

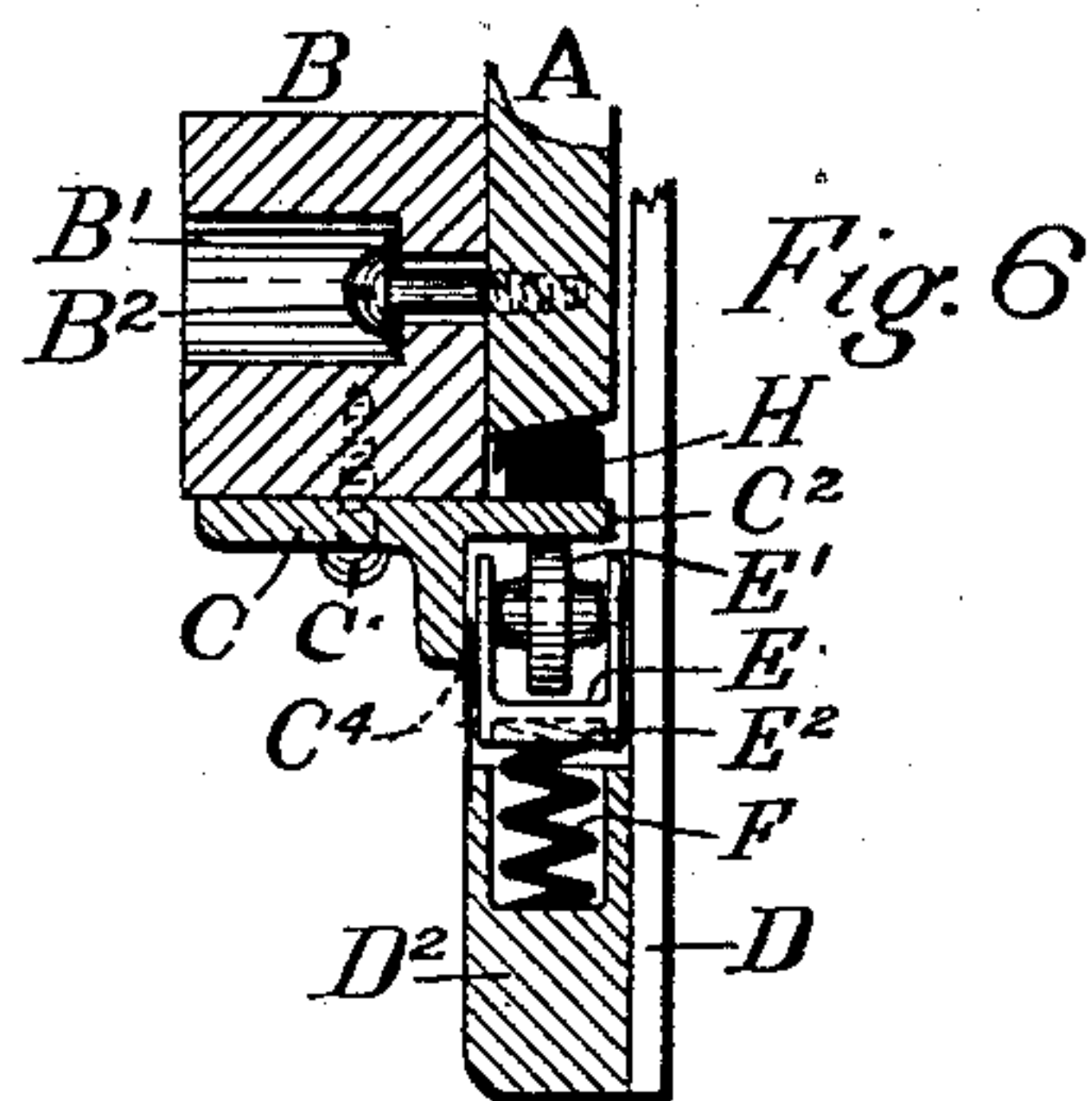
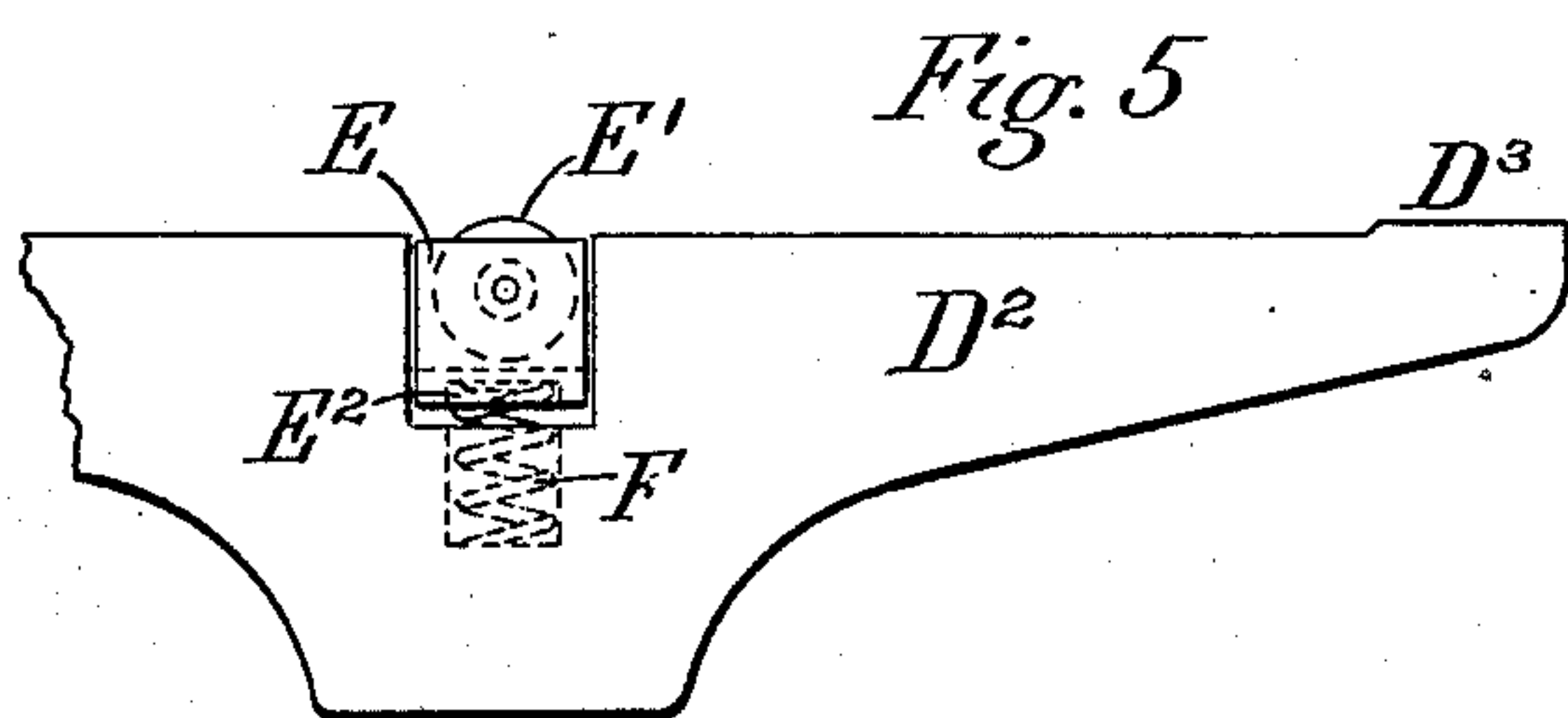
