New Inventions.

Strengthening Cast-Iron Ornaments.

Wm. Hill, of New York City, has invented an improved mode of strengthening cast-iron ornaments for railings, &c., which consists in providing each ornament with a separate brace of wire, or wrought-iron, said braces being of any shape to correspond with the form of the branching ornaments, and fitted snugly to other vertical braces, which strengthen the ornaments and give force to the railing. The ornaments are cast around the ends of the braces, which are placed in the moulds. A patent has been applied for.

Valve Motion.

T. Goodrun, of Providence, R. I., has applied for a patent upon an improvement in the arrangement and mode of operating the valves of steam engines, which consists in regulating the admission of steam to the cylinder by means of rotary tubular valves, placed in the cylinder heads and receiving a constant rotary motion, and in exhausting the steam from the cylinder through ports in the cylinder heads, furnished with puppet valves opening inwards, these valves being so connected that when one is opened the other is closed, they being operated by the piston, which opens one and closes the other at each end of its stroke.

Improved Cow Catcher.

B. F. McLung, of Troy, Ohio, has invented and applied for a patent upon an improved Locomotive Fender which consists in extending the cow catcher transversely, a sufficient distance to cover the entire front end of the locomotive, in combination with a guard placed outside of the wheels of the locomotive and train, whereby the animal, after being thrown from the track, is prevented from again getting upon it. The cow catcher is constructed with rollers instead of bars. We should think there were some good ideas in this improvement.

Horse Rake.

Anson B. Dingman, of Mount Upton, N. Y., has invented an improved horse-rake, which consists in attaching the wheels to the shafts, and hinging the head at its attachment to the thills, so that nothing but the weight of the head is to be lifted, and this is done to much better advantage than where the fulcrum is at the front end of the thills—an excellent improvement. The inventor has applied for a patent.

Drone Bee Trap.

Clark Wheeler, of Little Valley, N. Y., has invented a Drone Trap, or a box which is placed in the hive and is so constructed that the drones can pass in it, but cannot find egress while there is an opening at which the working bees can pass out. A patent has been applied for.

Improved Churn.

R. W. Davis, of Rodgersville, N. Y., has invented an improvement in churns, for churning and working the butter. This invention consists in so constructing the dasher, that it may be adjusted by the resistence of the cream in revolving through it, so as to present six centripetal cutting blades to the cream, and then after the butter is separated, by reversing the motion, to present but two gathering blades, which gather the butter, work it in rolls, and expel the battermilk. A patent has been applied for.

Screw Cutter.

David M. Robertson, of Manchester, N. H., has invented an improvement in machinery for cutting screws, which consists in attaching the dies to a series of vibrating levers or jaws, which are so arranged and operated that the dies may be brought into operation upon the screw, or opened to release it at the pleasure of the operator. The inventor has taken measures to secure a patent upon his invention.

Hydraulic Engine.

