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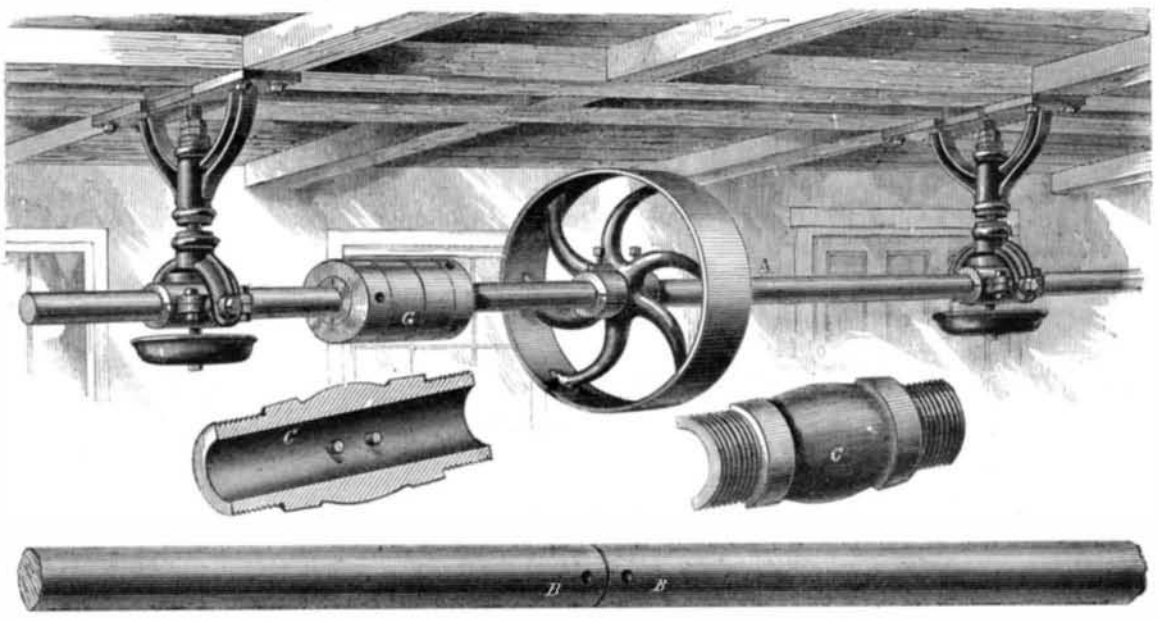
Improved Coupling and Cold Rolled Shafting.

For several years there has been in the market a quality of shafting known as the "cold rolled" shafting, which, being perfectly round—rolled to a gage—and bright, requires no turning, nor straightening, and is rolled in sizes from three-sixteenths of an inch to four inches, and twenty feet long, but is cut or rolled into lengths to suit customers. It is perfectly homogeneous, and is very fibrous and tenacious. We had opportunities to examine, and, in some measure, test this shafting about three years ago, and were satisfied at the time that it could not be surpassed, an opinion we have not yet seen reason for modifying. It is manufactured by Jones & Laughlins, of Pittsburgh, Pa.

This firm also manufacture adjustable hangers, pulleys, and Collins' patent, self-adjusting, double-compression couplings, all of which, with the cold rolled shafting, are represented in the engraving which accompanies this article. The hangers have swivel boxes, suspended, with the shaft, by bolts adjustable in hight by nuts. The pulleys are at once light and strong, being of a graceful pattern, as seen in the engraving.



JONES & LAUGHLIN'S SHAFTING AND COUPLING.

In the engraving, A, represents a line of shafting with hangers, pulley, and coupling; B B are two lengths of cold rolled shafting, fitted to receive the coupling. C C are inside and outside views of the coupling proper; D, the coupling, with its appendages complete, represented in half; E E, the thimbles, and F F, the securing nuts G is the coupling whole, as it appears when secured to the shaft.

