We claim for it the following advantages :—

It is FIVE TIMES THE STRENGTH of the same size Hemp Rope,
It is only ONE SIXTH THE BULK for equal strength Hemp Rope.
It is less than ONE HALF THE DIAMETER " "
It is 35 PER CENT. LESS WEIGHT " "
It is FIVE TIMES AS DURABLE " "
It does NOT STRETCH OR SHRINK in dry or wet weather.
It is not injuriously affected by the heat of Summer or cold of Winter.
It does not absorb water and double its original weight.
It is as pliable as Hemp Rope of equal strength.

*Below we append a comparative Scale of the Size and Weight per* 100 *feet of Round Wire Ropes, Hemp Ropes, and Chains of equal strength.*

| WIRE ROPE. | | HEMP ROPE. | | CHAIN. | | BREAKS AT | WORKING LOAD. |
|---|---|---|---|---|---|---|---|
| Circumference. | Weight per 100 feet. | Circumference. | Weight per 100 feet. | Diameter. | Weight per 100 feet. | Tons. | In lbs. |
| 1¾ inches. | 38 lbs. | 4 inches. | 63 lbs. | 7-16 in. | 183 lbs. | 5 | 1666 |
| 2 " | 53 " | 5 " | 100 " | ½ " | 266 " | 7 | 2333 |
| 2¼ " | 70 " | 5½ " | 117 " | 9-16 " | 309 " | 8½ | 2666 |
| 2½ " | 87 " | 6 " | 130 " | 19-32 " | 341 " | 11 | 3700 |
| 2¾ " | 100 " | 6½ " | 145 " | ⅝ " | 400 " | 13 | 4300 |
| 3 " | 125 " | 7¼ " | 185 " | 11-16 " | 466 " | 15 | 5000 |
| 3½ " | 150 " | 8 " | 236 " | ¾ " | 533 " | 19 | 6300 |
| 3¾ " | 200 " | 9 " | 297 " | 13-16 " | 650 " | 24 | 8000 |
| 4 " | 233 " | 9½ " | 330 " | ⅞ " | 750 " | 28 | 9400 |

## FLAT ROPES.

For a vertical shaft, where two ropes are used, flat ropes work to very great advantage, the form of the rope not allowing the bucket or rope to revolve.

These ropes are arranged to work on a drum, the flanges of which are of a large diameter, and the space between them sufficient to allow it to wind on the barrel, *like a tape line;* thus, the diameter of the descending rope is decreasing in the same ratio as the barrel of the ascending one increases, counterbalancing each other in whatever position the buckets may be.

Below we give a scale of the comparative size, weight and strength of Flat Wire and Hemp Rope.

*Scale of Weight, Size, and Strength of Flat Wire Rope compared with Flat Hemp Rope.*

| FLAT WIRE ROPE. | | FLAT HEMP POPE. | | BREAKING STRAIN. | WORKING LOAD. |
|---|---|---|---|---|---|
| Size in inches. | Weight per yard | Size in inches. | Weight per yard. | In Tons. | In lbs. |
| 2⅛x½ | 4¼ lbs. | 4x1 | 8¼ lbs. | 16 | 4032 |
| 2½x½ | 5 | 4½x1¼ | 10 | 18 | 4480 |
| 2¾x⅝ | 6⅓ | 5x1¼ | 12 | 22½ | 5600 |
| 3x⅝ | 7½ | 5½x1⅜ | 13 | 27 | 6960 |
| 3½x⅝ | 9 | 6x1½ | 14 | 32 | 8064 |
| 4x⅝ | 10 | 7x1⅞ | 18 | 36 | 8960 |
| 4½x⅝ | 11¼ | 8¼x2⅛ | 20 | 40 | 10.080 |
| 5x⅝ | 12½ | 8½x2¼ | 22½ | 45 | 11.300 |

One-seventh of the breaking strain is the usual working power or load.