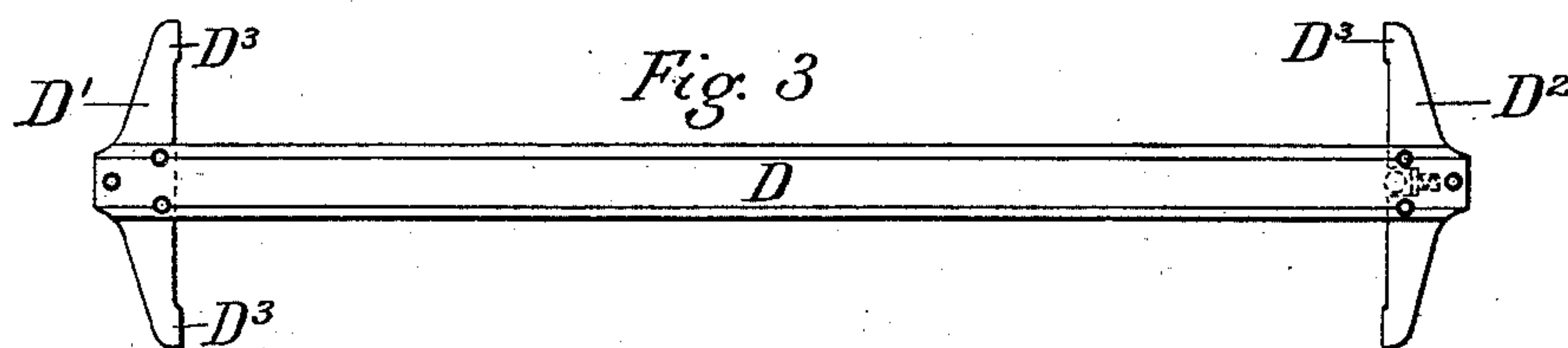
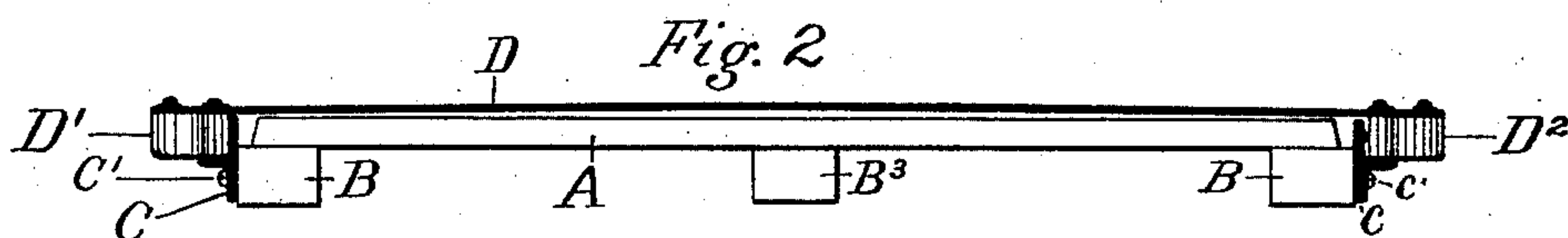