The coupling is a cylinder in halves, bored with a "shim" between the two sections, to fit the shaft to which it is to be attached. This allows something for compression or hug. When the two halves of the coupling are placed on the shaft, where they are retained—if desired, by pins seated in the coupling, and reaching into corresponding holes in the shaft—the thimbles or cone rings are slipped on and hold the two halves in place. Then the outer nuts, F, are screwed to place by means of a "spanner," or wrench, which operation makes the combination snug and close, and effectually secures the two ends of the shafting without keys or set screws.

The coupling, when complete, is a pulley or drum, without a single projecting point, bolt head, or nut, and may be used as a pulley for belts, if required; while a belt, however ragged or frayed, cannot be caught if it comes in contact with the coupling. Although heavy when complete, its parts are light and easily handled, and can be readily attached and detached. It makes a neat finish, and requires no turned shoulder to keep it in place; even the pins before referred to are not absolutely necessary.

The cold rolled shaft has been subjected to severe tests, both in this country and in England, and has proved its superiority over the ordinary refined iron commonly used for shafting, both in the resisting of torsion and weight, while it is easily drilled, clipped, and filed.

For further particulars address Jones & Laughlins, American Iron Works, or H. F. Mann, General Agent, both at Pittsburgh, Pa.

PEASE'S OILS AT THE RECENT FAIR.

Visitors at the late exhibition of the American Institute could not fail to notice the splendid collection of oils entered by the manufacturer, F. S. Pease, of Buffalo, N. Y. It was one of the most attractive groups in the fair from its beauty of material and artistic arrangement of specimens. But the excellent qualities of the oils were proved by the unanimous commendation of those who ran machinery, as his lubricating oil was used on all the machines at the fair, from the large steam engine to the delicate sewing machine. It was used also for lubricating the machinery at the Paris Exposition and received the first premium, as it did also in London, in 1862.

Mr. Pease had on exhibition at the Institute fair over fifty samples of oils for engines, signals, druggists, medicinal—requiring two years to manufacture—refined and colorless petroleum, standing a fire or heat test of 142°, and many other varieties. He claims that his oils possess all the requisites for reliability, which are these:

They must stand the highest heat without change (even of melted lead) in order to stand friction and lubricate the cylinders of steam engines. (The heat under a pressure of 150 pounds of steam, is enough to decompose or distil and dry up most of the natural oils in market.) They must be fixed and not volatile oils, as produced by destructive distillation, otherwise they are decomposed by friction and burnt or dried up. They must not show or possess any acid reaction, either naturally or artificially, otherwise the bolts are cut in the steamchest, and the iron, particularly wrought iron, is made porous. They must possess a sufficient power of tenacity without oxidization, otherwise they will gum.

These same laws are applicable to signal and burning oil, for it makes no difference whether the oil is subject to immediate heat, as in a lamp or steam cylinder, or whether it is slow and long continued as in slides and other bearings, the effect and result is the same on the oil in the end.

HINDMAN'S PATENT HUSKING PALM.

The engraving so plainly exhibits the form and manner of application of this device that a detailed description is unnecessary. It is a broad leather band, enveloping the hand and having a strap or stay passing over the thickest part of the thumb to retain it in place. The larger strap is armed with a hook for splitting and stripping the husk from the ear. This band also guards the hand in the act of breaking off the stalk. Both the straps are adjustable by buckles so as to fit any size of hand. It can be put on and adjusted instantly, and as readily removed. The work of husking is, at best, laborious, and this device seems to be well adapted to diminish this labor. It is neatly got up, durable, and cheap. It was patented by John Hindman, who may be addressed for territorial and manufacturer's rights at Indianapolis, Ind.

THE MANUFACTURE OF PARAFFINE.

