

(No Model.)

J. S. EBERT.

PRESSURE SCREW FOR SCREW PRESSES.

No. 302,327.

Patented July 22, 1884.

Figure 1.

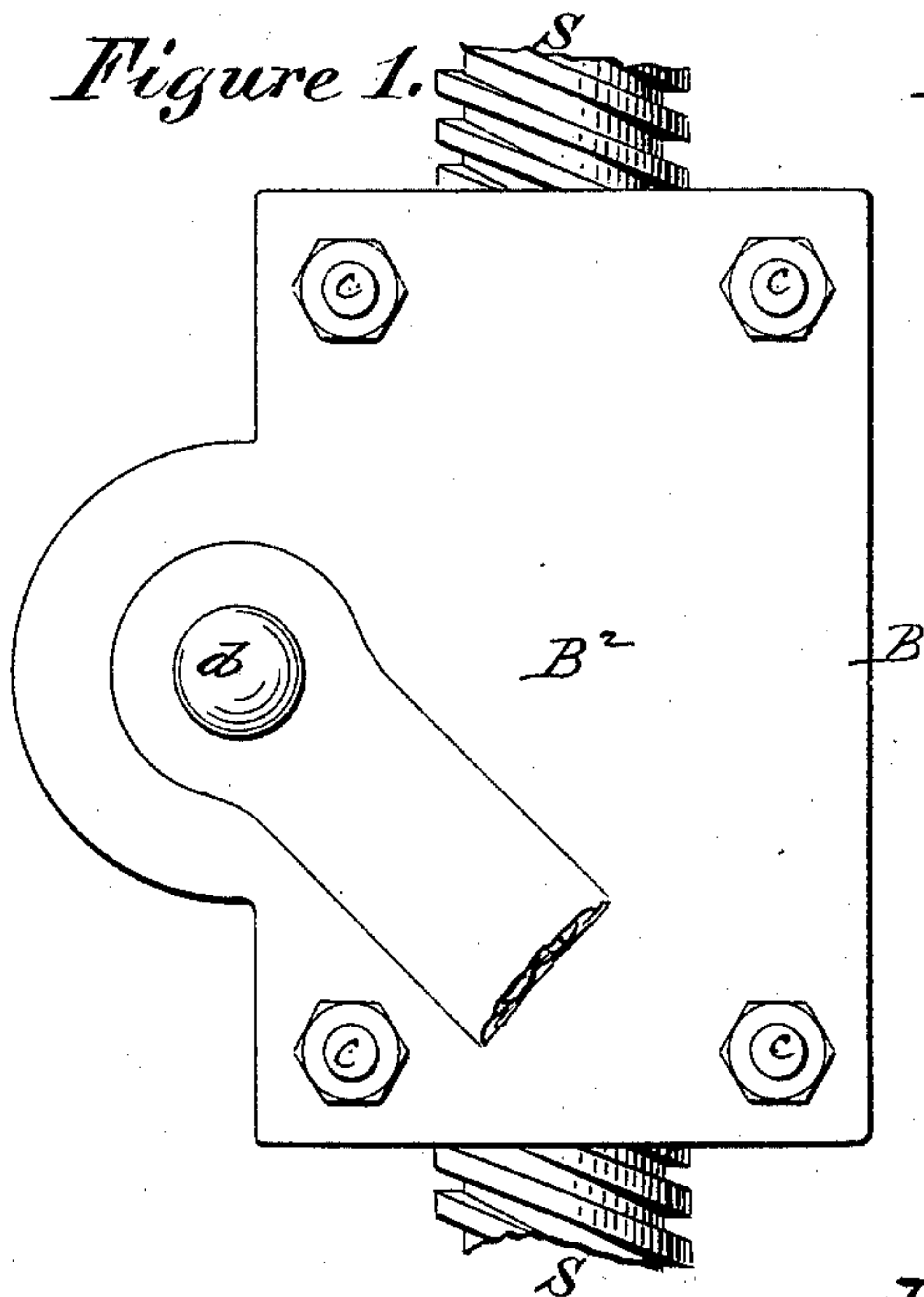


Figure 2.

