

IMPROVEMENT IN SHIPS AND PROPELLERS.

Mitchell's *Steam-shiping Journal* recently made the assertion that all the large steam-shiping companies in England would adopt propellers were it not for the prejudice among passengers in favor of side wheels. If this is true, there can be no doubt that the days of side-wheels for ocean steamers are numbered, for in this age mere blind prejudice cannot long maintain its ground against the real merits of any matter. At all events, there is no doubt that propellers are rapidly taking the place of both sails and side wheels, and unquestionably a very large

the great weight of the propeller in the extreme stern. 4. Liability to injury from shot or other cause. The patent for this invention was granted March 27, 1860; and further information in relation to it may be obtained by addressing the inventor, Henry W. Herbert, at Herbertsville, near Norfolk, Va.

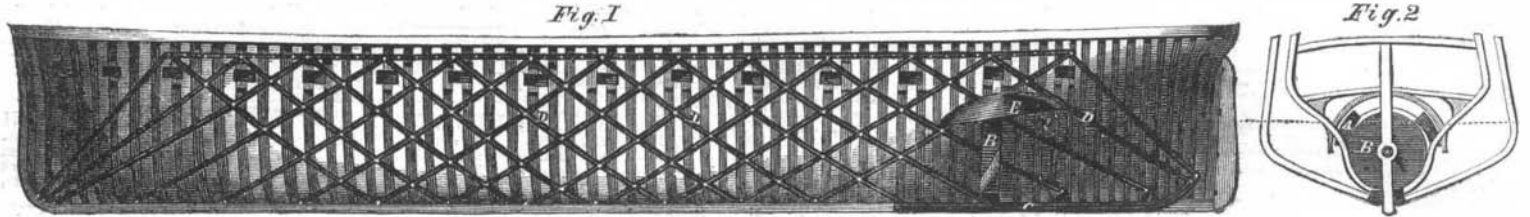
THE WINDING OF TREES.

Messrs. Editors:—I noticed the statement of your correspondent from Michigan, concerning winding trees; and as his observation was mostly on pine, I will give

2. Fig. 3 is a cross section of the cylinder and side pipe, showing the position of the guides of the valve, E. In Fig. 1, *j*, is the guide of valve, *h*, while the letters, *a*, *f* and *g*, indicate the places and arrangements for packing the piston, which will be readily understood.

For drawing the water from the pump, the rod shown in Fig. 4 is used for lifting the valve, E, from its seat; grooves being made in the piston just above the flange, *f*, through which the water may flow when this part of the piston is drawn up to the flange, *b*.

The patent for this invention was procured through



HERBERT'S IMPROVEMENTS IN STEAMSHIPS.

portion of the transportation of the world is doomed to be performed by this class of vessels. Notwithstanding all the study which has been given to this subject by the most profound and most thoroughly cultivated intellects of the world, we doubt whether the next few years will not produce a number of valuable inventions in this department. The propeller is so important a thing that any improvement in it, however small, is of incalculable value.

The invention which we here illustrate is of a radical and sweeping character, with manifest advantages over the plan at present in use, which must cause its general introduction. The plan is to construct the ship with a slot through the run, a short distance from the stern. This part of the run is slightly modified in shape from the usual construction, so as to conform to the circular drum, B, which is made in the form of a frustum

of a cone, and completely fills up the slot, so as to make a continuous smooth run when the projecting blades, A A A, are removed. To guard against any defect as to strength in this part of the ship, in addition to the strong method of framing (as shown in the cut), the invention provides other devices for strengthening with strong iron or other metal extending below the slot, and firmly fastened to the keel and both parts of the vessel. The diagonal braces, D D D D, are secured at their lower ends to this iron piece, while their upper ends are riveted to a strong iron strap, which completely encircles the ship. Other braces cross these, as clearly shown in the cut. This part is further strengthened by the shields, E, made very stiff, and securely bolted to the side, just high enough to be out of the way of the propeller.

Burlington, Mich., May 26, 1860.

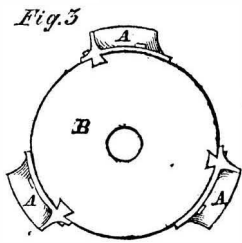
LLOYD'S PUMP.