Liebig, in his "Familiar Letters on Chemistry," long ago expressed his belief that one day olefiant gas—the illuminating ingredient of common coal gas—would perhaps be obtained in solid form for burning on our tables in candlesticks. The Exhibition of 1851 saw the realization of this desideratum, for there was first exhibited one of the greatest triumphs of chemical science, in the the shape of solid paraffine. This was the result of the labors of Mr. James Young, the founder of the well-known Bathgate Chemical Works, and the originator of the mineral oil trade; for years before the Pennsylvanian natural petroleum was an article of commerce, Mr. Young's oils were in great demand, as was also his solid paraffine, which was, and still is, largely used for making candles. The way in which the important and extensive manufacture of mineral oil in the Torbanehill district originated and became developed is worthy of notice. Some years since, in 1847, we believe, Mr. Young's attention was drawn by Dr. Lyon Playfair to a petroleum spring in an old coal mine near Alfreton, Derbyshire. On careful examination, it was found that the oil issued from a layer of sandstone over the coal. Mr. Young took a lease of the mine in the hope of working it for lubricating oils, but the supply proved so limited that he gave the matter up. He next turned his attention to the artificial production of the oil by distilling coal, and ultimately he found that the parrot, cannel, and gas coals, and especially the Boghead or Torbanehill mineral, yielded the desired results. In 1850, Mr. Young built the extensive works at Bathgate, to carry out the process as a commercial undertaking, and thus laid the foundation of an industry which in a few years has attained immense proportions. The works at Bathgate are of a very extensive and well appointed character, and are conveniently situated in close proximity to the Torbanehill mineral. The importance of this manufacture, and the leading part Mr. Young has taken in its development, as well as the interesting nature of the works, induces us to give some particulars respecting their arrangement and their products.

It is curious to trace the process by which a pure, white, shining, tasteless article like paraffine is produced from a compact, dull-looking, rusty black coal. It is also interesting to note the various products which result from the numerous processes involved in the manufacture. At the Bathgate Works, four different articles are manufactured by Mr. Young, namely, paraffine oil for burning, paraffine oil for lubricating machinery, the light volatile fluid known as naphtha, and solid paraffine or wax. The Boghead coal is conveyed from the pits by means of branch railways to the works where it is first subjected to crushing to bring the large blocks down to a size fit for the retorts. For this purpose a machine is used, which is formed of two large iron-toothed cylinders, which revolve in opposite directions, and crush up the coal. The broken mineral falls into a pit below in pieces ready for the retort house, to which they are conveyed by a lift. The retorts are vertical cast-iron tubes 12 feet in length and 14 inches in diameter, and are arranged in sets of four, placed in the form of a square, each set being built into one furnace and attended by one man. There are about fifty sets of retorts constructed upon this principle; they rise about 3 feet above the feeding platform, and have funnel-shaped tops to facilitate feeding. The tops of the funnels are closed by valves which are worked by counterbalanced levers. The body of the retorts pass down through the furnaces, the lower ends being made air tight by immersion in water. A low red heat is constantly kept up in the furnaces, sufficient to promote the distillation of the coal in the retorts, care being taken to keep the temperature exactly even. The coal fed in at the top of the retort is decomposed as it passes through that part of the tube surrounded by the furnace, and the oil is produced in the form of a vapor, which is led off through a pipe. The refuse material passes down the tube into the water at the bottom, from whence it is removed as it accumulates. As the vapors are generated, they pass off into a main pipe which conducts them to the condensers, which are placed outside the building, and are constructed upon the same principle as those employed in gas works. The vapors are thus condensed into a liquid, with the exception of a small portion which is always incondensible, and which is collected into a gas holder and used for lighting the workshops. The liquid portion is run off into a tank or reservoir capable of holding 100,000 gallons of this thick, black, greasy fluid, which constitutes the first result of the process of transformation which the Boghead coal undergoes.

From the reservoir, the crude oil is drawn off as required to cisterns for supply to the stills, to which it is fed by gravitation, and where it undergoes the first purification. The stills are cylindrical in form, and are placed in rows, with passages between them for the attendants. The stills are filled with crude oil, and the joints made air tight with clay;