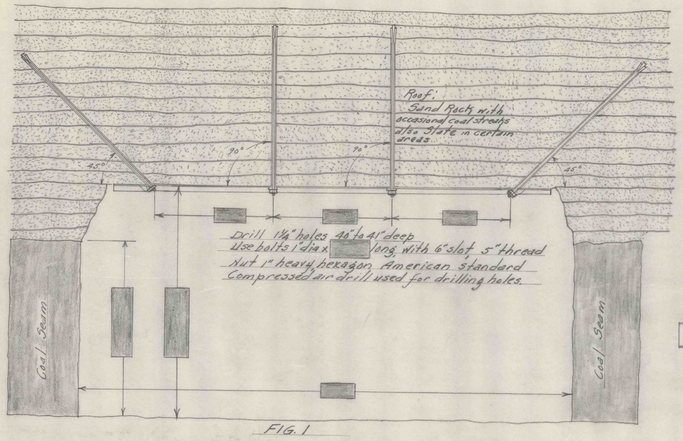


FIG. 1

Fig 1 shows a section of entry where top rock has been taken above the coal seam for additional headroom. Fig shows channel section bolted to roof rock with a smooth roof surface or with that surface nearly within the same plane, a steel channel used as a bearing plate is placed against the roof and one hole near the middle is marked to be drilled. That hole is drilled to proper depth, the bolt entered with the wedge started in the slot in the end of the bolt. The bolt is then driven and the channel replaced and a washer and nut tightened with an impact wrench bird the strata together and hold the channel in place. Then bolts are placed in like manner in the remaining pre-punched holes in the channel.

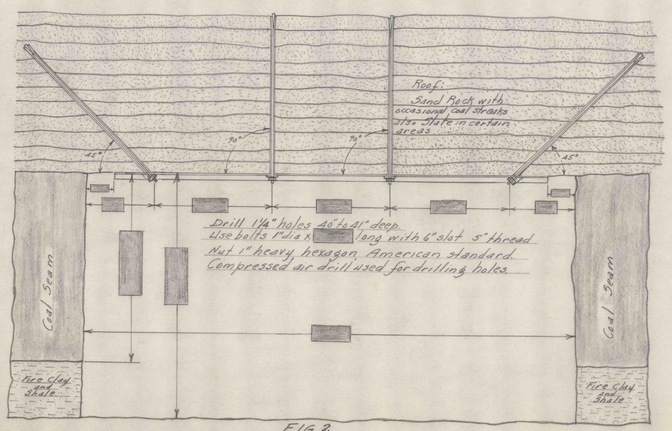


FIG 2

Fig 2 shows a section of entry where no top rock is taken above the coal seam, but the floor is taken up. Channel and bolts are placed in the same manner as described under Fig 1

When a steel channel is used and a depression exists where a bolt is to be placed (Fig 3) and it is deemed not practical to bend the channel to conform to that depression, then a steel bearing plate is to be used against the rock in that high area with the bolt passing thru the plate, also a spacer such as a piece of strong steel pipe or mud block of proper length to fill or almost fill between the channel and the bearing plate, having the spacer a small fraction of an inch short is no objection for then the channel may be drawn up tight against the roof adjacent to the depression.

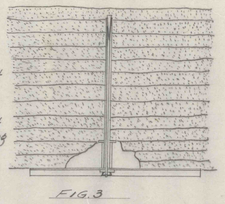
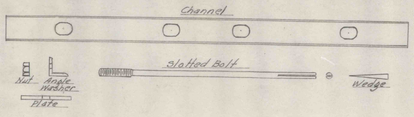
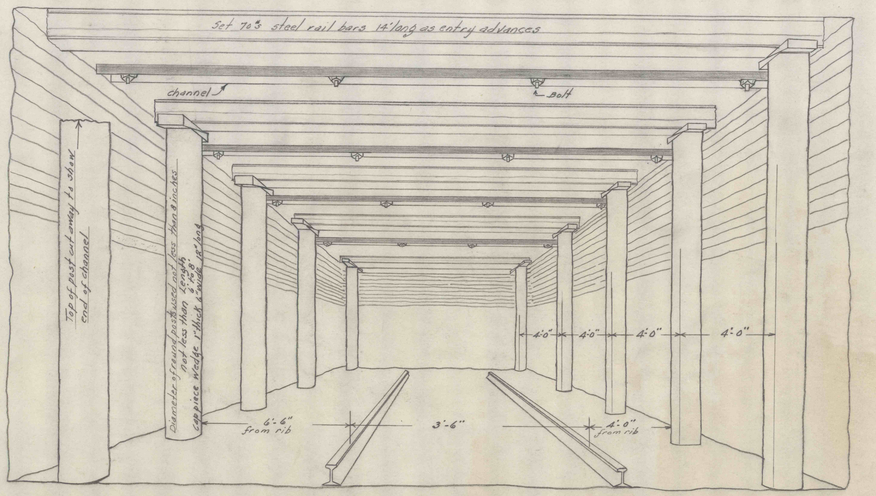


FIG. 3

Steel bearing plate, both channel or shin pierced to be used 3"x 8" x ⅜" thick, center punched
Angle washer 3"x 3"x ⅜"
Standard wedges 5⅛" long ⅜" wide tapered from ⅝" to 0
Channels (steel) 18' long 4" wide 1" thick. Weight 5.4 pounds per foot with holes 4 punched axial 8" x 4⅛"





Entry Arrangement of Conventional Timbering

ROOF BOLTING

The purpose of roof bolting as shown is to reinforce sandrock, shale or other rocks where planes of weakness usually planes of stratification exist due to laminations of coal or lack of effective natural cement between rock strata. No dependence is placed on loose or stratified rock being safely suspended from rocks which are considered stable.

FOR

Mine ____ Entry ____ Location ____

OPERATOR ____

APPROVED BY ____

21 A

Barnes-Thicker Company
Barnesboro, Pa. Mar. 28, 1950
(M.)