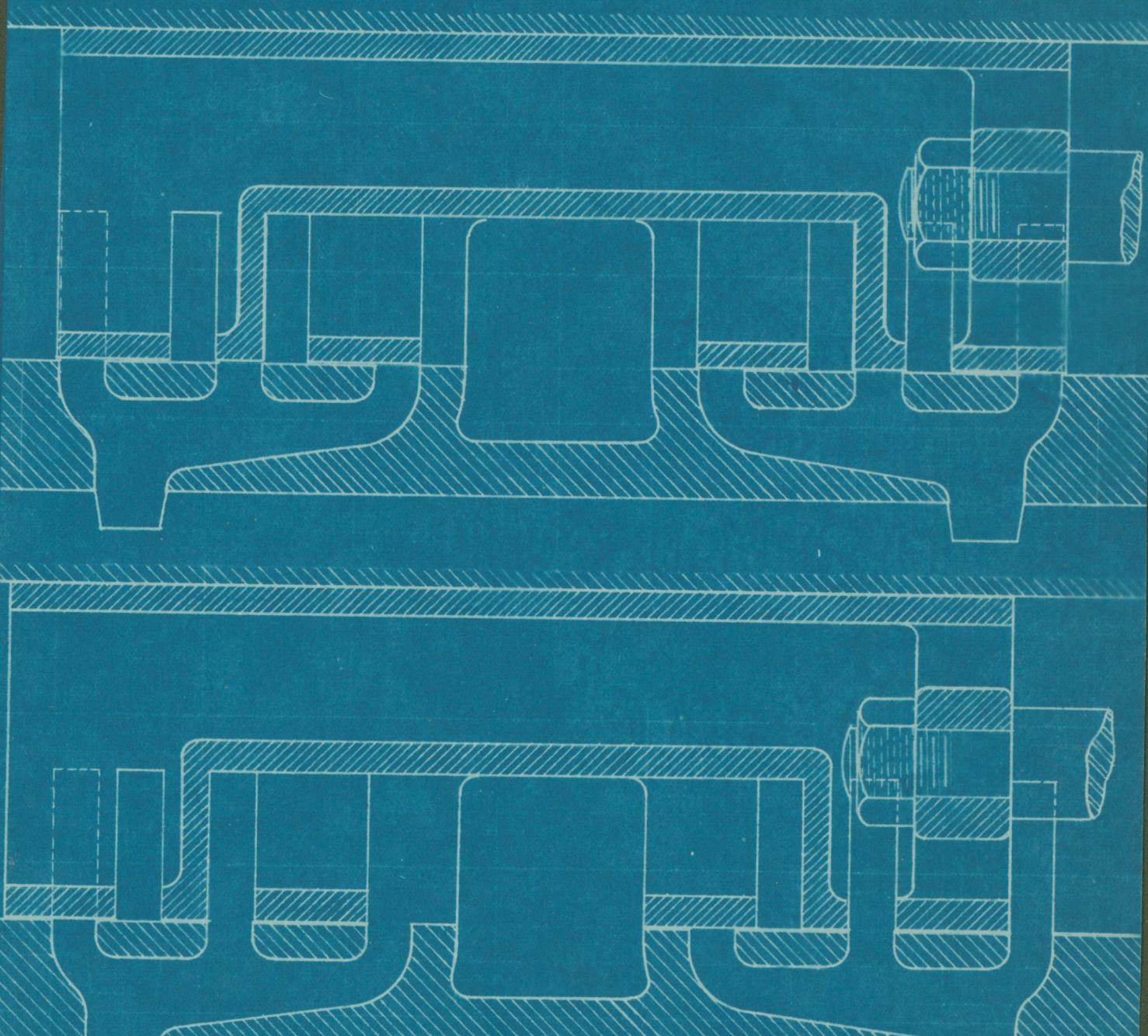


Adams Township, MI

CHAMPION COPPER COMPANY
SHOP SKETCH

Subject: Double Ported Hollow Piston Valve Fenberthy's Patent Date: Aug 28-11.