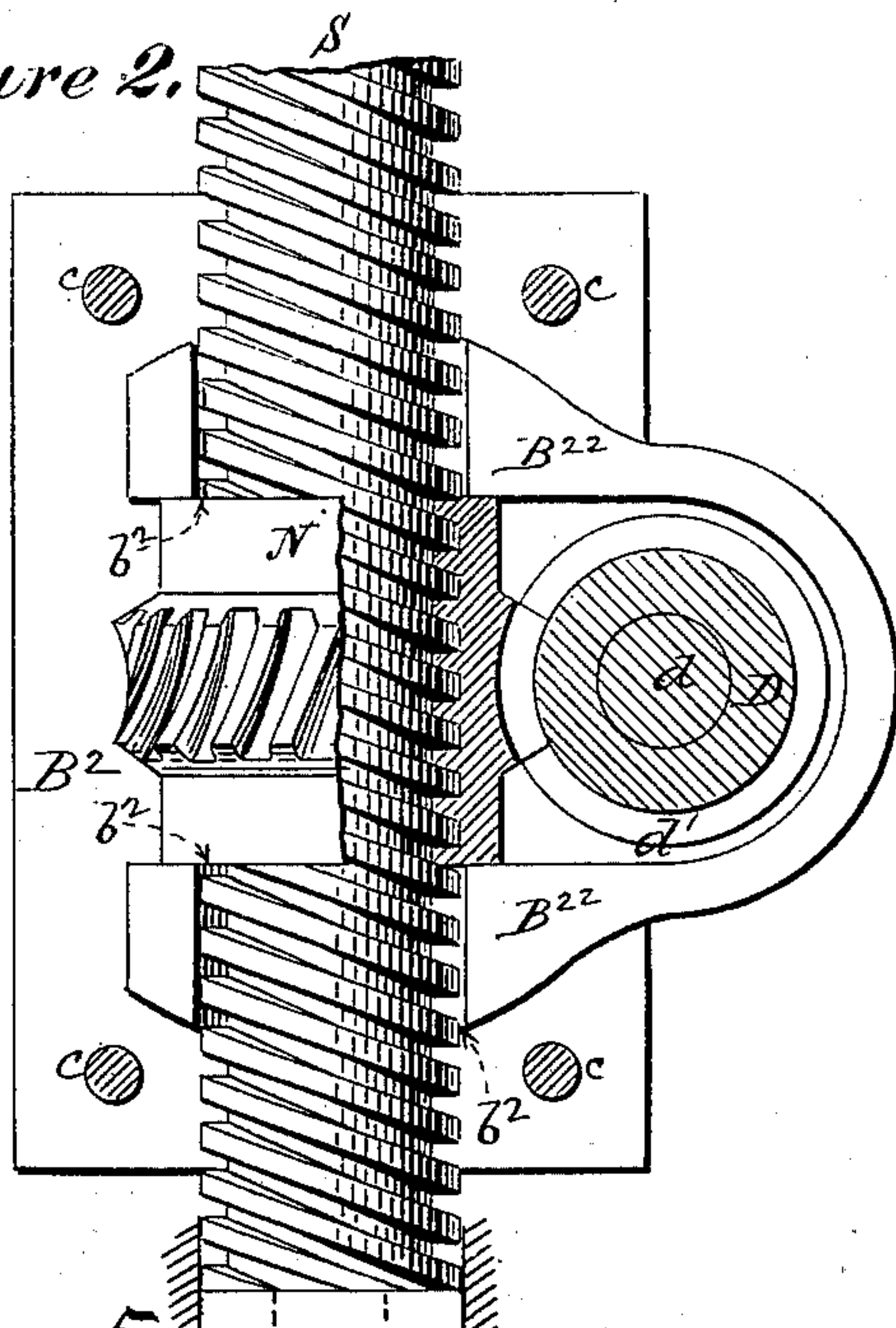


Figure 3.

