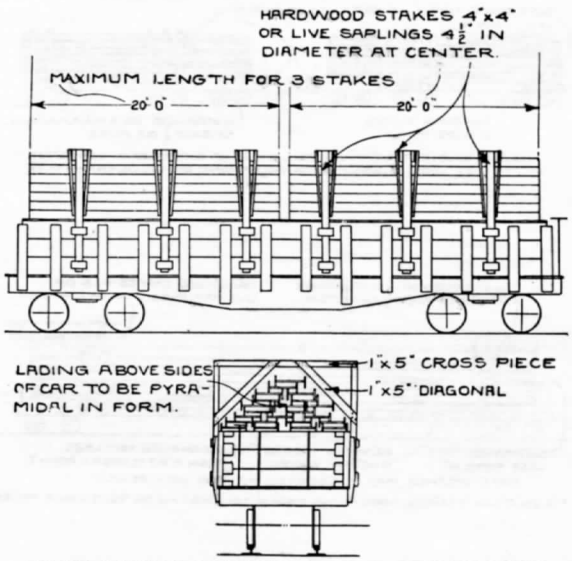


FIG. 35. LADING OF SHORT STRUCTURAL MATERIAL

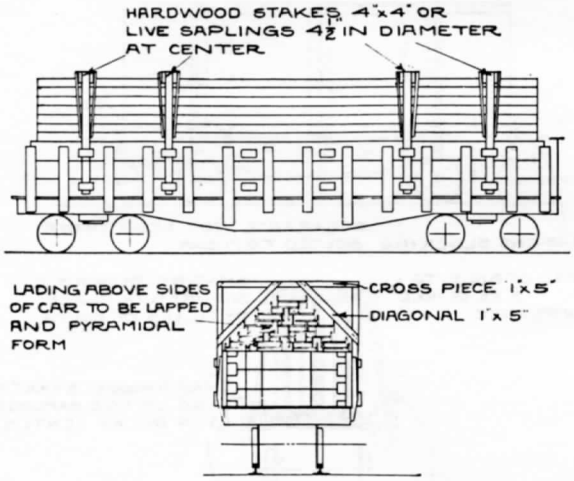


FIG. 36 LADING OF STRUCTURAL MATERIAL MORE THAN 20'-0" IN LENGTH.

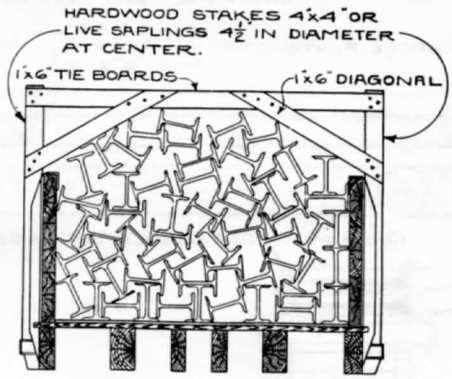


FIG. 37 MANNER OF LOADING LIGHT STRUCTURAL MATERIAL ON SINGLE GONDOLA CARS.

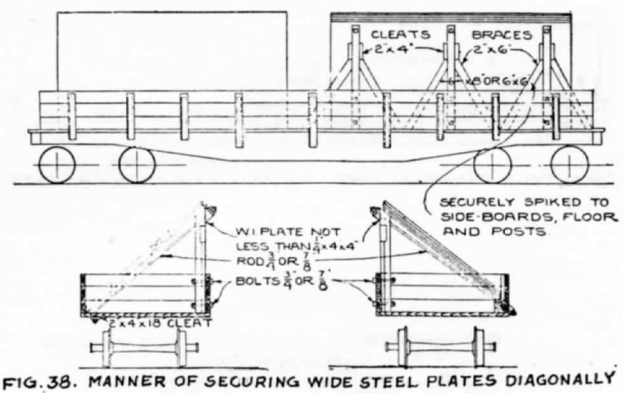


FIG. 38. MANNER OF SECURING WIDE STEEL PLATES DIAGONALLY ON GONDOLA CARS.

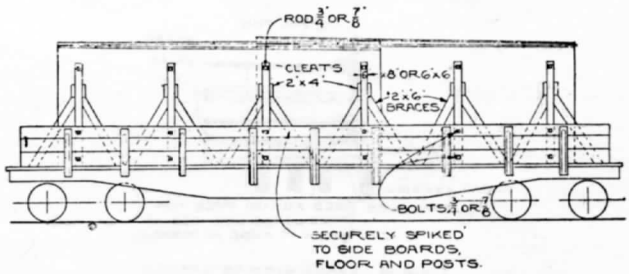


FIG. 38-A MANNER OF SECURING PLATES (LAPPED) LOADED IN DIAGONAL POSITION, ON GONDOLA CARS.

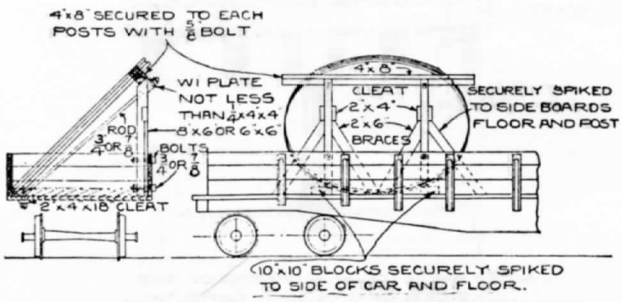


FIG. 38-B. MANNER OF SECURING ROUND FLAT PLATES LOADED DIAGONALLY ON GONDOLA CARS.

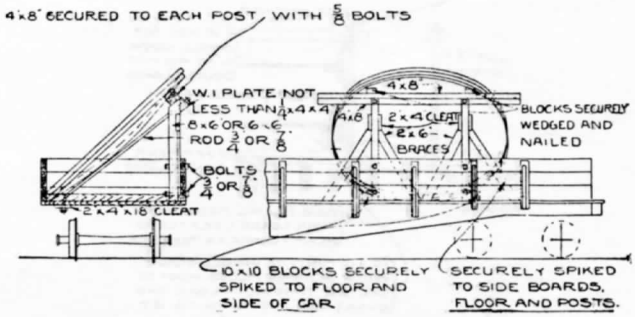


FIG. 38-C. MANNER OF SECURING ROUND FLANGED PLATES LOADED DIAGONALLY ON GONDOLA CARS.

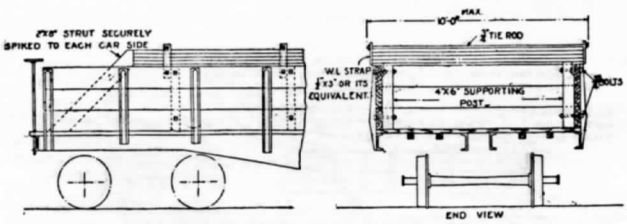


FIG. 38-D. MANNER OF SECURING FLAT PLATES LOADED ON TOP OF CAR SIDES.

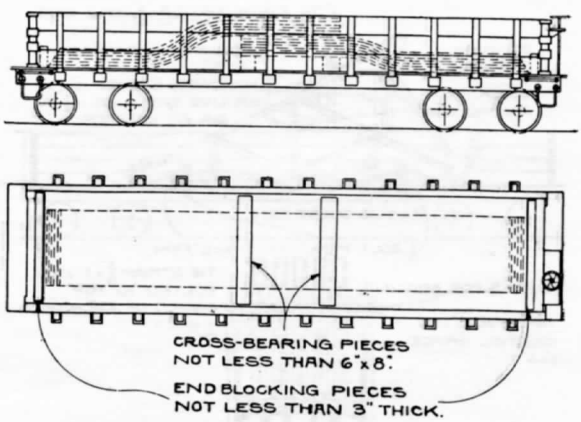


FIG. 39. LOADING FLEXIBLE PLATES ON SINGLE CARS.

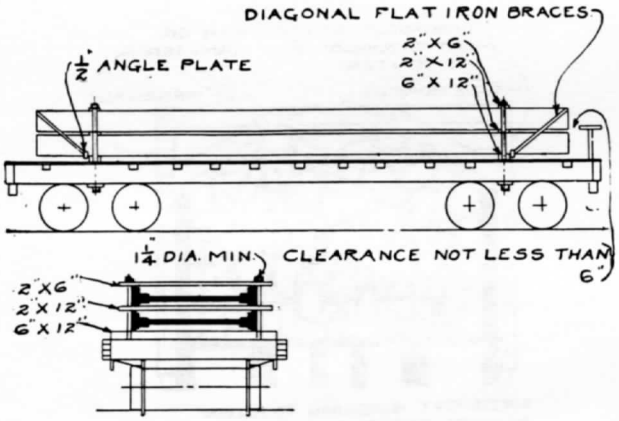
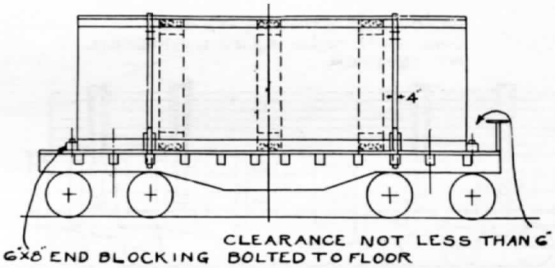


FIG. 40. LARGE GIRDERS LOADED FLAT ON FLAT CARS.



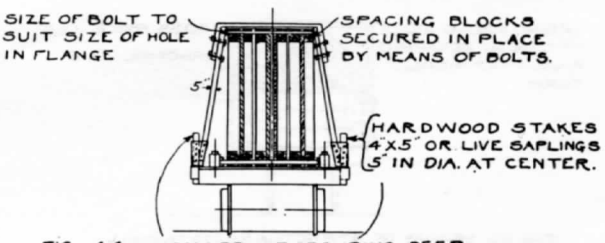


FIG 44 MANNER OF SECURING DEEP GIRDERS LOADED ON FLAT CARS.

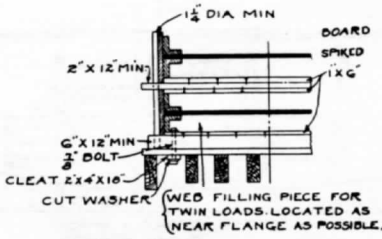


FIG 41 LARGE GIRDERS LOADED FLAT ON FLAT CARS.

