TO CROSS THE OCEAN IN THREE DAYS

The Turbine Engines Have Already Demonstrated Their Wonderful Power as a Marine Engine, a Speed of 43 Miles Has Been Attained and Now it Is Purposed to Equip One of the Big Ocean Liners With a 75,000, Horsepower Engine, This Would Guarantee a Speed of 45 and it Is Thought 60 Miles an Hour.

Chicago Journal.)

(The facts given in this article have been supplied by C. A. Parsons, the inventor of the new system).

A mile a minute through the water—a speed equal to that of our fastest express railway trains—would seem to those unacquainted with the latest developments in methods of propulsion to be an absurd supposition.

That the idea of a twenty-five-mile an-hour limit on the ocean may be finally abandoned by the public, it is only necessary to state that a speed of fifty miles an hour has already been accomplished, and that the extra ten, can be added whenever it is desired to add them. It is the turbine steamer which is doing all this, and that the turbine has come to stay is sufficiently indicated in the facts that it has already been fitted to many ships of war and passenger steamers, and that now, at least, the Cunard company is considering the advisability of putting them into trans-Atlantic vessels, and with this object in view a commission is about to begin a full inquiry into the system.

75,000 Horse Power.

Already a big firm of engineers has offered to fit on board the huge Cunarders which are just about to be built turbine engines which will develop 75,000 indicated horsepower on a coal consumption of only 3,365 tons, as against 6,864 tons required by the use of reciprocating engines. These turbines would reduce the Atlantic passage to 100½ hours or twenty-two less than at present.

This, however, is considered by the most competent authorities to be considerably within what is practicable at the present moment. It is preferred to advance gradually and surely in matters of this kind, which will revolutionize existing systems, but there is really no doubt whatever that a vessel could be built straight away which would reduce the Atlantic passage to between three and three and a half days, which would take three or four days off the passage to the Cape, five or six off that to Hong Kong, a week or more to Australia, and generally effect a further shrinkage of the world the results of which would be of such a far-reaching character that as yet they can hardly be imagined with any degree of accuracy.

What a Turbine Is.

The average person who has little or no acquaintance with mechanical engineering matters has still but the vaguest notion of what a turbine is. It has been proved by experiment that if ten average newspaper readers are asked the question only two will be able to give a proper answer, four others will be able to commit themselves as far as to say that it is a new application of steam power, while four will declare it to be a new power altogether—something on the lines of a petroleum engine such as is usually fitted to the motor car. The word "turbine" sounds as if it stood for a kind of oil or spirit, hence the confusion of the public mind.

A turbine would be described, bluntly, in a small dictionary as a horizontal water wheel and a water wheel such as drives machinery of some mills in country districts, and which is familiar to everybody, is really nothing but a water turbine. The steam turbine, which is engaged in upsetting all preconceived ideas about ocean voyages, is just the same principle, save that steam takes the place of water, and that it is force of impact alone, and not force combined with weight—as in the case of the water wheel—which makes the wheel go round. In the middle of the ship there is a big drum placed which will revolve on a central axle whence the motive power is applied direct to the propeller.

This drum is inclosed within a cylindrical case, and on the outside of the drum and on the inside of the case, facing and nearly touching each other, are rows of thousands of little projecting blades. The blades on the drum are so shaped slantingly that if you were able to blow hard enough at them a rotary impulse would be applied to the drum and it would be moved round. The steam is let into the cylinder through a hole at the side direct from the boiler, and, acting upon the movable blades, causes the drum to revolve at a very rapid rate.

How It Works.

The fixed blades on the inside of the cylinder which almost touch the others, slant in the opposite direction, and they are there for the purpose of securing the efficiency of the turbine and making the steam act upon it in the right way. When the steam first enters the cylinder it meets a ring of these fixed blades, by which it is deflected so that it strikes the adjoining ring of moving blades at the proper angle for imparting the rotary impulse. When the steam leaves these blades it has naturally been deficient and the second ring of fixed blades is interposed, these directing the steam on to the second ring of moving blads. Precisely the same process is carried out with the many succeeding rings of guide and moving blades, until the steam finally makes its escape at the exhaust passage.

This is a complete explanation of the turbine. If, then, it is so simple, and its capabilities so vastly superior to those of the ordinary steam engine—all this, too, having been known for years—the average person is at once prompted to inquire how it is that so little has been done with it so far. The answer to this question comprises all the objections to the turbine—objections which, for the most part, arise from its excess of merit.

