

# Picture Gallery

## One-Day Single-Handed Augsburg Spring Timepiece, c1680



Timepiece with calendar by Elias Weckherlin, Augsburg in a giltwood case 15½in (39.4cm) tall.

This timepiece is in a giltwood case with a opening glazed door. The dial is of gilded copper, but instead of being engraved, it has lightly punched decoration of a floral pattern in the corners and a landscape with a building in the centre, which do not show in the photograph. Similar clocks are known with the same type of punched decoration as well as others with engraved and gilded copper dials. The thin silvered brass chapter ring is held to the dial with four small rivets and has Roman hour numerals, half-hour markers and an inner date ring showing 1-31 days. The number 2 is in the typical early Germanic style of a Z. The brass hour hand and the iron calendar hand are a restoration based on those of a similar clock.

The pendulum swings in front of the dial, this being known in German as a *Zappler-Uhr* — from *zappeln*, to fidget, referring to the bob's very quick action — or a cow-tail pendulum. Below the bob is a silver winged cherub head. The front end of the verge escapement pivots in a decorative brass cock held on the front of the dial with a screw, the pivot masked by a typical circular brass disc. This means that the movement cannot be tested without the dial being in place, which makes adjustments rather inconvenient. Anticlockwise winding is by a square passing through the centre of the hands with an iron wheel at the rear, engaging with an identical one on the rear of the fusee arbor.

The small movement, only 3¼in (8.5cm) by 2½in (9.3cm), hangs on the dial and has a vertical extension to support the rear pivot of the pallet arbor and the top of the long crownwheel arbor, necessary to allow the pendulum to swing from the top of the dial.

Both end caps of the spring barrel are pinned to it and act as flanges to confine the fusee chain. The original mainspring would have had a block riveted to its outer end that fitted into a rectangular hole in the barrel, then held in place with a steel strip passing between the two outer coils and fitting into slots in the end caps. The inner end of the spring would have been bent back to form a tab that fitted into an angled slot in the barrel arbor. Hooks have subsequently been fitted to both barrel and arbor to take the usual type of hole-end spring. The fusee has a shallow curve, while the original fusee chain has relatively long links. The click for setting up the mainspring is part of a large decorative pierced and engraved brass casting, with a pierced steel spring and an iron clickwheel. This is typical of Continental practice and in sharp contrast to the utilitarian style used on English clocks.



Detail of the silver winged cherub head on the pendulum bob.

The wheels are fitted to their arbors with finned brass collets, that on the crownwheel being particularly decorative. The counts of the train are:

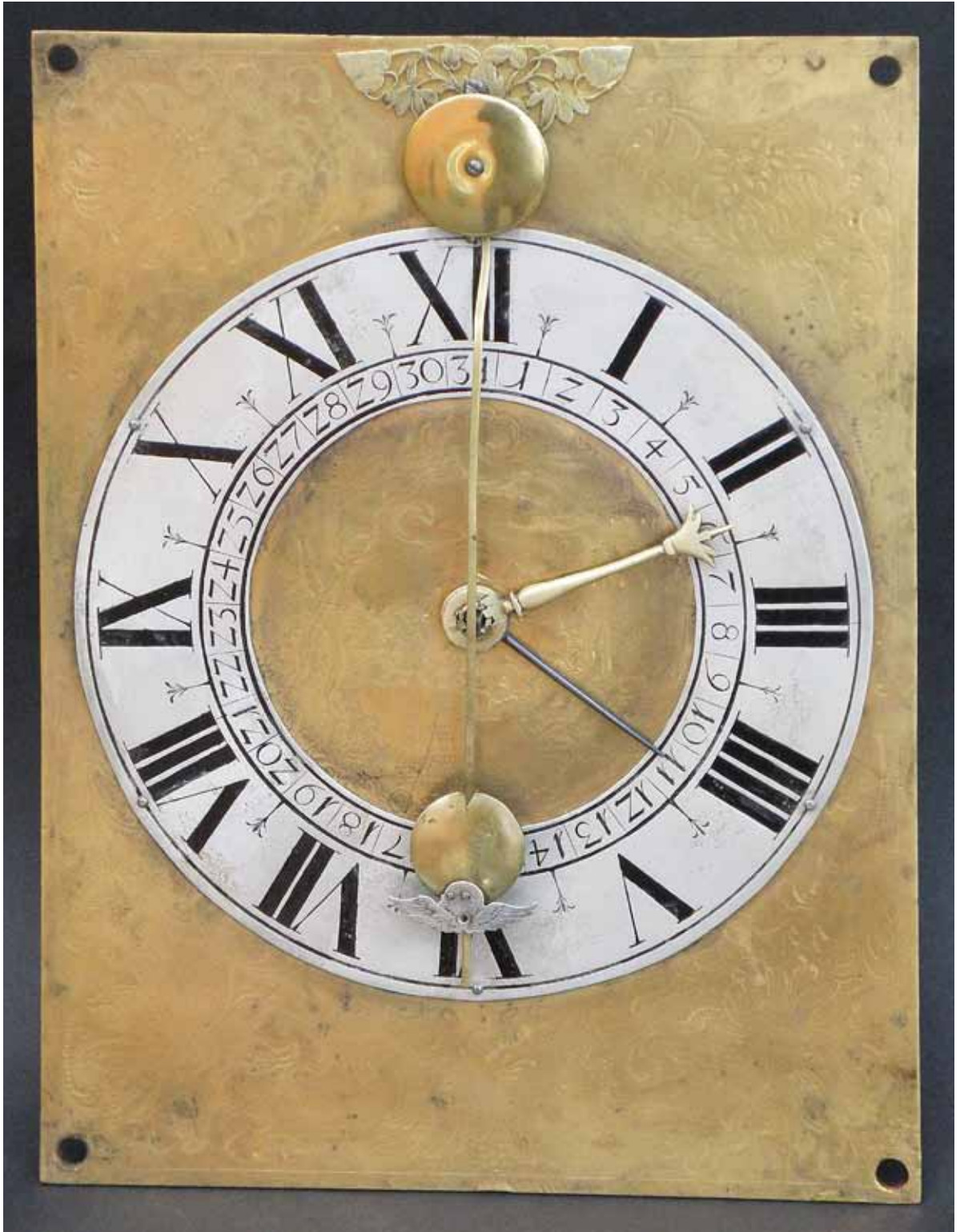
Crownwheel	21 — 5
Contrate wheel	45 — 5
2nd wheel	55 — 6
Fusee wheel	60 — 20
Dial wheel	60

giving a calculated beat of just over a third of a second and a theoretical pendulum length of about 4¾in (12cm). The duration is 27 hours.

A 12-tooth wheel on the rear of the hour-hand pipe drives a 48-tooth intermediate wheel, whose 4-pronged pinion-of-report engages with a 62-tooth calendar wheel. Since the latter is permanently engaged with the hour pipe, at the end of each short month the hour hand has to be turned forwards by two full turns, or more at the end of February. If the clock is not wound and the calendar is out of sequence by many days, then up to thirty turns of the hand, either forward or backwards, may be necessary to get the calendar to read the correct date.

The backplate is signed 'Elias Weckherlin, Augusta', *Augusta Vindelicorum* being the Roman city now known as Augsburg and a noted centre of early German clockmaking. A number of Weckherlin's clocks and watches are known to have survived, and this example was probably made about 1680, just a few years prior to his death in 1688/9. It is an early example of a cow-tail pendulum.

Text and pictures by John A. Robey



Gilt copper dial, 9in (22.5cm) x 6½in (16.7mm), with very lightly punched decoration in the corners and centre. Silvered brass chapter ring showing only hours and the date.





