

STRENGTH OF ROPE.

Manila as Strong as a Steel Bar of Equal Weight.

Of the flexible ropes suitable for power transmission, a manila rope is just as strong as a solid steel bar, weight for weight, though only 11 1/2 per cent as strong per equal cross section. Leather, on the other hand, is only about 5 per cent as strong as a steel bar of equal cross section and less than 40 per cent as strong per equal weight of material, says an expert in Power.

Records show that rope manufactured from the fiber of palms was used in Egypt long before the days of Christianity. Such ropes were found in the tombs of Beni-Hassan (3000 B. C.) and on the walls of these same tombs are illustrations depicting the preparation of hemp. Carvings found in tombs in Thebes represent the process of making rope from thongs of leather, about 1000 B. C., and Assyrian sculptures of about fifty years later show gigantic hauling operations performed with rope. These records are of particular interest as indicative of the steps through which rope manufacture passed in the early ages.

The relative efficiency of manila rope and leather belting for the transmission of power is not directly proportional to their respective strengths, however, as the internal construction of hemp rope and a strip of leather differ greatly and very differently by wear. Manila fibers from which the rope is manufactured are usually from eight to ten feet in length, are composed of elongated cells that possess great strength longitudinally, but are comparatively weak transversely. Leather, on the other hand, is about equally strong in any direction, so that the wear on such a belt is mostly external. In a manila rope the wear is largely internal, the elongated fiber cells being crushed together when passing around a sheave and breaking up into short pieces. A worn-out manila rope, so far as its strength is concerned, may have the outward appearance of an excellent rope, while internally its construction is but a mass of short, broken particles. The allowable working stress of a good leather belt is customarily taken as 320 pounds per square inch, or about one-tenth its tensile strength. In the course of a year or so a manila rope will lose about 50 per cent of its original strength, after which the weakening becomes more gradual. Under such conditions it is safe to figure on an allowable working stress of about 288 pounds per square inch, or one-thirty-second its tensile strength.

WATER FILTER PLANTS.

Lack of Competent Operation a Menace to Public Health.

Cities often spend thousands of dollars upon the construction of a water purification plant or sewage disposal works and then place in charge of its operation a political appointee with no claim to technical knowledge. The evils of this practice were commented upon in a recent paper by Dr. Allan J. McLanahan of the United States public health service. He said in part:

"The greatest obstacle to proper operation and control of plants has been the difficulty of securing the right man to place in charge of the plant. The best type of man for this position is a graduate in sanitary engineering. He will not only be conversant with the mechanical details of the plant, but will be able to adjust his chemicals according to the constituents and needs of the raw water. Most important of all, he will be able to make daily bacteriological examinations to determine the efficiency of purification. Nearly all the disasters due to sewage polluted water supplies which have occurred were due to lack of daily bacteriological knowledge of the public supply or the inefficient operation of plants by unskilled men. The employment of such a graduate is economy even in small cities."—Engineering Record.

Chromic Iron Ore.

Deposits of chromic iron ore occur in Maryland and the adjacent portion of Pennsylvania, in North Carolina and in Wyoming, but the only deposits operated in the United States within recent years are in California. Numerous deposits have been reported in thirty-two counties of that state according to the United States geological survey, and many of them could be worked if the demand for the ore and its value warranted exploitation. The available deposits, with much in reserve, largely exceed the local demand for refractory material in a field extending as far east as the Rocky mountains.

Chicago's Water Supply.

Three experts who have been studying the future sanitary policy of Chicago announce that the time has come to consider the filtration of the city's water supply from Lake Michigan, which is often so turbid as to be extremely distasteful. The present sanitary quality of the water is not questioned, but there is arising a demand for a clearer water than it is possible to obtain without filtration with intake crabs at any reasonable distance from shore.—Engineering Record.

Metal Stair Corners.

