No. 658,087. Patented Sept. 18, 1900.

C. A. HIGBEE.

SCREW COUPLING.

(Application filed Jan. 4, 1900.)

(No Model.)

FIG. 1.

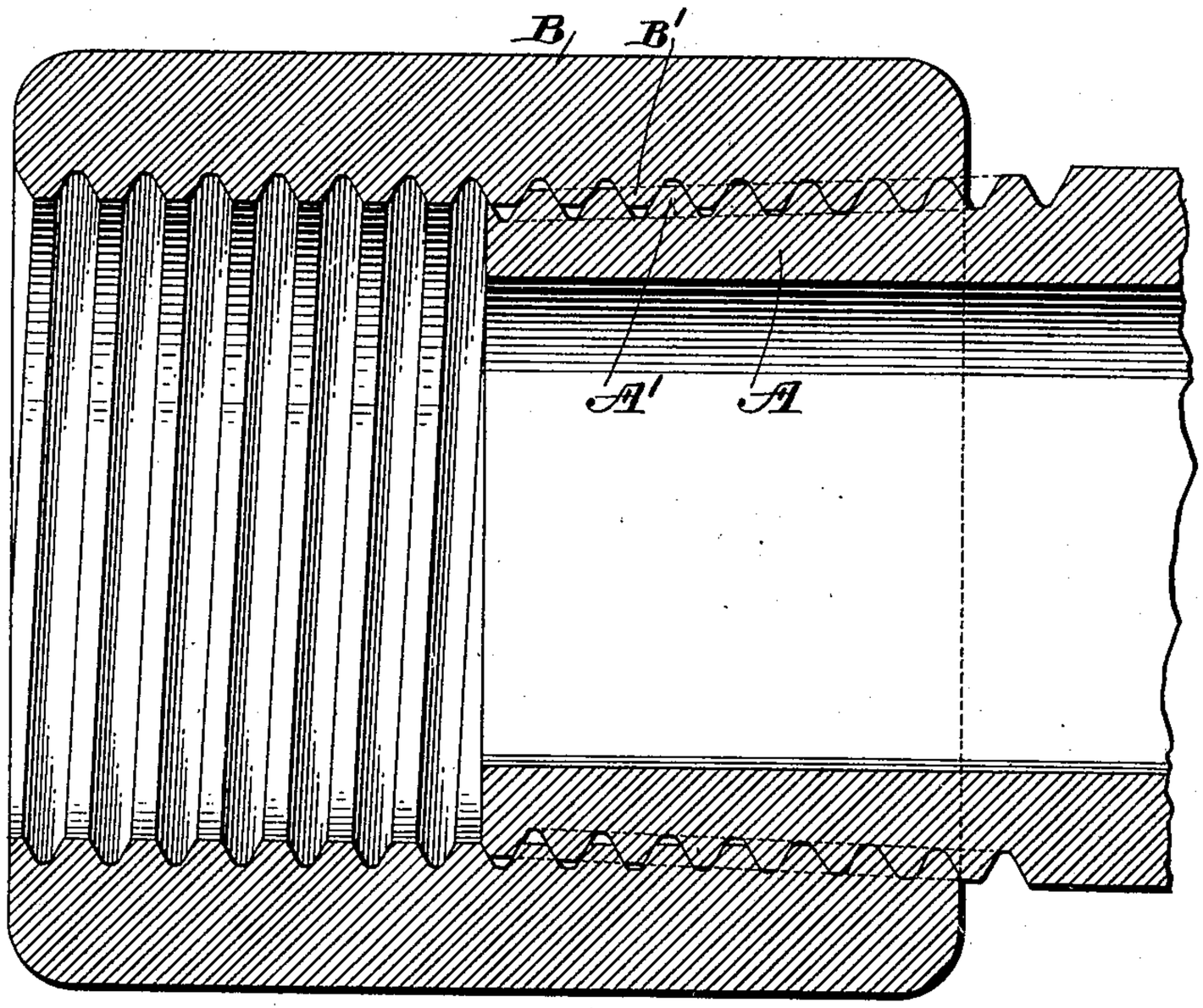


FIG. 2.

