

minutes, the unprepared was rather more consumed than the other, but the difference was not considerable.

ITALIAN OAK.—Unprepared ignited into a flame in 15 seconds.

Prepared into a small flame in 35 ditto;

DANTZIG FIR.—Both prepared and unprepared being thrust towards the hottest part of the Furnace, burst into flame immediately, but the heat was considered too great for such an experiment.

NEW ZEALAND COWDIE.—Placed not so far in the Furnace as the above, but both immediately ignited into flame, the prepared, however, burnt less fiercely than the other.

RIGA FIR.—Placed near the mouth of the Furnace—the prepared was exceedingly less inflammable than the other. It ignited into flame some time after the unprepared.

PITCH PINE.—Unprepared burst into flame in 5 seconds. Prepared resisted flame $6\frac{1}{2}$ seconds, and then gave out a feeble flame.

RED PINE (Canada.)—Red hot iron placed over both—the unprepared burst into flame immediately; the prepared gave no symptoms of flame and the iron became cold without its inflaming.

ELM (Canada.)—Placed in the hot pots, containing the Copper Cakes lately ladled out of the refining furnace. The unprepared ignited into flame in half a minute.

The prepared into a very much smaller flame in $2\frac{1}{4}$ minutes.

YELLOW PINE, (Canada.)—Placed in the Cake Pots similarly to the before mentioned.

The unprepared burst into flame immediately.

The prepared was watched for 12 minutes, but burst not into flame at all. The heat was great.

A second experiment was tried, on this Timber by placing Red Hot Iron on it. The unprepared ignited immediately into flame. The prepared not at all.

It appears from the above experiments that some of the prepared Woods, (especially the Canada Yellow Pine,) have resisted ignition into flame to an extraordinary degree.

We are of opinion that the Yellow Pine Timber prepared in this way, might be used most beneficially, not only for Magazine and Light Room Bulkheads, but also for all the Bulkheads of a Ship. There appears to be nothing in the solution calculated to injuriously affect the health of the crew, and if, by preparing Yellow Pine Timber in this way, it might be as durable as the Timber generally used for Bulkheads, it would be found to possess the double advantage of preserving the Timber and of preventing its ignition into flame.

The solution used in the above experiments was about eight times the ordinary strength.

We remain, &c.

(Signed)

R. BLAKE,
T. STURDIE,
J. WATTS,
J. OWEN.

Portsmouth Yard, 25th May, 1844.

SIR,—With reference to your Memo. 20th March last, directing me to report whether we propose that Bulkheads should be prepared with Sir Wm. Burnett's solution of the same strength as that used in the experiments described in our letter of the 16th March last, that is eight times the usual strength, and if so, what would be the expense of fitting a line-of-battle-ship in that manner—also the expense of solution even of the ordinary strength, we have the honor to state, that we have instituted