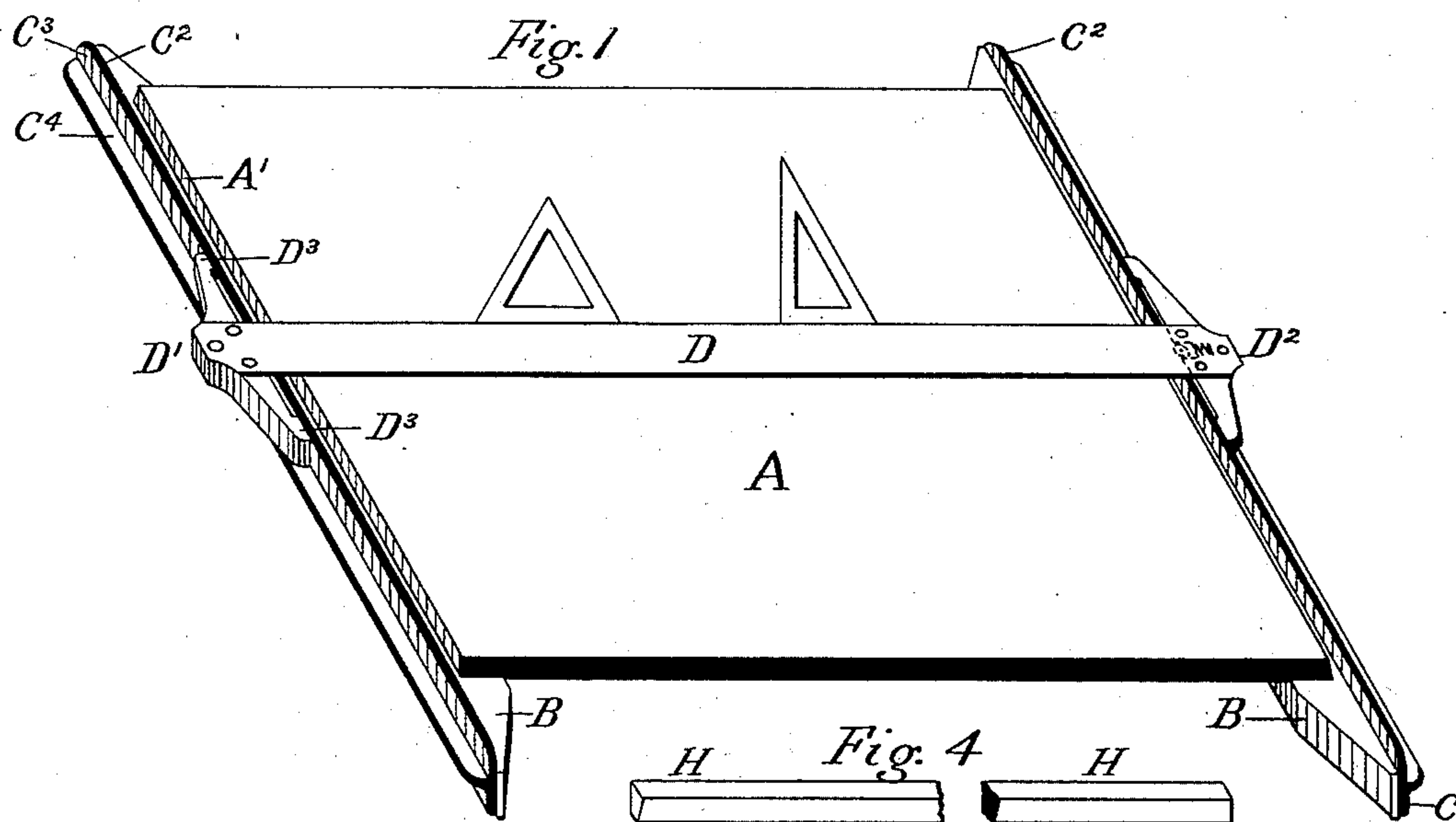
(No Model.)

