

(No Model.)

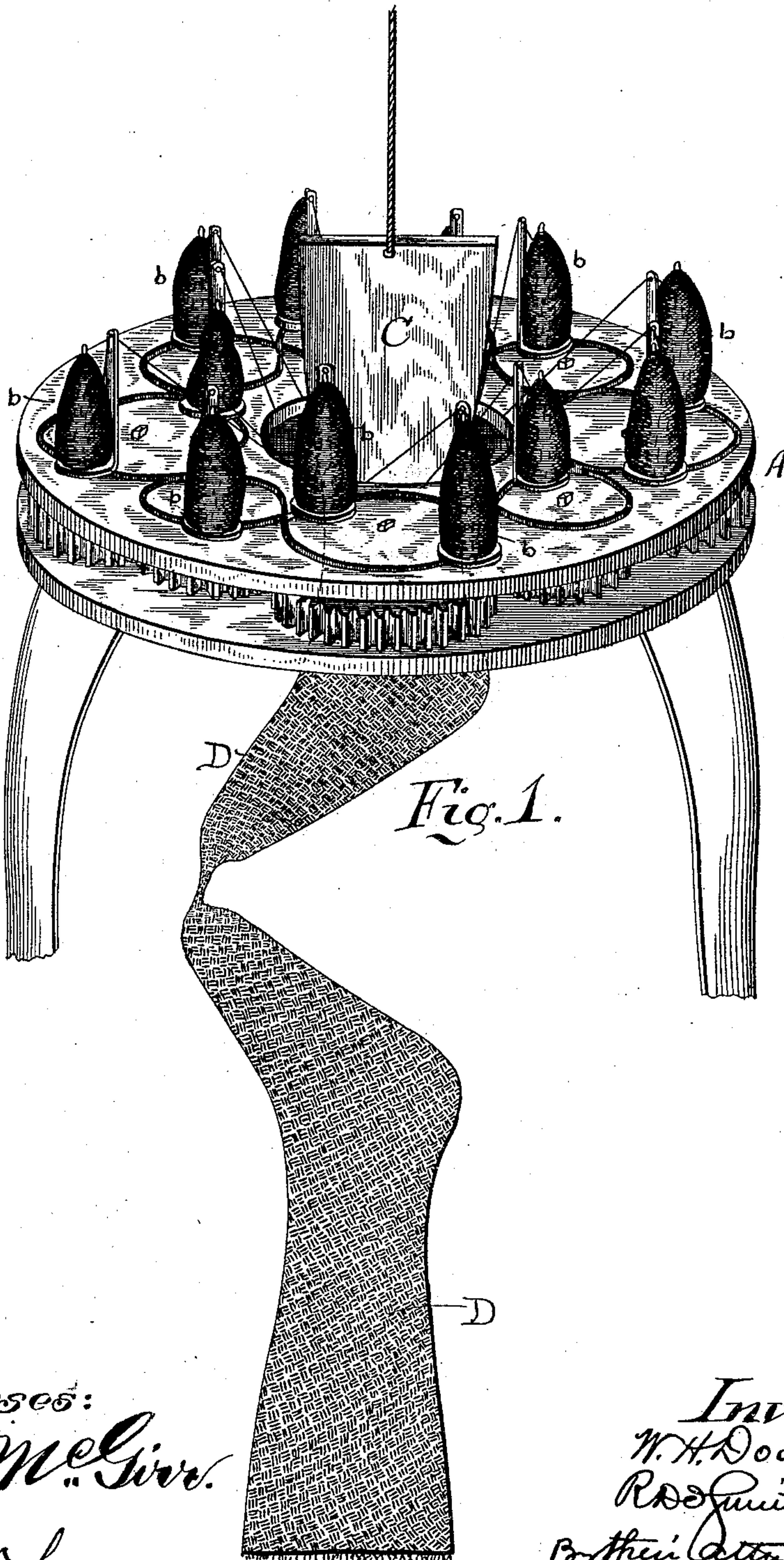
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W. H. DODGE & R. D. O. SMITH.

