

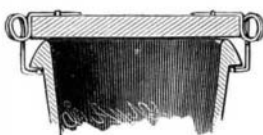
**JAR COVER.**

The cover, which is about the same diameter as the rim of the jar, is made of wood rendered waterproof by varnish or paint. To opposite edges are secured wire fasteners made of iron or steel spring wire, copper coated, or of brass wire. The form of these wires is clearly shown in the engraving. The cover is placed on the jar by bringing one of the spring fasteners into engagement with the under side of the rim of the jar, then pulling the other fastener until it will pass over the rim, then pushing down the cover and releasing the second fastener, which will engage with the rim. The cover is removed by pulling out one of the fasteners. The cover can be made to fit any size jar. This invention has been patented by Mr. W. F. McFarland; particulars can be had from Messrs. McFarland & Rowles, of Pleasantville, Ohio.



**The United States Cotton Harvester.**

The United States Cotton Harvester, invented by Mr. Owen T. Bugg, of Georgia, was recently exhibited in operation at the New York Cotton Exchange. In spite of certain disadvantages arising from the slipping of the wheels on the polished floor, and the brittleness of the dried cotton plants, the trial was pronounced successful by the planters in attendance. The cost of harvesting the lint by hand is at a low estimate \$10 per bale, while with this machine the inventor states that the cost will not exceed \$1 per bale. Should he be able to realize these figures in practice, the innovation will be of great importance to the entire cotton-growing district.



**Honor to Whom Honor is Due.**

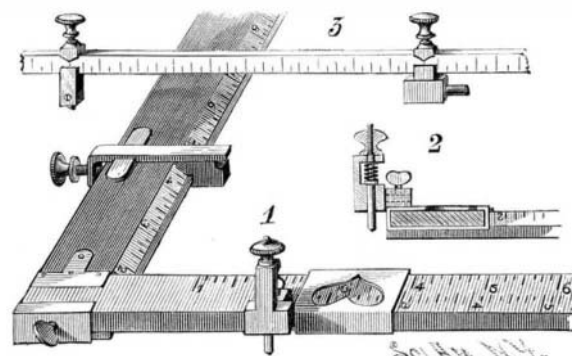
Mr. Alvan Clark, of Cambridge, Mass., the famous telescope maker, has received from the Czar of Russia the honorary golden medal of the empire, "in acknowledgment of the excellent performances of the great object glass" made for the chief telescope in the Pulkowa observatory. This medal is seldom bestowed, and only for extraordinary merits.

**GLASS CUTTING GAUGE.**

By means of this gauge, panes of glass can be cut at true angles or on curved lines, exactly and rapidly. On one end of the main part of the gauge is a clamp for holding the tongue in place, as shown in Fig. 1. Mounted on the tongue is a slide, having a recess in its top; in the edge of the recess is formed a pointer, which indicates the position of the slide on the scale on the outer edge of the tongue. On the upper surface of the slide is a projection having an aperture for receiving a pin projecting from a block, as shown in Fig. 2. The diamond for cutting the glass is held on the lower end of a rod passing through this block, a spiral spring pressing the rod downward. On the main part of the gauge is a guard which can be locked in place, thereby facilitating the cutting of large quantities of glass of the same size. To cut along the edge of the tongue, the slide is moved, the spring permitting the diamond to give more or less where there is any unevenness in the glass. To cut the glass on curved lines, the block shown in Fig. 1 is removed, and that shown on the right of the sweep, Fig. 3, is adjusted on the slide mounted on the tongue. The sweep, which is provided with a diamond carried by a sliding clamp, is then swung to describe the desired circle, the center of the glass being located by the pointer on the edge of the recess in the slide on the tongue.

This invention has been patented by Mr. E. O. Boyle, of Chateaugay, N. Y., who will furnish all further particulars.

cess, Lord Wolseley desired the Government to immediately contract with Messrs. Yarrow & Co. for eight more, which were forthwith proceeded with, and one of these forms the subject of our illustration, which has been engraved from a photograph taken in Egypt. Some of them were fitted up as gunboats, and some for transport purposes. A large gun was placed on the upper deck, forward, commanding, from its elevated position, a good range over the river banks. There were also eight Nordenfolt guns, having shields in front of them, in various parts of the vessel, placed so as to receive an all-round fire. Forward, on the lower deck, is a shot-proof house capable of accommodating eight riflemen, and high above the rest will be



**BOYLE'S GLASS CUTTING GAUGE.**

**AN ENGLISH STERN WHEEL STEAMER FOR THE NILE.**

Stern wheelers have of late come very prominently before the public in consequence of the success which attended those built by Messrs. Yarrow & Co. for the Nile expedition. It will be recollected that in the latter part of 1884 the Government determined to immediately advance upon Khartoum. Had steamers been available at the time, suitable for the navigation of the Nile, they would undoubtedly have been adopted; but such not being procurable, the authorities resorted to the now well-known rowing boat system. There was, however, a stern wheeler partly finished in Messrs. Yarrow & Co.'s yard at Poplar, which was being constructed for a South American firm, and this the Government purchased. Immediately after she was shipped, the War Office ordered an exact facsimile to be put in hand and finished with all speed, and it will be remembered Messrs. Yarrow & Co. completed her in the remarkably short period of seventeen days. These boats were 100 ft. long by 18 ft. beam, drawing 18 in. water. One of them was put together above the second cataract near Wady Halfa, and was ultimately named the Lotus.