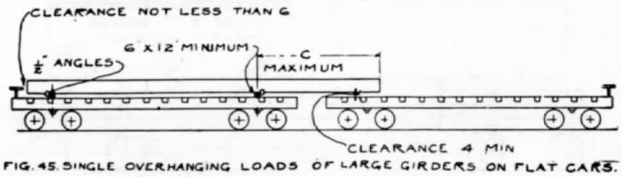


FIG. 45. SINGLE OVERHANGING LOADS OF LARGE GIRDERS ON FLAT CARS.

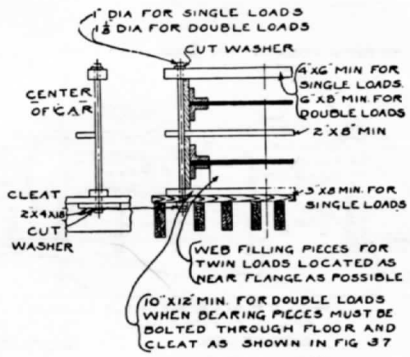
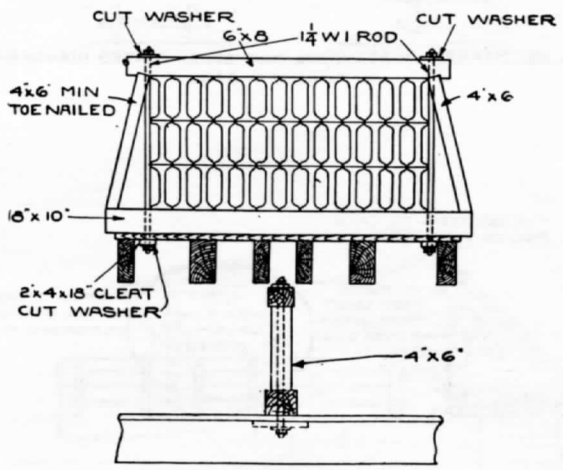


FIG 42 LARGE GIRDERS LOADED FLAT ON FLAT CARS.



NOTE:- WHEN LOADING ON TOP OF THE SIDES OF GONDOLA CARS, THESE BOLTS TO EXTEND THROUGH BEARING-PIECE ONLY.

FIG. 46 STRUCTURAL MATERIAL LOADED ON FLAT CARS OR ON TOPS OF SIDES OF GONDOLA CARS

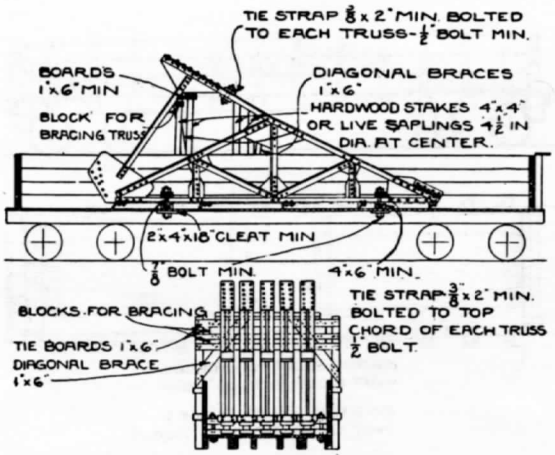


FIG. 43. LADING OF STEEL HALE ROOF TRUSSES.

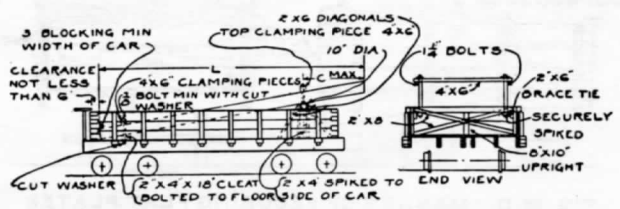


FIG. 47 SINGLE OVERHANGING LOADS ON GONDOLA CARS

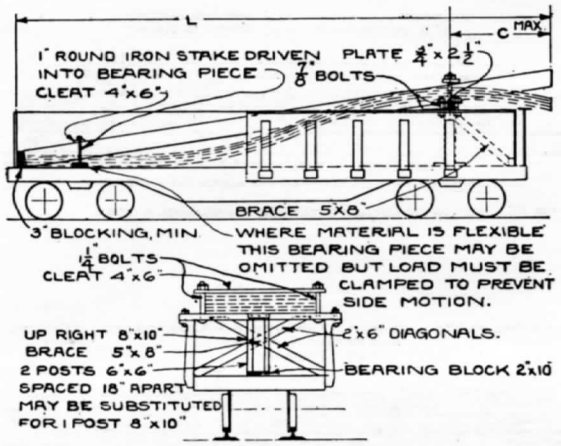


FIG. 48 MANNER OF LOADING OVERHANGING LOADS OF STRUCTURAL MATERIAL ON STEEL GONDOLA CARS WITH BEARING PIECES LOCATED OVER THE BOLSTER

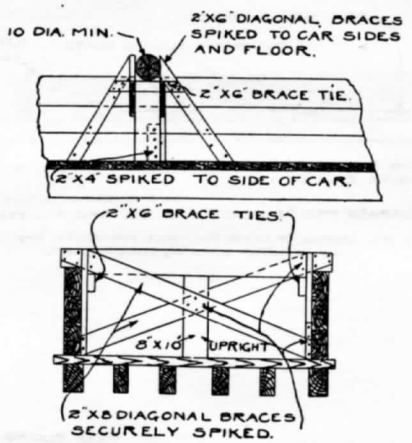


FIG. 49. MANNER OF BLOCKING ROUND BEARING PIECES, LOW SIDE GONDOLA CARS WITH SIDES 3" OR MORE IN THICKNESS.

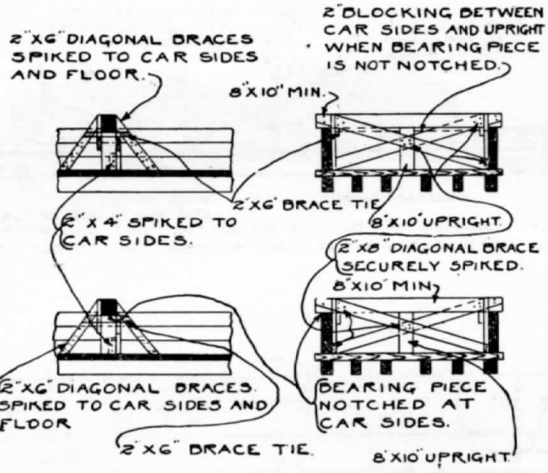
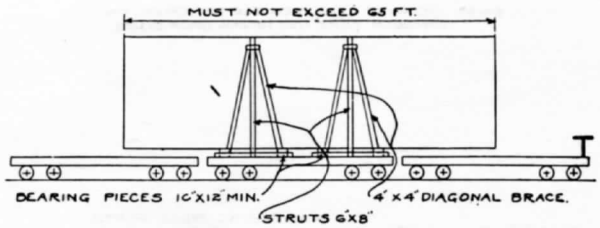


FIG. 50. MANNER OF BLOCKING RECTANGULAR BEARING PIECES.



NOTE- BRAKES MAY BE LOCATED AS THE LOAD WILL PERMIT.

FIG. 51. MANNER OF SECURING LATTICE GIRDERS, BOX GIRDERS, COLUMNS, ONE-HALF ROOF TRUSSES AND SIMILAR MATERIAL. THIS MANNER OF LOADING TO BE USED ONLY WHEN ABSOLUTELY NECESSARY.

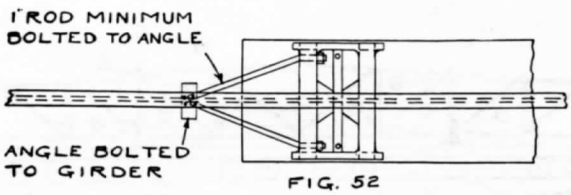


FIG. 52

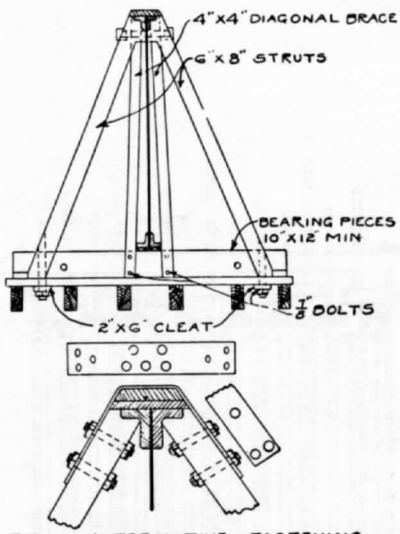


FIG. 53. ALTERNATIVE FASTENING.

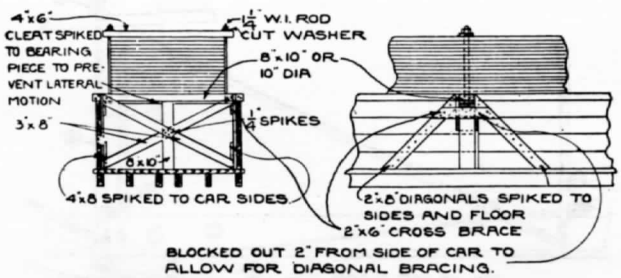
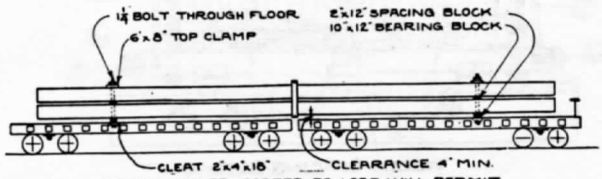
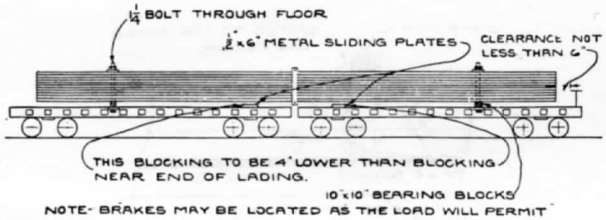


FIG. 54. TWIN SHIPMENTS ON GONDOLA CARS NOT EQUIPPED WITH DROP ENDS AND HAVING SIDES THREE OR MORE INCHES THICK



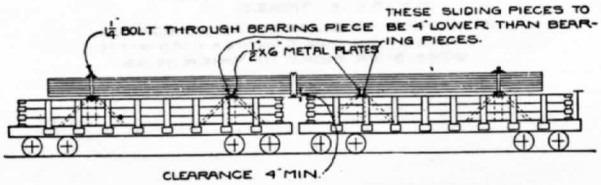
NOTE- BRAKES MAY BE LOCATED AS LOAD WILL PERMIT.