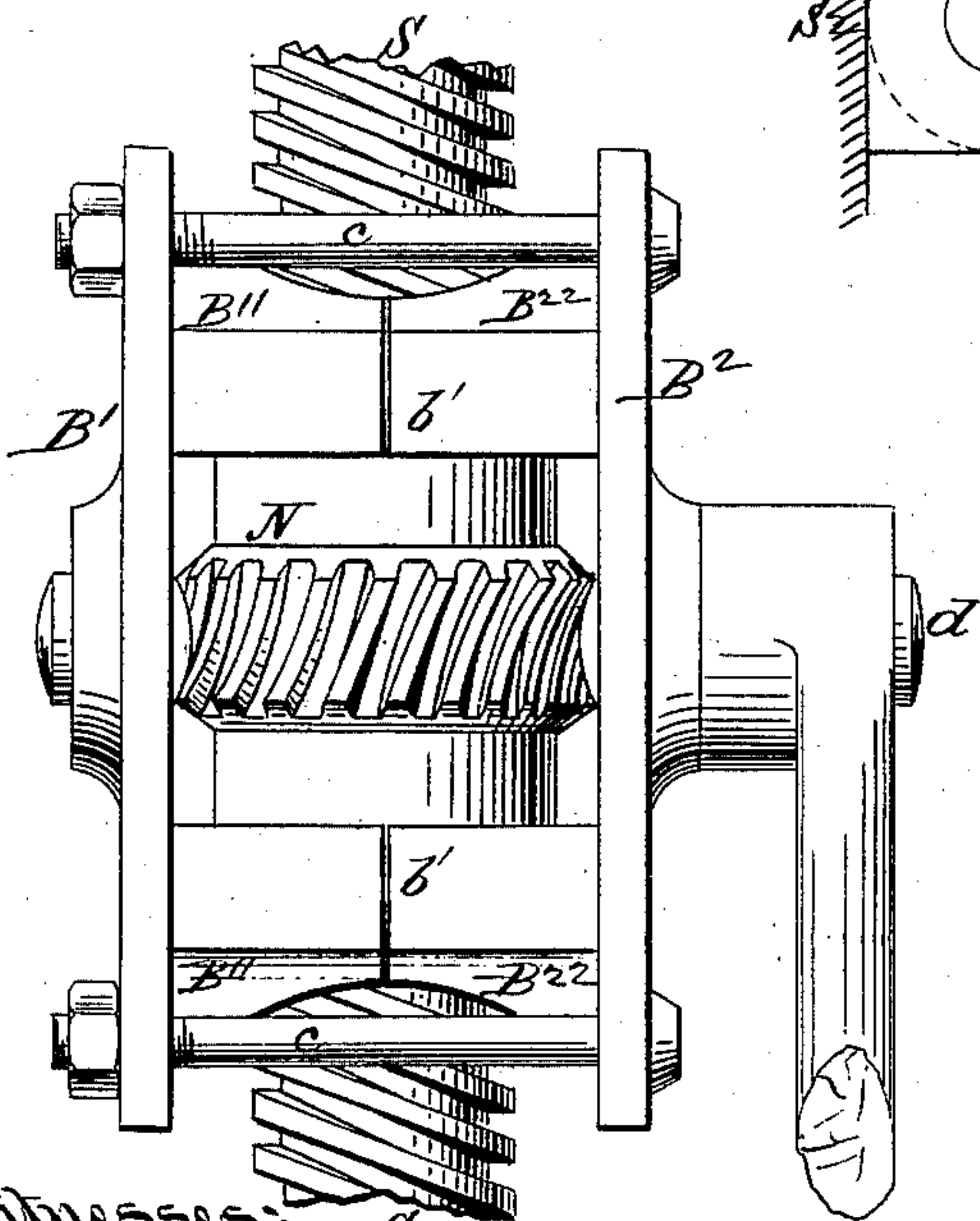


Figure 5.

