Hampshire Antique Restoration
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Restoration of an English Eight-day longcase clock by Charles Robotham, Leicester

Circa 1790

Background

This Report has been produced in order to summarise the work undertaken on the restoration of an English longcase clock.

The clock was made by Charles Robotham of Leicester and has an eight-day movement driven by weights on both the going and striking sides. Apart from striking the hours, it has a calendar and moon phase mechanism driving disks attached to the rear of the main dial. The calendar disc advances twice in every twenty-four hour period, so half way through the day the pointer will be showing half way between dates. This is normal for the particular mechanism used, which was a simple devise avoiding the need to introduce further gearing into the under-dial work.

The clock has a 13-inch one-piece enamelled break arch dial with, unusually, Arabic numerals indicating both the hours and the minutes. There are very nicely pierced brass hands, all of which appear original and undamaged.

Details of the work undertaken can be found below.

Condition as received and proposal of work

The dial had suffered some erosion of numerals and the maker's name and place of work. Some of the gilding had also worn and there was damage to the paint of the date disc. The movement appeared to be substantially complete and original but the following is a list of items requiring attention:

- Missing driving weight pulley (replaced with what appeared to be a 'Meccano' wheel)
- Spring missing from the rack (replaced with what looked like a Biro spring)
- Pendulum crutch broken in half and being held together by an electrical junction box
- Two previously replaced teeth on centre wheel not filed to correct size or profile
- Locating pin missing from pendulum back cock
- Pendulum suspension arm forced open on back cock
- A bad solder repair to the rack arm
- Damage to end of the pendulum adjusting rod

The remainder of the wheels and pinions appeared to be in satisfactory order for a clock of this age. After due consideration, and subject to any additional findings during the process of striping down the movement, the following work was proposed:-

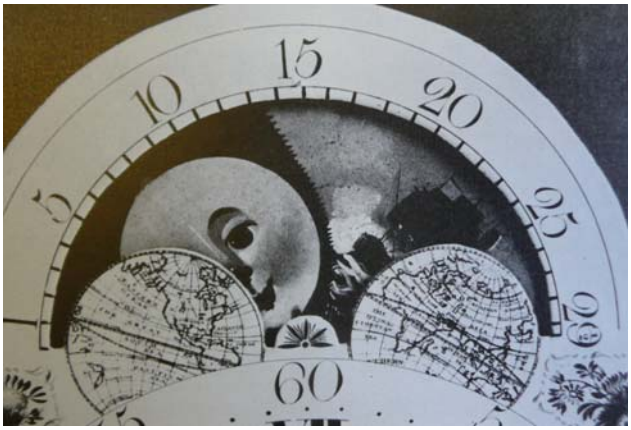
- Cleaning all parts with a regime chosen so as to maintain the colour and patina of the clock
- Lightly polishing the pivots and barrel arbors
- Replacing the driving weight pulley
- Making a new spring for the rack tail and fitting to the original end piece

- Repair the break in the pendulum crutch
- File replacement teeth of centre wheel to appropriate shape and profile
- Fit new locating pin to pendulum back cock
- Repair damage to pendulum suspension arm on back cock
- Improve upon appearance of solder repair to the rack arm
- Straighten pendulum adjusting rod
- Repair the chipped areas of the date disc and replace worn lettering, numerals and gilding on the main dial
- Re-oiling where required
- Testing and regulating

Dial

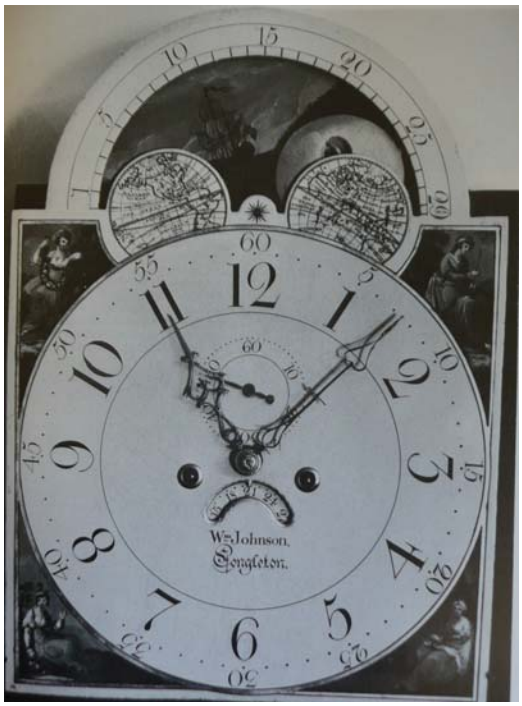
The dial did not appear to have had any previous restoration work and whilst most of the dial was in reasonable condition for its age, some of the numerals and the maker's name required reinstating. There was considerable damage to the day of the month ring (left).

Research showed that the moon-phase dial was very similar in painted design as one found on a clock by John Hunter of Bridlington, North Yorkshire of the same period (1790), as shown below.