The hardest part of a room or stairway to clean is the corners, and these always collect a good quantity of dirt. Instead of removing the dirt each time, a better plan is to fix the corner with a triangular piece of brass or copper, two inches on each side, fastened into the corner with one nail through the center. These metal pieces are especially desirable in public buildings.

Use Thicker Oil in Summer.

As the weather gets warmer and the automobile bearings run hot use thick oil, greases and graphite.

First Official Program of the Dallas Chautauqua

R. D. EDWARDS—Superintendent
DR. JAMES H. McLAREN—Morning Hour Lecturer
Programs Begin Promptly
Children's Hour.....9:00 A. M. Morning Lecture.....10:00 A. M.
Afternoon Concert.....2:30 P. M. Afternoon Lecture.....3:00 P. M.
Evening Concert.....7:30 P. M. Evening Lecture.....8:15 P. M.
Morning Hour Admission—Adults, 25c; Children, 15c.

SATURDAY

"Pioneer Day"
Afternoon—Welcome address by Mayor. Response by Superintendent.
Short addresses by Pioneers.
Music.....LYRIC GLEE CLUB
Community Lecture—"Farming and Being Farmed"
.....COL. W. H. MILLER
Admission, 35 cents
Evening—Grand Opening Concert.....LYRIC GLEE CLUB
Impersonations by Francis Ives Hendry
Entertainment—WM. A. McCORMICK, the wonderful imitator, and BRONTE, the smartest dog in the world.
Admission, 35 cents

SUNDAY

Morning—Usual services at all churches
Afternoon—Sacred Concert.....ELWYNN TRIO
Lecture—"The New American"
.....DR. FRANK W. GUNSAULUS
America's Greatest Pulpit Orator
Vespers, 4:00 P. M.
Admission 50 cents

Evening—Concert.....ELWYNN TRIO
Popular Lecture—"Christianity and the New Chinese Republic"
.....NG POON CHEW
"The Oriental Mark Twain"
Admission, 35 cents

MONDAY

Morning—Children's Hour (Seton Indian Games)
Lecture—"The Wisest of Fools"
.....DR. JAMES H. McLAREN
Afternoon—Melodies of the Southland.....HANN JUBILEE SINGERS
Lecture—"Why I Quit Fighting"
.....F. R. WEDGE, Ex-Prize Fighter
Admission, 35 cents

Evening—Jubilee Concert.....HANN JUBILEE SINGERS
Lecture Oration—"The Burden of the Nations"
.....DR. THOMAS E. GREEN
World Lecturer
Admission, 50 cents

TUESDAY

"Music Day"
Morning—Children's Hour (Seton Indian Games)
Lecture—"The Radium of the Soul"
.....DR. JAMES H. McLAREN
Afternoon—Concert.....CIRICILLO'S ITALIAN BAND
Admission, 50 cents

Evening—Popular Concert.....CIRICILLO'S ITALIAN BAND
Music Festival.....THAVIU GRAND OPERA COMPANY
with CIRICILLO'S ENTIRE BAND
Admission, 75 cents

WEDNESDAY

"Woman's Day"
Morning—Children's Hour (Seton Indian Games)
Lecture—"Rachel, or an Old Time Courtship"
.....DR. JAMES H. McLAREN
Afternoon—Literary Interpretations.....MRS. WILLIAM CALVIN CHILTON
Lecture—"The Japanese as I Saw Them"
.....MRS. A. L. A. ROBINSON
Admission, 25 cents

Evening—Entertainment.....MRS. WILLIAM CALVIN CHILTON
Travelogue—"Mexico and South America" (175 Beautiful Views)
.....DR. PETER MacQUEEN
Admission, 50 cents

THURSDAY

Morning—Children's Hour (Seton Indian Games)
Lecture—"Ben Hur"
.....DR. JAMES H. McLAREN
Afternoon—Concert.....DUNBAR SINGING ORCHESTRA
Popular Lecture—"Brains and the Bible"
.....DR. CHARLES L. SEASHOLES
Admission, 25 cents
Evening—JOY NIGHT—"The time of your life!"
"Haste ye here! Dull Care hath taken wing!"
Admission, 50 cents

OBITUARY.

