T. SMITH.

ADJUSTABLE BRACKET.

APPLICATION FILED AUG. 14, 1905.

922,204.

Patented May 18, 1909.

2 SHEETS—SHEET 1.

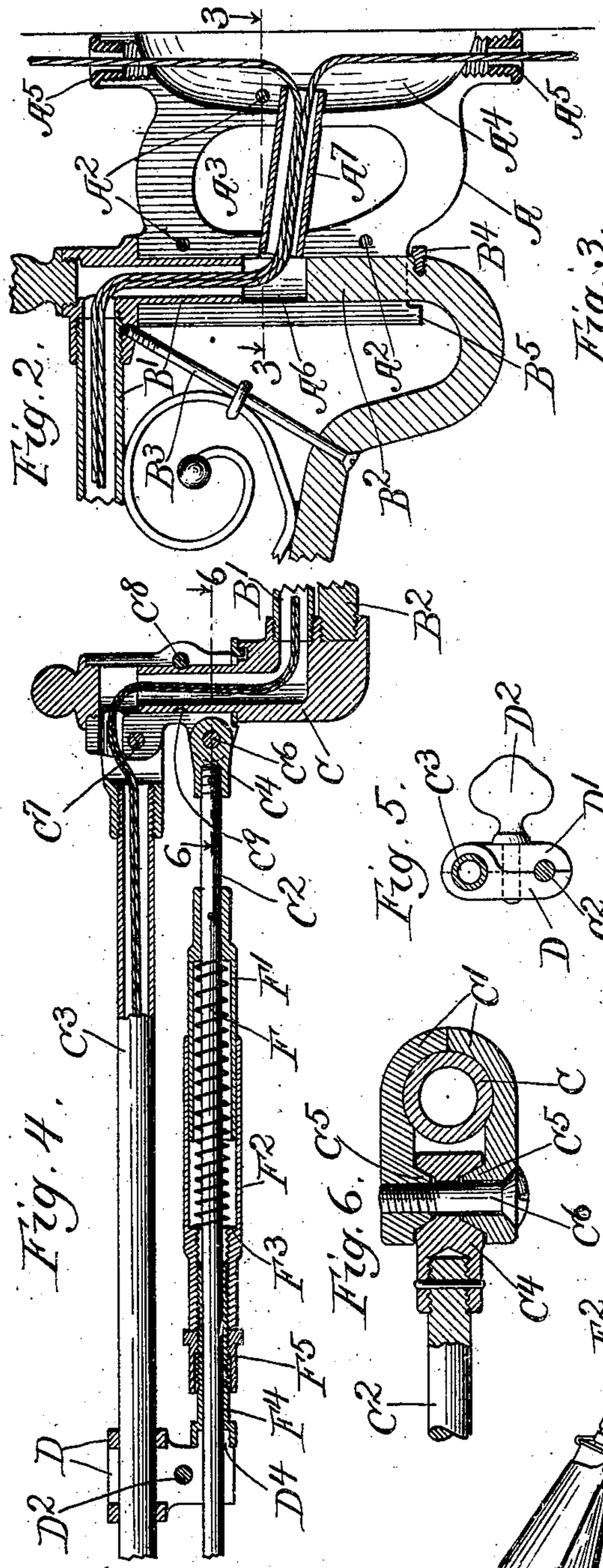

Fig. 2.

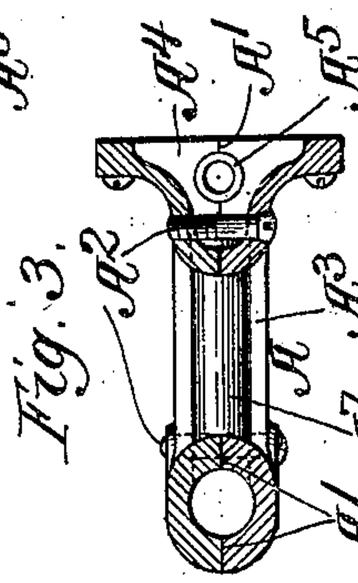

Fig. 3.

