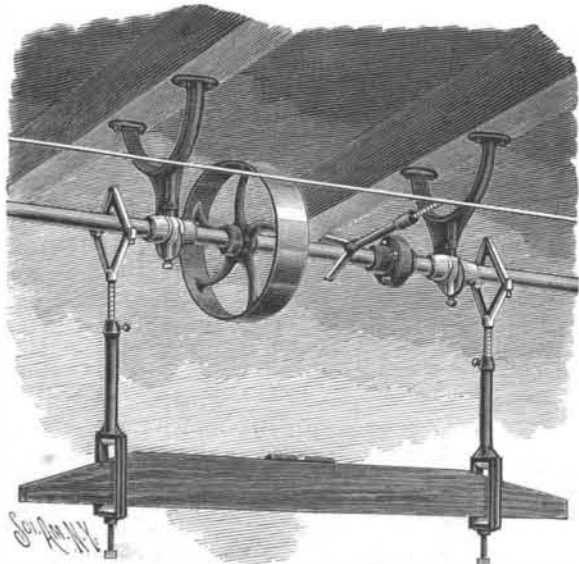


A SHAFT ALIGNING IMPROVEMENT.

To facilitate quickly and accurately running a line of shafting, irrespective of the different diameters of individual shafts in the line of pulleys, clutches, etc., Mr. Jacob M. Isgrig, of Traverse City, Mich., has patented the improvement represented in the accompanying illustration. A special tool is employed to measure the distance of the shaft from a stretched temporary cord, to find lateral discrepancies, and a pair of adjustable hangers supported on the shafting and carrying a level to find discrepancies at right angles to the

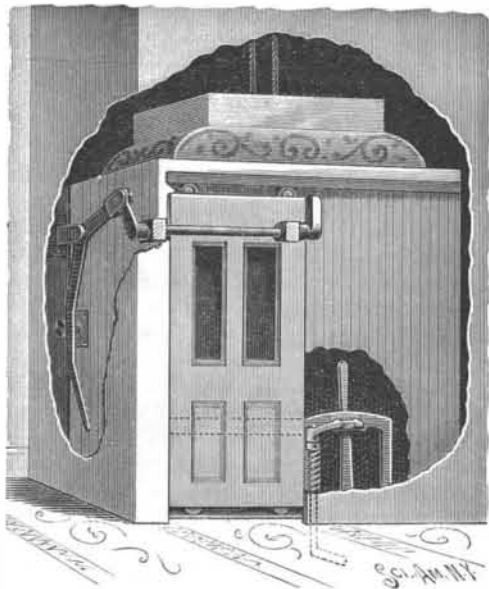


ISGRIG'S SHAFT ALIGNING DEVICES.

temporary cord. The measuring tool to be applied at different points between the shafting and the cord consists of a tubular body having at its closed end arms adapted to straddle the shaft, while in its open end a graduated bar is adjustable by means of a tapered thread and nut, to indicate the proper distance from the line of shafting to the temporary line. The hangers each consist of an angular loop, whose members are pivoted at one side and detachably connected at the other side, the loop being connected at its lower end with a graduated bar sliding in a tube, where it is held in adjusted position by a thumb screw. Connected with the closed lower end of the tube by a swivel is an open head, with knife edges at its top and bottom, to support a spirit level or a straight edge with a spirit level, the level being supported at its ends in the two heads as shown in the illustration. When the line of shafting to be leveled is supported from the floor, the hangers extend upwardly and the spirit level is supported upon the opposite knife edges of the open head, a detachable thumb screw and follower in the outer end of the head being then brought into use to clamp the hanger firmly to the straight edge or level.

A DOOR CONTROLLING ELEVATOR ATTACHMENT.

The illustration represents an improvement applicable to passenger and freight elevators to prevent the door of the cage from being opened when the cage is not in place to be entered. It has been patented by



PHILBRICK'S ELEVATOR ATTACHMENT.

