

duced into the spiral, the needle is moved towards the right. But after having placed the north pole of each bundle in the spiral, if temporary torsions be given to the south pole, it will be found that a torsion in the same direction will produce contrary currents, according as it is applied to the one or to the other of the two bundles.

The following results are obtained:

	Torsion to the Right.	Contrary Torsion.	Torsion. to the left.	Contrary Torsion.
For the <i>dextrorsum</i> bundle, which was first twisted from right to left.	15 left.	10 right.	15 right.	14 left.
For the <i>sinistrorsum</i> bundle.	15 right.	15 left.	15 left.	15 right.

It is only necessary, therefore, to add to the apparatus a commutator, to reverse the direction of the current after each semi-oscillation, in order to obtain, by means of the turning vibrations, a continuous current which may be rendered highly intense.

These facts appear to me (M. Wertheim) likely to raise theoretical questions of extreme importance. I propose to discuss them in a work on the torsion of solid bodies in general, upon which I have been long occupied.

For the Journal of the Franklin Institute.

### Have we a New Power?

The caloric ship Ericsson has since her trial early in January, made a trip to Washington for the purpose of demonstrating her success, and also of obtaining for Capt. Ericsson a contract from the government for one or more first class war vessels. Unfortunately for the community, (and also I think, for those who have invested their money in the enterprise,) no disinterested persons competent to judge were allowed on board, and to form an opinion from the reports of Capt. Ericsson or Capt. Sands, would be unfair; for the former is so deeply interested in the enterprise as almost to form a part of it, while the latter is unacquainted with machinery, and has given much of his testimony on hearsay evidence; there was no one on board to note the revolutions, weigh the coal, etc. The gentlemen interested in building this ship have been (it is understood) well pleased with the mystery that has been hanging around all their movements, and they are certainly entitled to the credit of having supported the enterprise with much cordiality, when even *they* were allowed to know but little of its details. I presume that a portion of this zeal may be attributed to the expectation on their part, of large profits; for the promise of a saving in fuel of 80 per cent. will convince many a man who will hold out against the prospect of fair returns. But to return to the ship. On a visit to Washington recently, I conversed with several engineers who visited her while she was at that port, and saw her engines in motion (the vessel being at anchor). The number of revolutions per minute was from 4 to 4½; the fires were burning bright, and in their

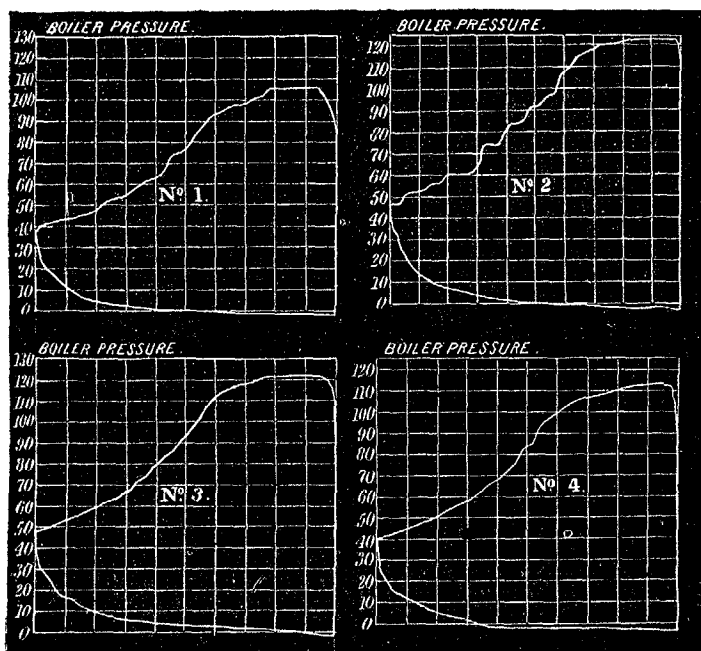
opinion, 6 to 8 tons would be the consumption per 24 hours; wheels, 29 feet diameter; paddle, only about 12 inches wide, and dipping under very slightly. Whatever may be the final termination, it is certain that up to the present time the results obtained have not equalled the expectations of the originators of the enterprise. The working pressure is but 8 lbs. instead of 12, and as a consequence, the paddle wheels have been reduced in diameter, and one half the paddles removed. While I really hope that the engine will succeed, and a new power more economical than steam be introduced to the world, I must say that the profound mystery that has been connected with the Ericsson goes far in my mind, to stamp the whole thing as a failure.

## II.

For the Journal of the Franklin Institute.

To the Committee of Publications:

GENTLEMEN:—The inclosed diagrams were taken from one of the engines of the steamer *George Collier*, a large first class cotton boat running between New Orleans and Memphis. I could not obtain the dimensions requisite for an analysis of her performance; she carries 850 tons of freight,



INDICATOR DIAGRAMS.	No 1.	No 2.	No 3.	No 4.
Throttle open, . . . .	.25 inch.	1.25 inch (full).	.75 inch.	.50 inch
Revolutions per minute, .	12½	14		
Difference between boiler pressure and engine pressure, .	26	2 lbs.	8 lbs.	12 lbs.
Mean pres. throughout the stroke, 76		89.9		
Horses power, each engine,	266	353		