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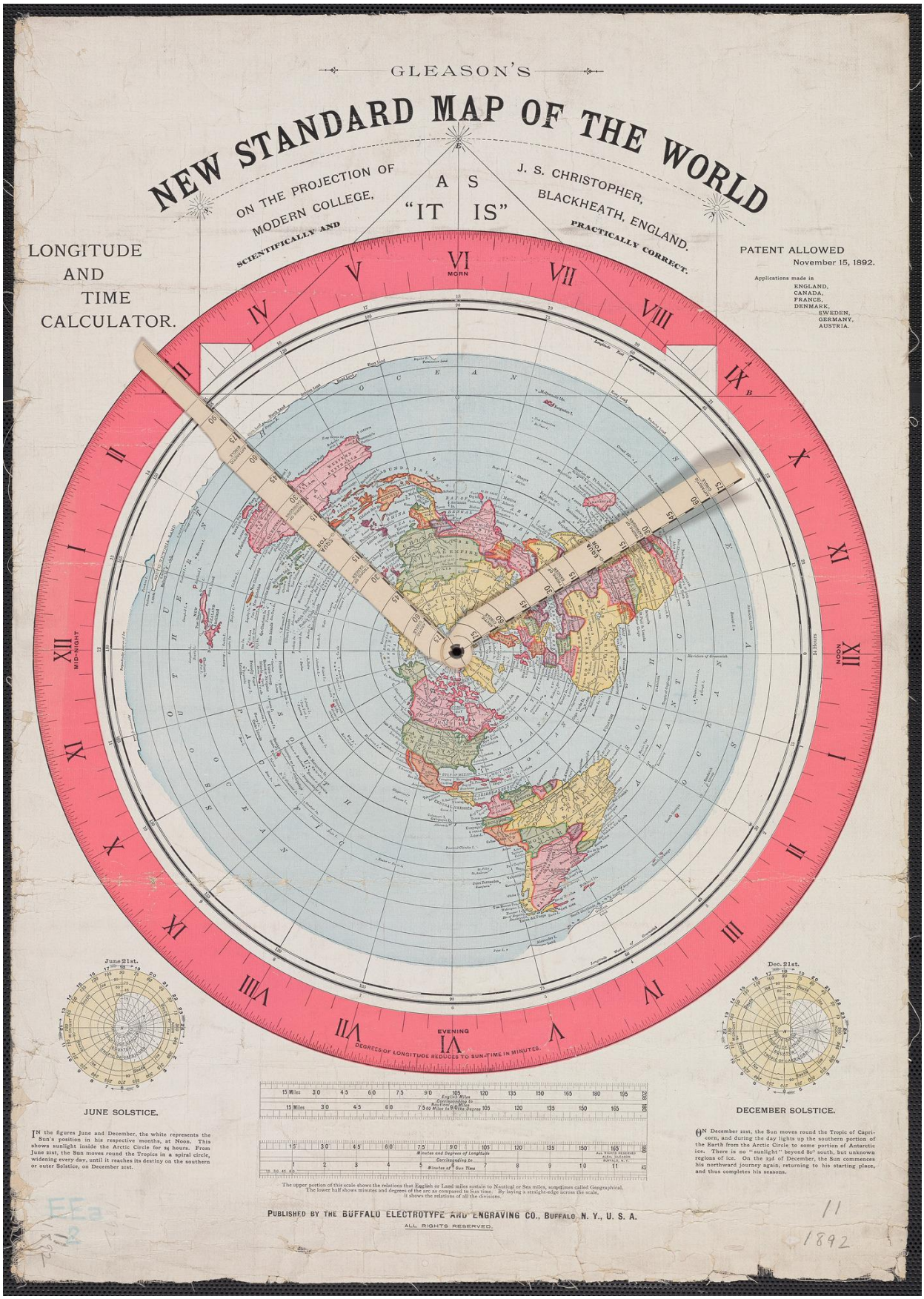