The annexed cut represents a pump with some novel features which a very short description will render plain to such of our readers as may be skilled in this class of inventions.

By the upward stroke of the hollow piston, G, the water is drawn in through the pipe, D, filling the lower part of the cylinder, A, including the enlargement, a.

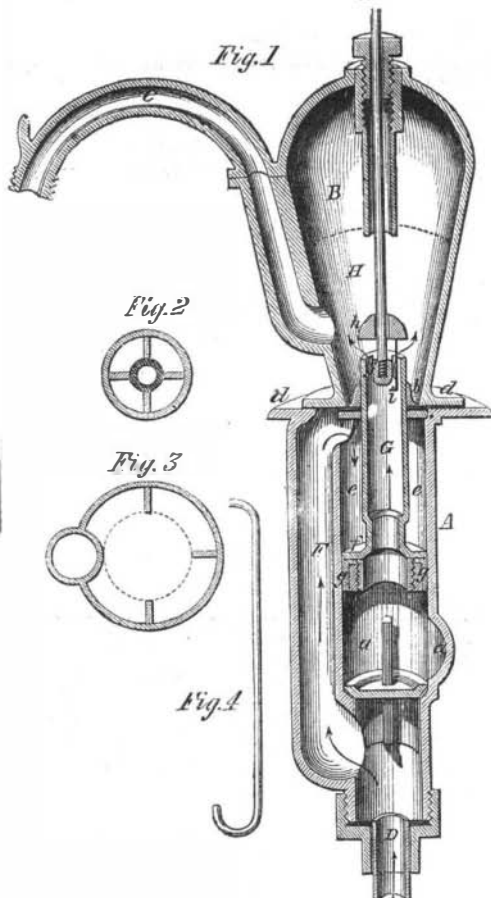
the Scientific American Patent Agency, May 3, 1859, and further information in relation to it may be obtained by addressing the inventor A. W. Lloyd, at Otis, Mass.

A COTTON CLEANSER.—It is rumored that an ingenious person has introduced a very curious and valuable invention into New Orleans, in the shape of a cotton-cleanser. A quantity of the dirtiest cotton, scarcely saleable at all, is put into a kind of hopper, and in a moment you see it flying out at another aperture, quite clean and white. Three or four rollers, armed with wire about an inch and-a-half long, revolve in the same direction, and so that the teeth of one pass between the teeth of another. The cotton caught by the first roller would be carried up and round, but that the teeth of the next roller arrests it half-way up, take it from the teeth of the first and carry it under, to be taken in the same way by the next. The fiber is not at all torn, as is shown by passing a newspaper through the same process unharmed; but the dust is crushed to powder, the heavier portions falling to the bottom, and the lighter being blown out by a constant current of air, created for the purpose.



Two hollow iron beams large enough to serve for coal bunkers, extend along the inner sides of the ship, passing the point of the propeller, thus not only strengthening this point, but adding very much to the stiffness of the whole vessel. The blades are secured to the body of the propeller by dovetailed joints and screw bolts, and may be promptly removed through an opening in the deck, directly over the propeller, provided for that purpose, whenever it is desired to dispense with steam power and use sails alone. The body of the propeller is made hollow, and can be filled with a composition of cork dust and coal-tar, boiled down to the consistency of pitch, or with asphaltum, to prevent its being filled with water through any leak which might occur.

It is important that when this propeller is used in naval or other large vessels, the propeller box should not extend higher than the gun deck. One great advantage claimed for this propeller is the large size which it can be conveniently made, giving great velocity to the blade with moderate rapidity of the revolutions, and it is claimed to obviate the following objections to ordinary propellers:—1. Difficulty of oiling the journals. 2. The drag of the rudder post and shaft through the water. 3. The tendency to hog the ship by



The downward stroke of the piston closes the lower end of the cylinder, A, by pressing the valve, E, into its seat, and forces the water up through the hollow piston, G, and out at the discharge pipe, C, lifting the valve, *h*, from the top of the piston in its course; at the same time the water is drawn down from the side pipe, F, which causes its place to be supplied through the pipe, D. The mode in which the piston rod, H, is secured to the upper end of the piston, G, is clearly shown in Fig.



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