MANUFACTURE OF WOOLEN BOOTS.

No. 376,372.

Patented Jan. 10, 1888.



Witnesses:
J. B. McGivver
H. N. Low

Inventor:
W. H. Dodge.
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Fig. 2

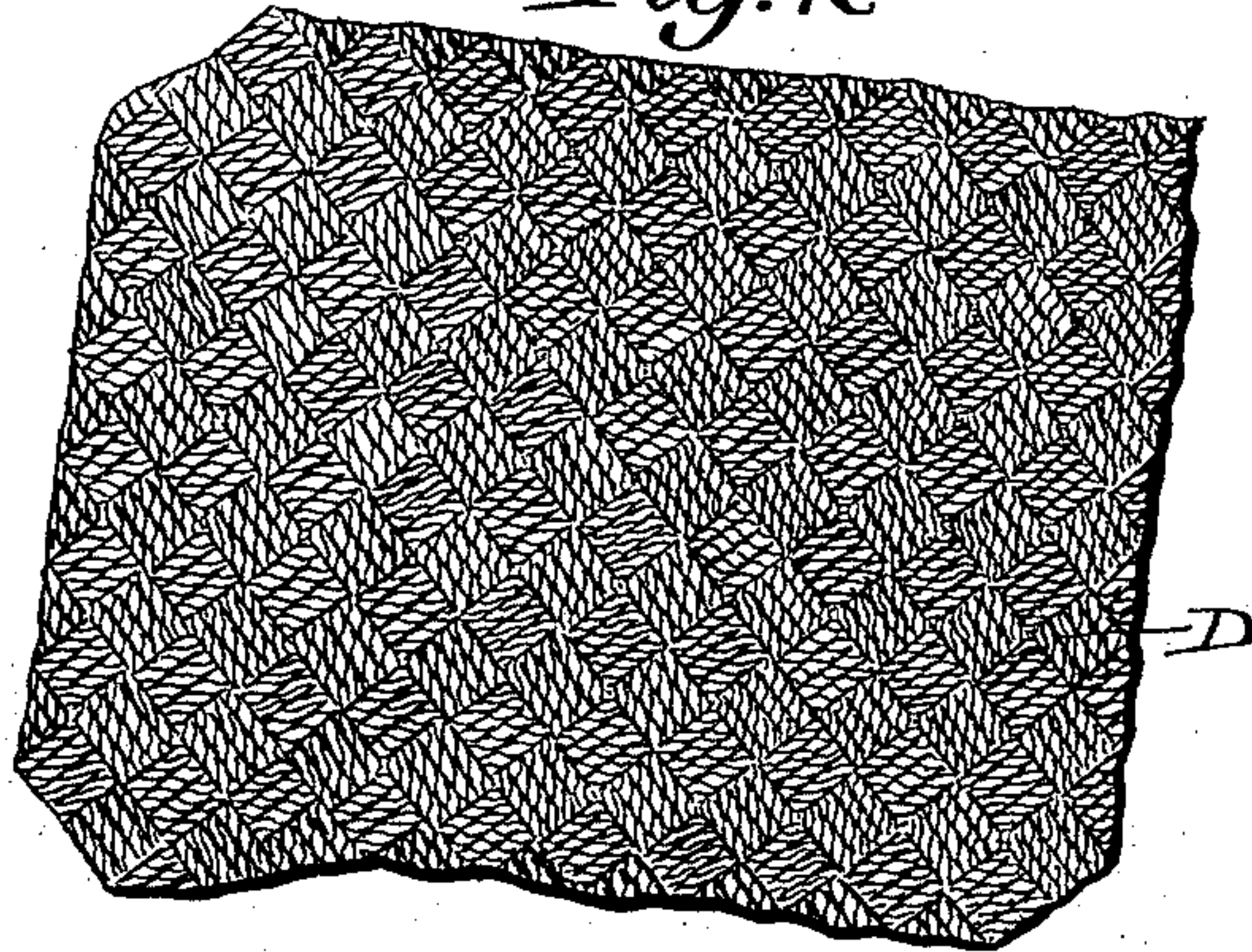


Fig. 3



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UNITED STATES PATENT OFFICE.