In the first place, the full advantage of the turbine is only derived when it is working under full pressure and on a large scale. It does not do so well on a small scale or at low speeds, and, therefore, the best fields for experiment all along, and the one which would have yielded the best results, would have been the Atlantic liner. But the ocean giants are not let out for experiments and it is the way of the world that early trials must be made on comparatively small things.

The Coming Engine.

Mr. Parsons had to get over this difficulty as best he could, and nine years ago the first ship, specially built at Wallsend-on-Tyne, where are now the works of the Parsons Steam Turbine company, limited, was propelled by the new method. She was Called the Turbina, and a speed of thirty-four knots an hour was obtained with her. Then the torpedo-boat destroyers Viper and Cobra were built and taken over by the admiralty, the former proving herself able to travel at forty-three miles an hour. Both these vessels came to grief through causes with which the turbines had nothing to do; but the admiralty were convinced, and more orders were given. Then the turbine passenger steamers were fitted for the Clyde service, and those have been followed by the new boats on the English channel service, the wonderful performances of which have attracted so much attention. Turbines, moreover, have been fitted to three steam yachts so far, one being the Emerald, belonging to Sir Christopher Furness, which is the first turbine-fitted vessel to cross the Atlantic.

An entirely separate system of turbine has been provided for reversing purposes. The steamship Queen was stopped dead, when going over nineteen knots an hour, in one minute and seven seconds after the order was given to the engine-room, the distance she traveled in this time being only equal to two and a half times her own length.

Take your lemonade unsweetened, and your liver will reward you by working with extra energy. Leave sugar out of your diet, and you will forget that you have any liver.

SUPREME COURT OPINIONS

And Cases Set Down for Argument First Week in January

The supreme court this afternoon handed down two opinions. They are:

H. N. Smith, respondent, vs. N. Wilcox, appellants, and H. N. Smith, respondent vs. Isaac Temple, et al.,; appellants; appeals from Multnomah county; affirmed. Opinion by Justice Wolverton. Both cases were brought for the purpose of foreclosing mechanics' liens. Appellants contended that Smith could not foreclose a lien as he was a sub-contractor, but the court holds that the mechanics' lien law makes no difference between contractors and sub-contractors, and affirms the decision of the lower court.

T. F. Walker, appellant, vs. G. F. Harold and Sarah Harold, respondents; appeal from Linn county; R. P. Boise, judge; reversed. Opinion by Chief Justice Moore.

This was a suit to set aside a deed alleged to be fraudulent. The court reverses the decision, and enters a judgment, giving appellant and other claimants first right to secure their claims, the balance to go to the respondent, Sarah Harold, wife of G. F. Harold.

The following cases have been set for hearing by the clerk of the court.

Tuesday, January 5—B. Brockway, respondent, vs. City of Roseburg, et al, appellants; appeal from Douglas county. W. M. Ladd administrator, respondent, vs. W. L. B. Mills, appellant; appeal from Multnomah county.

Wednesday, January 6—F. K. Arnold, administrator, respondent, vs. Albert U. Smith, et al., appellants; appeal from Multnomah county. Laura Ella Froman, appellant, vs. Thomas Froman, respondent; appeal from Lane county.

Thursday, January 7—Minnie Caseday, respondent, vs. P. A. Lindstrom, appellant; appeal from Clackamas county. W. W. Hall appellant, vs. Laura C. Hall, respondent; appeal from Clackamas county.

Head Waiters and Waitresses

That lustrous example of the utmost fun-making possibilities of the stage yclept, "The Head Waiters," will be seen at the Grand Opera House tonight, rejuvenated and new in everything but name. This piece, whose popularity and whose laugh-making powers seem to grow with the years, is one of the most uproariously funny entertainments of the times.

Each season's alterations improve it. The ludicrous scheme of the moneyless, but Hopeful Pipe Dreamer are prolific of the most laughable indicdents possible to imagine. The specialities are equally attractive, and this season they have the merit of novelty, as well as that of intrinsic interest. An unusually brilliant and versatile company will be headed by Joe Kelly, and includes Inman & Vincent, Dolly DeVyne, Franza Hayford, Elsie Harvey, Pierce and Rosyln, Chas. Burkhart, Eureka Comedy Four, Bert Wainwright, Lew Kelly and 25 chorus girls.

Wherever the "Head Waiters" are there the bill of fare is simply immense. Wherever the have appeared the newspapers have only the kindliest words for them, all saying they are the fun-makers of the season. Don't overlook them tonight. Curtain at 8:15.

The art of keeping the mouth shut should be taught in every school.