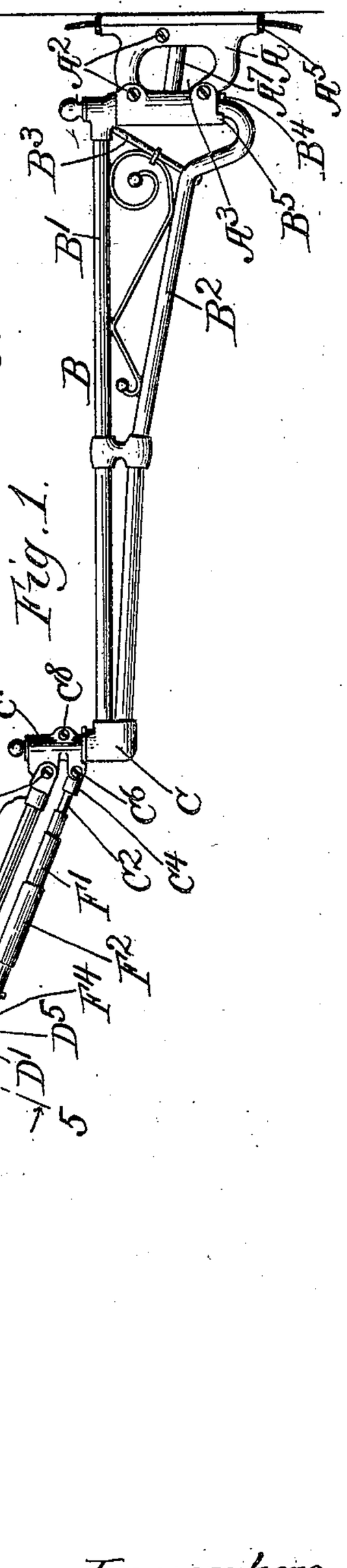

Fig. 1.

Fig. 4.

Fig. 5.

Fig. 6.

Witnesses.

Edward T. Wray.

Howard L. Kroff.

Inventor.

Theodore Smith

by Parker & Carter

Attorneys.

T. SMITH.

ADJUSTABLE BRACKET.

APPLICATION FILED AUG. 14, 1905.

922,204.

Patented May 18, 1909.