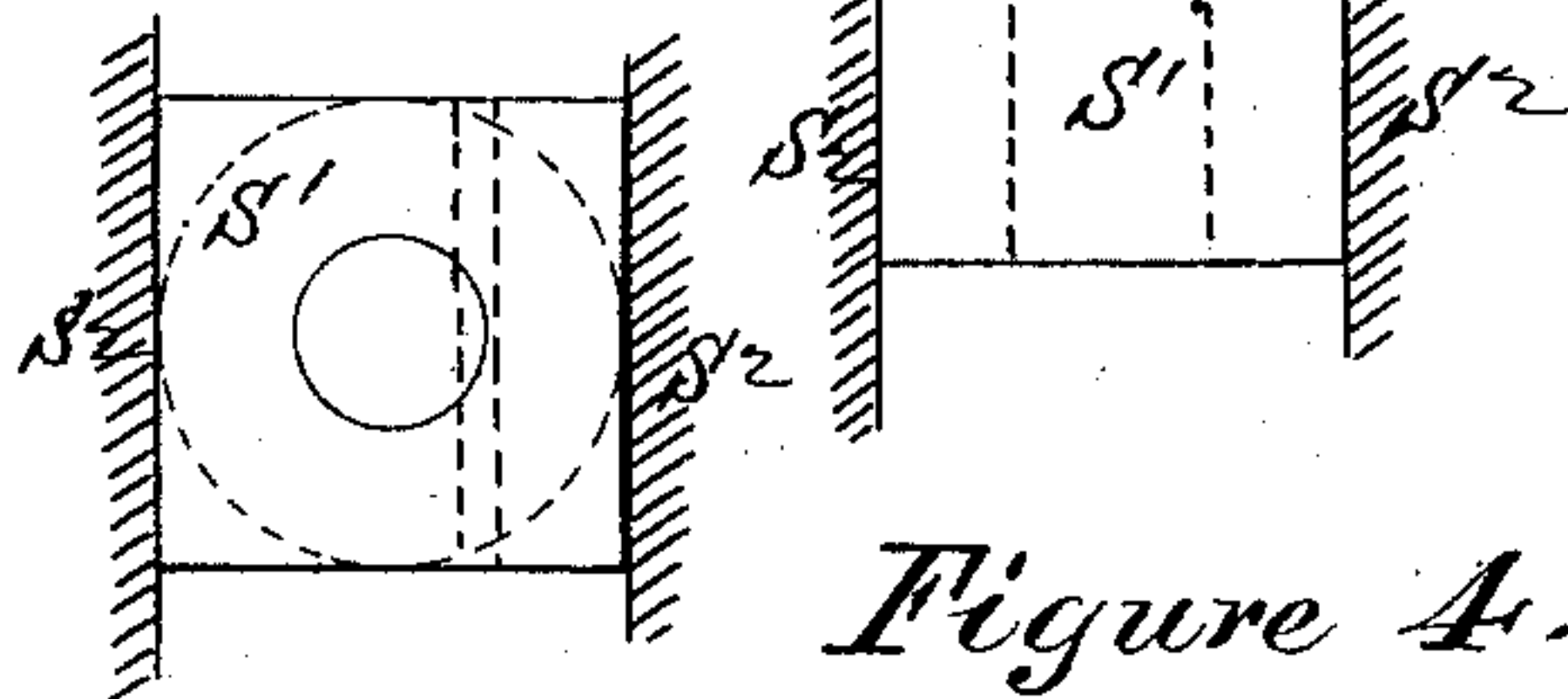
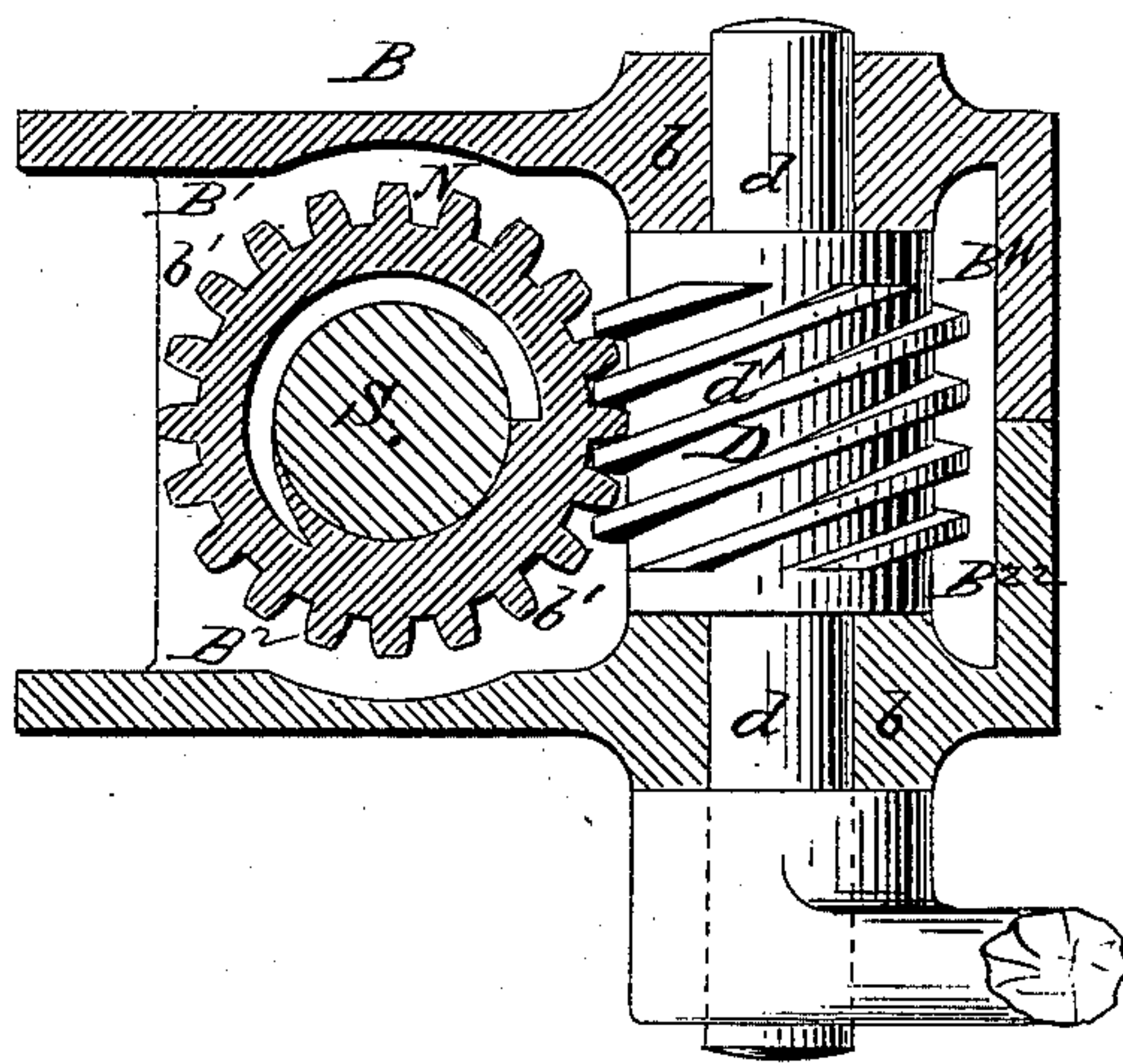


