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## THE SALE OF THE BRITISH ADMIRALTY PLANS.

The British Government has detected the sale of certain naval plans and specifications, which were in the custody of the Chatham dock yards.

The Naval Department of the United States has started on the work of building ships, and recently purchased from a private English constructor the plans for a vessel. Considerable comment was devoted to this transaction by the English journals. They deemed the ship builder's action unpatriotic. But the enormity of the more recent transaction completely overshadows any evil discernible in Secretary Whitney's purchase. A draughtsman in the pay and employ of the government steals and sells its own private plans and specifications.

Hence, when the question arose of who the purchaser could be, America was first settled upon as the criminal.

A cable message, dated March 11, disposes of this rumor. An official announcement is made that the British authorities hold the name of the purchaser, and are in receipt of trustworthy information that the naval department of Russia is the culprit.

The exoneration of America from any share in the transaction is said to be complete. The unfortunate draughtsman has been discharged, and may be further proceeded against. Parliamentary action, government prosecution, and indictment for perjury threaten him. Russia has not yet been communicated with, but presumably will be well able to take care of herself.

The fact that the United States are no longer "in it" is, from an American point of view, a gratification. It would be a slur upon the ingenuity and resources of our engineers and inventors to acknowledge that we could not build a war vessel upon American lines. In the past our inventors have always risen to urgent occasions, until their quick and ready way of dealing with emergencies has become a proverbial attribute of Americans. The advertisements in the foreign journals bear their tribute to the ingenuity of the people of this country, where special tools, household implements, steam pumps, and other articles are heralded as of American invention. No foreign aid is needed to enable us to build war vessels.

The inventive genius of the United States can do as well as the British Admiralty in designing ships. Rigid adherence to precedence, an unwillingness to test new designs, and a want of confidence in ourselves, would be a very poor basis for action in establishing a navy. The successful war vessel of the future will probably involve many new features. It will be based as much on original thought as on precedents. To cope with those already existing it must be more than a duplication of its possible antagonists. For us to simply copy the ships of Great Britain would be a sure means to keep our navy behind the age, as the patterns would always lead the copy by some years.

## JAMES BUCHANAN EADS, C.E.

In the history of American enterprise and engineering, the name of Captain Eads has long held a foremost place. By personal qualities of the highest order, and indomitable will and persistence, he won for himself a world-wide reputation in his profession. His fame was as great in England as here, and she was most generous in her tributes to his genius. His death has now to be chronicled with unfeigned regret. He died at Nassau, on the 8th of March, of pneumonia. He was a typical American in his inventiveness and powers of resource, and stood with but few equals in the front rank of the world's engineers.

He was born at Lawrenceburg, Ind., on May 23, 1820. From the age of eight, he showed more than the usual boy's interest in mechanics, and a couple of years later, at Louisville, whither his family had moved, possessed a workshop of his own, fitted up for him by his father, where he made all sorts of models for his amusement. Three years later the family removed to St. Louis. The steamer carrying them burned, and all his father's possessions were destroyed. Landing a barefooted boy, it is said that he began life by selling apples for a living. Eventually he became a clerk in a business house, and in 1839 was a purser on a Mississippi steamer. He kept up his mechanical studies, and in 1842 invented a diving bell for the recovery of cargoes from sunken steamers. A company was organized for its use, and employed it for several years in saving wrecked goods. Thus young Eads acquired an intimate knowledge of the great river and of its action upon the silt beds that lie in its course. In 1845 he sold his interest in the company and established glass works in St. Louis, the first ever started west of the Ohio. Failing in this, he returned to the work of saving wreckage, and in this work and in improving the river channel at St. Louis he accumulated a fortune.

As long ago as 1856 he proposed to keep the channel of the Mississippi, Missouri, Ohio, and Arkansas Rivers clear, but Congress rejected the plans. His first great achievement was during the war. In 1861 President Lincoln asked him for designs for gunboats for the Western rivers. He offered the plans, which were accepted, and he undertook to build seven vessels in sixty-five

days, and carried out the contract. Seventeen other boats were built by him during the war, and did good service under Farragut, at the capture of Mobile and elsewhere.

