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## BORING MACHINE.

The invention herewith illustrated is adapted to the boring and turning of pulleys, gears, spiders, etc. A is the bed or frame, which is cast in a single piece, and arranged to fasten to a post, as at B. C is the face plate which is cast with the hollow shaft, D. The latter fits in the boxes, E, and serves throughout its whole length as a bearing for the bar, F. The cone pulley receives motion from a suitable belt, and transmits it to the gear wheels, G and H. In the hub of the latter is a feather which, acting on a slot in the bar, F, communicates power to the latter.

The work to be bored is fastened upon the chuck, I, as in an ordinary lathe. If the exterior of the object is to be turned, a set screw in the shaft, D, is screwed down upon the bar, F, and motion is thus imparted to the shaft, D, face plate and chuck. The operation completed, the screw is loosened, the face plate set by a dog or pawl, and the cutter is adjusted in the hole, J, at the extremity of the bar, F, where it is held by the set screw shown. The shaft, D, now remains motionless, but the cutter rotates with the bar, F. The feed gear is set in motion by a reversible lever at the end of the machine (not shown). K the feed screw is held in position by a slot planed along its entire length and a stationary feather or lug to keep it from turning.

It is claimed that this device occupies but little room and will do twice the work of a lathe for the same purpose. It will bore any sized wheel, from ten inches upwards to any required size.

Further information may be obtained of Messrs. T. R. Bailey & Vail, of Lockport, N. Y. This is the same firm recently alluded to as manufacturers of the excellent form of key seat cutting machine, a short time since illustrated and described in our columns.

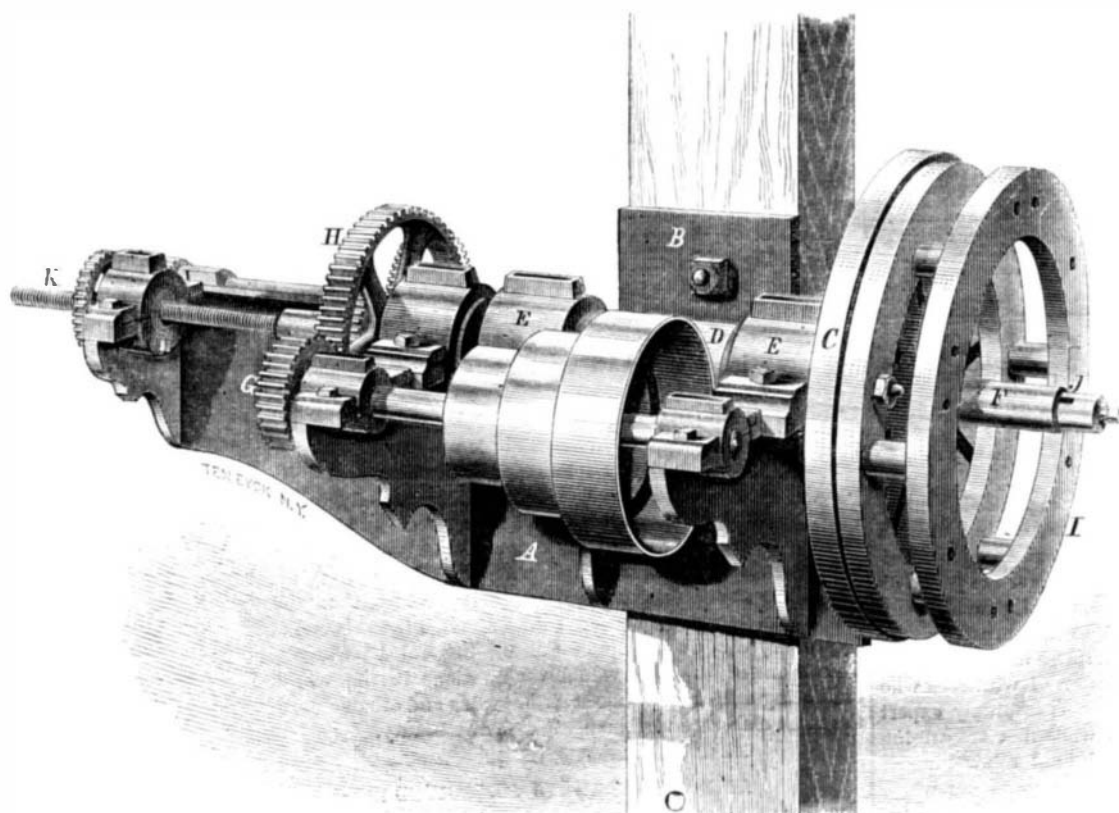
## PADDLE SHAFTS FOR PACIFIC MAIL STEAMERS.

Our illustration conveys an excellent idea of the immense size of two paddle wheel shafts, probably the largest ever forged, recently made by Messrs. Lazell, Perkins & Co., of Bridgewater, Mass., for the Pacific Mail Steamship Company. These are intended as spare shafts for the steamers Japan and China, to supply the deficiency in case of break down.

The one belonging to the Japan weighs 78,520 lbs., that of the China 68,400 lbs. They were transported from Bridgewater to San Francisco by rail, and reached the steamer, in the latter port, which was to transport them to their

destination, the depot at Yokohama, Japan, in twenty days from the time of leaving the forge.

These immense masses of iron are each 38½ inches in largest diameter by 39 feet 8 inches and 37 feet 3 inches (respectively) long, and are made of the best Swedish scrap iron, worked with charcoal and open forge fires. The hammer used in forging them is 11 tons in weight and has a ten foot stroke. It is believed to be the largest machine of its kind in use



IMPROVED BORING MACHINE.

in the country. The time consumed in making and finishing the shafts was about six months, 350,000 lbs. of iron and 900,000 lbs. of coal being employed in their manufacture.