FIG. 55. LADING OF LONG MATERIAL ON FLAT OR DROP END GONDOLA CARS.



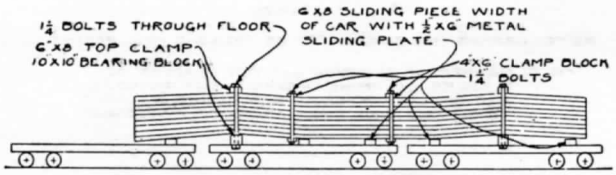
NOTE- BRAKES MAY BE LOCATED AS THE LOAD WILL PERMIT

FIG. 56. LADING OF LONG FLEXIBLE MATERIAL ON FLAT OR DROP END GONDOLA CARS.



NOTE- BRAKES MAY BE LOCATED AS LOAD WILL PERMIT

FIG. 58. LADING OF LONG FLEXIBLE MATERIAL ON GONDOLA CARS NOT HAVING DROP ENDS.



NOTE- BRAKES MAY BE LOCATED AS LOAD WILL PERMIT

FIG. 60. LOADING OF LONG FLEXIBLE MATERIAL ON FLAT CARS

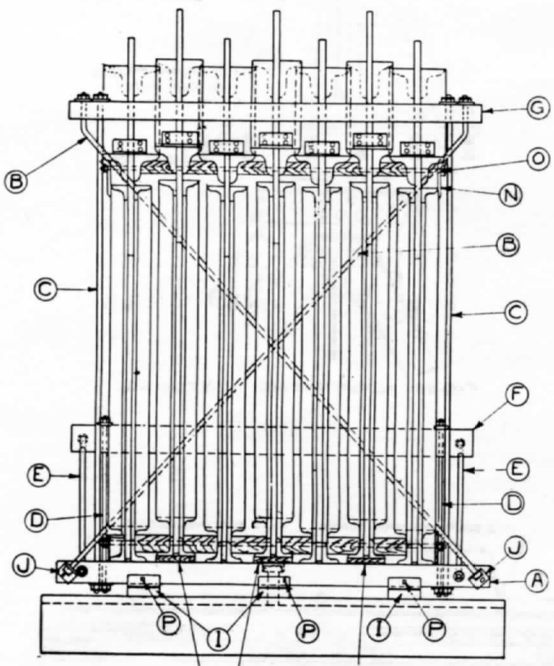
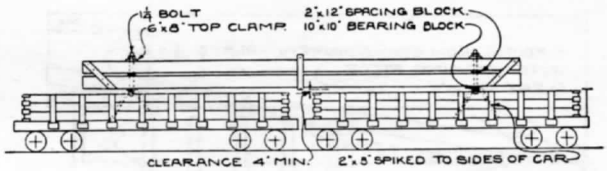
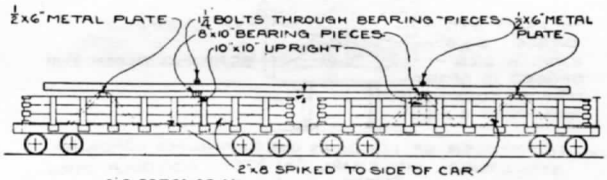


FIG. 64B END VIEW OF FIG. 64.



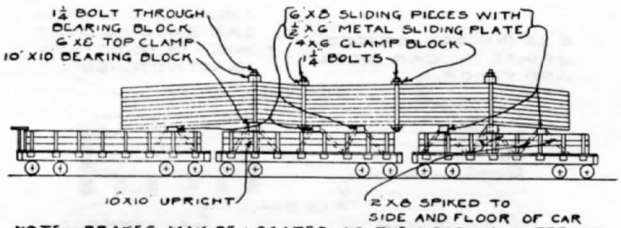
NOTE- BRAKES MAY BE LOCATED AS LOAD WILL PERMIT.

FIG. 57. LADING OF LONG MATERIAL ON GONDOLA CARS.



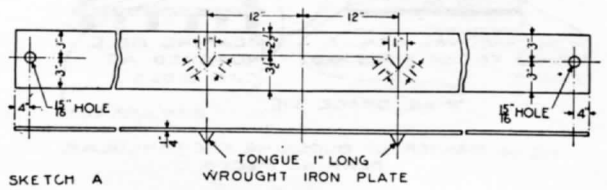
NOTE BRAKES MAY BE LOCATED AS THE LOAD WILL PERMIT

FIG 59 LADING OF LONG FLEXIBLE MATERIAL ON GONDOLA CARS NOT HAVING DROP ENDS



NOTE - BRAKES MAY BE LOCATED AS THE LOAD WILL PERMIT

FIG. 61 LOADING OF LONG FLEXIBLE MATERIAL ON GONDOLA CARS



SKETCH A

MANNER OF PREPARING 1/2"x6" METAL SLIDING PLATES FOR LOADS OVER 40,000 LBS. PER BEARING PIECE

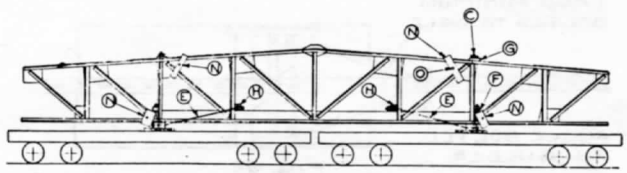


FIG. 64 MANNER OF LOADING ROOF TRUSSES AND SIMILAR MATERIAL.

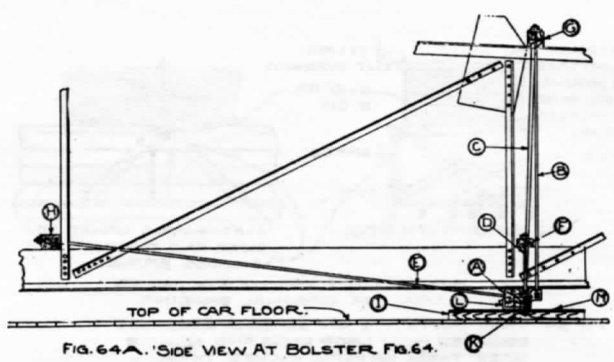


FIG. 64A. SIDE VIEW AT BOLSTER FIG. 64.

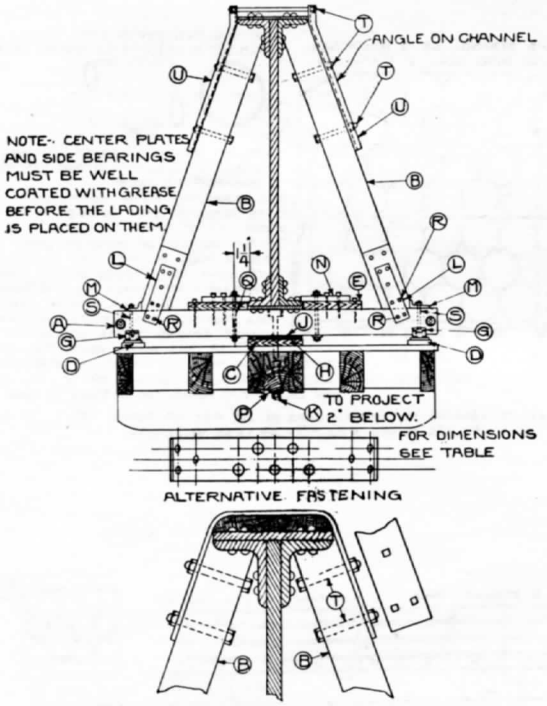


FIG 65. LOADING OF GIRDERS IN VERTICAL POSITION ON TWO OR MORE CARS.

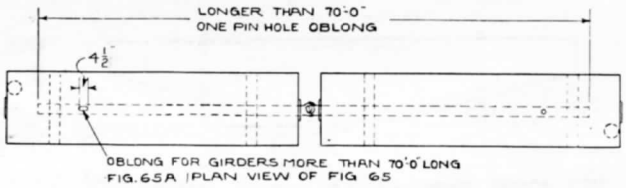


FIG. 65A PLAN VIEW OF FIG. 65

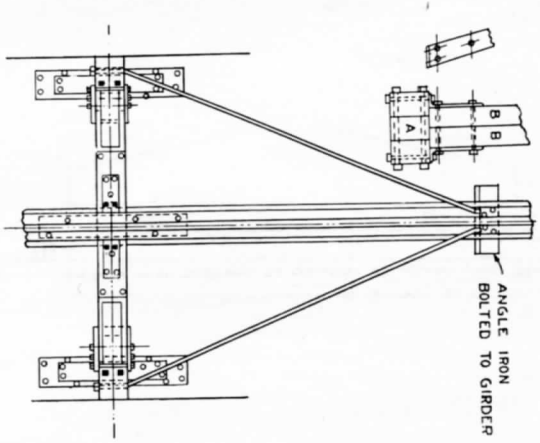
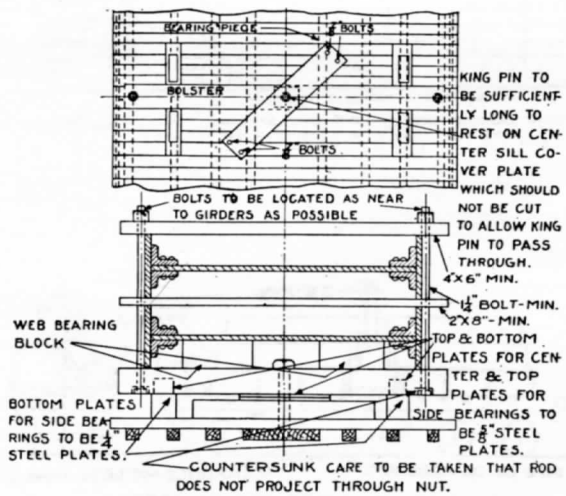


FIG. 66. PLAN VIEW OF FIG. 67



BOLSTERS SHOULD IN NO CASE BE MORE THAN 9'-6" LONG. FOR GIRDERS WEIGHING 30,000 LBS. OR LESS BOLSTERS TO BE 8" DEEP X 10" WIDE. FOR GIRDERS WEIGHING 30,000 LBS. TO 72,000 LBS. 10" DEEP X 14" WIDE. FOR GIRDERS WEIGHING 72,000 LBS. OR MORE 12" DEEP X 14" WIDE.

FIG. 68. HORIZONTAL LOADING OF LONG GIRDERS ON PIVOTED BOLSTERS CARS EQUIPPED WITH STEEL UNDERFRAME.

