

FIGURES AND PLANS

Showing the Method and Expense of Improving the Mississippi.

MOVABLE CAISSON JETTIES

To be One of the Most Important Features of the Operations.

ON THE LINE OF EADS' PRINCIPLE.

Which is Developed to Meet the Necessities of the Situation.

TO PREVENT THE CAVING OF BANKS

Love of gain and love of man; extension of trade and saving of life; salvation from corporate dissent and alienation from creditors...

tained that it would carry off the greatest floods without overflow, and further, would drain the adjacent country.

The River's Scouring Power. The total discharge of the river, and consequently its scouring power, cannot be accurately determined as yet, but allowing that the yearly discharge is 200 cubic miles, and that the scouring power is 1-800 of the total discharge...

PAPER NO. 4. Love of gain and love of man; extension of trade and saving of life; salvation from corporate dissent and alienation from creditors...

Table with financial data: Hulks and machinery, 7,000 tons, \$700,000; Tenders (three steamers), 800 tons, \$500,000; Yards and shore works, \$1,000,000; Total, \$2,200,000.



THE CAISSON JETTIES IN OPERATION.

Table with financial data: Maintenance and deterioration at 12 1/2 per cent., \$93,750; Wages, footmen, etc., 2,500,000; Subsistence, 4,000,000; Total, \$7,500,000.

To which add for incidental expenses, \$4,500,000; For hydraulic grading of banks above and below the shifting of the river, \$1,500,000; Total, \$13,500,000.

Which is nearly \$75,000 per mile of channel. Yearly maintenance, \$4,940 per mile of channel.

A river of uniform velocity does not cut its banks; cutting and caving are due to the variations in the velocity of the current. Water has a saturation point for any given depth and speed with respect to sediment.

The process of permanent river improvement will be slow; for the evil of centuries must be undone. The river at present flows in a channel which it has built for itself...

Our humanity, a liberal foresight, the immediate necessities of trade, and the demand, hourly swelling, for more land to provide homes for the people...

The channel between the caisson-jetties would be contracted at their down-stream ends, and the angles of the jetties with one another and with the banks would be varied at pleasure by taking up or paying out the steel cables...

The improvement of the river above Cairo, and of the tributaries must be coincident with the establishment of a suitable channel for the lower river.

Floods Must be Impounded. The improvement of the river above Cairo, and of the tributaries must be coincident with the establishment of a suitable channel for the lower river.

great lakes, to be connected with them at several advantageous points, and augmenting population, production and commerce in the northern half of the States...

TWO RESIGNATIONS

AT THE BRADFORD MEETING OF THE RESURRECTED P. P. A.

Nearly a Full Representation of the Committee Present—The Situation Not so Bad as Reported—News From the Various Fields.

Bradford, Dec. 12.—The first meeting of the Executive Board of the P. P. A. which has been held since December, 1889, was in session here to-day, and all the members except Mr. Phillips and one other, who were delayed by missing train connections...

The producers to-day wore a happy smile, which was in strange contrast to their dejected spirits manifested in every lineament of their countenances for the past two months.

Nothing Unusual There. The Mansfield Operations in the Mansfield field are keeping the even tenor of their way. The output of the Mansfield No. 2 well...

Health Also a Factor. Our humanity, a liberal foresight, the immediate necessities of trade, and the demand, hourly swelling, for more land to provide homes for the people...

Two Fat Producers. PETERSVILLE.—At Petersville, Gerkert & Steele have finished cleaning out No. 2 Humphrey and No. 4 Duncan and got them down to within 500 feet of the surface...

Franklin.—The situation in the heavy oil district is all that could be asked for. The lubricant is in good demand at \$5 65 at the wells for the oil district oil.

Calvert.—Gerkert & Co.'s well on the Davidson farm has been shot with 100 quarts of glycerine, which has apparently made a marked improvement in its production.

After five months' continuous treatment by Dr. Evers all the unpleasant symptoms complained of by Mr. Schumpff were removed...