## Experimental Researches on the Treatment of Asphyxia.

By whatever means air is introduced into the lungs of an asphyxiated person, whether by pulmonary insufflation or artificial respiration, experience proves that its introduction is completely useless when the circulation is arrested. This happens in the case of a drowned person in some four or five minutes.

M. Le Bon, of Paris, further states that if the physiological causes be inquired into regarding the impossibility of restoring drowned animals to life after this short delay, it will be found that the heart always contains voluminous black clots of blood. To renew the movement of the heart when it has ceased is not difficult, but to force out these enormous clots, which completely block the passages, is manifestly impossible.

## Max Muller on Darwin.

In a lecture recently delivered in connection with the Liverpool Literary and Philosophical Society, Professor Max Müller addressed himself to the phase of Mr. Darwin's theory, which deals with the possibility of the higher animals acquiring the faculty of articulate speech.

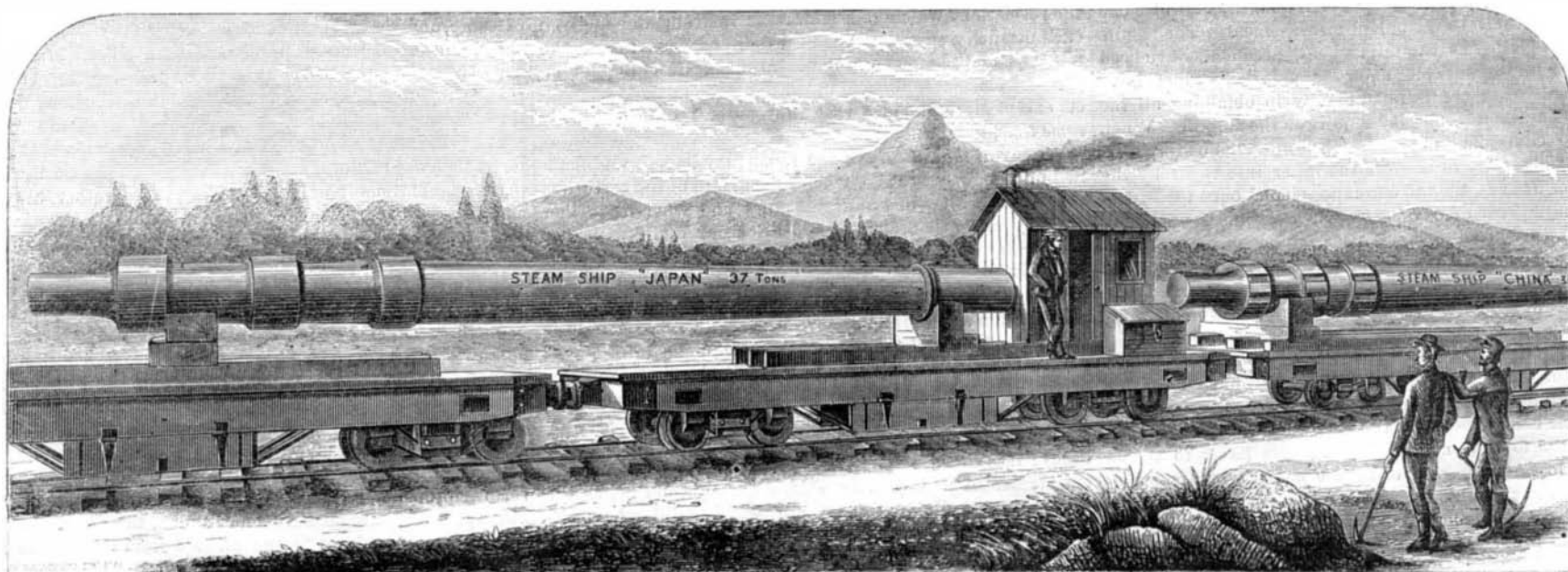
The lecturer gave various illustrations of the essential difference between the expression of emotions and the expres-

sion of ideas or abstract conceptions, and argued at length as to the impossibility of mere emotional signs and sounds developing into articulate speech; and he ridiculed the notion that the materials of language being given, all the rest was a mere question of time, a natural gradation from the neigh of the horse to the poetry of Goethe. Man and animals possess emotional language in common, because man is an animal; but animals do not possess rational language, because they are not man. This distinction between emotional and rational language, so far from being fanciful and artificial, is radical, as proved by various evidence, especially by the testimony of pathology in reference to certain brain diseases. Rational language is to be traced back to roots, and every root is the sign of a general conception or abstract idea of which the animal mind is incapable. Mr. Darwin has said there are savage languages which contain no abstract terms; but the names for common objects, such as father, mother, brother, etc., are ab-

stract terms, and unless Mr. Darwin is prepared to produce a language containing no such names, his statement, said the lecturer, falls to the ground as the misconception of the real nature of a general idea as distinguished from an emotion. This phase of the controversy lies within the Professor's peculiar domain, and he was able to entertain his audience with technical illustrations that in ordinary hands must have proved tedious, but in the hands of the most accomplished linguist of the day proved a source of wonder and amusement to his hearers. He concluded as he had begun, by maintaining that language is the true barrier between man and beast.

## Photo Obituaries.

The latest style in mourning is to have a black frame printed in the paper at the head of the obituary notice of your friend, in which a photo portrait of the deceased is pasted after the papers come from press. We have received a copy of the Marlboro' (Mass.) Journal containing such a photo obituary of an enterprising citizen of that place, and the general effect is quite pleasing.



TRANSPORTING PADDLE SHAFTS FOR PACIFIC MAIL STEAMERS ACROSS THE CONTINENT.