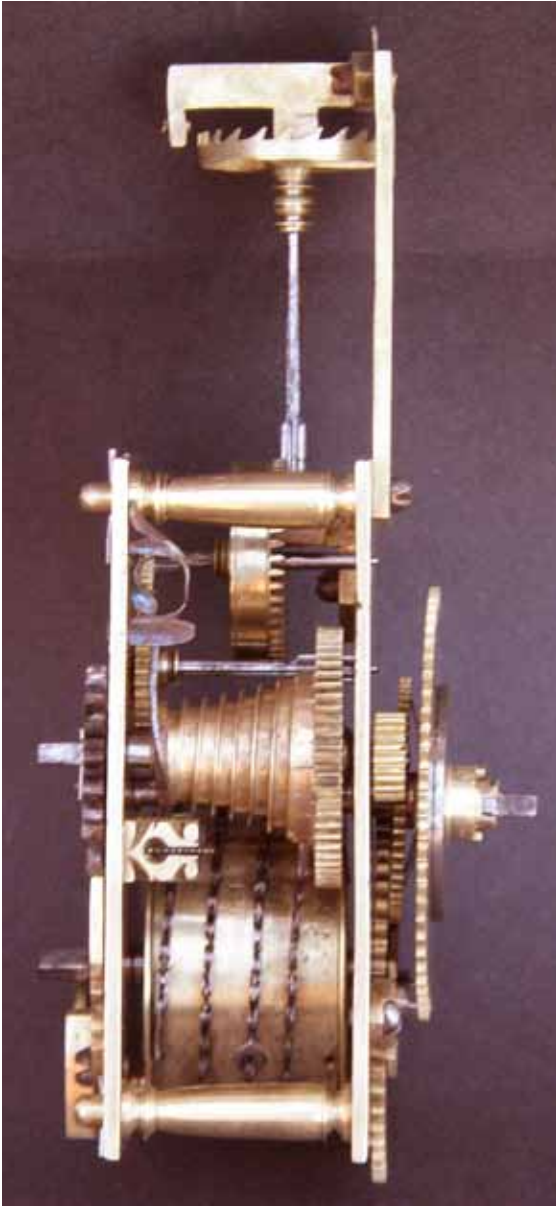
Movement from the front with the calendar wheel removed. The crownwheel pivots in a vertical extension screwed to the front plate.



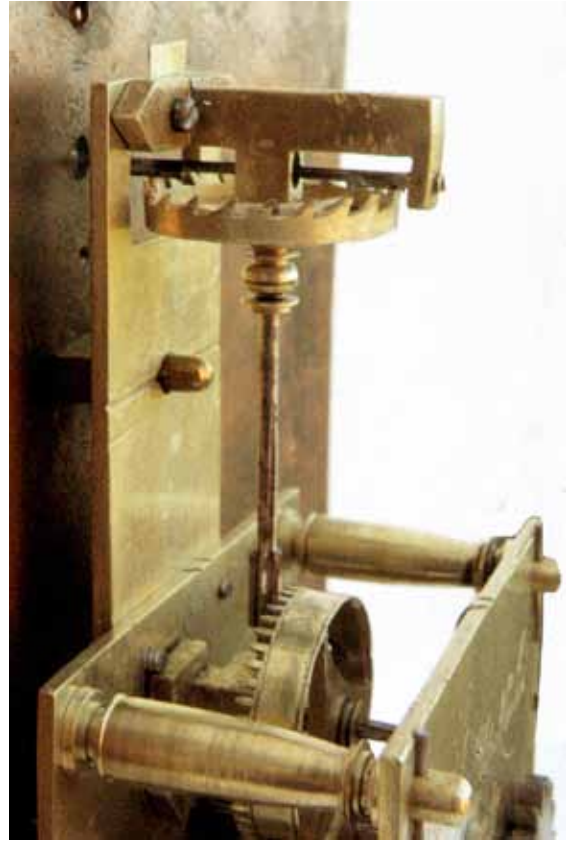
Movement from the rear. Note the two iron wheels to connect the winding square with the rear of the fusee. Decoratively engraved and fretted brass set-up click. The crownwheel has a long turned and finned collet.



The spring barrel, the four brass wheels of the going train and the fusee chain.



Side view showing the baluster pillars and the long vertical crownwheel arbor.



Above: detail of the verge-and-crownwheel escapement. Below: the fusee with its exposed click and spring.



The pierced and engraved decorative brass cock that supports the front pivot of the pallet arbor (left), and the pendulum bob (right).