

S. E. ROOT.
Clock-Dial.

No. 210,806.

Patented Dec. 10, 1878.

Fig. 1.

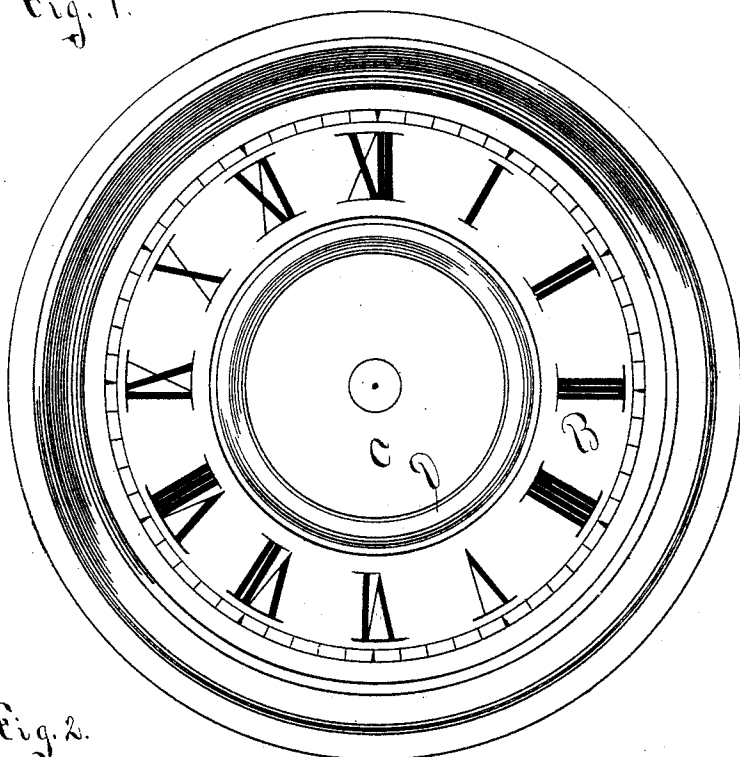


Fig. 2.

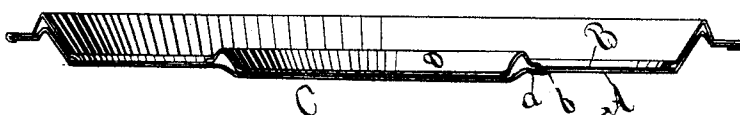
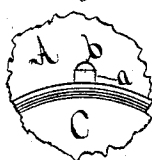


Fig. 3.



Witnesses
W. B. Thomson.
P. J. Markley.

Inventor
S. Emerson Root
By James Shepard Atty.

UNITED STATES PATENT OFFICE.

S. EMERSON ROOT, OF BRISTOL, CONNECTICUT.

IMPROVEMENT IN CLOCK-DIALS.

Specification forming part of Letters Patent No. **210,806**, dated December 10, 1878; application filed August 22, 1878.

To all whom it may concern:

Be it known that I, S. EMERSON ROOT, of Bristol, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in the Manufacture of Clock-Dials, of which the following is a specification:

My invention consists, first, of the process hereinafter described of making a sunken-center paper dial, which consists in preparing and finishing the paper front of the dial with the usual figures thereon when in the flat, and afterward striking up the sunken center and covering the edge thereof with an ornamental ring; second, the peculiar fastening devices for securing the ornamental ring to the face of the dial, as hereinafter described.

In the accompanying drawings, Figure 1 is a front elevation of a clock-dial which embodies my invention. Fig. 2 is a transverse section of the same; and Fig. 3 is a detached rear view of the same, showing one of the fastenings for the middle ring.

The dial at the edge and its outer ring may be of any ordinary style. The dial proper consists of a metal back, A, and paper front B, the same as shown and described in my patent of 1859. This metal back and paper front, with the ordinary figures thereon, are first glued or firmly cemented together when flat, so far as the paper extends, and when dry I place the dial between suitable swaging-dies and strike up the middle depression or sunken center C. If desired for a cheaper dial, paper alone may be used, without the metal back. I then take a quadrangular die and punch, which cuts only on three of its sides, and make two or more perforations, *a*, preferably three, around the edge of the sunken center. This punch for cutting the perforations is straight on its cutting sides and beveled on its non-cutting side, which beveled side turns the slug outward at an angle to the dial, in which position it is left temporarily with quite a hole through the dial at every point thus cut. I then take an ornamental ring, D, struck up from sheet metal, with its inside edge as much deeper than its outside one as the depth of the sunken center, and with as many prongs *b* left on its outside edge as there are holes

punched in the dial. This ring D is placed on the face of the dial, with its prongs running through the holes punched to receive them, when the ends of the prongs are clinched on the inside and the outwardly-turned slugs bent down, with their cut ends pressing firmly against the prongs, whereby the holes in the dial are closed, and the prongs *b* and the ring D are firmly and cheaply held in place, the whole producing a neat finished paper dial with a sunken-ring center at less cost than by the ordinary modes. The metal and paper around the sunken center are strong enough to support themselves, so that very thin stock may be used for the ring and still a strong dial be produced. The greatest projection on the back of the dial is the smooth surface of the sunken center, which projects so far as to protect the fasteners by which the ring is secured, so that there is no danger of their being accidentally caught and torn up in the act of transportation.

Heretofore, so far as I know, paper dials with sunken centers have been made only by cutting out a piece and setting it back of the main dial, supported by the ornamental ring. In my dial the sunken center is supported by the body of the dial and not by the ring.

By the employment of paper or a paper-faced dial the sunken center can be formed from one and the same piece with the main dial after the other parts of the dial are finished, which is not the case with dials of any other material that I know of.

I am aware that dials other than paper have been provided with struck-up and uncut sunken center, and afterward painted, and I hereby disclaim the same; also, that rings for carriage-curtains and other articles have been provided with prongs for fastening to other parts by passing them through holes and clinching the prongs, which I also disclaim.

I am also aware that an uncut sunken-center dial and an ornamental ring are old, the latter being secured to the former by means of wire prongs, soldered or otherwise attached to the back side of the ring, and passed through round holes in the dial and bent over on the back, and I disclaim the same.

I claim as my invention—

1. The process hereinbefore described of making a sunken-center paper dial, which consists in preparing and finishing the paper front of the dial with the usual figures thereon when in the flat, and afterward striking up the sunken center and covering its edge with an ornamental ring, substantially as described.

2. In a dial, the ring D, having prongs *b*, in combination with the dial proper having

quadrangular holes, with the slug remaining therein hanging to one side and bent down against the prongs, substantially as described, and for the purpose specified.

S. EMERSON ROOT.

Witnesses:

JAMES SHEPARD,
FRANK W. SHEPARD.