Gear circle 44.½ feet diameter. Circumference 139.8 feet

Pinion 16" dia. 20 teeth. Circumference 50.26"

33.41 revolutions of pinion to make one full revolution of draw

Worm gear on bridge shaft 2' diameter 37 teeth driven by a worm or endless screw, which will require 37 revolutions to make the pinion shaft revolve once around, and 1224.7 revolutions to make a full revolution of the draw.

Pulleys on worm shaft 2 feet diameter.

There will be three of these, two of six inch face, one center of three inch face, made fast on shaft as driving pulley.

Two belts, one cross belt, one straight, The pulleys with six inch face will allow the belts to be shipped across, so that either belt can be on the driving pulley, or both on the loose pulleys. Both operated by one shipper, so arranged as to stop at any point with the engine running.

The pulleys on engine six feet diameter will be as one to three on worm shaft, making 408.23 revolutions to one revolution of draw.

To assist in propelling vessels past the draw, the speed of worm shaft will be the same as the draw shaft.
The chain pulleys two feet diameter. Circumference 75"39 revolving 33.1 times with a travelling velocity to the chain of 207.95 feet to one revolution of draw.
At each end of pier, horrizontal capstan on shaft with chain pulley 30" diameter, one foot face.
Circumference of capstan - for a hawser from the passing vessel - 94"24 inches, revolving 33.1, will propel the vessel 259.94 feet to one revolution of draw.
Capstan worked by chain of ½" wire will sustain a pulling pressure of five tons.

Length of gear circle 139.8			
Dip inch face — thickness 2¼ in weight — 2200.			$200.00
69. feet Sheafting 2½ in dia.		1152.	126.61
being 1 of 50. feet. 1 of 13. feet and four of 4. feet each			
20 Stands with guide and bearing pulleys for chain supports		800.	88.00
2 gear Stands.		700.	77.00
12 Beams and boxes for shafts.		900.	99.00
Gearing and pulleys.		1000.	110.00
1 Chain 492. feet long ½ inch iron.			
1 " 209. " " " " " .		1633.33	199.99
Bolts, screws, Spikes and labor.			300.00
10 White Oak piles.			200.00
Building 26' x 20' and planking.			350.00
Double steam engine complete.			1500.00
Contingencies			325.00
			$3575.60

Operations of machinery
for opening & Closing Draw
and propelling vessels.

Cost of same &c