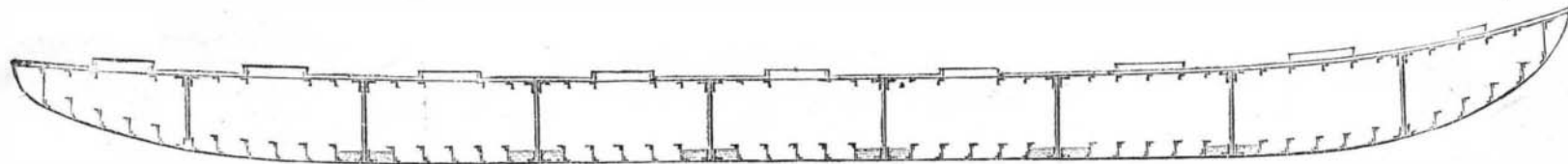
This design of steamer having proved so great a suc-

seen the conning tower, from whence the navigation is directed.

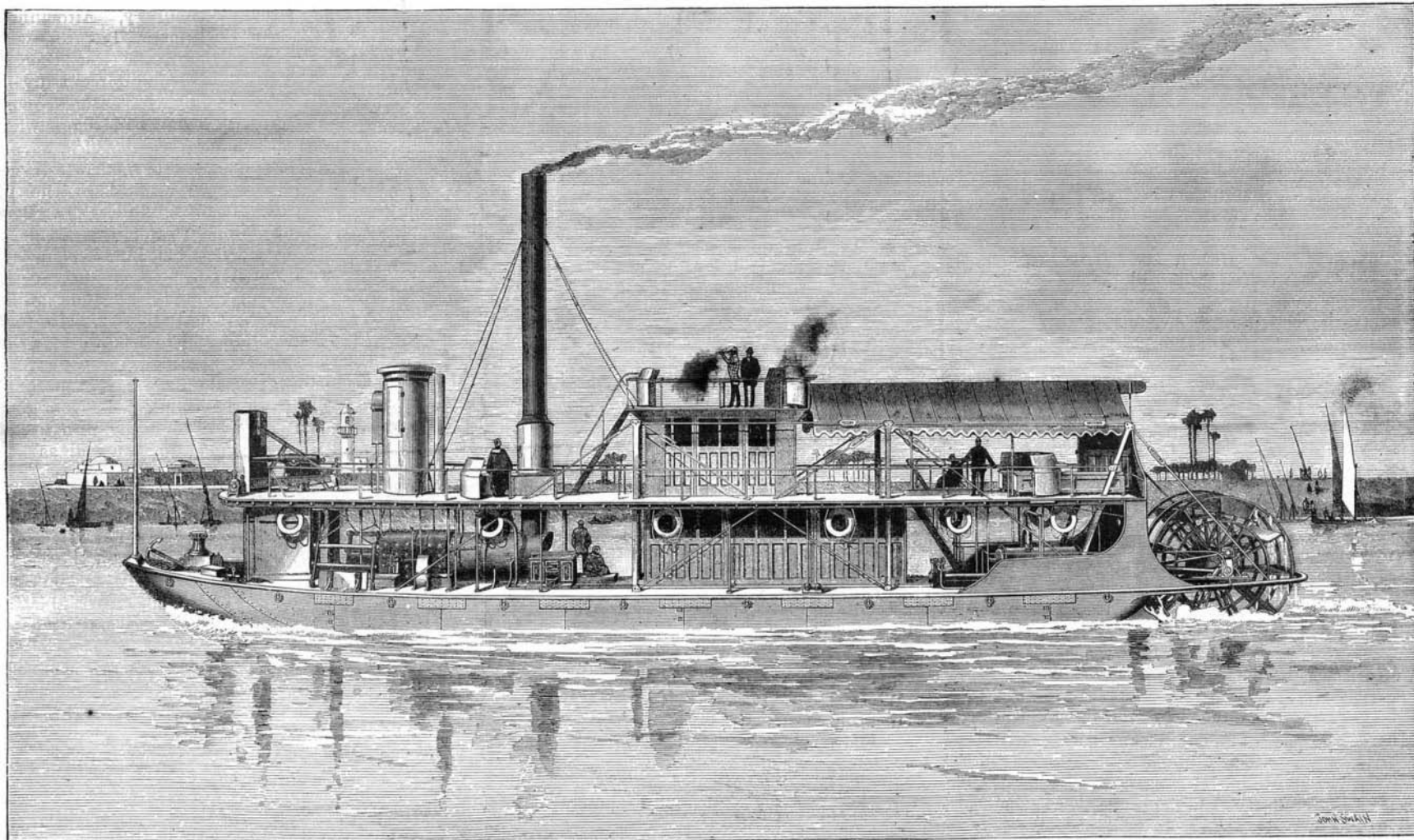
In order to secure economy of fuel, which is very scarce in Upper Egypt, the engines were compound surface condensing, and the boiler, which was of the locomotive type, was arranged either for burning wood or coal, it being provided with a fan and closed ash pan, to be utilized at times when an extra supply of steam was needed to ascend any specially rapid part of the river. Under ordinary conditions of working, however, a forced draught was not used, so as to avoid the wear and tear of the boiler.

The general arrangement of the cabin accommodation is clearly seen from the engraving.

There is one point about the construction of the hulls which is deserving of special notice, namely, the manner in which they are designed, with a view to being put together with the greatest possible rapidity. To fully explain the system, we refer to the accompanying engraving. The hull is divided into several transverse sections, each section having water-tight bulkheads at both ends. When afloat, they draw 6 in., and are of a size suitable for easy shipment in a vessel's hold, and of



**HULL OF STERN-WHEEL STEAMER FOR THE NILE.**



**AN ENGLISH STERN WHEEL STEAMER FOR THE NILE.**