AWFUL SKIN DISEASE

Child a Mass of Raw Bleeding Sores—Miraculous Cure by Cuticura Remedies.

A face, from the hair to the neck on both sides, a few miles of bleeding sores; two little hands and arms in the same condition; a body, around the feet in that position, time to time, when the river is brought to its highest state...

EARLY BUYERS

OF HOLIDAY-GIFTS

Will find our stock well assorted and very easy to make a selection from. The largest and choicest assortment to be had of

FINE FANCY GOODS

FORCELAIN, BRONZES

Plush and Leather Cases, Fine Leather Goods, Desks, Portfolios, Photograph Albums, etc.

JOSEPH EICHBAUM & CO., 48 Fifth Avenue, de69-7

PLEASING PRESENT. COMFORT AND BEST STYLE GUARANTEED.

FOX'S EUREKA EYE GLASS. Combines the style and convenience of an Eye Glass, with the accuracy and firmness of a Spectacle.

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SALLER & CO.

ARE GIVING AWAY FREE THIS ELEGANT HANGING RACK. GRATIS

With every \$12 Suit or Overcoat and upward, this Hanging Rack and Hat Rack, in Mahogany or Xyl. Century Oak. Details everywhere for \$5. SEE THEM IN OUR WINDOWS.

Grand Slaughter! SUITS AND OVERCOATS

For Men, Boys and Children. Slaughtering prices in Hats and Furnishing Goods.

Ten-Pin Sets and Sleds Free to the Boys.

A large Sled or box of Ten-Pins given away free of charge with every Boys' \$3 Suit or Overcoat and upward.

SALLER & CO.

Clothiers, Hatters and Furnishers, Cor. Smithfield and Diamond Sts. de6-7-8

HOLIDAY PRESENTS! Gold Spectacles and Eye Glasses, Opera, Field and Marine Glasses, Binocular Telescopes, Graphoscopes, Magic Lanterns, Stereoscopes, Microscopes, Barometers, Thermometers, Photographic Outfits, etc.

KORNBLUM'S OPTICIAN STORE, NO. 50 FIFTH AVE., NEAR WOOD ST. de6-7-8

HOLIDAY PRESENTS. STEVENS' Favorite Chairs.

Press and Outfits \$1.75, 2.50, 5.00, 7.50, 10.00, 21.00 to 31.00. Send for Catalogue

W.A. BUNTING, 20 5th Ave., PITTSBURGH, PA. de6-7-8

W.M. E. STERNER, Optician, 544 SMITHFIELD ST., PITTSBURGH, PA. de6-7-8

MR. W. H. SCHLUMPF, SE. WICKLEY, PA. MEMBER OF THE WELL-KNOWN FAMILY OF THAT NAME, PROMINENT IN THE BAKERY AND CONFECTIONERY BUSINESS...

HOLIDAY PRESENTS. GOLD SPECTACLES, \$5 and upward. GOLD EYEGLASSES, With Chams Attached, \$5 and upward. PEARL OPERA GLASSES, \$5 and upward. FIELD GLASSES.

J. DIAMOND, Optician, 22 Sixth Street, Pittsburg.

OIL WELL SUPPLIES, LIMITED, 91 and 92 WATER ST., PITTSBURGH, PA. nos 58-775-8008

AJAX ENGINES AND-CORRY Boilers.

The Ajax is the strongest, quickest, most durable and economical Oil Well Engine ever made...

OVER 5,000 NOW IN USE. The Corry Boiler is the largest, strongest, best-constructed and most economical in the world...

JAMES M. LAMBING, SOLE AGENT, CORRY, PA. de6-7-8

MEET ME AT KAUFMANN'S



TO-DAY! TO-DAY!

From 8 o'clock in the morning until 10 o'clock at night, KAUFMANN'S GREAT STORE

Thousands of Anxious Christmas Buyers, And Every One Will be Treated to a Most Agreeable Surprise.