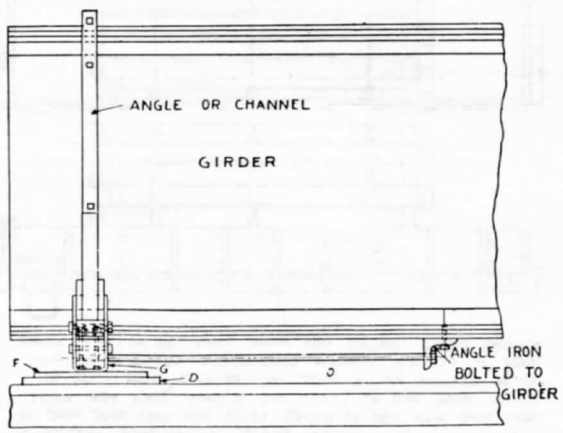


FIG 67. SIDE VIEW OF FIG. 68.

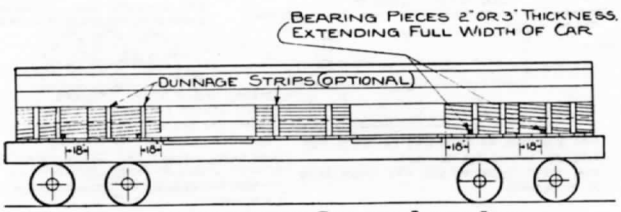
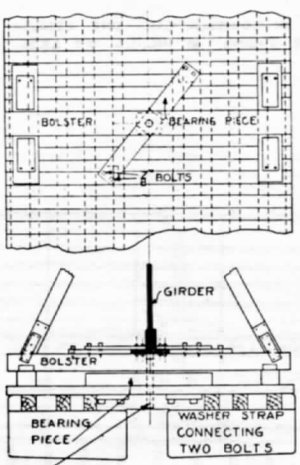
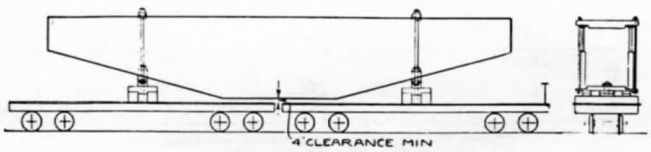


FIG 70 MANNER OF LOADING BILLETS, AXLES AND SIMILAR MATERIAL, FOUR FEET LONG OR OVER, WITHOUT DOOR PROTECTION



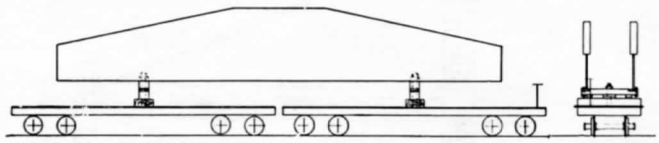
KING PIN SHOULD BE SUFFICIENTLY LONG TO REST ON CENTER SILL COVER PLATE WHICH SHOULD NOT BE CUT TO ALLOW KING PIN TO PASS THROUGH.

FIG. 69. VERTICAL LADING OF LONG GIRDERS LOCATION OF BEARING PIECE FOR BOLSTERS FOR TWIN LOADS. CARS EQUIPPED WITH STEEL UNDERFRAMING



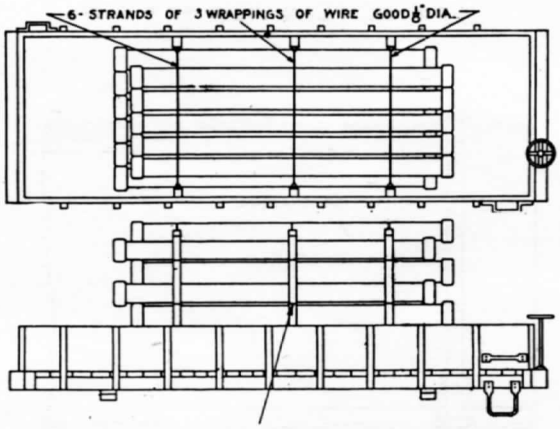
NOTE BRAKES MAY BE LOCATED AS LOAD WILL PERMIT

FIG 71 LOADING OF TURNTABLES



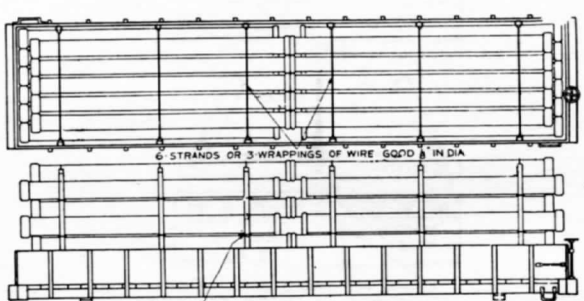
NOTE BRAKES MAY BE LOCATED AS THE LOAD WILL PERMIT

FIG 72 LOADING OF TURNTABLES



BEARING PIECES SPACED NOT MORE THAN SIX (6) FEET APART MUST BE PLACED BETWEEN CONSECUTIVE COURSES OF PIPE THESE BEARING PIECES MUST NOT BE LESS THAN FOUR (4) INCHES WIDE AND AT LEAST ONE (1) INCH THICK FOR WROT IRON PIPE AND TWO (2) INCHES THICK FOR CAST-IRON PIPE IN THE ABSENCE OF DUNNAGE STRIPS OR BEARING PIECES & WHEN LOAD EXCEEDS THREE (3) FEET ABOVE TOP OF SIDES OF CAR THIS WIRING OF SIX (6) STRANDS OR THREE (3) WRAPPINGS OF WIRE GOOD 1/8" IN DIA. IS TO BE USED TO PULL TOGETHER AND SLIGHTLY INCLINE STAKES TOWARD CENTER OF CAR. THE DISTANCE OF THIS WIRING ABOVE THE TOP OF SIDE OF CAR MUST NOT EXCEED EIGHTEEN (18) INCHES.

FIG 74 LOADING IN GONDOLA CARS ONE LENGTH OF ALL PIPE OR TUBING 12 INCHES OR LESS IN DIA.



IN THE ABSENCE OF DUNNAGE STRIPS OR BEARING PIECES AND WHEN LOAD EXCEEDS 3 FT ABOVE TOP OF SIDES OF CAR THIS WIRING OF 3 WRAPPINGS OR 6 STRANDS OF WIRE GOOD 1/8" DIA. IS TO BE USED TO PULL TOGETHER AND SLIGTLY INCLINE STAKES TOWARD CENTER OF CAR THE DISTANCE OF THIS WIRING ABOVE THE TOP OF SIDE OF CAR MUST NOT EXCEED 18 INCHES.

FIG. 75. LOADING IN GONDOLA CARS TWO LENGTHS OF ALL PIPE OR TUBING 12" OR LESS IN DIAMETER BY 23-FEET OR LESS IN LENGTH

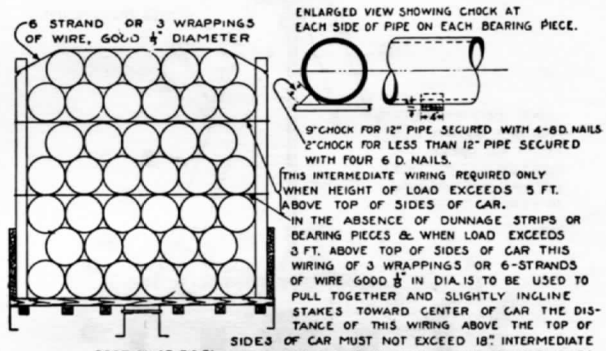


FIG. 76 LOADING IN GONDOLA CARS OF ALL PIPE OR TUBING 12" OR LESS IN DIA. X 23 FEET OR LESS IN LENGTH.

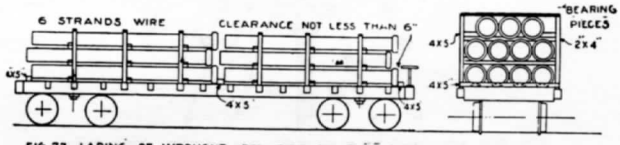


FIG 77. LADING OF WROUGHT IRON PIPE ON FLAT CARS PIPE MORE THAN 12" & LESS THAN 24" IN DIA.

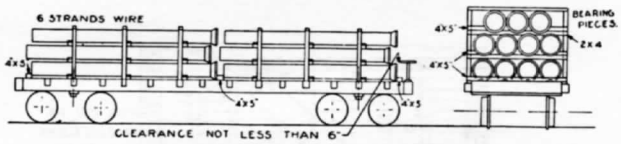


FIG 78 LADING OF CAST IRON PIPE ON FLAT CARS PIPE MORE THAN 12" & LESS THAN 24" IN DIAM.

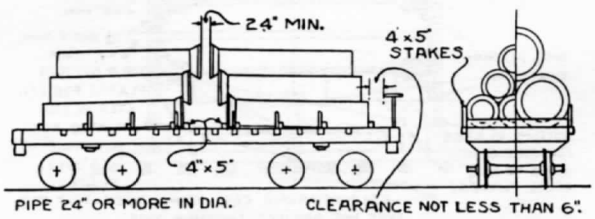


FIG. 79. LADING OF PIPE ON FLAT CARS.

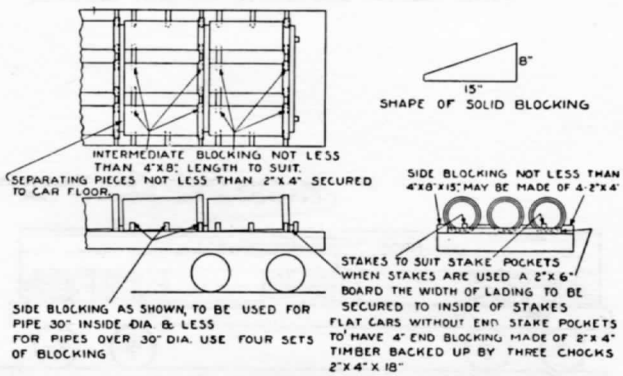
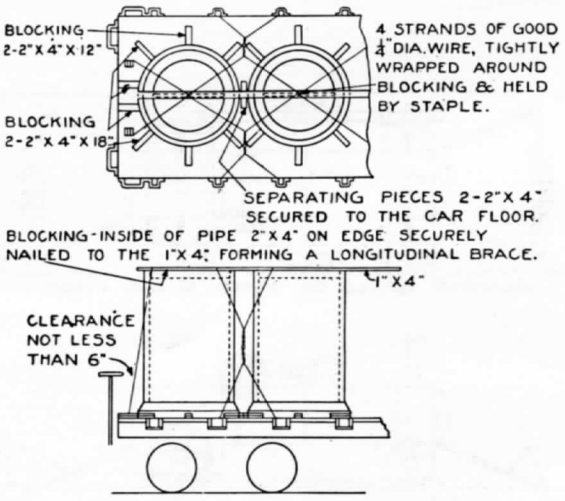


FIG. 81 MANNER OF LOADING CONCRETE CULVERT PIPES ON FLAT CARS.



