

We see by this table it takes 357 seconds, or nearly 6 minutes to fall from the surface to the centre, or 24 minutes to make a passage through the earth and back again. The velocity at the centre will be 117500 feet, or 22.25 miles per second.

*Philadelphia, August 1851.*

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For the Journal of the Franklin Institute.

*A List of Steamers in course of Construction in Baltimore, together with their Dimensions, &c.*

I. PALMETTO Propeller.—The first of a line of steamers to be established between Baltimore and Charleston, S. C. Builder, J. A. Robb; Engines by C. Reeder, Jr.

Length on Deck, . . . . .	186 feet.
“ of Keel, . . . . .	172 “
“ between Perpendiculars, . . . . .	175 “
Breadth of Beam, . . . . .	30 “
Depth of Hold, . . . . .	18 “
Dead Rise, . . . . .	10 inches.
Tonnage (custom house measurement), . . . . .	750 tons.

Immersed sectional area at load line, or direct resistance, 224 sq. feet.

Two Direct Action Engines, with Vertical Cylinders.

Diameter of Cylinders, . . . . .	44 inches.
Stroke of Pistons, . . . . .	40 “
Diameter of Air Pump, . . . . .	28 “
Stroke of Air Pump Piston, . . . . .	20 “

Slide Valves.—Steam Ports,  $4 \times 20$ ; Exhaust do.,  $4 \times 20$ .

Two Cylindrical Iron Boilers, with double return flues. Length, 16 feet; Diameter,  $9\frac{1}{2}$  feet. Fuel, Bituminous Coal.

One Cast Iron Propeller. Diameter  $11\frac{1}{2}$  feet; Face, 40 inches; Pitch,  $23\frac{1}{2}$  feet. Propeller surface, 98 square feet, being a proportion of propelling surface to area of direct resistance as 1 to 2.28. Length of Propeller shaft, (3 sections,) 72 feet; diameter of do., 10 inches; journals of do.,  $10 \times 12$  inches.

The *Palmetto* is a fine looking vessel, with excellent lines of flotation. Three masted, schooner rigged, with foresail, foretopsail, and foretop-gallantsail.

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II. GENERAL McDONALD.—For the Philadelphia line, to run in connexion with the *Robert Morris* on the Delaware. Builder, J. S. Brown; engine re-built by C. Reeder, Jr.

Length on Deck, . . . . .	225 feet.
Breadth of Beam, . . . . .	30 “
Over Guards, . . . . .	54 “
Depth of Hold, . . . . .	9 “
Draft of Water, . . . . .	$4\frac{1}{4}$ “

Hollow lines, coppered and copper fastened.

One Beam Engine, re-built, having been in use for several years on board the late steamer *Constitution*.

Diameter of Cylinder,	52 inches.
Stroke of Piston,	10 feet.
Diameter of Air Pump	40 inches.
Stroke of Air Pump Piston,	44 inches.

Two Iron Boilers, arch and tubular. Fire and flue surface, about 3000 square feet; fuel, wood.

Length of Boilers,	17½ feet.
Breadth,	9 "
Height in front,	10 "
" at back,	8½ "
Diameter of Flues, (internal,)	3 inches.
Diameter of Water Wheels,	31 feet.
Face " "	8½ "
Depth of Buckets,	30 inches.
Diameter of Water Wheel Shaft, (wrought iron,)	13 "

III. A side wheel steamer for Savannah, Georgia. R. & E. J. Bell, builders; engine by C. Reeder, Jr.

Length on Deck,	130 feet.
Breadth of Beam,	20 "
" over Guards,	34 "
Depth of Hold,	7½ "

One Beam Engine.

Diameter of Cylinder,	24 inches.
Stroke of Piston,	8 feet.
Diameter of Air Pump,	18 inches.
Stroke of Air Pump Piston,	42 "

One Cylindrical Iron Boiler.

Length of Boiler,	15½ feet.
Diameter " "	7½ "

Double return flues, fire and flue surface, 800 square feet; fuel, wood.

Diameter of Water Wheel,	22 feet.
Face of " "	5 "
Depth of Bucket,	20 inches.
Diameter of Shafts, (wrought iron.)	7 "

IV. A side wheel steamer for La Guayra, South America. Builder, — Gardner; engines by Murry & Hazelhurst, Vulcan Works.

Length on Deck,	132 feet.
" between Perpendiculars,	130 "
Breadth of beam,	21 "
" over Guards,	34 "
Depth of Hold,	9 "
Tonnage (custom house measurement),	250 tons.

Has a drop deck and is a three masted schooner rigged. Is supplied with two steeple engines connected.