The great steel arch bridge at St. Louis, with a clear span of 564 feet, built by him, still represents a triumph of modern engineering. It was opened to traffic in 1874, after seven years had been consumed in building it. His next important work was the excavation of the Mississippi channel by the aid of jetties, which work he carried out in the face of the most determined opposition from other engineers. He deepened the South Pass from a depth of 8 ft. to 30 ft. by his plan of making the river scour its own channel.

His great project of the Tehuantepec ship railroad is still in embryo. Success marked his work always. He has left this enterprise in such an advanced phase that its consummation need only be a question of time.

He was the recipient in June, 1881, of the Albert medal of the British Society of Arts, he being the first American upon whom it was conferred. From the Missouri State University he obtained the degree of LL.D. In the same year he was received by the British Association at their York meeting, and made an address upon the improvements of the Mississippi channel, and upon the Tehuantepec ship railroad, which the society voted to print among its archives. A full account of his achievements would fill many pages. The above is a mere note of the more remarkable ones. In past numbers of the SCIENTIFIC AMERICAN and SUPPLEMENT, various accounts of his life and labors will be found.\*

## THE STATE TAX ON COMMERCIAL TRAVELERS UNCONSTITUTIONAL.

On March 7 an opinion was rendered by the Supreme Court of the United States in a case involving this tax. In Shelby County, Tenn., a special tax has been levied upon traveling salesmen engaged in soliciting orders. In amount it was quite onerous, being ten dollars per week or twenty-five dollars per month. It was collected not only from salesmen from other States, but also from those coming from other parts of Tennessee. This district includes the city of Memphis. The case is numbered 816. It is of special importance, because in the opinion of the court the doctrine of the regulation of inter-state commerce is considered at some length.

An unlicensed salesman had been arrested in Memphis, and had been convicted and fined, and on appeal to the highest State court the conviction had been affirmed. The case was then carried up to the Supreme Court of the United States. They have now reversed the decision of the Tennessee Supreme Court, and ordered the plaintiff in error to be discharged. The opinion was delivered by Chief Justice Bradley. Starting with the point that the power to regulate inter-state commerce is vested in Congress, the court holds that this power is exclusive whenever the subjects of it are national in character, and only admit of one uniform system or plan of regulation. The part of the Constitution on which this rests is the well known third clause of Section VII., the one under which protection is extended by the United States courts to trade marks.

From this premise it is held that a failure on the part of Congress to act in such cases indicates its will that the subject shall be left free from any restrictions or regulations imposed by the States, except as regards matters of local concern. Thus, by virtue of its police power and jurisdiction over persons and property within its boundaries, certain restrictions might incidentally be placed upon business transactions, but this would not justify any direct interference with inter-state commerce, nor the direct imposition of taxes upon temporary sojourners within the State, nor upon property not yet become part of the common mass, so as to discriminate against the citizens of other States. In the matter of inter-state commerce, the United States are, in the opinion of the court, but one country, and are, and must be, subject to one system of regulations, and not to a multitude of systems.

This is a brief abstract of the principles on which the decision was founded. The question of its expediency as affecting the resources of the State is considered at considerable length. Congress is pointed out as the proper power to pass laws to undo any injury which freedom of trade may do to the individual State. Based on the peculiar fact that Shelby County taxes commercial travelers from other parts of Tennessee as well as the outside class, a dissenting opinion was rendered by Justices Field and Gray, they holding that to relieve such travelers from other States from taxation would operate as a discrimination against those from other parts of Tennessee. Two wrongs do not make a right, however, and the State of Tennessee can easily, by proper legislation, remove this burden, if it is such, from residents outside of Shelby County. A further interest attaches to the decision, as it indicates a reaffirmation of the limits of State rights.

\* See SCIENTIFIC AMERICAN, December 27, 1884, and SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 44 and 479.