NOTE:- IF THE HEIGHT OF THE PIPE IS MORE THAN 1½ TIMES ITS DIAMETER IT MUST BE WIRED AS SHOWN, OTHERWISE FLOOR BLOCKING ONLY WILL BE REQUIRED.

FIG. 82 MANNER OF LOADING CONCRETE CULVERT PIPE ON END, ON FLAT CAR.

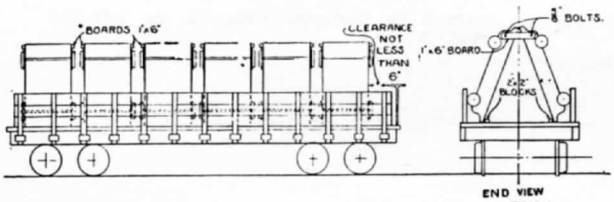


FIG. 83 MANNER OF LOADING MINING CARS AND SIMILAR VEHICLES IN GONDOLA CARS.

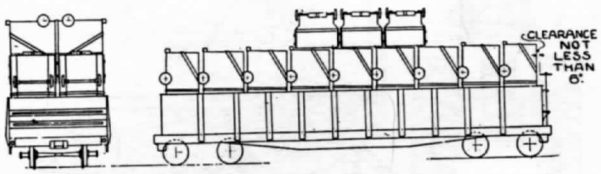
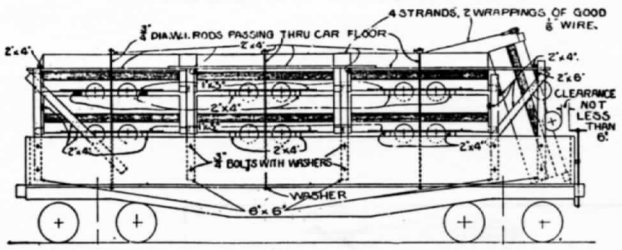


FIG. 84. MANNER OF LOADING MINING CARS AND SIMILAR VEHICLES IN GONDOLA CARS.



NOTE.- ALL TIMBERS USED TO SUPPORT LOAD MUST BE HARDWOOD SIZES GIVEN ARE MINIMUM.

FIG. 85. MANNER OF LOADING MINING CARS IN GONDOLA CARS WITH SIDES LESS THAN 44" IN HEIGHT.

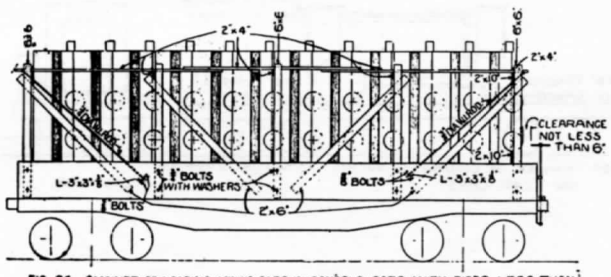


FIG. 86. MANNER OF LOADING MINING CARS IN GONDOLA CARS WITH SIDES LESS THAN 44" IN HEIGHT.

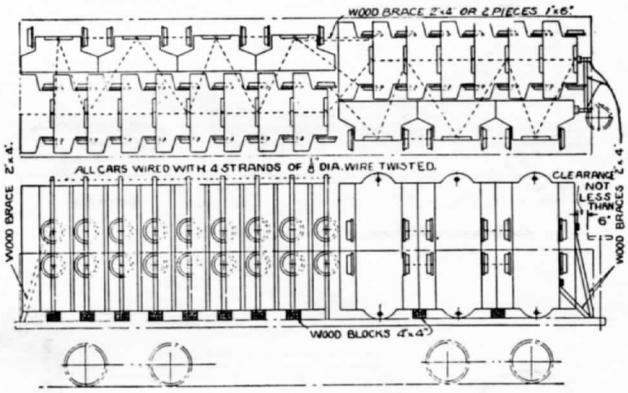


FIG. 87 MANNER OF LOADING MINING CARS IN GONDOLA CARS.

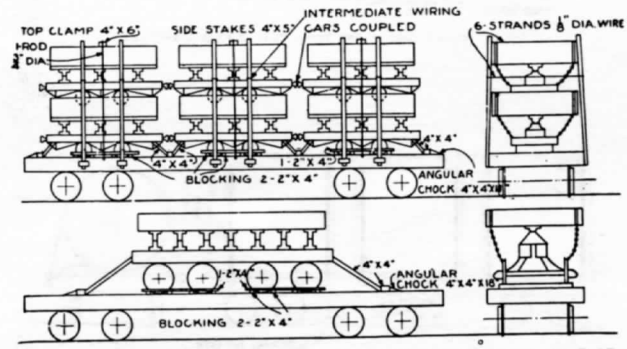


FIG. 88 MANNER OF SECURING DUMP CARS & SIMILAR VEHICLES ON FLAT CARS.

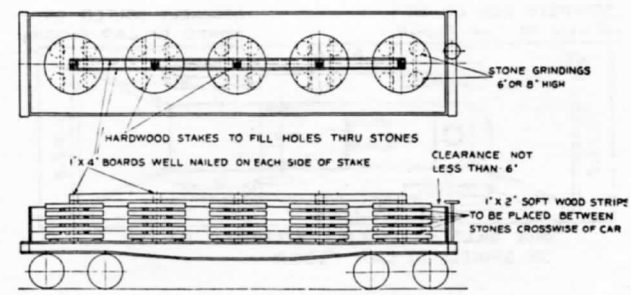


FIG 89 MANNER OF LOADING GRINDSTONES ON GONDOLA CARS.

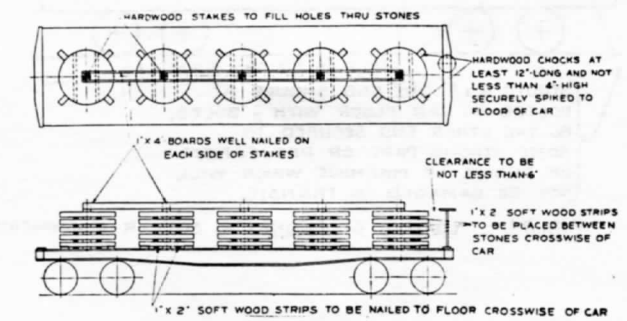


FIG 90 MANNER OF LOADING GRINDSTONES ON FLAT CARS

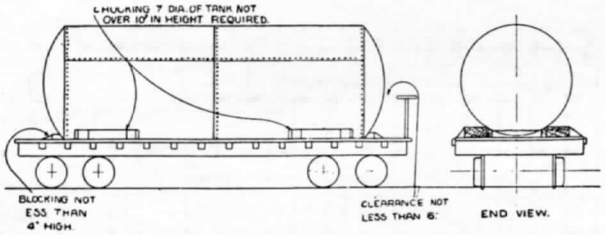


FIG. 91 BOILER SHELLS AND TANKS 8FT OR LESS IN DIAMETER

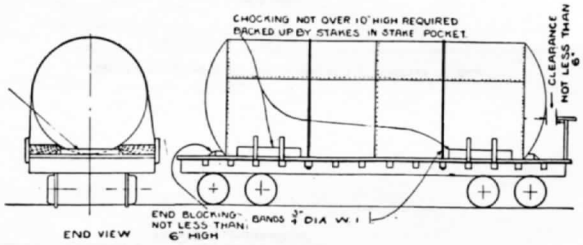


FIG. 92 BOILER SHELLS AND TANKS OVER 8 FT. IN DIAMETER.

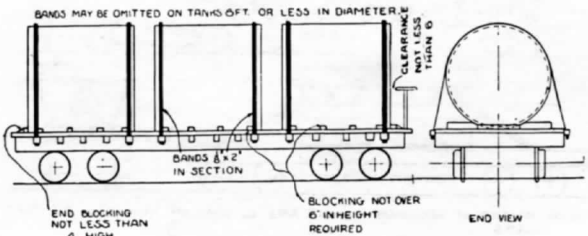
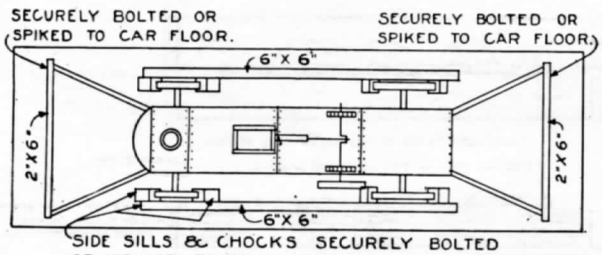
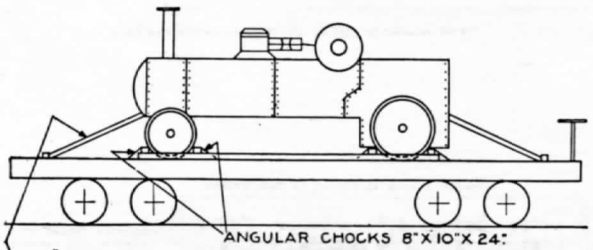


FIG. 93. SECTION OF BOILERS TANKS OR SHELLS OVER 8 FT. IN DIA. WEIGHING LESS THAN 2500 LBS. PER SECTION

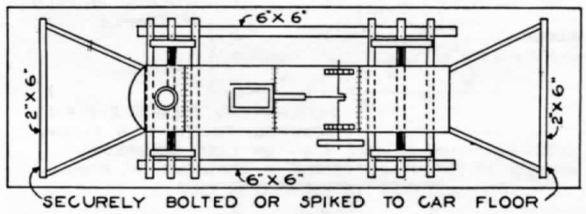


SIDE SILLS & CHOCKS SECURELY BOLTED OR SPIKED TO CAR FLOOR

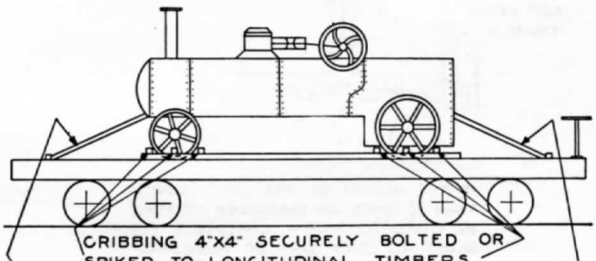


STRUTS 6"X 8" ONE END SHOULD BE BOLTED TO CAR FLOOR WITH $\frac{5}{8}$" BOLTS, & THE OTHER END SECURED TO SOME STRONG PART OR PROJECTION OF ENGINE OR MACHINE WHICH WILL NOT BE DAMAGED IN TRANSIT.

