## CLAVISHOROLOGIEE or, A K E Y <br> To the whole Art of ARITHMETICAL DYALLING,

## In Two Parts

The Firft fhewing how to draw the Hour-Lines on all manner of Regular Dyals, and how to reduce all Irregular Dyals into Regular Forms by means of a new Latitude and a new Declination, and that Arithmetically.
The Second Part fhewing how to place all manner of Furniture on all forts of Dyals, let them be never fo irregular, and that Arithmetically; whereunto is annexed the Tables of the Altitude of the Sun for every hour of the Day at his Entrance into the 12 Signs from one Degree of Latitude to go; with Tables of Azimuth to each Latitude, and for every hour of the Day at his Entrance into each Sign, with many other Tables ufful in the Art of Shadows.

Whereunto is Annexed an

## APPENDIX,

BEING
The Explication of the Pyramidical Dyal fet up in His Majefties Garden at WhiteHall, 166 g . In which very many forts of Dyals are contwined; By which, befides the and Affrompony, are by the Suns fhadow made vifible to the Eye, by that Reverend
 Mathematicks at Liege in Gernamy.
By $\mathcal{F} O H X H O L W E L L$, Teacher of the Mathematics.
London, Printed by Will. Bonny, for Tho. Howkins in Gearge-Yard
in Lombard-Street, MDCLXXXVI.
"CLAVIS HOROLOGIE or, A KEY To the whole Art of ARITHMETICAL DYALLING" is a book in two parts with an appendix describing the famous dial in Whitehall Gardens. The chapters are:

The First Part.
CHAP. I.
Of the Making of the Fundamental Diagram.
CHAP. I I.

Containing the Distinction of Dyals; with the Manner of finding the Declination, Reclination and Inclination of all Planes whatsoever.

CHAP. I I I. The First Dyal.
To draw the Hour-Lines in an Equinoctial Plane.
CHAP. I V. The Second Dyal. To draw the Hour-Lines upon a Polar Plane.

CHAP. V. The Third Dyal.
To draw the Hour-Lines upon a Direct East or West Plane.
CHAP. V I. The Fourth Dyal. To draw the Hour-Lines upon A Horizontal Plane.

> CHAP. V I I. The Fifth Dyal.

To draw the Hour-line on a Direct South or NorthPlane.


Diagram used for Drawing the Seventh Dial. CHAP. V I I I. The Sixth Dyal.
To draw the Hour-lines on a South or North-inclining or reclining Dyal.

CHAP. I X. The Seventh Dyal.
How to draw the Hour-lines upon a South or North Erect Plane Declining East or West to any Declination.

CHAP. X. The Eighth Dyal.
How to draw the Hour-Lines upon any Plane Declining far East or West, or any other in which the Hour-Lines run close together, by help of two Equinoctial lines, without respect to the Center.

CHAP. X I. The Ninth Dyal.
How to draw the Hour-Lines upon any Direct Plane Reclining or Inclining East or West.

## CHAP. X I I. The Tenth Dyal.

To draw the Hour-lines upon a Declining reclining or Declining inclining Plane.

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CHAP. X I V. The 12th. Dyal.
To draw the Hour-Lines upon a South reclining Plane declining East or West, which passeth between the Pole and Horizon.

CHAP. X V. The 13th. Dyal.
To draw the Hour-Lines upon the Polar Plane Declining East or West, it being the first Variety of North declining and reclining Planes.

CHAP. X V I. The 14th. Dyal.
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North Declining West 60 deg. Reclining 54 deg.
CHAP. X V I I. The 15th. Dyal.
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CHAP. X V I I I. The 16th. Dyal.
Of the manner of cutting divers Bodies in Wood or Stone, and making Dyalls upon them.
СНАР. X I X.

How the Meridian-Line is to be placed in all those Dyals that are referred to a new Latitude.

The Second Part.
C H A P. I.
Of the Furniture with which Sun-Dyals may be Beautified.

## A

## TABLE

OF THE
Sun's Altitude
At the Entrance of
EACHSIGN,
And for all HOURS of the DAY.
From one Degree of Latitude to 90.

## A

TABLE
OF
Right and Contrary Shadows, TO EVERY
DEGREE and Tenth MINUTE OF THE

## QUADRANT.

A
TABLE
OF THE
Suns Azimuth
From the East or West, for each Hour of the Day, and the Beginning of each Sign, from One Degree to Ninety.

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Containing the Description, Construction and Vse of the foregoing Tables of Altitude.

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C H A P. IV.
How to describe the Tropicks and other Circles of Declination in a Polar Plain.

## C H A P. V.

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C H A P. IX. (sic.)
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> С H A P. XVI.

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How to draw the Hour-Line on the bottom of a Box, so that a Star or other Figure may pass over them, and shew the Hour of the Day let the Plane be never so irregular (viz.) let it be direct, horizontal, declining, reclining, or both.

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An East Diall with its Furniture

## C H A P. XXVIII.

To draw the Reflected Hour-lines to any Reclining Glass on any Plane whatsoever, that the Sun will be reflected on, by help of an ordinary Horizontal Dyal for that Latitude.

## C H A P. XXIX.

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II. To draw the Reflected Tropicks, or other Parallels of Declination.

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## C H A P. XXXII.

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## C H A P. XXXIII.

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C H A P. XLI.
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## C H A P. XLII.

How to draw the Parallels of the Signs or Declination, or Parallels of the Length of the Day, or any other Parallel that doth depend upon the Declination of the Sun, without having respect to the Hour-lines, and that three several ways Geometrically, which Ways never have been Published in any Language.

## FINIS.

A N
APPENDIX
TO
CLAVIS HOROLOGIE:
E X PLICATION
OF THE
PYRAMIDICAL DYAL
Set up
In His Majesties Garden at WhiteHall, Anno 1669.


The Pyramidical Dial at White-Hall.


Details of two of the Whitehall Dials
A Brief Explication of the Pyramidical Dyal set up in His Majesties Private
Garden at White-Hall, July 24. 1669.

> С H A P. I.

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Of the Four Glass Bowls standing on the Four Branches of the First Piece.

## C H A P. V.

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Of the Eight Reflecting Dyals placed on the Top of the Second Table.
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Of the Four Dyals supported by the Four Branches of the Second Piece.

C H A P. IX.
Of the Dyals described on the great Globe which stands on the Second Table.

C H A P. X.
Ofthe Four Glass-Bowls supported by the Four Branches of the Great Globe.

C H A P. XI.
Of the Three uppermost Pieces of the Pyramis.
FINIS.

At the end of the book is a list of 48 Subscribers Names followed by a list of:

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