A number of clock dials around this period appeared to use the scene of a ship at sea in one half of the painting and a landscape scene in the other half. This was of course a time when the British Navy ruled supreme.

The dial is unusual in that both the minutes and hours are shown in Arabic, whereas the usual way was to show the hours in Roman numerals and the minutes in Arabic.



The picture on the right is of a dial by F. Byrne (Birmingham) of the same period. Note the unusual use of Arabic numerals on both hours and minutes. It was common for clockmaker's to purchase dials from specialist makers, and given that Leicester is not that far from Birmingham, it is quite possible that the dial on the Robotham clock is by Byrne. Note also the painting in the moon-phase.

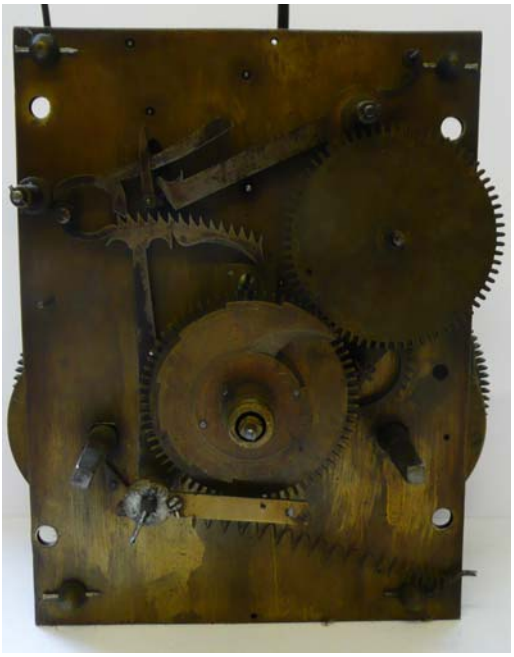
The dial, shown below in the condition received, was repaired by a professional dial restorer, the following work being undertaken:

Main dial: clean and repair chipped and scratched paint; restore all rings, Arabic numerals, names and ornamental details using fine quality Indian ink; accentuate gilding on raised gesso patterns and re-apply gold leaf to the hour ring.

Date ring: clean, remove loose and unsafe paint and repair damage; repaint and restore numerals and markings (see also picture on page 3).

Moon-phase dial: clean and repair chipped paint around mounting hole and polish.

Under-dial work



Under-dial work before……

and after cleaning

The picture on the left above shows the state of repair when received. Please note the Biro spring doing the job of the missing rack tail spring at the bottom of the picture. A new spring therefore needed to be made.

New spring being made and fitted to original 'tail'

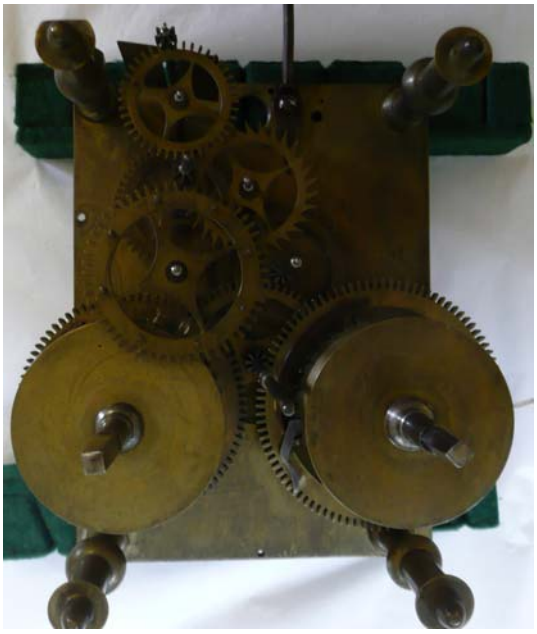
New spring bent to shape and 'aged'

New spring fitted in place

As received

Movement

Detail of the movement before ……



and after cleaning

The movement was in a satisfactory state of repair for its age. Pivots were polished and all pivot holes thoroughly cleaned of deposits. New natural gut line was fitted for the driving weights.

Other work undertaken

As can be seen from the photographs below, the pendulum crutch was broken and held together by an electrical junction box (left). The crutch was therefore repaired using silver solder (right).

The pendulum suspension block had also been incorrectly adjusted by fitting a nail upon which to hang the pendulum suspension spring. The nail was removed and the suspension arm on the back cock repaired.

Damage to arm. 'Fingers' were closed to achieve correct position

As previously mentioned, one of the driving weight pulleys was missing and a Meccano wheel had been used in its place. A new pulley was purchased from a specialist supplier to match more closely the original and 'aged'.

Mechano wheel, new pulley and remaining original

Upon initial testing, the pendulum was found to be too short to enable proper time regulation. The suspension spring was therefore replaced in order to lengthen the pendulum mechanism, which then allowed the necessary degree of adjustment to be made to deliver the required oscillation rate.

END

M.L.E.D
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