FIG. 94 LOADING OF ENGINES & SIMILAR MACHINERY.



SECURELY BOLTED OR SPIKED TO CAR FLOOR



CRIBBING 4"X4" SECURELY BOLTED OR SPIKED TO LONGITUDINAL TIMBERS.

STRUTS 6"X 8" ONE END SHOULD BE BOLTED TO CAR FLOOR WITH $\frac{5}{8}$" BOLTS & THE OTHER END SECURED TO SOME STRONG PART OR PROJECTION OF ENGINE OR MACHINE WHICH WILL NOT BE DAMAGED IN TRANSIT.

FIG. 95 MANNER OF LOADING ENGINES & SIMILAR MACHINERY.

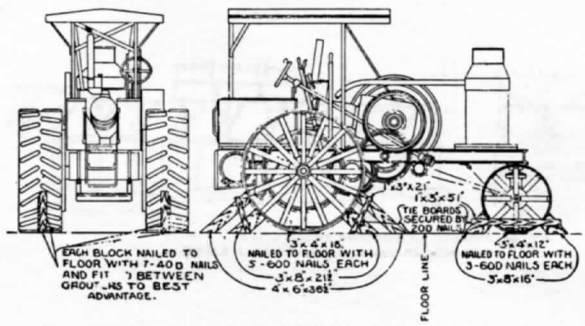
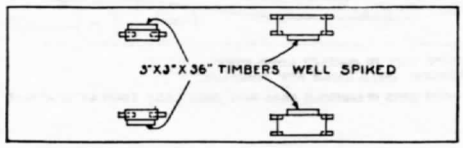


FIG. 96. MANNER OF LOADING GASOLINE TRACTOR ENGINES ON FLAT CARS.



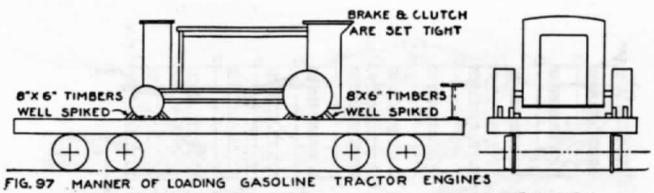


FIG. 97 MANNER OF LOADING GASOLINE TRACTOR ENGINES ON FLAT CARS.

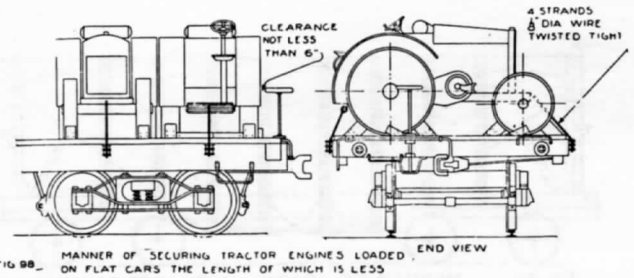


FIG 98 MANNER OF SECURING TRACTOR ENGINES LOADED ON FLAT CARS THE LENGTH OF WHICH IS LESS THAN THE WIDTH OF CAR.

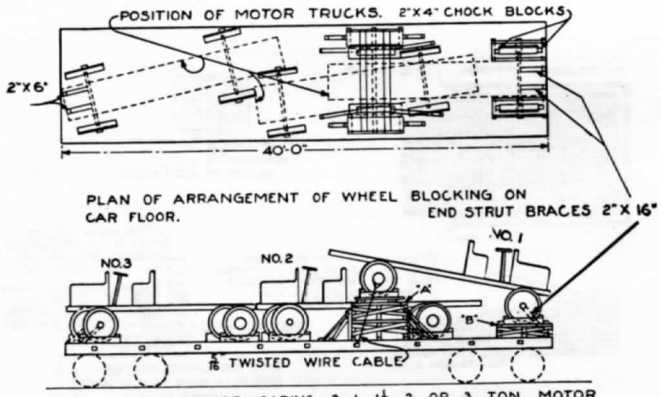
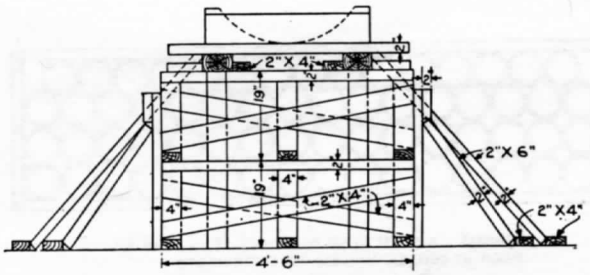
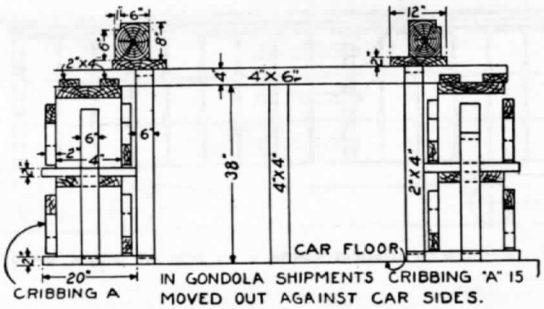


FIG. 99 MANNER OF LOADING 3-1, 1½, 2, OR 3 TON MOTOR TRUCKS ON GONDOLA AND FLAT CARS.





CRIBBING A IN GONDOLA SHIPMENTS CRIBBING "A" IS MOVED OUT AGAINST CAR SIDES.

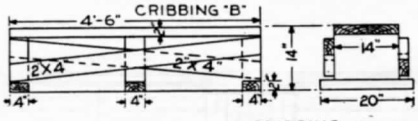


FIG. 99A CRIBBING A

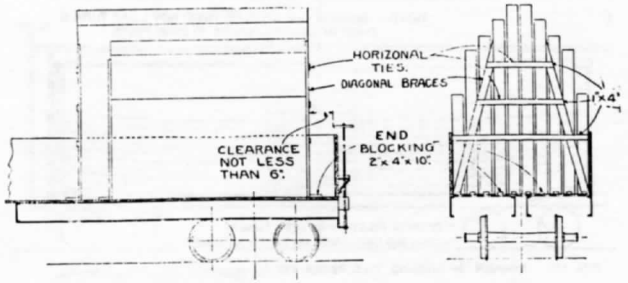
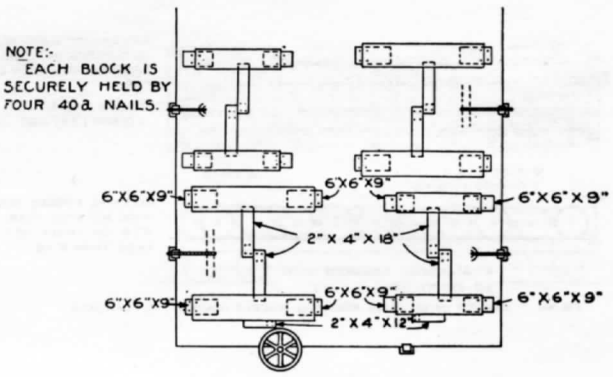
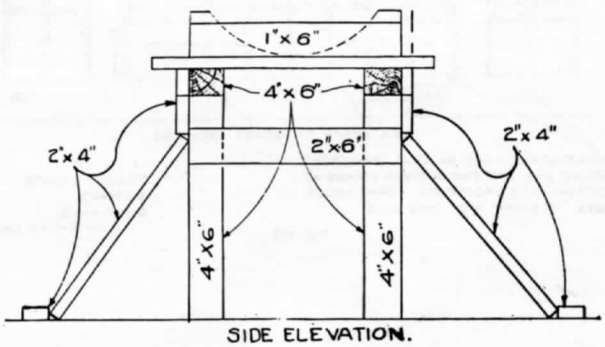


FIG. 102. MANNER OF LOADING PLATE GLASS ON FLAT OR GONDOLA CARS.



PLAN VIEW OF BLOCKING OF FIG. 98.

FIG. 98 A MANNER OF SECURING TRACTOR ENGINES LOADED ON FLAT CARS THE LENGTH OF WHICH IS LESS THAN THE WIDTH OF CAR.



SIDE ELEVATION.

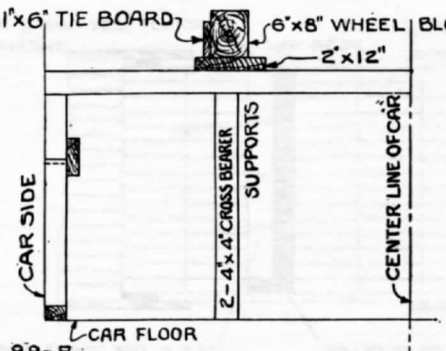


FIG. 99-B. THIS METHOD OF SUPPORTING CROSSBEARER MAY BE USED IN BOX CARS INSTEAD OF CRIBBING "A".