Mr. Samuel M. Philbrick, of Portland, Ore. (box 845). On one side of the cage is a friction roller adapted to engage the vertical arm of a bell crank lever fulcrumed on a bracket attached to one of the posts in the shaft, the other arm of the lever being pivotally connected with an arm on a horizontal shaft having a stop arm adapted to move into and out of the path of the door. This stop arm remains in the path of the door when the cage is traveling between floors, but the friction roller at the side of the cage, as the latter nears the landing, swings the bell crank lever to move the stop out of the way, the door to the shaft thus remaining locked when the cage is away from the shaft en-

trance. To prevent the starting of the cage before the door is closed, a longitudinal ridge or projection on the door is adapted to engage a catch on a shaft on which is a torsion spring, and which turns in bearings on a frame secured to the cage, carrying the upper part of the starting and stopping lever. The free end of the catch has lugs engaging opposite sides of the lever, which cannot be moved by the operator until the door is closed. On the lower end of the shaft on which is the catch is an arm adapted to pass into a recess in the elevator shaft near each floor, preventing the up or down movement of the cage excepting upon the proper movement of the lever.

Curious Seeds and Their Use.

Queer seeds will be an interesting feature of the exhibit of the Department of Agriculture at the Atlanta Exposition, says the Washington Star. Among those shown will be various kinds employed for food by the Indians of North America. The latter eat the seeds of certain cacti, which are parched, pulverized and made into a palatable gruel. Their fondness for the seeds of some pines is well known, these "pinions" being to them what sugar plums are to white people. Sunflower seeds, too, they parch, grind, and make into cakes, which are said to be equal to corn bread. From the same seeds they get oil for anointing their bodies.

Seeds of many kinds have been found in the ruins of the ancient cliff dwellers of Utah, the evidence being satisfactory that they were used for food. Among these may be mentioned the common garden bean, which is also discovered in mounds in Arizona. Though of European origin, this vegetable was cultivated by the aborigines of this country at a very early date. The cliff dwellers used to eat the seeds of the ordinary "pigweed." Indians generally to this day consume the seeds of many species of grasses, making bread and mush from them. Along the rivers in Colorado and Arizona grass seeds are collected in great quantities for grinding into flour. Grape seeds, gourd seeds, and acorns are likewise employed.

The exhibit described will include a collection of poisonous seeds, such as the famous Calabar bean, which is said to be worse than strychnine. This bean is used by the natives for an ordeal. If a person is suspected of a crime, he is compelled to eat one, being judged to be guilty in case of death, which is almost inevitable. Another interesting seed, employed for a like purpose, is that of the "ordeal tree" of Madagascar. It is said to be the most deadly of all vegetable products. One of these seeds, about the size of an almond, will kill twenty men. The local name of the plant is "tanghinia." Yet another seed, alleged to be poisonous, is that of the common cockle, which, finding its way into wheat fields, poisons the bread made from the wheat. It is the bane of millers in the Northwest.

Another kind of seed, known to science as the "hyaenanche globosa" is powdered and sprinkled on meat, in the neighborhood of Cape Colony, for the purpose of poisoning hyenas. It is popularly supposed that horse chestnuts are very unwholesome. Nevertheless, in Turkey they are roasted for coffee, fermented for liquor and utilized for horse medicine. In India there is a kind of seed that varies so little in respect to size as to be used for a weight standard. It is called the "retti," and weighs one grain. From its name is derived the word "carat," which has come into occidental use.

A series of seeds employed as substitutes for adulterations of coffee will be shown, also seeds used for the illuminating oil they contain, for medicine, etc. An interesting seed is the betel nut, which is chewed, having a narcotic effect. Possessing wonderful properties as a stimulant is the famous kola nut of Africa. From Guatemala comes the candle nut, used for lighting. The main entrance of the Department of Agriculture is approached through an avenue of "ginko" trees imported from Japan, where their seeds are highly esteemed. But these trees do not fruit in this country, save in rare instances.

A special display will be made of seeds arranged according to their species in such a manner as to show the extent to which seeds in general are apt to vary in point of size. It is very desirable that farmers should obtain seeds for planting that are as big and plump as possible, for such seeds germinate more quickly than smaller ones, and the plants produced from them get a better start.