William Edgar Goodell was born in Troy, N. Y., July 4, 1839. Later he moved with his parents to Illinois, where he lived in Knoxville until he left for Oregon with the family of I. I. Dempsey in the year of 1862. Two years later, near Rieckreall, where they settled, he married their daughter Julia.

They returned to Illinois and lived there until 1874. While there their eldest child, Grace, died at the age of six. After returning to Oregon they lived in the neighborhood of Rieckreall continuously with the exception of five years spent in business at Independence.

For many years Mr. Goodell was owner of the Rieckreall store, H. C. Fox being for a number of years his partner. "Uncle Billy" and his wife left many warm friends all over Polk county, and many came from Independence, Monmouth and the surrounding neighborhood to pay their last respects to the last deceased. There was always a welcome for every one at their home, and the friends who have entered their door, and sat with them for chats, and partaken of their hospitality, are legion.

Mr. Goodell and wife were members of the Methodist Episcopal church since early in life, and with the exception of the five years spent at Independence he was superintendent of the Rieckreall Sunday school from the time it was organized up until a little over a year ago, having spent over thirty years in that capacity.

His face had long been familiar and will long be remembered at the little

church at Rieckreall, where the funeral services were held last Friday morning. He was laid to rest beside his beloved wife at the Burch cemetery, she having preceded him less than four months ago. He leaves one brother, Charles Goodell, living in Illinois.

FALLS CITY TO CELEBRATE.

Committee Appointed to Arrange Details At Work.
Falls City will celebrate the Glorious Fourth in the good old way. A big picnic, baseball games, and other amusements, including sports of various kinds, are being arranged by W. R. Hinshaw, J. C. Talbot and G. O. Clement, the committee in charge. The full program will be announced by The Observer later.

Some Improvement Notes.

Dan Stauffer has just completed rebuilding his residence on Main street, and it now presents a handsome appearance. Chas. Westover was in charge of the work, which cost the owner about \$1500.

G. Vaughn, having purchased an automobile, is having a garage built at his residence on Levens street.

Frank Myers of Smithfield has erected a pumping system, getting water from a spring for domestic and other uses.

This household efficiency propaganda may eventually discourage the great American wife from using a hair brush to drive nails with.

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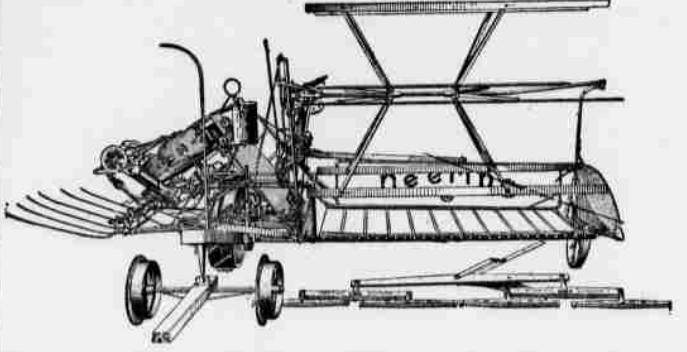
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Stand—Kersey's Confectionery. Phone 1061
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I can drill a six-inch hole to a depth of 900 feet. Give me a call and let me figure with you.
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One mile north of Dallas. 19-1f.

THE NEW NEW JOHN DEERE BINDER



Supported Reel Chain Drive, Improved Canvas Tightener, Plenty of Binder Clearance, Has Three Packers instead of Two, Well Balanced and Light Draft.

PRICE: 6-ft., \$155; 7-ft., \$160.
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Electric wiremen now "fish" the wires—walls and ceilings are not harmed—floors are not ripped up except in a closet or out of the way place
The work is done quickly and at so low a cost that small incomes can afford it
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