Figure 4.



Witnesses:
Wm. Gardner.
Alfred

Inventor:
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UNITED STATES PATENT OFFICE.

JOHN S. EBERT, OF BROOKLYN, NEW YORK.

PRESSURE-SCREW FOR SCREW-PRESSES.

SPECIFICATION forming part of Letters Patent No. 302,327, dated July 22, 1884.

Application filed December 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. EBERT, a citizen of the United States, residing in the city of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Device for Operating the Pressure-Screws of Screw-Presses and Similar Devices, of which the following is a specification.

I am aware that heretofore the pressure-screws in lifting-jacks and other similar devices have been operated by worm-gears interposed between and engaging with the actuating-nut and crank or other source of power.

The object of my invention is to attain the advantages attending the use of a driving-worm working at right angles to the actuating-nut, and at the same time forward the pressure-screw without revolving it upon its longitudinal axis, and obviate the necessity for slotting it longitudinally or otherwise weakening its thread.

The invention consists in the combination and arrangement, with a pressure-screw held by suitable means against revolution upon its longitudinal axis, but capable of longitudinal motion in either direction, of an actuating-nut supported between stationary shoulders, and provided with an interior female thread for engaging the thread of the pressure-screw, and with exterior teeth for engagement with a driving-worm, which is in turn operated by a crank or other means of imparting motion.