W. G. STEWART.

DRAWING BOARD AND DRAFTING APPLIANCE.

No. 318,319.

Patented May 19, 1885.



WITNESSES.

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DRAWING-BOARD AND DRAFTING APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 318,319, dated May 19, 1885.

Application filed March 16, 1885. (No model.)

To all whom it may concern:

Be it known that I, WALTER G. STEWART, a citizen of the United States, residing at the city of Reading, county of Berks, State of Pennsylvania, have invented a new and useful Improvement in Drawing-Boards and Drafting Appliances, of which the following is a specification.

This improvement pertains to both the board and the T-square to be used therewith.

The object of the improvement is to secure in a cheap and effective manner a board that may be relied upon by the draftsman and that will insure the parallelism of lines drawn thereon without reference to the truth of the ends of the board, upon which the paper may be quickly secured without the use of tacks or glue, and a T-square adapted to be used in combination therewith easily handled from either end of the board or at any point between and self-adjusting as to parallelism therewith.

The above objects are attained in the use of the board and T-square shown in the accompanying drawings, in which similar letters indicate similar parts throughout.

Figure 1 represents in perspective the board and square. Fig. 2 is a longitudinal section through the board and square, showing the latter in its normal condition, curved upward from the board to clear the paper upon the same; Fig. 3, a detached plan view of the square; Fig. 4, a partial elevation in perspective of the paper-securing wedge; Fig. 5, a detail on enlarged scale of the movable head and its anti-friction self-adjusting device; Fig. 6, a reversed detail cross-section through the center of the movable head, showing the connection of the same with the adjusting-roller and of the button and T-guide with the board.

A represents the board, made of any convenient size and of a suitable material, having the ends A' dressed to a slight bevel. Battens B are secured to the board at its outer ends, the battens extending beyond the width of the board at each side thereof about one-half the length of the head of the T-square used therewith, and are provided with the usual oblong recessed holes, B', for the screws B², which allow for subsequent expansion and contraction of the board. Intermediate bat-

tens, B³, are introduced when necessary. Preceding the attachment of the battens B, a cast or wrought bar, C, of a suitable metal and of a T-section, is secured to the edge of the batten by screws C', with one arm of the T projecting above the face of the same. It is then clamped without straining upon the bed of a metal-planer, and the faces C², C³, and C⁴ planed to a straight and true surface. Being removed from the same, and the dressed faces rubbed down with fine emery-cloth, the battens are then made a part of the board, as described, the inner face of the projecting T-arm being set away from the ends far enough to receive between it and the board the wedge-sectioned piece H, that secures the paper upon the same.

The ends of the board should be parallel, or nearly so, with each other, but a slight variation from parallelism either of the board or of the T-guides will not interfere with the parallel movement of the blade, which is dependent mainly on the truth of the guide for the fixed head. As for the width edges, it is not essential, except for appearances, that any care should be taken to have them at right angles with the ends or parallel with each other.

The ruling-blade D, used in connection with the board, as described, has the usual fixed head, D', upon the left-hand side of the board, in contact with the face C³ of the T-guide when in use, and upon the opposite end of the blade, which has a length sufficient for the purpose, is movably secured a head, D², in loose contact with the guide C³ of the opposite end, in length and outline similar to the fixed head. The bearing-faces of both heads are cut back intermediate to the ends, leaving feet D³ at each end of the same. This prevents rocking of the head and decreases the frictional resistance in moving the square over the board. The blade D, prior to use, is steamed and bent so as to lie clear of the paper when the heads are resting upon the T-guides C, which carry the weight of blade and heads, the heads being arranged so as to bear only on the ends. This insures a sensitiveness to the touch in moving the square not attainable where the blade rests upon the paper, and also prevents begriming and rubbing in of dirt upon the drawing inseparable from the use of the ordinary T-square.

