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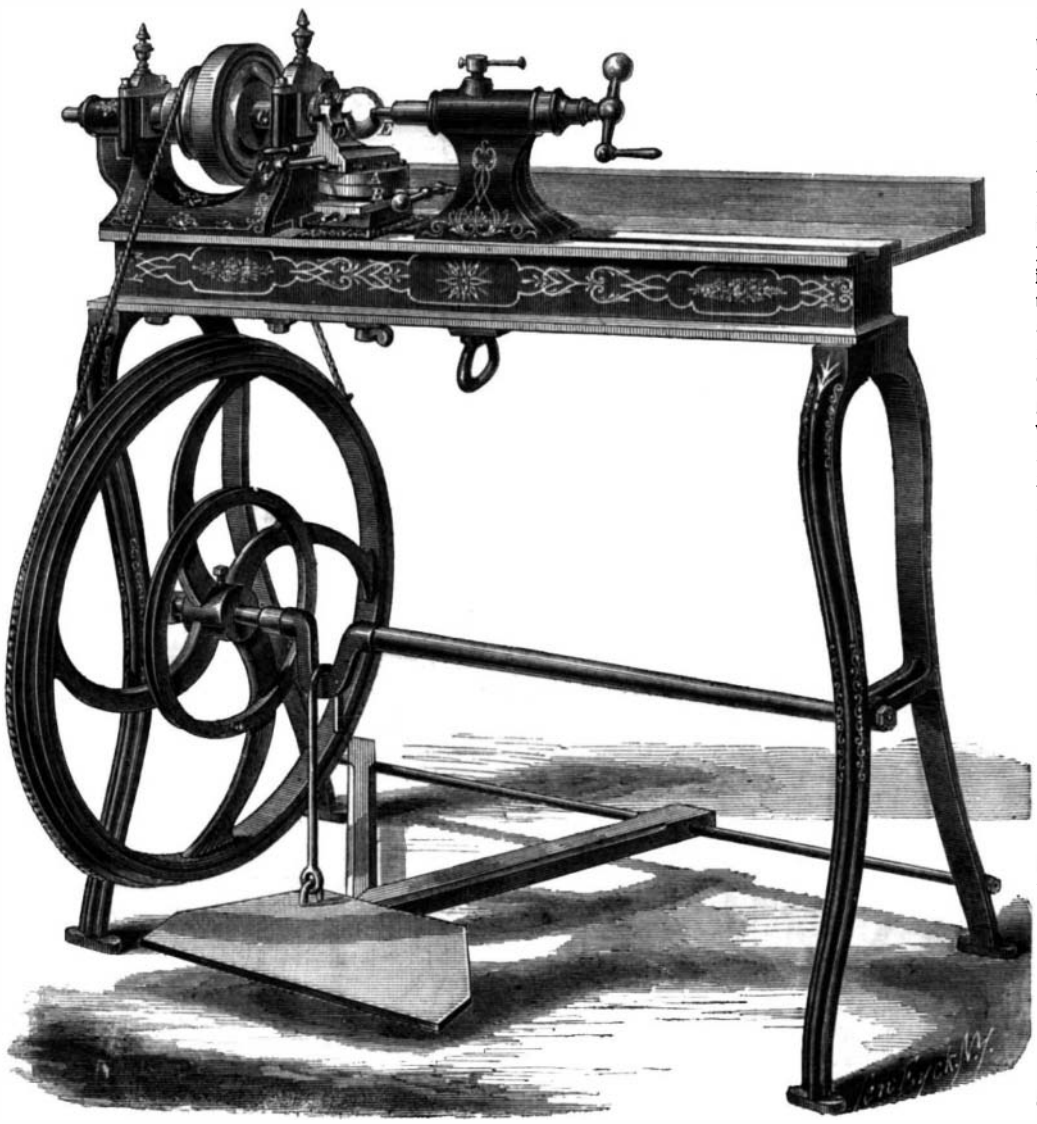
Lathe for Turning Billiard Balls.

Much difficulty has always been experienced in turning spheres or globes, so that they will be perfectly round. Makers of philosophical apparatus have much to contend with in this respect, but turners of billiard balls, in particular, have felt the want of a machine which would turn out a perfect ball, for the skill and experience of the most celebrated player is frustrated by an untried ball, and many games have been lost by reason of the imperfection alluded to. So well is this fact known that a set of balls which are perfectly tried are greatly prized by those who aspire to become more than ordinary players of this fascinating game.

