Science and Art.

Peculiarities of Color and Temperature of the Ocean.

It is a commonly observed fact that the usual color of the ocean is a bluish green, of a darker tint at a distance from land, and clearer towards the shores. According to Dr. Scoresby, the hue of the Greenland sea varies from ultramarine blue to olive green, and from the purest transparency to great opacity. The surface of the Mediterranean, in its upper part, is said to have, at times, a purple tint. In the gulf of Guinea the sea sometimes appears white, about the Maldive islands black, and near California it has a reddish appearance. Various causes must, of course, co-operate to produce this diversity of tint. The prevailing blue color is generally ascribed to the greater refrangibility of the blue rays of light, which, by reason of that property, pass in greatest abundance through the water. The other colors are ascribed to the existence of vast numbers of minute animalculæ—to marine vegetables at or near the surface—to the color of the soil—the infusion of earthy substances—and very frequently the tint is modified by the aspect of the sky. The phosphorescent, or slimy appearance of the ocean, which is a common phenomenon, is also ascribed to animalculæ and to semi-putrescent matter diffused through the water.

The temperature of the ocean also exhibits some peculiar and interesting phenomena. Within the tropics the mean temperature at the surface is about 80° Fah., and generally ranges between 77° and 84°. At great depths the temperature is probably nearly the same under every latitude. In the torrid zone it is found to diminish with the depth, while in the polar seas it increases with the depth; and about the latitude of 70° it is nearly constant at all depths. But the small number of observations which have yet been made on this subject do not indicate any uniform law, according to which the variations of temperature at different depths is regulated.—*Ex.*

Improved Carriage Shafts.

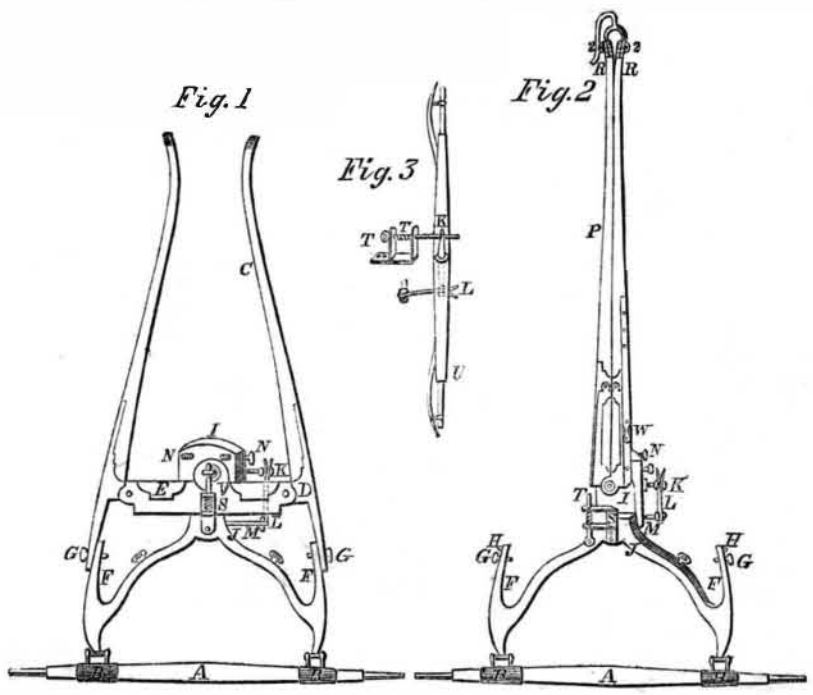
This invention is designed to enable one or two horses to be attached to a vehicle, the shafts being capable of being made into a pole by simply closing them.

Our illustration and description will fully elucidate the invention, Fig. 1 being the arrangement as shafts, and Fig. 2 as a pole. Fig. 3 is the shaft and pole attachment detached.

A represents the carriage axle, and B the clips, to which the shafts are usually attached. C are the shafts, having an iron knuckle joint, D, at each side, by which they are connected to the cross piece, E. The front end of joint D, is permanently screwed to the shaft, and the other end extends back to the pole bar point, F, where it is attached by a thumb screw, G, and pin, H. I represents the iron plate, which is fastened to the front end of pole bar, J. Through the center of the plate, I, is a main bolt, K, which is held down at its lower end by a forked spring, L, the spring being attached at its back end to the pin, M. N N are two thumb screws near the front of the plate, for the purpose of being screwed up against the shafts, C, to tighten them when they are closed together and form the pole, P. At the front end of the pole is a hook, having two eyes, 2, and its points, R, fitting into the ends (in a socket) of pole or tongue, with a shoulder on each, so that the horses can be hitched by the pole straps to the eyes, 2, to hold back the carriage, but in case of the horses becoming unruly and running off, they are detached from the swiveltree behind, and in moving forward the hook slips out, and frees the horses from the pole.

S represents a plate with two uprights, through which a disconnecting pin with a spiral spring, T, passes. This pin, T, is intended to hold the swiveltree, U, in its place. The bolt, K, is pressed upwards by the operator through the center of the swiveltree, U, and then the pin, T, is forced forward by its spiral spring through an eye in the upper end of bolt, K. The swivel or doubletree, U, is thus fastened, but in the event of the horse or horses running off, the driver pulls a strap which is attached to the head of the pin, T, and as the pin, T, is drawn back, the bolt, K, falls down, and the swiveltree is instantly

HOFFMEIER'S SHAFTS FOR VEHICLES.

