Exhibit 23.1

## CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-229435) and N-2 (No. 333-261732) of Hercules Capital, Inc. of our report dated February 16, 2023 relating to the financial statements, financial statement schedule, senior securities table and the effectiveness of internal control over financial reporting, which appears in this Form 10-K. We also consent to the reference to us under the heading "Senior Securities" in this Form 10-K.

/s/ PricewaterhouseCoopers LLP San Francisco, California February 16, 2023