2 SHEETS—SHEET 2.

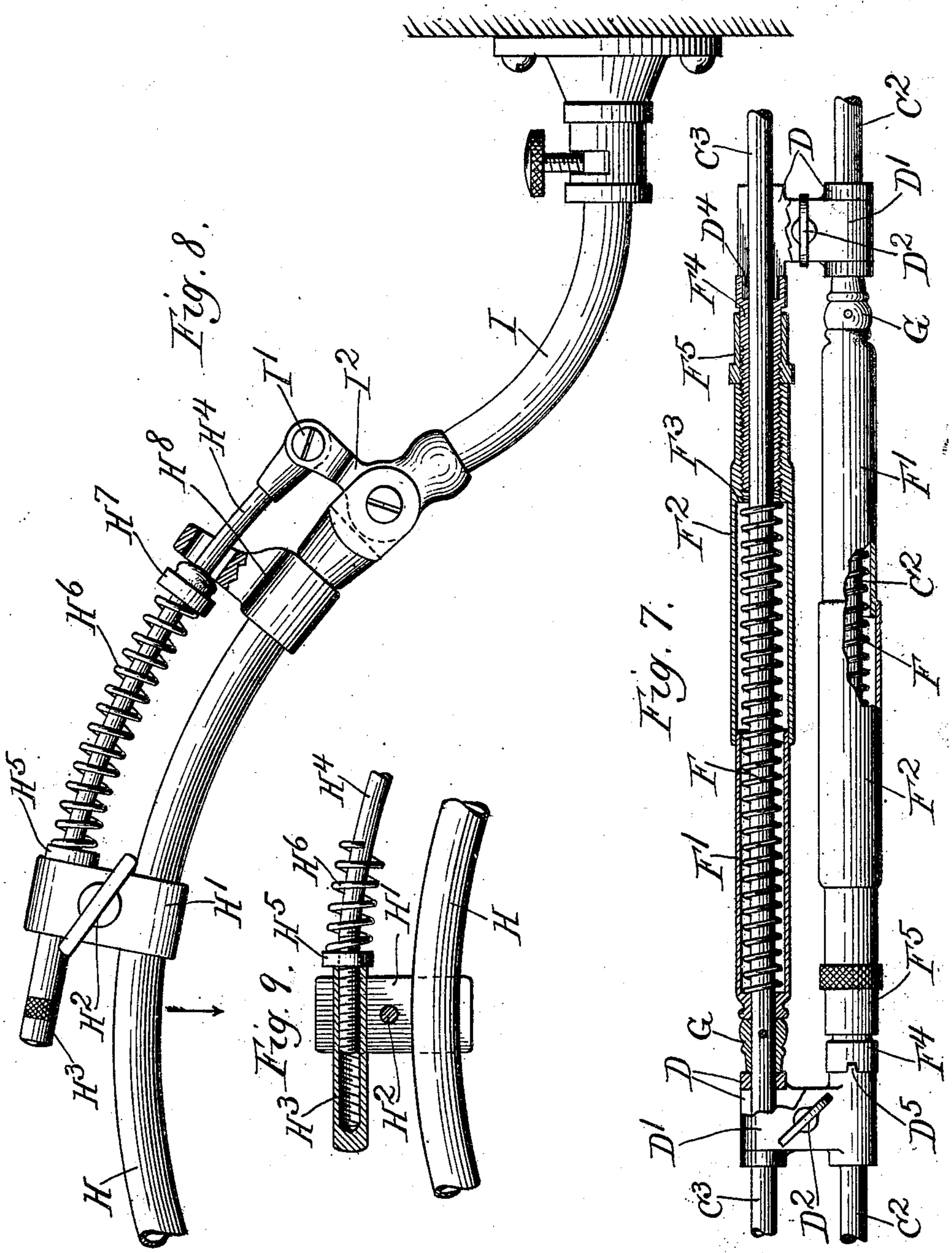

Fig. 8.

Fig. 9.

Fig. 7.

Witnesses.
Edward T. Wray
Howard L. Corbett

Inventor.
Theodore Smith
by Parker & Burton
Attorneys.

UNITED STATES PATENT OFFICE.

THEODORE SMITH, OF CHICAGO, ILLINOIS, ASSIGNOR TO THEO. SMITH MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ADJUSTABLE BRACKET.

No. 922,204. Specification of Letters Patent. Patented May 18, 1909.

Application filed August 14, 1905. Serial No. 274,122.

To all whom it may concern:

Be it known that I, THEODORE SMITH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Adjustable Brackets, of which the following is a specification.

My invention relates to adjustable brackets, and has for its object to provide a new and improved device of this description.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a view of an adjustable bracket embodying my invention; Fig. 2 is an enlarged sectional view of the end of the bracket attached to the support; Fig. 3 is a sectional view taken on line 3—3 of Fig. 2; Fig. 4 is a view in part section showing the spring lifting mechanism; Fig. 5 is a sectional view taken on line 5—5 of Fig. 1; Fig. 6 is a sectional view taken on line 6—6 of Fig. 4; Fig. 7 is a view showing a modified construction of the spring lifting mechanism; Fig. 8 is a further modification of the spring lifting mechanism; Fig. 9 is a view in part section showing the means for adjusting the spring.

Like letters refer to like parts throughout the several figures.

In the drawing I have illustrated an adjustable bracket adapted to be attached at one end to a support, and to be provided at the other end with a lamp. The end piece A is fastened to the support in any desired manner, and is split near the middle as shown at A^1 Fig. 3, the portions being held together by the screws A^2. The end piece A is cut away at A^3 so as to form an enlarged opening entirely therethrough. The two pieces of the end piece are also hollowed out at the point where they engage the support so as to form the space or receptacle A^4. When the device is used as an electric fixture the space A^4 is provided at the top and bottom with openings in which are bushings A^5. The front end of the end piece A is provided with an opening or receiving space A^6 into which are received the inner arms B^1, B^2 of the movable part B of the bracket. The arms B^1 and B^2 are preferably separated by a space at their ends as shown in Fig. 2, and one of them, as for example B^1 is hollow. A tube A^7 connects the receptacle A^4 with the receiving space A^6. As before stated, the arms B^1 and B^2 do not meet, there being a space between them. These arms are connected together by an adjusting device B^3 which in this case is a screw passing through the arm B^2 and entering a threaded hole in the arm B^1. By means of this adjusting device the wear of the parts may be taken up, and the bracket tightened.