WALLACE H. DODGE AND ROBERT D. O. SMITH, OF MISHAWAKA, INDIANA.

MANUFACTURE OF WOOLEN BOOTS.

SPECIFICATION forming part of Letters Patent No. 376,372, dated January 10, 1888.

Application filed October 17, 1887. Serial No. 252,531. (No model.)

To all whom it may concern:

Be it known that we, WALLACE H. DODGE and ROBERT D. O. SMITH, of Mishawaka, in the county of St. Joseph and State of Indiana, have invented new and useful Improvements in the Manner of Making Knit Boots; and we do hereby declare that the following is a full and accurate description of the same.

In Letters Patent No. 367,333, granted to M. V. Beiger and Adolphus Eberhart, July 26, 1887, it is stated—

“In boots made from wool the required stiffness can only be attained by the use of a quantity of stock in the leg sufficient when shrunk and fulled to acquire thereby the desired hardness and stiffness. * * * We discovered, therefore, that to procure a boot with sufficient stock knitted into the leg it is necessary to make a loosely-twisted yarn, and much larger than any heretofore in use, and to do so it was necessary to construct carding and spinning machines larger in size than those heretofore in use. The yarn we employ is very loose and, say, three-sixteenths or one-quarter of an inch in diameter, equivalent to from fifteen to twenty-five times the size of woolen yarn spun for any other purpose.”

We have discovered that equally good results—i. e., an equally hard and stiff boot leg and foot—may be made of yarn of ordinary size, produced on ordinary machinery, without the use of knitting-machines; and therefore, while we do not claim to have, broadly, invented a boot made wholly of yarn, our invention consists in the method of making a boot wholly of yarn by braiding together two or more independent strands of ordinary single-twist yarn in large proportions and subsequently fulling and felting the same down to size in ordinary fulling and felting machinery.

In the accompanying drawings, Figure 1 shows in perspective a braiding-machine and a braided boot partly completed. Fig. 2 represents the braided fabric of the boot. Fig. 3 represents the boot as completed.

A is the braiding-machine, which may be similar to other braiding-machines in common use for braiding tubular goods. It may be adapted to carry three or more spools, *b*, in train, or several independent loosely-twisted yarns may be wound on one spool and simultaneously fed to the fabric. The former is preferred, because it makes it possible to cut out

or add in yarns at any period of the process. Otherwise, however, the single spool involves less mechanism and less liability to derangement.

C is the former, roughly in the form of a boot greatly exaggerated, over which the braiding takes place. The boot D thus produced will be approximately, in the form of the foot and leg, very much larger than the finished boot and very loose in texture. In course of manufacture a succession of formers, C, will be used, and these will be successively removed as the successive boot-blanks are separated after leaving the machine. After the blanks D are finished on the braiding-machine they are fulled and finished on the last in the usual way with woolen boots, as shown in Fig. 3.

The advantages gained by our improvement are important and substantial. The yarn may be produced on ordinary carding and spinning machinery, and the braiding is accomplished on a braiding-machine instead of a knitting-machine, the braiding-machine being much cheaper and less liable to derangement than a knitting-machine. Therefore the cost of production will be lessened.

Having described our invention, we claim—

1. The herein-described improvement in the mode of making wool boots, which consists in forming the boot-blank of an exaggerated size by braiding two or more independent single-twisted strands of yarn together, and subsequently shrinking or fulling to the desired size and finishing on the last, as usual with wool boots.

2. The herein-described improvement in the mode of making wool boots, which consists in braiding two or more independent loosely-twisted strands of yarn to form a series of continuous boot-blanks of an exaggerated size over a succession of formers, separating such blanks, fulling or shrinking them to the required size, and finishing them on tree and last.

WALLACE H. DODGE.
R. D. O. SMITH.

Witnesses as to signature of Wallace H. Dodge:

M. W. MIX,
W. B. HOSFORD,

Witnesses as to signature of R. D. O. Smith:

J. B. MCGIRR,
EDWARD STURTEVANT.