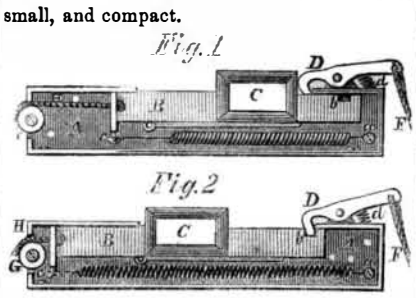


disengaged, and the horse is at once loosed from the carriage. The cross-piece, E, has a joint, V, in its center, and the bolt, K, passes through the joint, V. When the ends of the shaft at its connection, F, with the pole bar, J, are unscrewed by the screw, G, the shafts will operate and close at the joint, V, and the ends of shaft will hook on to the thumb screws, W.

They are the invention of A. K. Hoffmeier, of Lancaster, Pa., and were patented by him September, 7, 1858. He will be happy to furnish any further information upon being addressed as above.

Wells' Belt-Shipper.

The ordinary belt-shippers are by no means secure, and the belt which drives machinery from a main pulley has often become changed from a "fast" to a "loose" pulley by accident, thus causing serious consequences to the piece of wood or metal being operated upon, and the machine tool then in use. To prevent any future accidents of this kind, Morris Wells, of Brooklyn, E. D., in this State, has invented the belt-shipper which is the subject of our engraving, and at the same time to furnish a cheap and sure belt-shipper, that can be depended upon in all cases. It is simple, small, and compact.



Our illustrations show it with the front plate off, that its working parts may be seen, Fig. 1 being as it would keep the belt on one pulley, and Fig. 2 as it would keep the belt on the other.

It consists of a cast iron box, A, in which the bolt, B, is free to slide back and forth on a projecting piece cast with A, and seen under it. The case, A, can be secured by screws to any beam or piece of metal or wood over which the belt may pass, at any angle, or in any position to suit the direction of the belt. In B is a square slot, C, rounded on its interior surface, so as not to cut the belt which passes through it.

The operation is simple. Suppose the belt to be on the loose pulley, and the shipper in the position seen in Fig. 1, the bolt, B, would be held securely in that position by the spring which is attached to it at *c*, and to the box at *a*. When it was desired to run the machine, the cord, H, which may be of any length, and conveyed any distance, and which passes over the small pulley, G, in the box, must be pulled, and the spring would be distended, while the bolt would assume the position shown in Fig. 2, and there it would be held by the end of catch, D, being forced into slot *b*, of the bolt by the spring, *d*; this brings the belt on to the fast pulley. Should it then be convenient to stop the machine, the cord, F, must be pulled. This depresses one end of the catch, and elevates the other, releasing the bolt, which the spring draws back, and with it the belt, on to the loose pulley of the machine.

This is an addition to the machine shop that has long been wanted, and we are happy in being able to recommend this invention. It was patented February 2, 1858, and the inventor will furnish any further information upon being addressed as above.

Curing Hams.

As the time is at hand for preparing these useful stores of rich and savory food, a few words will not be out of place in regard to them. The legs of hogs, short in the hock, are the best for hams, and should be chosen in preference to lanky legs. They may be salted by immersion in a clean pickle, containing a little sugar and saltpeter dissolved, or they may be salted by rubbing ground solar evaporated salt over them, turning them every day, and giving them a good rubbing. A little sugar and ground black pepper added to the salt will much improve the flavor of the meat. It requires about a month to salt hams by the wet process, and three weeks by the dry system. At the end of this period, they should be hung up for a few days to drip, and then they are ready for smoking. Much depends on the kind of material used for smoking them, so as to secure a sweet flavor. Whatever fuel is used for this purpose, one condition should never be overlooked; it should be perfectly dry, or else it will be liable to impart a bitter taste to the meat. Dry corn cobs, and some dry sweet hay are superior to all other agents that we have seen employed for smoking beef and hams.

Mutton hams may be prepared in the same manner as those of pork, and they are exceedingly palatable when the meat is good, and care exercised to smoke them slowly.

First Employment of Coal as Fuel.

As an evidence of the vast difficulty experienced by introducers of new articles, from the prejudices of a community alone, we may mention a fact in relation te the employment of the useful material of coal as a fuel. When coal was first introduced into England as a fuel, the prejudice against it was so strong that the Commons petitioned the Crown to prohibit the "noxious" fuel. A royal proclamation having failed to abate the nuisance, a commission was issued to ascertain who burned coal within the city of London and its neighborhood, and to punish them by fine for the first offence, and by demolition of their furnaces if they persisted in transgressing. A law was finally passed making it a capital offence to burn coal in the city, and only permitting it to be used in the forges in the vicinity. It is stated that among the records in the town of London, a document was once found purporting that in the time of Edward I. a man had been tried, convicted and executed for the crime of burning coal in London! It took three centuries to entirely efface this prejudice.

Spontaneous Combustion.—A material much used for flooring and roofing in Europe, and called "asphalted felt," has on various occasions been found to be on fire. All such materials as are composed of organic fibers mixed with hydro-carbons should be carefully used, as they are all liable to become ignited from chemical decomposition.