To secure a parallel movement of the blade over the board, within the movably-secured head D^2 , and beneath the blade in a recess formed within the head, is secured a movable case, E, having an anti-friction roller, E' , journaled therein and provided with a spring-pocket, E^2 , at the rear of the same. A spiral or equivalent spring, F, placed in the pocket E^2 of the case and abutting against the rear of the recess in the head, presses the anti-friction roller E' against the surface C^3 of the T-guide, and draws the blade and fixed head D' of the square toward and snug against the opposite end T-guide, and retains the square steadily in place. In adjusting the movable head D^2 to the blade the feet D^3 are given about one thirty-second of an inch play upon the guide-face C^3 , the head D' being held tightly to the corresponding face of the opposite end guide. The blade being moved by the head D^2 , will, on its release, oscillate upon the anti-friction roller E' and come to rest in an instant perfectly parallel with any former line drawn upon the board.

To use the improvement, the paper is cut to the proper length and laid upon the board with its ends lapping over the space between the ends of the board and the guides C. The wedges H, of hard wood or metal, are then forced down upon the paper and effectually clamp the same between it and the board. This done at both ends, the paper is ready to receive the drawing. Should there be any subsequent stretching of the paper, the wedges are removed at one end and the paper smoothed, and the wedges reinstated, which secures a solid face without distortion of lines previously drawn.

The blade, as previously stated, may be handled indifferently from either head; but the draftsman will find himself handling it altogether from the blade. It is held so nicely in adjustment upon the board that a very slight touch will transfer it from point to point. When a line is to be drawn, the finger placed upon the blade will press the same to the paper, the anti-friction roller taking up the slight additional length occasioned thereby, and the instant the finger is removed the blade will again rise, and may be moved without risk of blotting over the freshly-made ink-lines.

The construction of the board with the battens and T-guides extended beyond the width of the same permits the drawing to fill out the entire space when so required, and the operation of the device is not restricted to a dead-level board, as it will work equally as well as long as the inclination of the board does not exceed the sliding limit of the blade upon the same. By strengthening the spring the angle may be made forty-five degrees.

It will be evident from the above that my improvement fills a long-felt want in draftsmen's appliances, that it makes the board and the movement of the blade thereon independ-

ent of atmospherical influences, and that, while the main features of the common draft-board and T-square are maintained, yet the improvements which I have herein shown and described add immeasurably to the accuracy, facility, and neatness of operation that may be attained thereby, and the relief to the draftsman occasioned by the automatic action of the anti-friction roller E' in keeping the head D' snug in place, in lieu of the constant exertion and care necessary to secure the same result with the ordinary board and T-square, can only be realized after the use of the improvements.

Having shown my improvements, described their construction, use, and advantages, I desire to secure by Letters Patent the following claims thereon:

1. As an improvement in the construction of drawing-boards, the suitable attachment to the beveled ends thereof of battens B, extending upon either side beyond the width of the same, and provided with metallic T-guides C, said battens so placed as to leave a suitable space between the ends of said boards and the inner face of the projected arm of the T-guide for the reception of a wedge sectional piece, H, substantially as and for the purpose set forth.

2. The blade D, provided with a fixed head, D' , and a movably-adjustable head, D^2 , having a recess therein containing a case, E, anti-friction roller E' , spring-pocket E^2 and spring F, the heads D' D^2 , having feet D^3 , and the blade D, slightly curved away from the board at the center of its length, whereby it may be moved over the paper without soiling the same, substantially as and for the purpose shown and declared.

3. The combination of a drawing-board and a ruling-blade having, essentially, the following elements: a board with beveled ends A' , and battens B, secured to each end thereof, said battens provided with metallic T-guides having one arm of the T projected above the attaching-face of the batten, and extending beyond the width of the board on one or both sides of the same, in combination with the paper-securing wedges H, and the blade D, having a fixed head, D' , and adjustable head D^2 , the latter provided with an anti-friction roller, E' , retained in place against the outer face of the projected T-guide at its end of the board, and movably holding the fixed head D' against its guide upon the opposite end thereof, whereby the blade may be moved over the board from either head of the same or by the blade alone, substantially as and for the purpose set forth.

WALTER G. STEWART.

Witnesses:

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