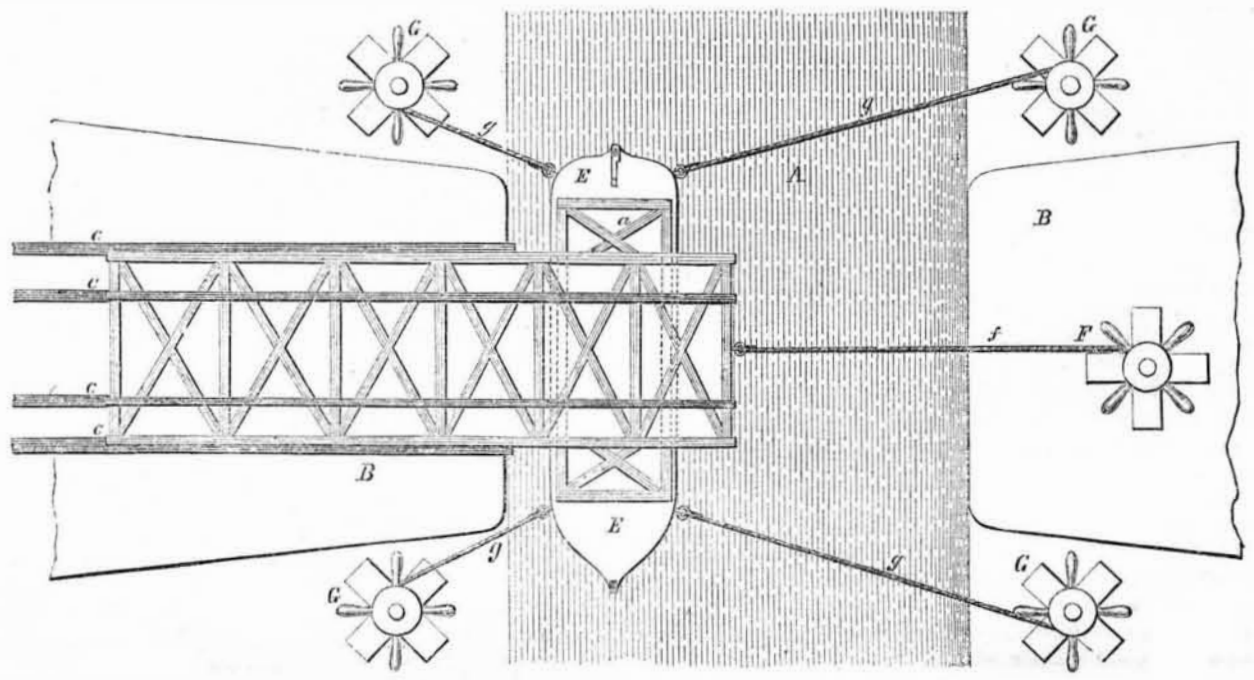
A. C. Carey and Jeremiah Smith, of Ipswich, Conn., has invented an improved Hydraulic Engine for a motor, to be applied to the propulsion of machinery. The nature of this invention consists in having two horizontal water cylinders, provided each with a valve and piston. The pistons have adjustable or movable heads, and the ends of the piston rods are secured to connecting rods or levers, which are attached to reverse cranks on a shaft having a gear wheel upon it, from which the power is taken. The water acts upon the pistons alternately, and a continuous motion is thus given to the crank shaft. A patent has been applied for.

Plenty of Dear Gas and Little Light.

The "Chicago Tribune" of the 17th inst., states that without any *increase* of light, the gas meters in that city have indicated an increased consumption of gas, which in many cases have amounted to 100 per cent in one month. This is attributed to an increase of pressure in the gas pipes. The very same complaint is made by the Cleveland (Ohio) papers. The consumption of gas has greatly increased in that city also, owing to an increase of pressure in the main pipes.

The attention of the public has been directed to this fact through the colums of the "Scientific American" by Mr. Mascher's letter. Let the people of Chicago and Cleveland use burners for expanding the gas, before it passes out of the flame orifice, and they will obtain the desired remedy.

CHAMPION'S MODE OF PASSING BRIDGES OVER STREAMS---Fig. 1.



The engravings herewith presented are illustrations of T. & S. Champion's improved mode of passing bridges over rivers.

Figure 1 is a side view, and fig. 2 a top or plan view of a bridge being passed over a stream by this plan.

The bridge, it will be understood, is first built upon the ground at about a level with its intended position, and is then placed upon the trucks, D D. The abutments, B B, having been previously prepared, a vessel, E, having upon it a frame-work, *a*, of a height nearly equal to that of the abutments, is placed in the stream, A, and a sufficient supply of water is admitted to float it so that the top of the frame shall be on a level with the top of the abutment. The ballast water is regulated by means of an inlet valve and a pump.