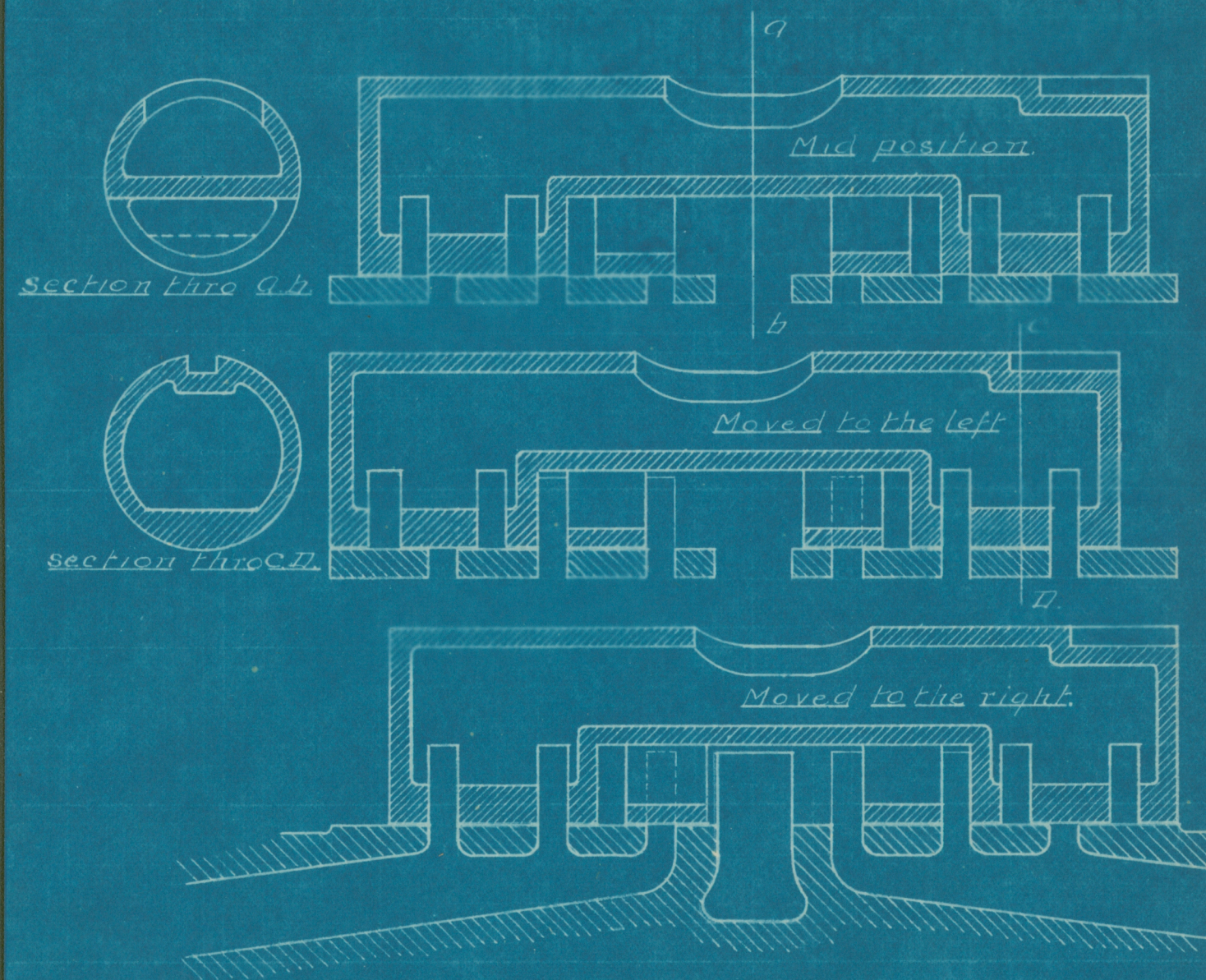
Dia of cylinder inches	stroke of piston inches	Dia of Steam Pipe	area of Steam Pipe	outside dia of Valve	inside dia of Valve	Length of Valve in inches	Wt of Valve lbs	Travel of Valve outside Lap	Total area of Port opening in sq in	Total Area of effective Port opening in sq in	Total Circumferential bearing or wearing surfaces.
8 3/4	10 1/2	3"	7.06 sq	4 1/2"	4"	12 1/2"	12 lbs	1 1/2"	7 sq	7 sq	106 sq app
Single Ported Ordinary Piston Valve.											
8 3/4	10 1/2	3"	7.06 sq	3 1/2"	4"	9"	12 lbs	2 1/2"	12.75 sq	7 sq	40 sq app

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Subject: Double Ported Hollow Piston Valve "Fenberthy's Patent" Date: Aug 31-11



Section thro A-A

Section thro B-B

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