The lathe which is here illustrated has a rest of peculiar construction.—Very many machines have been devised to turn true balls, but most of them have been made on wrong principles, or else so complex that they practically defeated the object in view. The slide rest here illustrated is extremely simple and free from the objection above noted. It is constructed to be operated by hand, and the lathes are driven by steam or the foot, as desired. The peculiarity consists in attaching the upper part, A, of the compound slide rest, to the lower part, B, so that while it has a free movement round its center it has no lateral play, no tendency to jar, and no liability to spring and allow the tool to dig in, or the work to become full of "chatters." By merely grasping the handle, C, the tool stock, D, is carried round the ball in the chuck, so that it is accurately and truly turned to a perfect circle in a short space of time. The chucks which hold the ball itself are also peculiar. If an ordinary center were employed the ball would be injured, and in fact rendered useless for its office A revolving stud, E, is therefore inserted in the spindle, F, fitted so as to turn easily and fit closely. This center is tipped with india-rubber, slightly cupped out so that it has a fair bearing on the ball; when the latter is turned by the chuck, the stud revolves in its spindle and the ball is steadied but not outwardly bruised. The end of the main driving spindle, G, is also made concave so that no wooden chucks are needed; but if they may be required for balls of unusual size, a thread is provided on the spindle, whereby chucks can be affixed as usual.

For manufacturers of all classes, who have work of this kind to execute either in metal or any other substance, for purposes of ornament or utility, this rest will be found a great advantage. It is now used by Messrs. Phelan and Collender in their large manufactory of billiard tables, and they state that they were unable to make a set of balls true before, except at a great expense of time and trouble, whereas, by the use of this rest, they have no difficulty whatever, and every set is guaranteed to be perfectly round. It was patented through the Scientific American Patent Agency on the 8th of September, 1863, by L. A. Johnson; for further information address Messrs. Phelan & Collender, 63 Crosby street, New York, where the lathe may be seen in operation.



LATHE FOR TURNING BILLIARD BALLS.

A Rotary Oil Car.

Recently, says the Philadelphia *Press*, a rotary oil car for the carriage of coal oil brought its first load of petroleum to this city via the Pennsylvania Railroad. This car has been patented by Mr. Lawrence Myers, of this city, and seems to be well adapted to the purpose for which it is intended. Its appearance can probably be understood by imagining two pairs of solid iron wheels, of sixty inches diameter each, connected together by hollow axles of fifty inches diameter, and the whole surmounted by a wooden platform. The oil is let into the hollow axles by means of a hose, and when filled the barrels are closed by valves arranged for the purpose. The expense of barrels and the cost of labor in their shipment is saved by this means. The car we saw has a capacity of 1,000 gallons, or 500 gallons in each cylinder. It is intended to make the cylinders of sixty inches diameter, which will carry 1,400 gallons of oil. In addition to this, the platform may be used for the carriage of other goods.

Ammoniacal Gas as a Motor.

The *Journal of the Society of Arts* states that M. Ch. Tellier has conceived a new and curious application of this gas. He proposes to take advantage of its peculiar properties and use it, in certain cases, as a substitute for steam. The qualities referred to are, its great solubility in water, its easy liquefaction, its power of supplying motive power at the ordinary atmospheric temperature, the capability of its vapor being superheated without too great an increase of the temperature, the possibility of re-collecting it by solution, and the faculty of extracting the latent heat from its vapor, after the latter has been employed, and transmitting it to that which is about to be used, by the simple act of dissolving the gas in water. With a given quantity of ammoniacal gas and three times its weight of water, says the inventor, the whole of the former may be vaporized and used as a motive force with a pressure of eight to ten atmospheres, and the action would be constant because the latent heat required for the vaporization would be constantly reproduced by the caloric released by condensation. So that liquid ammonia is said to supply an instantaneous and practical means of obtaining a motive vapor. With about 22 lbs. of the liquid, we are told, the force of one horse may be obtained for an hour. The inventor does not pretend to place this system in competition with the steam engine, but only where the production of steam would be impracticable and inconvenient. For instance, he says, "an omnibus, drawn by two ammoniacal horses, only need carry about 40 lb. of liquid ammonia and 120 lbs. weight of water. This would supply a simple motor, without smoke or steam, instantaneous in its action, however long and frequent were the stoppages, and with an economy over horses of at least 75 per cent." M. Tellier also recommends his invention for steep inclines on railways, tunnels, mines, and other places where heat cannot be tolerated. We believe that the idea dates back more than twenty years.

It required no less than twenty-seven ships to transport the cotton Sherman captured in Savannah,