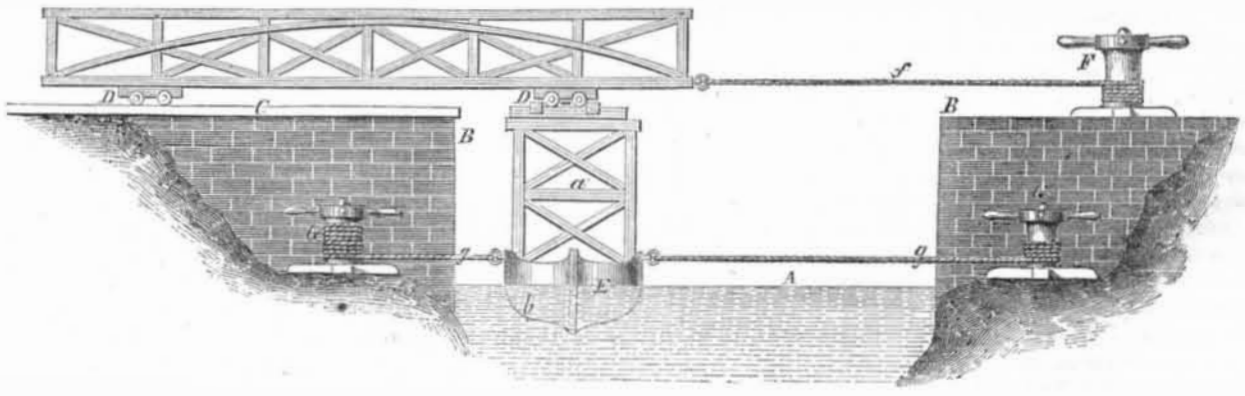
All these matters being properly adjusted, the vessel is drawn up against the side of the abutment, and by means of the trucks, one end of the bridge is easily placed upon the frame, *a*. This will of course sink the vessel deeper in the water, and a portion of the ballast water must be pumped out, to raise the frame-work again to the level of the abutment. When all this is prepared, by means of the capstans, F G, the vessel and the bridge upon it are floated across the stream.

The bridge, it will be observed, is placed on a roller carriage, so that it can be drawn with great ease by the use of the capstans. The ends can then be lifted by jacks, when the bridge has reached its proper position, so as to take the carriages from it. When it is remembered that very heavy bodies were raised and moved by the ancients through the mechanical agencies of capstans and windlasses, no limits can be set to the weight of a bridge, which may thus be floated into position. The work of lifting a tube weighing 1200 tons, 100 feet high, has been successfully accomplished by a hydraulic ram worked by a steam engine; the method here proposed to accomplish a like object (to lay the bridge on its abutments) appears to be more simple and ingenious, than that brought into requisition at the building of the Great Britannia Tubular Bridge.

We think this an excellent device for the purpose which it is intended to accomplish, and have no hesitation in recommending it to the attention of engineers and all others interested, and we are confident there are many situations where it will prove of great assistance, and save a great expense now incurred by the erection of such bridges in separate pieces over rivers and creeks. Of course it is not suitable for rivers and creeks, the waters of which are not of sufficient depth to float the bearing vessel, but in such situations scaffolding can be easily erected. It may be said, "why not employ a floating scaffolding like this to build a bridge across from abutment to abutment, with out building it on land, and then being at the trouble to float it across to its resting place?" But it is well known that the work can be quicker and better done by building it on land, as the workmen can apply themselves more conveniently than on a scaffolding, and is certainly a much safer plan.

For further information address the patentees, Washington, D. C.

Figure 2.



The Caloric Ship "Ericsson."

Last week, our daily papers stated that this ship, with entirely new engines, was to make her trial trip this week. They also stated that it was to be put on the Havre Line, in place of the Humboldt, which was wrecked at Halifax. It is now about a year since her first trip, and in that time it has only made three, and then had to get in new engines. This looks very like superseding steam, but we shall have something more to say about it by and by.

We shall next week announce the names of the successful competitors for the $450 prizes.

Instantantaneous Kindling of Fire in the Human Body.

The "Courier de l'Eure" communicates to the world an account of spontaneous kindling, though no combustion, in the person of a mantua maker. This young lady was sewing one night by the light of a candle, when she felt an undue heat all over her body. She noticed at the same time that her forefinger was on fire. The flame was bluish and emitted a sulphurous smell. She plunged her hand into cold water, and wrapped it in moistened cloths, but the burning still continued, and spread over her hand. Her apron caught fire, and she was obliged to take it off. The flame was only visible in the dark. The girl spent the night in efforts to extinguish the blaze, and only succeeded at day-break.

[We have seen the above in a great number of papers. Any scientific man will at once pronounce it a sheer fabrication to astonish the groundlings.

Cast-Iron Canal Lock.

A Sunbury paper says, the cast-iron outlet lock in the Philadelphia and Sunbury Railroad Company's basin, at that place, is nearly completed.