

## Salvaging a Wreck

When underwater treasure hunters hit upon traces of an old shipwreck their first effort is to establish the ship's identity. A ship's bell with a name or a cannon with insignia can quickly indicate the ship's origin. Lacking that or other similar artifacts they can only research documents and records of shipwrecks in or near the area of the find. Still, absolute proof of the ship's name will be an arduous process.

Once again I found on eBay an "old wreck of a microscope" (Fig.1) and managed to purchase it at a reasonable price. From its design I deduce it to be a) of Continental European origin and b) from the late 19th century: It has a cast iron horseshoe base, plain stage, fine focus in the main column, coarse focus by sleeve (no gear whatsoever) and is not of the highest precision. The drawtube was missing as were an objective or an eyepiece when I got it, and the condenser sleeve cum mirror bracket under the stage appears to have been added later. It had no apparent signature in the condition as I got it, but upon polishing the stage I came upon a fragmentary signature *Qu.....A* and a serial number *3094* .(Fig.2). There could have been an "a" after the *Qu*, but unfortunately some previous owner had cut a section off the stage, for whatever reason, thus obliterating most of the engraving.

The only maker whose name begins with a "Q" is *Jas. W. Queen of Philadelphia* who always signed his instruments as such. To date I have not been able to identify the maker. Perhaps a reader can enlighten me, that would be much appreciated. Until then the "ship wreck" remains unidentified!

The first step of the reconditioning was to disassemble the entire instrument and clean it. Then I removed the old paint, lacquer and corrosion by carefully sanding or remachining all parts, leaving the deeper dents (Fig. 3) It was then that I noticed that the triangular prismatic bar of the fine adjustment was either



crudely made or had been tampered with subsequently. In any case it fits rather loosely into the outer part. There is a shimming plate, but it lacks the usual screws to press it against the shaft to reduce slack, nor can it be removed to underlay additional shimming because for some weird design it cannot be removed! This really puzzled me: the plate has an oblong recessed slot with a screw or bolt that prevents

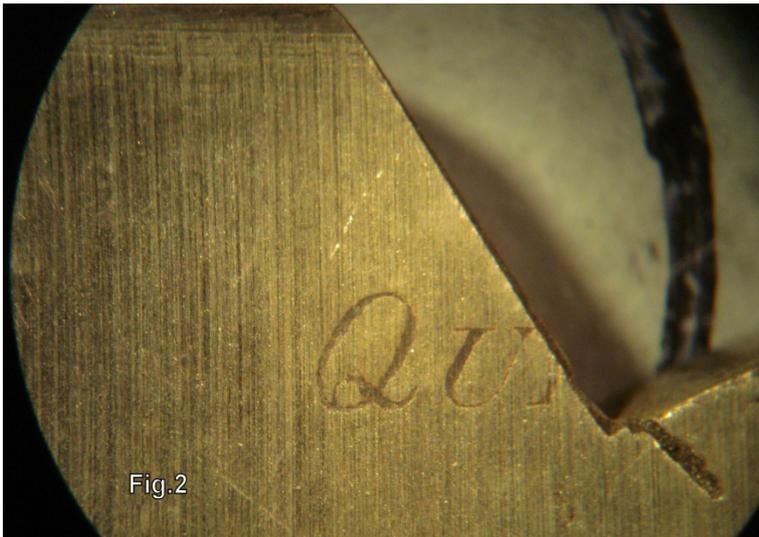
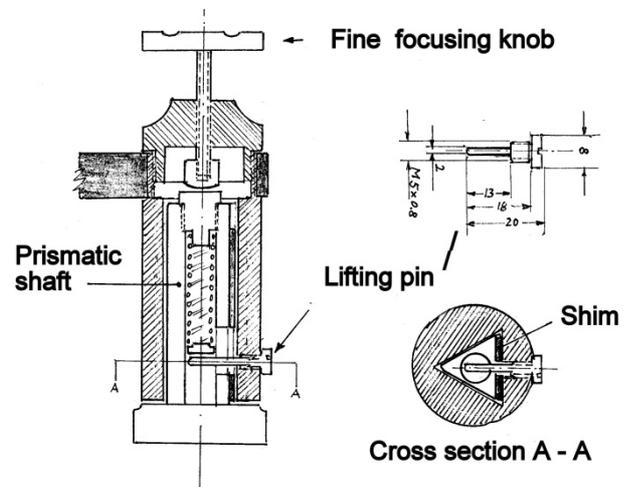


Fig.2

it from sliding from the triangular guide. This screw or bolt is inaccessible from the inside nor could I detect any signs on the outside of any "rivetting" or similar device to secure it. I decided to leave things as they were.

I then replaced the fine focusing screw with a suitable one I had on hand. The one that came with the instrument looked like a decorative knob from a hardware store, hardly original.

The fine focus mechanism is also of an unorthodox design and as one major part had been replaced by a rather crude pin, it took me a while to figure out how it worked and what I needed to make to get it going. The action end of the pressure spring inside the



Schematic of focusing mechanism

Fig. 4

stationary triangular prism shaft rests on a lifting pin that protrudes from the outer body



Fig.3

through the shimming plate and a slot in the prism shaft. The length of this slot limits the fine focus range. Turning the fine focus down lifts the outer body with the pin compressing the spring. In the illustration the hatched sections are the moving parts. I have not come across a similarly designed fine focus in my experience.

I had a graduated black drawtube in my stock that fitted the old tube once the felt lining was replaced. This tube had the usual stop screwed in at the lower end which normally prevents it from being pulled totally out. This I had to machine off in order to insert it from above, its knurled outer rim was too large in diameter to fit into the main tube. That draw tube also lacked the upper end sleeve for the eyepiece which I could machine from a suitable piece of brass on hand. I also found in my scrap box an old condenser which I could reshape to fit into the condenser sleeve on the underside of the stage. This may be somewhat anachronistic as microscopes of this type rarely were fitted with a condenser, perhaps a cylinder stop.

The mirror appeared cracked, but it is only the silvering on the back which is partly detached. I didn't touch that.

An old 6x eyepiece and Spencer 44x 4mm N.A.0.7 objective completed the restored "old wreck" (Fig. 6).

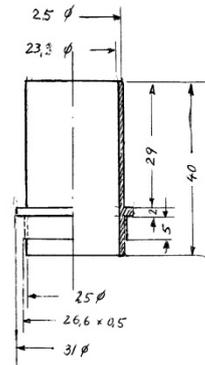
As they say: it will look good on the mantel of a fireplace.

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**Eyepiece sleeve**

**Fig. 5**



**Fig. 6**