Diameter of Cylinders,	28 inches.
Stroke of Piston,	48 "

One double acting air pump, worked from crank motion of centre shaft.	
Diameter of Air Pump.	18 $\frac{1}{2}$ inches
Stroke of " " Piston,	24 "
One Iron Boiler; Double return flues.	
Length of Boiler,	15 $\frac{1}{2}$ feet.
Width of " . . . . .	10 $\frac{1}{4}$ "
Height of " . . . . .	11 "
Heating Surface, 1000 feet; Fuel, Soft Coal.	
Diameter of Water Wheel,	15 $\frac{1}{2}$ feet.
Face of " " . . . . .	5 $\frac{1}{2}$ "
Depth of Buckets,	20 inches.
Hanging Wheel.	

V. A large steamer for the Powhattan Co., The "Belvedere," Freight and Passengers to Richmond, Va. Builders, Cooper & Butler; engine by Murry and Hazelhurst, Vulcan Works.

Length on Deck,	225 feet.
" between Perpendiculars,	210 "
Depth of Hold,	12 "
Breadth of Beam,	34 "
" over Guards,	58 "
Draft at load line,	9 "
Tonnage (custom house measurement),	840 tons.
Line of Flotation slightly concave.	
One Beam Engine.	
Diameter of Cylinder,	50 inches.
Stroke of Piston,	10 feet.
Diameter of Air Pump,	3 "
Stroke of Air Pump Piston,	4 $\frac{1}{2}$ "
Area of Steam Valves,	230 sq. inches.
One Iron Boiler, Single Return Flues.	
Length of Boiler,	24 feet.
Height of " . . . . .	13 "
Width of " . . . . .	11 $\frac{1}{2}$ "
Diameter of cylindrical part,	11 "
Heating surface, 2200 feet; Fuel, Wood.	
Diameter of Water Wheel,	29 feet.
Face " " . . . . .	9 $\frac{1}{2}$ "
Depth of Bucket,	2 $\frac{1}{4}$ ft.

Buckets radiated from centre of shaft. The "B" is to fill the place of the "Columbus," recently burnt, belonging to the same company.

VI. A side wheel Steamer for the Norfolk line, Bay route; Builders, Cooper & Butler; Engine by Murry and Hazelhurst, Vulcan Works.

Length on Deck,	245 feet.
" between Perpendiculars,	237 "
Breadth of Beam,	34 "
" over Guards,	60 "
Depth of Hold,	11 "
Draft at load line,	6 "
Tonnage, (custom house measurement),	864 tons.

One Beam Engine.

Diameter of Cylinder,	56 inches.
Stroke of Piston,	11 feet,
Diameter of Air Pump,	44 inches.
Stroke of Air Pump Piston,	50 "

Two Iron Tubular Boilers.

Length of Boilers,	14 feet.
Width "	14 "
Height "	11 "

Arch below and returns through 4 inch tubes; Fuel, Bituminous Coal; Heating surface, 4000 square feet.

Diameter of Water Wheels,	32 feet.
Face " " "	9½ "
Depth of Bucket,	2½ "

Buckets radiate from centre of shaft.

The company to whom this boat belongs will find, to their regret, that they have limited the engineers in the size of her cylinders injudiciously. A reservation of power in the capacity of a cylinder to meet exigencies that occur during the winter passages on that route, would certainly more than pay the difference in the first cost in a short time, between a 56 and 60 inch cylinder, in the certainty of her time, and a reduced amount of wear and tear in machinery, owing to the fact that forcing her will be unnecessary.

I have for comparison taken the steamer Vanderbilt, running on the Long Island Sound.

Vanderbilt, tonnage, 1041, capacity of Cylinder,	339 cubic feet.
Norfolk Boat, " 864 " "	188 " "
Vanderbilt cylinder, capacity to tonnage is as	1 to 3·07
Norfolk Boat, " " "	1 to 4·05

Thus showing a proportion of power to tonnage, largely in favor of the Vanderbilt, a boat having very similar duties to perform, to that of the Norfolk boats. S.

For the Journal of the Franklin Institute.

Photographs in Colors.

For the last few months our journals have been occupied with the reported discovery, by a gentleman in the State of New York, of a method of obtaining photographic images of objects in their natural colors, and much anxiety has been expressed to see his pictures. Mr. Hill has not thought proper to publish his process yet, and in the meantime the same results have been arrived at in France.

On the 7th of February, 1848, M. Edmond Becquerel sent to the Academy of Sciences, at Paris, a description of a method of preparing silver plates so as to obtain an image of the solar spectrum. This communication was reported on, (12th Feb., 1849,) by a committee consisting of MM. Biot, Chevreul, and Regnault, and on their recommendation the memoir was directed to be printed in the collection of memoirs presented to the Academy by persons not members. (*Recueil des Savants Etrangers.*)

Since this, several other notices on the subject, by M. Becquerel, will be found in the *Comptes Rendus* of the Academy, and on the 2d June