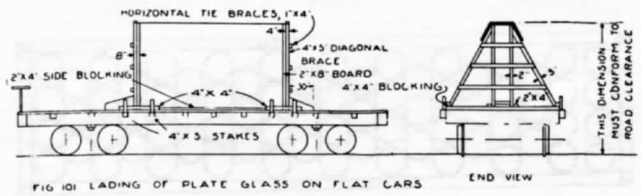


FIG 101 LADING OF PLATE GLASS ON FLAT CARS

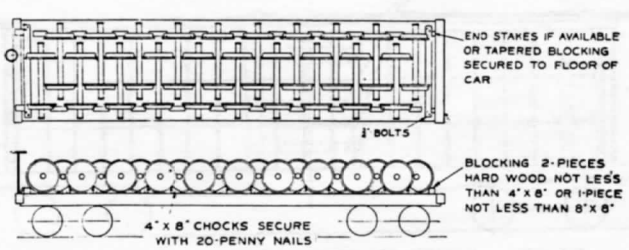


FIG. 103 MANNER OF SECURING MOUNTED WHEELS LOADED ON FLAT CARS

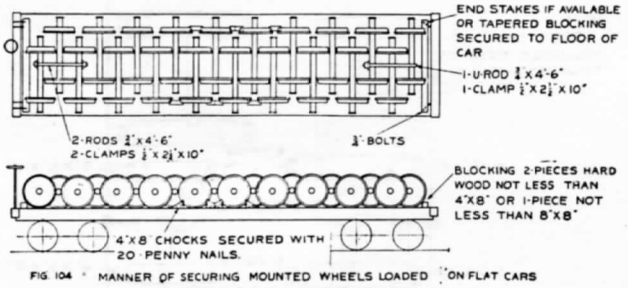


FIG. 104 MANNER OF SECURING MOUNTED WHEELS LOADED ON FLAT CARS

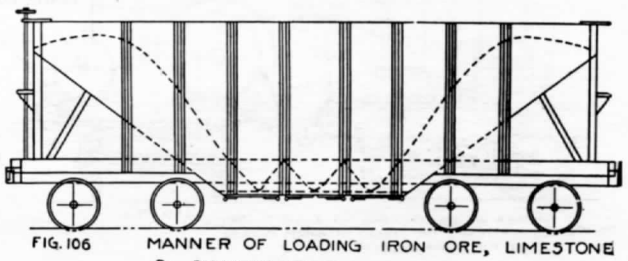


FIG. 106 MANNER OF LOADING IRON ORE, LIMESTONE & SIMILAR MATERIAL

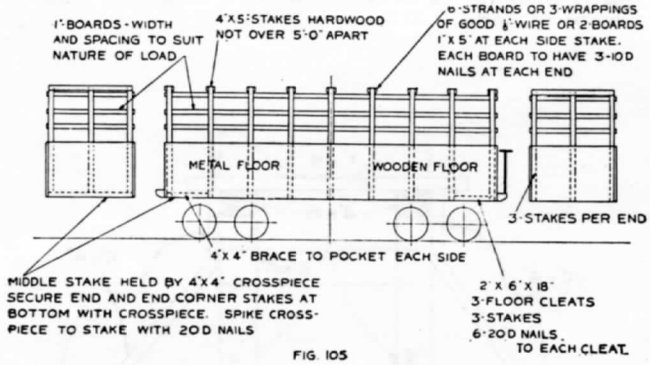


FIG. 105

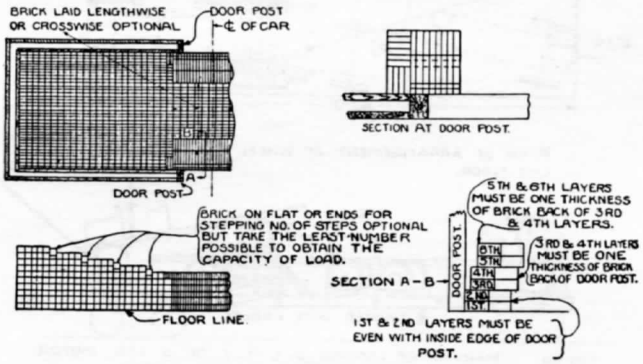


FIG. 107. MANNER OF LOADING BRICK 15" OR LESS IN LENGTH WITHOUT DOOR PROTECTION.

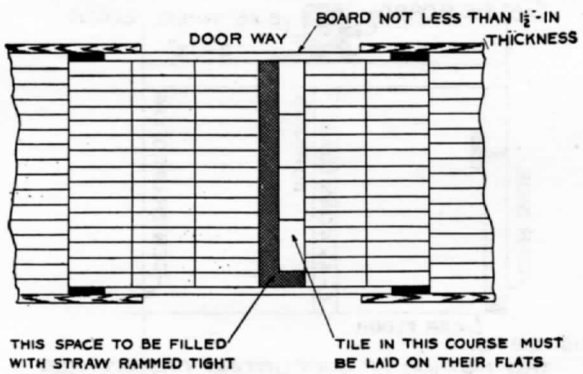


FIG. 108 MANNER OF LOADING BRICK WHEN DOOR PROTECTION IS REQUIRED

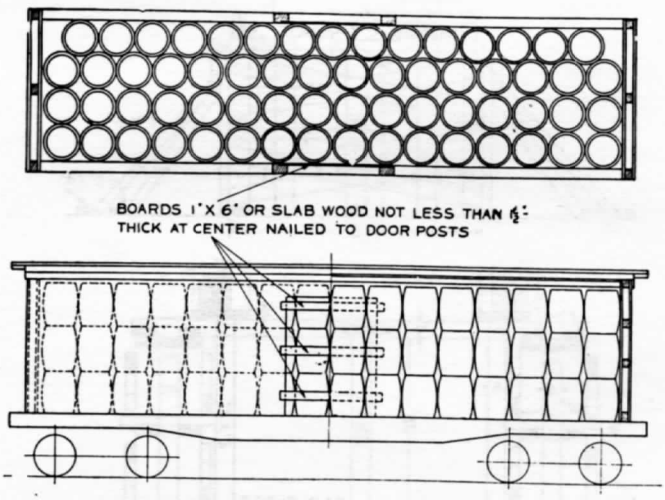


FIG. 110 MANNER OF LOADING BARRELS IN BOX OR STOCK CARS

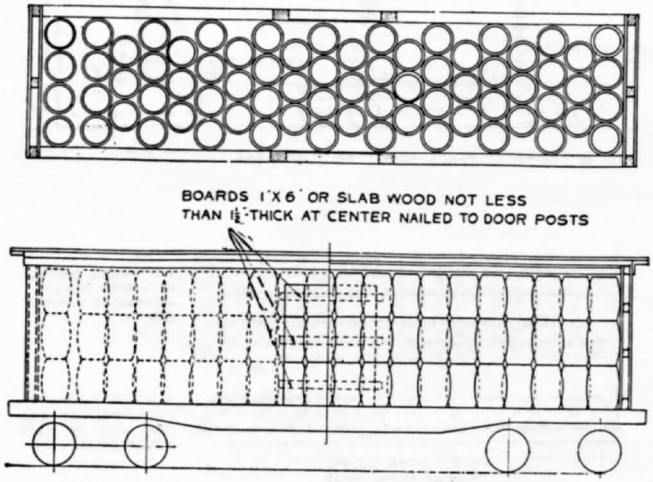


FIG 109 MANNER OF LOADING BARRELS IN BOX OR STOCK CARS

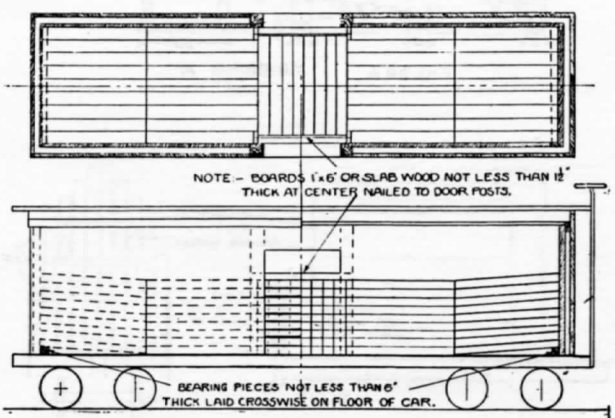


FIG. 111 MANNER OF LOADING TIES, FENCE POSTS, WOODEN BILLETS, BARREL STAVES AND SIMILAR SHORT WOOD IN CLOSED CARS.

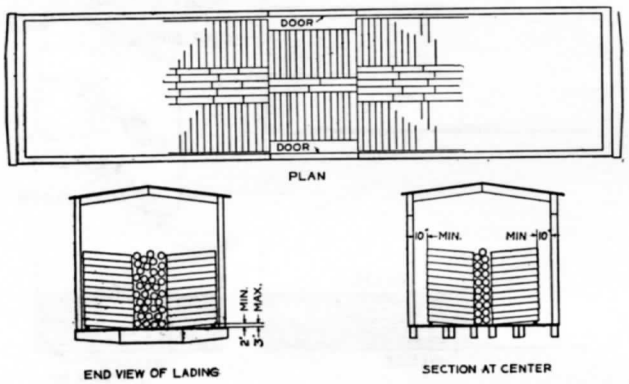


FIG. 111-A MANNER OF LOADING WOOD CORES 3 TO 4½ FEET LONG IN BOX OR STOCK CARS

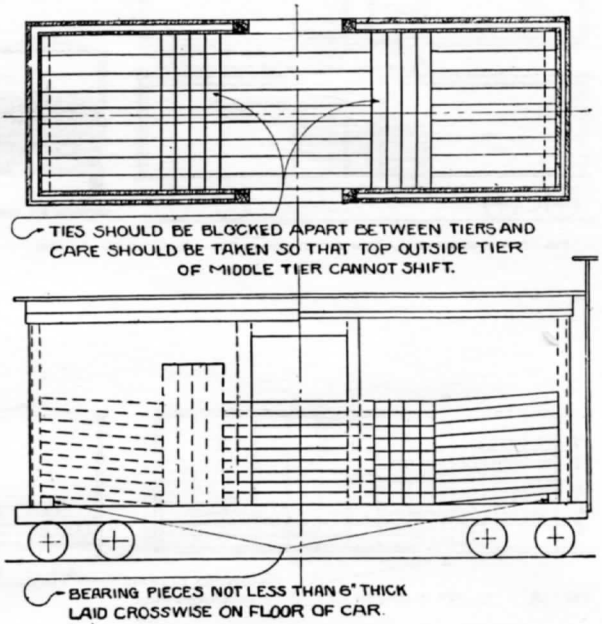


FIG. 114 MANNER OF LOADING THREE PILES OF TIES IN CLOSED CARS.

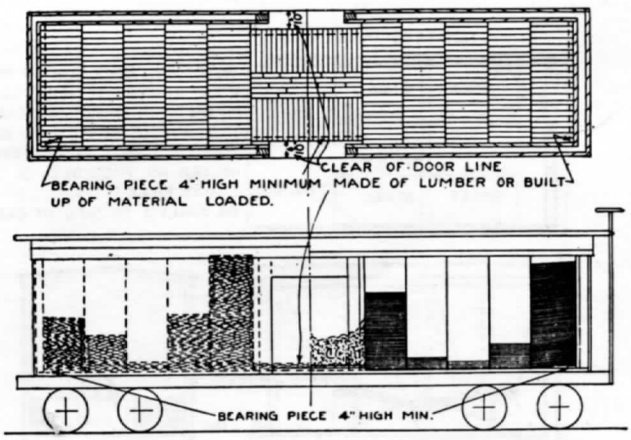


FIG. 112 MANNER OF LOADING STAVES-FENCE POSTS-LATH-TAN BARK & SIMILAR MATERIAL IN CLOSED CARS WITHOUT DOOR STRIPPING.