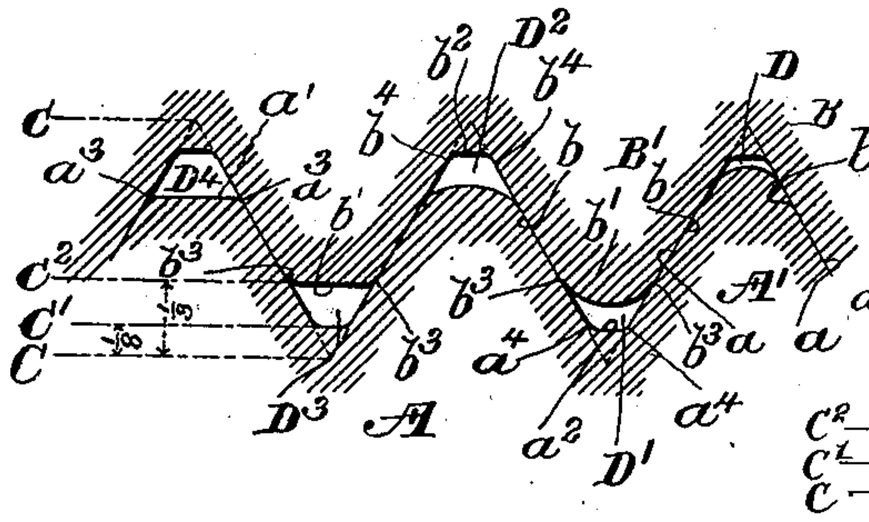
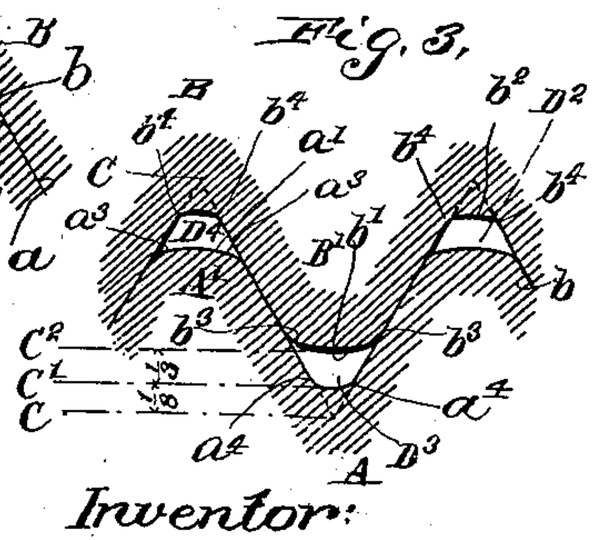


FIG. 3.



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UNITED STATES PATENT OFFICE.

CLINTON A. HIGBEE, OF PHILADELPHIA, PENNSYLVANIA.

SCREW-COUPLING.

SPECIFICATION forming part of Letters Patent No. 658,087, dated September 18, 1900.

Application filed January 4, 1900. Serial No. 323. (No model.)

To all whom it may concern:

Be it known that I, CLINTON A. HIGBEE, a citizen of the United States of America, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Screw-Couplings, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to screw-couplings of the general character described and shown in my prior patent, No. 597,000, of January 11, 1898, the object of my invention being to provide a coupling of this character in which the form of the threads will be especially advantageous; and my invention consists in providing a screw-coupling in which one member has its thread formed upon a conical surface and the other member its thread formed upon either a cylindrical or a conical surface, preferably less inclined than the other, with threads the sides of which are angular and the tops and bottoms of which are squared, the tops being considerably broader than the bottoms and the corners, where the squared tops and bottoms intersect the angular sides, being preferably slightly rounded.

In the drawings which illustrate my invention, Figure 1 is a sectional view of the screw-coupling constructed in accordance with my invention; Fig. 2, a cross-section through engaged threads of the coupling, shown on a larger scale; and Fig. 3 is a similar view with some peculiarities of construction exaggerated for purposes of illustration.

A indicates the male coupling member, having its thread (indicated at A′) formed on a conical surface.

B indicates a female coupling member having its thread (indicated at B′) formed, as shown, on a substantially-cylindrical surface.

a' indicates the squared top of the thread A′, and a^2 its squared bottom, a^3 indicating the rounded corners at the top, and a^4 the rounded corners at the bottom, while $a\ a$ indicate the angular sides of the thread. In the same way the squared top of the thread B′ is indicated at b', its square bottom at b^2, its rounded corners at b^3 and b^4, and its angular sides at $b\ b$. The rounding of the corners a^3 a^4 b^3 b^4 is, in fact, slight, and to illustrate in kind the described construction I have shown the rounding much exaggerated in Fig. 3.

D D′ D^2, &c., indicate the clearance between the tops and bottoms of the coupled threads, and it will be seen in Fig. 2 how these clearances are gradually filled up by the flow of the metal of the thread under the stress exerted in screwing them together.

The distance between the lines C C in Fig. 2 indicates the height of the thread if prolonged to an entire V shape, and, by preference, I make the squared bottom of the thread, as indicated by the distance between the lower letter C and C′, of a breadth which would be represented by filling up the lower point of the V-shaped thread for a distance equal to one-eighth of its height, while I make the breadth of the square top of the thread correspond, as shown, to the truncation of the point of the angular thread by cutting it away to a distance equal to from one-third to one-fourth the height of the thread. As shown, the distance between the lower letter C and the line C^2 is equal to one-third of the height of the thread.

I have found in practice that threads shaped substantially as hereinabove described are especially well adapted for an easy and natural flow of the metal and for the formation of an absolutely-tight union impervious to gas or fluid under the greatest pressure.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A screw-coupling one member of which has its threads formed on a conical surface and so as to form a jamming union when coupled with the other members and both members of which coupling have threads formed with angular sides and square tops and bottoms the breadth of the tops being greater than that of the bottoms and so that a clearance is left between the square tops and square bottoms of the coupled threads.

2. A screw-coupling, one member of which has its threads formed on a conical surface

and so as to form a jamming union when coupled with the other member, and both members of which coupling have threads formed with angular sides and square rounded-edged tops and bottoms, the breadth of the tops being greater than that of the bottoms and so that a clearance is left between the square tops and square bottoms of the coupled threads.

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