A secondary feature of my invention consists in the peculiar construction and arrangement of the stationary bearing-box for the reception of the actuating-nut and driving-worm, as hereinafter set forth.

In the accompanying drawings, which show only a portion of a pressure-screw, together with the actuating-nut and driving-worm, Figure 1 is an elevation of the stationary nut-box and bearing; Fig. 2, a sectional view of one side of the screw-actuating nut and of the worm-wheel, one side of the stationary bearing-box being removed. Fig. 3 is an elevation of the parts, taken at right angles to Figs. 1 and 2. Fig. 4 is a transverse section on plane of line *x x*, Fig. 2, showing the driving-worm in elevation. Fig. 5 is an end view of the pressure-screw, showing the square head or

shoulder-piece, which, by engaging with guide-ways in the frame, prevents the revolution of the said pressure-screw upon its longitudinal axis.

The bearing-box B is attached to and incorporated with the frame or other stationary portion of the press or other device to which my improvements are applied. It is preferably cast in two parts, B' B², which are duplicates of each other, except that they are respectively rights and lefts, which, when bolted together, afford suitable bearings, *b b*, for the axle *d* of the driving-worm D, as well as affording supporting-shoulders *b' b'*, between which the actuating-nut N is confined by the pressure-screw S, which passes through annular openings *b² b²*, formed between the said shoulders *b' b'*. The pressure-screw is prevented from revolving upon its longitudinal axis in any of the ordinary devices resorted to in this class of apparatus, that shown in the drawings, which consists of a square shoulder-piece, S', passing over or between suitable guide-ways, S². As shown in the drawings, this stationary bearing-box B consists of two plates, B' B², from the opposed sides of which coinciding yokes or flanges B¹¹ B²² project a sufficient distance to leave interior spaces large enough to accommodate the actuating-nut and driving-worm when the plates B' B² are fastened together by bolts *c c*, the yokes or flanges B¹¹ B²² at the same time inclosing and protecting the parts and centralizing them accurately with relation to each other. I am enabled thus to yoke the parts together by what practically constitutes, when bolted, a single rigid bearing piece or casing, thus avoiding the looseness, undue wear, and inaccuracy of adjustment liable to occur where independent bearings are provided, and rendering the action of the parts smooth and easy.

The combined bearing-box is simple and cheap of construction, and the facility with which the parts may be put together is to be observed. It is to be noticed that the axes of the actuating-nut N and of the driving-worm D are at right angles to each other, and that the said parts bear such relation to each other that the endless screws or worms *d'* upon the driving-wheel mesh into the inclined gear-

teeth formed upon the periphery of the nut N. While the revolution of the worm-threads upon the driving-wheel D will thus impart to the nut an impetus at right angles to its axis that will cause it to revolve thereon, it will be seen that the reverse action cannot take place—*i. e.*, the nut cannot cause the worm-wheel to revolve, no matter how great the pressure, simply for the reason that the teeth upon the periphery of the nut can only impart a strain upon the driving-worm in a line parallel to its axis, and the greater this back strain may be the more securely will the worm-wheel D be held. It is to be observed that by this construction the nut acts directly upon the pressure-screw to forward it, and not as a means of revolving it upon its axis within a stationary nut, and that the threads on the pressure-screw are unimpaired and continuous. The construction of the press is thus rendered much more simple and inexpensive, and by moving the pressure-screw without revolving it upon its longitudinal axis the necessity for using a swiveled head or follower is obviated, and the device adapted for use in a variety of circumstances where a swiveled bearing or follower would be objectionable—as, for instance,

in raising any object which was free to turn laterally.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a pressure-screw capable of moving longitudinally in either direction, but prevented from revolving upon its axis, substantially as described, and an actuating-nut supported between stationary bearings and formed with an interior female screw-thread which engages with the thread upon the pressure-screw, and with exterior gear-teeth which engage with the threads of a driving-worm, substantially in the manner and for the purpose described.

2. In combination with the pressure-screw and its actuating-nut and the driving worm-wheel, arranged substantially as described, the bearing box or yoke formed in two parts, with suitable bearings and supporting-shoulders formed upon and between coinciding flanges, which inclose and protect the parts.

JOHN S. EBERT.

Witnesses:

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