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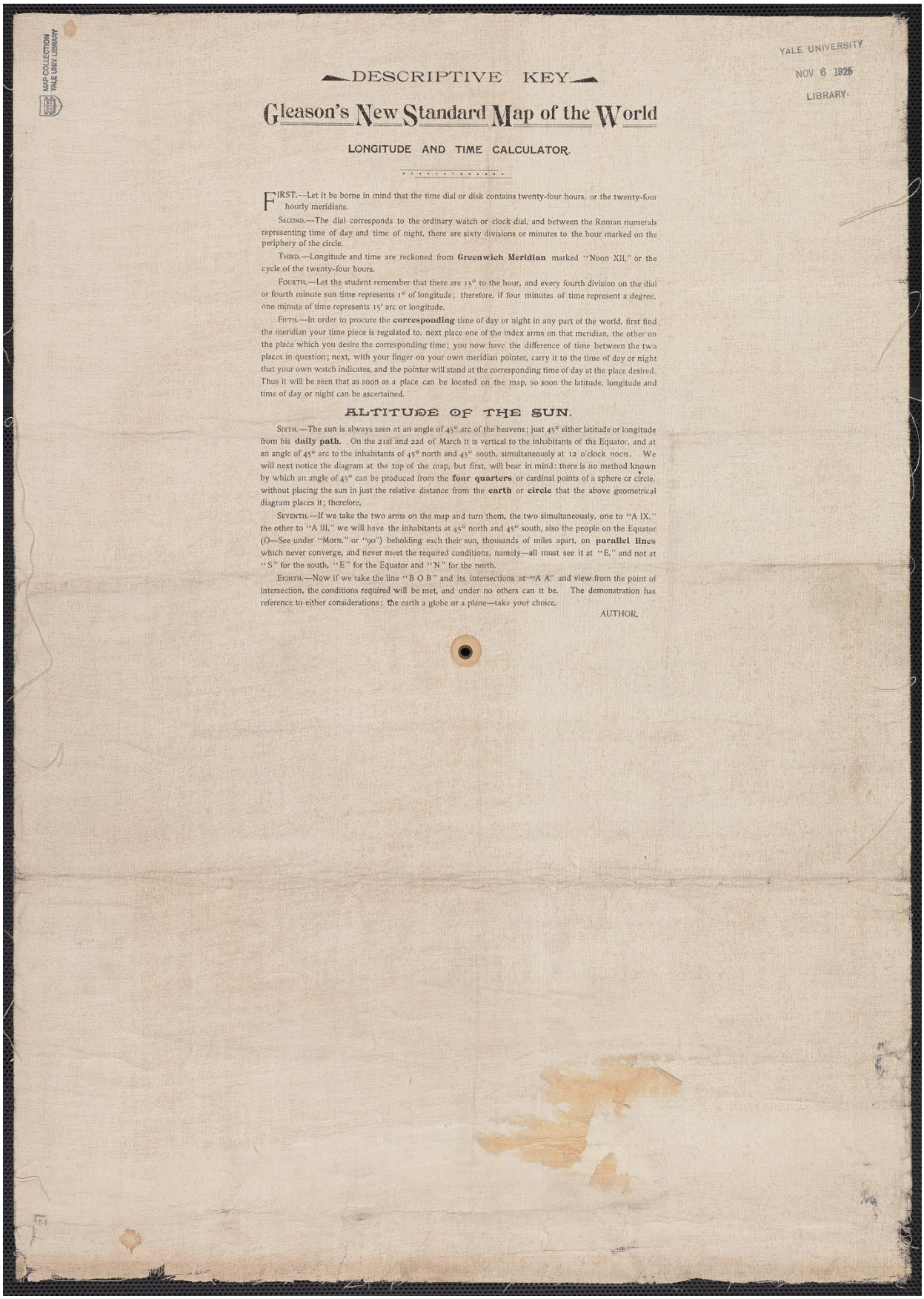

DESCRIPTIVE KEY

Gleason's New Standard Map of the World

LONGITUDE AND TIME CALCULATOR.

FIRST.—Let it be borne in mind that the time dial or disk contains twenty-four hours, or the twenty-four hourly meridians.

SECOND.—The dial corresponds to the ordinary watch or clock dial, and between the Roman numerals representing time of day and time of night, there are sixty divisions or minutes to the hour marked on the periphery of the circle.

THIRD.—Longitude and time are reckoned from **Greenwich Meridian** marked "Noon XII," or the cycle of the twenty-four hours.

FOURTH.—Let the student remember that there are 15° to the hour, and every fourth division on the dial or fourth minute sun time represents 1° of longitude; therefore, if four minutes of time represent a degree, one minute of time represents 15′ arc or longitude.

FIFTH.—In order to procure the **corresponding** time of day or night in any part of the world, first find the meridian your time piece is regulated to, next place one of the index arms on that meridian, the other on the place which you desire the corresponding time; you now have the difference of time between the two places in question; next, with your finger on your own meridian pointer, carry it to the time of day or night that your own watch indicates, and the pointer will stand at the corresponding time of day at the place desired. Thus it will be seen that as soon as a place can be located on the map, so soon the latitude, longitude and time of day or night can be ascertained.

ALTITUDE OF THE SUN.

SIXTH.—The sun is always seen at an angle of 45° arc of the heavens; just 45° either latitude or longitude from his **daily path**. On the 21st and 22d of March it is vertical to the inhabitants of the Equator, and at an angle of 45° arc to the inhabitants of 45° north and 45° south, simultaneously at 12 o'clock noon. We will next notice the diagram at the top of the map, but first, will bear in mind: there is no method known by which an angle of 45° can be produced from the **four quarters** or cardinal points of a sphere or circle, without placing the sun in just the relative distance from the **earth** or **circle** that the above geometrical diagram places it; therefore,

SEVENTH.—If we take the two arms on the map and turn them, the two simultaneously, one to "A IX," the other to "A III," we will have the inhabitants at 45° north and 45° south, also the people on the Equator (O—See under "Morn." or "90") beholding each their sun, thousands of miles apart, on **parallel lines** which never converge, and never meet the required conditions, namely—all must see it at "E," and not at "S" for the south, "E" for the Equator and "N" for the north.

EIGHTH.—Now if we take the line "B O B" and its intersections at "A A" and view from the point of intersection, the conditions required will be met, and under no others can it be. The demonstration has reference to either considerations: the earth a globe or a plane—take your choice.

AUTHOR.