Glossy Black Paint for Bicycles.

A glossy black paint can be made thus:

Amber.....	16	oz.
Boiling linseed oil.....	1/4	pint.
Asphalt.....	3	oz.
Resin.....	3	oz.
Oil turpentine.....	1	pint.

Melt the amber in the boiling oil, and add the asphalt and resin. Mix thoroughly, remove to open air, and gradually add the turpentine oil. Black japan also produces a good and cheap black enamel paint suitable for bicycles.

APPARATUS FOR RAISING SUNKEN VESSELS.

The illustration represents a two-part hull, with the parts rigidly connected with each other by an overhead framework, and carrying hoisting devices for raising a sunken vessel. It has been patented by Mr. Hubert Schon, cor. Kaiser and Haslage Avenues, Spring Hill, Allegheny, Pa. The hull parts support at their adjacent ends swinging cranes which carry grappling devices adapted to be raised and lowered by a hoisting chain. The grappling arms are held in extended or open position when being lowered to raise

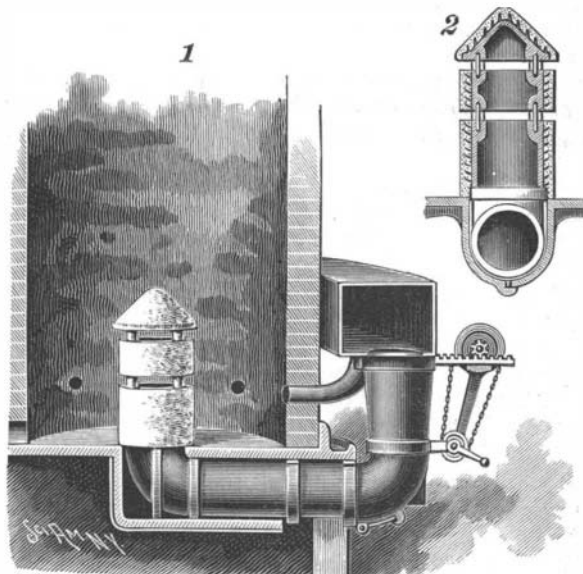


SCHON'S APPARATUS FOR RAISING SUNKEN VESSELS.

a vessel, but on contact with the vessel the arms are unlocked and the grappling hooks approach each other and engage the hull of the vessel. The chains are drawn up by windlasses on the cranes to raise the vessel. An indicator denotes the engagement of the grappling forks with the vessel. The precise construction shown in the illustration may be varied according to the work, and the raising apparatus may be made to raise stones and sand. An apparatus is also provided for locating sunken ships, and for the direction of the raising apparatus by telephone.

A BLAST FURNACE WITH CENTER BLAST.

In the furnace shown in the illustration air is forced to the center of the charge as well as supplied at the sides, making the whole interior of the furnace a melting zone, preventing gases going to waste, increasing the capacity of the furnace, and lessening the wear and tear on the lining. The improvement may be applied to any cupola. It has been patented by Mr. Charles Johnson, of Rutland, Vt. Fig. 1 shows the application of the improvement, Fig. 2 being a sectional view of the center blast pipe. Into the stack discharge tuyeres connected with the wind box in the usual manner, and a center blast pipe is also connected with the wind box, its discharge being controlled by a gate provided with a rack meshing with a pinion on whose shaft is a pulley turned by a driving pulley actuated by a crank arm. The center pipe is made in sections, a trap door in the bottom of one of its elbows facilitating the removal of any slag or metal that may run



JOHNSON'S BLAST FURNACE.

into the pipe. On the top of the section of the center pipe entering the stack is a series of sockets in which are pins engaging similar sockets in the lower end of the next pipe section above, and between these sockets are spacing collars to hold the sections a suitable distance apart, the size of the tuyere opening being varied by employing longer or shorter collars.

The upper pipe section is also similarly connected with a conical cap, forming a second tuyere opening beneath the cap. The pipe sections within the stack, and the cap, are provided with exterior pins or projections, to facilitate holding thereon a covering of asbestos or other incombustible material.