

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

Schedule 13G

Under the Securities Exchange Act of 1934  
(Amendment No. 25)\*

A. O. SMITH CORPORATION  
(Name of Issuer)

Class A Common Stock, \$5.00 par value  
(Title of Class of Securities)

831-865-10-0  
(CUSIP Number)

Check the following box if a fee is being paid with this statement /\_/ . (A fee is not required only if the filing person: (1) has a previous statement on file reporting beneficial ownership of more than five percent of the class of securities described in Item 1; and (2) has filed no amendment subsequent thereto reporting beneficial ownership of five percent or less of such class.) (See Rule 13d-7.)

\*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

(Continued on following page(s))

CUSIP No. 831-865-10-0

13G

1 NAME OF REPORTING PERSON  
S.S. or I.R.S. IDENTIFICATION NO. OF ABOVE PERSON

Smith Investment Company      IRS ID #39-6043416  
Lloyd B. Smith  
Arthur O. Smith

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

Not Applicable

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Smith Investment Company      - Nevada  
Lloyd B. Smith                      - United States  
Arthur O. Smith                      - United States

NUMBER OF      5      SOLE VOTING POWER

SHARES              Smith Investment Company              - 8,067,252

BENEFICIALLY      6      SHARED VOTING POWER

OWNED BY              -0-

EACH                  7      SOLE DISPOSITIVE POWER

REPORTING              Smith Investment Company              - 8,067,252

PERSON                8      SHARED DISPOSITIVE POWER

WITH                      -0-

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

Smith Investment Company      - 8,067,252  
Lloyd B. Smith                      - 0  
Arthur O. Smith                      - 0

10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

Lloyd B. Smith /x/  
Arthur O. Smith /x/

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

Smith Investment Company - 95.0  
Lloyd B. Smith - 0  
Arthur O. Smith - 0

12 TYPE OF REPORTING PERSON\*

Smith Investment Company - CO  
Lloyd B. Smith - IN  
Arthur O. Smith - IN

\* SEE INSTRUCTIONS BEFORE FILLING OUT!

Item1(a) Name of Issuer:

A. O. Smith Corporation

Item 1(b) Address of Issuer's Principal Executive Officers:

11270 West Park Place  
Milwaukee, Wisconsin 53224

Item 2(a) Name of Person Filing:

Smith Investment Company IRS ID# 39-6043416  
Lloyd B. Smith  
Arthur O. Smith

Item 2(b) Address of Principal Business Office or, if note, Residence:

Smith Investment Company  
11270 West Park Place  
Milwaukee, Wisconsin 53224

Lloyd B. Smith  
11270 West Park Place  
Milwaukee, Wisconsin 53224

Arthur O. Smith  
11270 West Park Place  
Milwaukee, Wisconsin 53224

Item 2(c) Citizenship

Nevada — Smith Investment Company  
United States — Lloyd B. Smith and Arthur O. Smith

Item 2(d) Title of Class or Securities:

Class A Common Stock, \$5.00 par value

Item 2(e) CUSIP Number

831-865-10-0

Item 3 If this statement is filed pursuant to Rules 13d-1(b), or 13d-2(b), check whether the person filing is a:

Not applicable

Item 4. Ownership

As of December 31, 2004, Smith Investment Company owned 8,067,252 shares of A. O. Smith Corporation Class A Common Stock or approximately 95.0% of the outstanding stock. Smith Investment Company has sole power to vote and dispose of such shares.

Mr. Arthur O. Smith is a director of Smith Investment Company. He retired as Chairman and Chief Executive Officer of Smith Investment

Company in January 1999. During 1993, Mr. Lloyd B. Smith retired as Vice President and a director of Smith Investment Company.

On December 31, 2004, Arthur O. Smith owned beneficially 191,141 shares, and his wife owned of record and beneficially 6,970 shares of the outstanding common stock of Smith Investment Company ("SICO") and 444,009 shares were held in various trusts for the benefit of the wife and issue of Arthur O. Smith. On December 31, 2004, Lloyd B. Smith owned beneficially 1,924 shares of the outstanding common stock of SICO and 631,786 shares were held in various trusts for the benefit of the wife and issue of Lloyd B. Smith. In addition, Messrs. Smith were trustees of various trusts for the benefit of persons other than themselves, their wives and issue, which trusts held an aggregate of 965,112 shares of the common stock of SICO outstanding on December 31, 2004. Messrs. Smith have shared investment and voting power on all trusts for which they are co-trustees. On all other trusts one or the other shares trust powers with at least one other person. The shares of common stock of SICO held beneficially by Messrs. Smith and their wives, together with shares held by Messrs. Smith in trust for others comprised 67.6% of the 3,317,066 outstanding shares of common stock of SICO on December 31, 2004. Messrs. Smith disclaim that any of the foregoing interests in the common stock of SICO constitute beneficial ownership of any Class A Common Stock of A. O. Smith Corporation.

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Item 5 Ownership of Five Percent or Less of a Class:

Not applicable

Item 6 Ownership of More than Five Percent on Behalf of Another Person:

Not applicable

Item 7 Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company:

Not applicable

Item 8 Identification and Classification of Members of the Group:

Not applicable

Item 9 Notice of Dissolution of Group:

Not applicable

Item 10 Certification

Not applicable

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#### SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

SMITH INVESTMENT COMPANY

/s/ Bruce M. Smith  
Bruce M. Smith, Chairman & CEO  
February 14, 2005

/s/ Lloyd B. Smith  
Lloyd B. Smith  
February 14, 2005

/s/ Arthur O. Smith  
Arthur O. Smith  
February 14, 2005