FREE! Distribution of Gifts. FREE!

A GRAND MAGIC LANTERN WILL BE GIVEN With Every Boy's Suit or Overcoat Costing \$4 or More.

And, mind you, these Magic Lanterns are no ordinary or trashy affairs, no little, insignificant things, but LARGE AND COSTLY GOODS, imported from Germany, and all complete, ready for the canvas.

With garments costing less than \$4 we will present a large, strong Sleigh, or one of our magnificent Pictorial Books. This same book will also be presented with Girls' Cloaks or Jackets.

Free Gifts to Ladies and Gentlemen.

A first-class Gold and Silver Heated English Gloria Umbrella, 26 or 28-inch size (a very acceptable gift for someone else, if you don't need it), or the great STANLEY BOOK, publishers' price \$3, will be presented with every Suit or Overcoat or Cloak or Wrap of \$10 or over.

Christmas Bargains in Clothing and Cloaks.

MEN'S CLOTHING—The best Suit or Overcoat in the house goes at \$25 to-morrow—intrinsic value, \$40. Extra quality Imported Dress Suits or Overcoats, exquisite materials, at \$18 and \$20; will cost you one-third more at other stores.

BOYS' CLOTHING—3,500 Suits or Overcoats, sizes 4 to 14, suitable as Christmas Gifts for poor Children, at \$1.98, \$2.50 and \$3. A fine line of novelties in Boys' Suits and Overcoats, all sizes, grand variety of patterns, at \$5. 100 more of these Big Boys' (12 to 19 years) Black Cheviot Suits at \$6.50. Handsome Double-Breasted Black Cheviots, \$10.

PANTALOONS—2,100 pairs at \$1.25 and \$1.75, 3,000 pairs at \$2.50, \$3 and \$3.50, 1,400 pairs at \$4 and \$4.50. 900 pairs at \$5 and \$6. Sizes to fit all men—including stouts and slims.

DERBY AND SILVER—Complete Manicure Sets, MERIDEN \$14. Silver Puff Boxes, \$5.75. Silver Match Boxes, 75c. Silver Whisky Flasks, \$3.39. Silver Shaving Cups, \$4.19. Silver Shoe-horns and Buttons, \$1.59. Silver Smoking Sets, \$5.98. Silver Toilet Brushes, best brushes, \$5. Silver Combs, \$1.98. Silver Hand-Mirrors, \$5.98. All of the foregoing are of the celebrated Derby or Meriden plated ware—best in the world.

GERMAN SILVER—Ink Stands, 69c; Silver Manicure Sets, \$3; Silver Photograph Frames, 19c; Silver Dressing Mirrors, \$3.50; Silver Smoking Sets, 89c; Silver Bonbonniers, 25c; Silver Poker and Whist Sets, 89c; Silver Collar and Cuff Sets, \$1.98.

PLUSH AND EMBOSSED LEATHER ARTICLES. Such as Toilet Sets, Shaving Sets, Portfolios, Writing Desks, Work Boxes, Jewel Cases, Traveling Sets, etc.—all at greatly reduced prices.

FUR CAPS—Men's Imitation Seal Caps (cheapest present you can buy) at 79c. Real Sealskin (pieced) Caps at \$2.50. Genuine Alaska Sealskin Caps, all shapes, from \$4.50 to \$12.

PLUSH JACKETS AND SACQUES—Jackets, 25 inches long, FUR TRIMMED REEFER JACKETS, in fine Imported Chevots or Diagonals, Astrakhan, Wool or French Seal Trimming, those formerly \$18 are now \$12; the \$20 ones are cut down to \$15; the \$25 garments will go at \$18, and the finest, formerly \$30, will be sold at \$22.

PLUSHES—Genuine Seal Plush Wraps, Satin-lined throughout, with deep fringe, reduced from \$20 to \$12.50. Braided Plush Wraps reduced as follows: From \$30 to \$20; from \$35 to \$25; from \$50 to \$30.

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