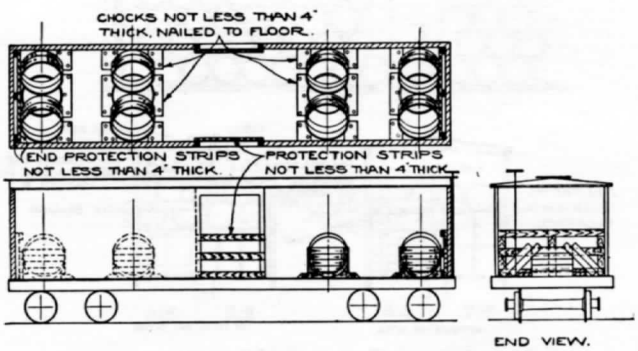


FIG. 115. MANNER OF LOADING TIRES IN BOX OR STOCK CARS.

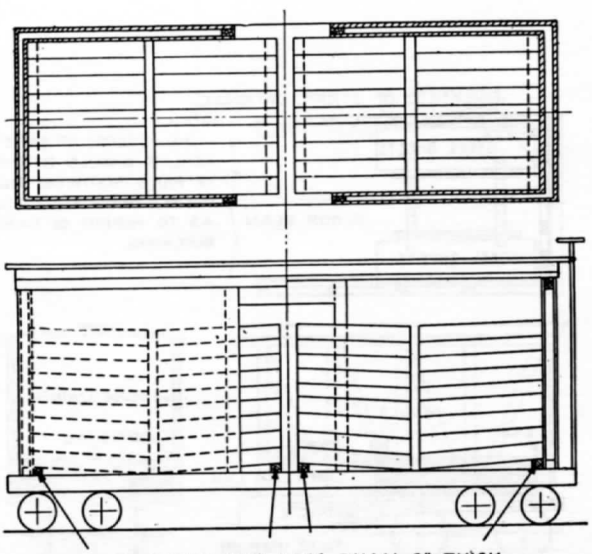


FIG. 113 MANNER OF LOADING FOUR PILES OF TIES IN CLOSED CARS.

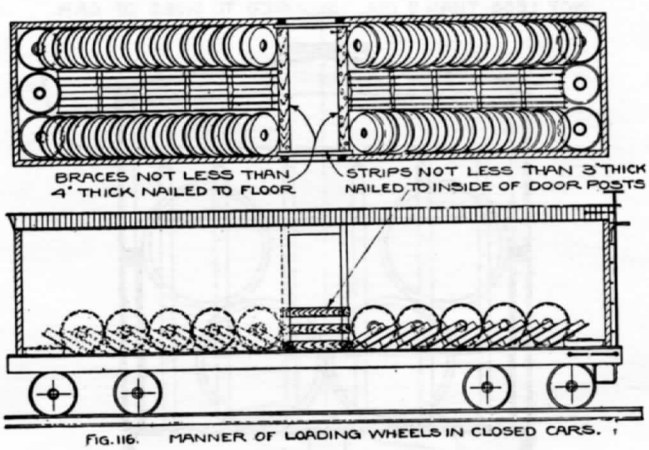


FIG. 116. MANNER OF LOADING WHEELS IN CLOSED CARS.

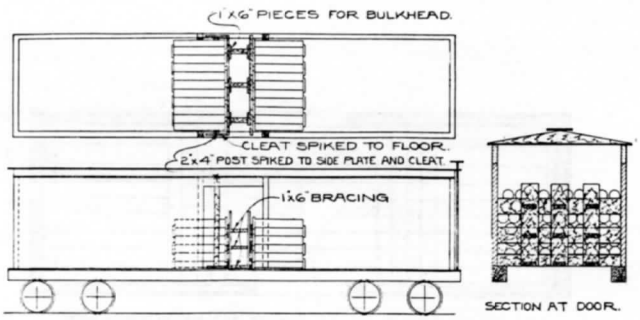


FIG. 117. MANNER OF LOADING SEWER PIPE IN CLOSED CARS.

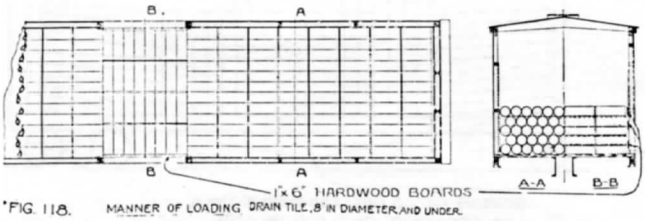


FIG. 118. MANNER OF LOADING DRAIN TILE 8" IN DIAMETER AND UNDER.

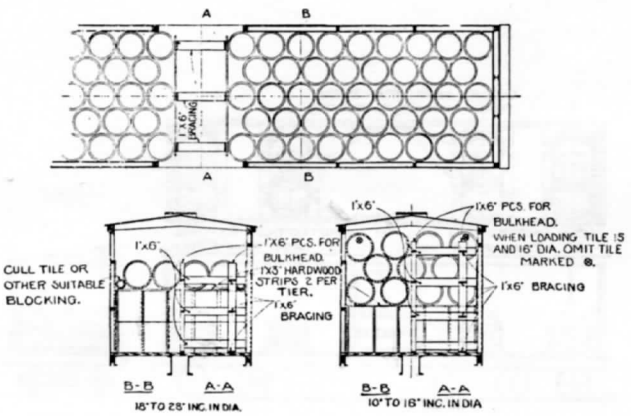


FIG. 119. MANNER OF LOADING DRAIN TILE 10" TO 25" IN DIA.

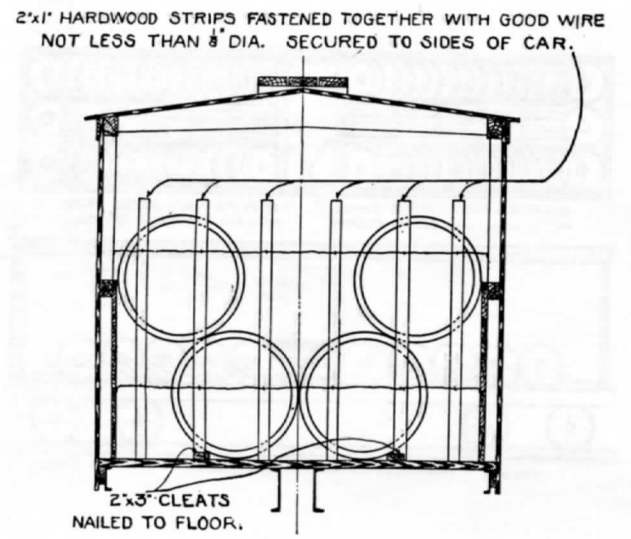


FIG. 120. MANNER OF LOADING DRAIN TILE 30" IN DIA. AND OVER.

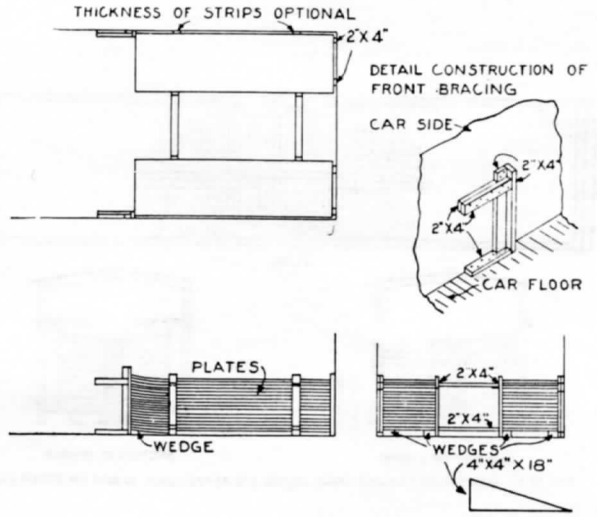


FIG. 121 MANNER OF BRACING STEEL PLATES IN BOX CARS.

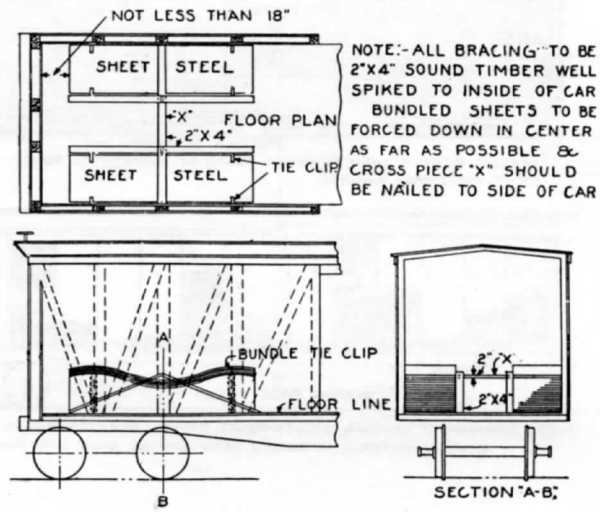


FIG. 122 MANNER OF BRACING BUNDLED SHEET STEEL PLATES IN BOX CARS.

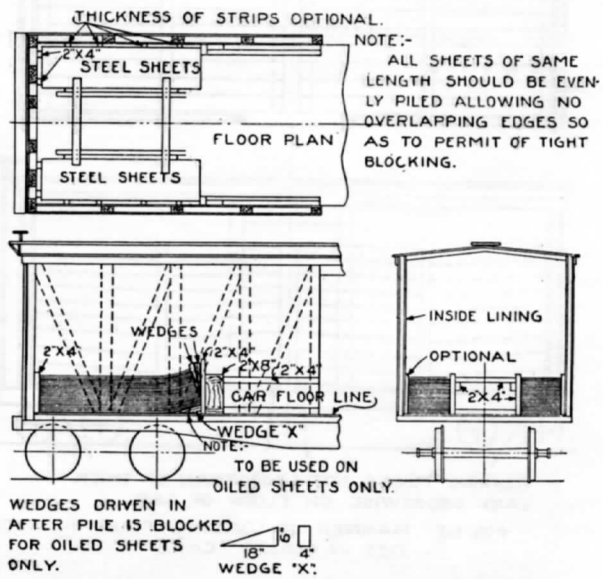


FIG. 123 MANNER OF BRACING LOADS OF PLAIN OR OILED SHEET STEEL PLATES IN BOX CARS.