The bracket is provided with a stop device which prevents the movable part from coming into contact with the wall. This stop device consists of a pin or projection B^4 associated with the arm B^2. The end piece A is cut away so as to permit this projection to move as the movable part is moved about the end piece A, but engages a stop piece B^5, said stop piece being located so that the movable part is stopped before it strikes the wall, thus avoiding injury to the lamp and to the wall. The adjusting device B^3 permits adjustment of the parts so as to prevent the projection B^4 from falling below the stop B^5 so as to be free from said stop. The arms B^1 and B^2 are attached to a connecting piece C upon which is rotatably mounted a split center piece C^1 and to which are pivoted the outer arms C^2, C^3. The arm C^3 is hollow, as is also the connecting piece C, for the passage of the fluid used for lighting. In this case electric wires are placed in these hollow portions. The arm C^2 is connected to the split center piece C^1 by a connection, the details of which are illustrated in Fig. 6. Attached to the arm C^2 is a coupler C^4 provided with two cone-shaped indentations into which fit the cones C^5 on the two parts of the split center piece C^1. A screw C^6 passes through the several parts as shown in Fig. 6, and is threaded into one side of the split piece C^1. It will be seen that by this construction the wear can be taken up, and the frictional contact between the parts adjusted. The connection of the arm C^3 with the split piece C^1 is preferably a simple pivot connection, the parts being connected by the screw C^7. The two parts of the split piece are held together by the screws C^6, C^7 and C^8. The connecting piece C is preferably provided with a groove C^9 into which the screw C^8 fits (see Fig. 4) so as to permit rotation but at the same time to prevent the split piece from being removed from the piece C. The arms C^2 and C^3 are connected by a clamping device comprising the parts D and D^1 connected by the thumb screw D^2. The part D is provided with an opening through which passes the arm C^3 and is cut away at one side to receive the part D^1.

The part D is preferably fastened to the arm C^3 so as to be fixed thereto. The arm C^2 is clamped between the parts D and D^1, and the frictional contact may be adjusted by the thumb screw D^2. The arms C^2 and C^3 may be moved up and down, and may also be rotated about the part C. A lamp E is attached to the end of the arms C^2 and C^3. In the present case the lamp is an electric lamp, and is connected to the socket E^1 which is pivotally connected to knuckle E^2, which in turn is pivotally connected to the link E^3 to which the arms C^2 and C^3 are pivoted. Associated with the arm C^2 is a spring lifting device adapted to assist in lifting the arms C^2 and C^3 so as to elevate the lamp E. This spring lifting device comprises a spring F contained within a shell F^1 fixed to the arm C^2. A second shell F^2 incloses part of the spring and overlaps the shell F^1. The shell F^2 has a shoulder F^3 which engages the end of the spring F. The shell F^2 has a screw thread engagement with a sleeve F^4 on the arm C^2 and which engages the clamping device consisting of the parts D and D^1. Said parts are provided with projections D^4 (see Fig. 4), the sleeve F^4 being enlarged at the end so as to inclose these projections. The rotation of the sleeve F^4 is prevented by a lug D^5 on part D^1 which engages a slot in the enlarged end thereof. A lock nut F^5 is also provided. The tension of the spring is controlled by rotating the shell F^2, this rotation because of the screw threads moves it back or forward so as to increase or decrease the compression of the spring. The lock nut holds the shell F^2 in any desired position. When the arms C^2 and C^3 are pulled downwardly the clamp, consisting of the parts D and D^1, slides along the arm C^2 toward the shell F^2 and moves said shell so as to compress the spring F. The parts are stopped in any given position by the friction of the clamping device. If now it is desired to lift the lamp, said lamp or one of the arms C^2 or C^3 is grasped by the hand and moved upwardly and the compressed spring F tending to expand helps this movement, and thus makes it easier to accomplish.

In Fig. 7 I have shown a modified construction. In this figure both the arms C^2 and C^3 are provided with spring lift devices, said devices being constructed like the device shown in Fig. 4. In this figure there are two clamping devices. The part D of one of the clamping devices is fixed to the arm C^3 while the part D of the other clamping device is fixed to the arm C^2, and a washer G is located at the end of each of the shells F^1, said washers being fixed to the arms C^2 and C^3 respectively. It will be seen that the two clamping devices are, as it were, reversed, one of them being fixed to the arm C^3 and frictionally clamping the arm C^2, the other being fixed to the arm C^2 and frictionally clamping the arm C^3. By means of this arrangement both of these spring lift devices assist in lifting the parts. If, for example, the parts are pressed downwardly the friction device clamped to arm C^3 is slid along arm C^2 so as to compress the spring, while the other friction device is slid along arm C^3 so as to compress the spring. The parts are held in any desired position by the frictional clamp. A slight upward pressure on these parts brings the springs into action and causes them to assist in lifting the parts.

In Fig. 8 I have shown a further modification. In this construction the lamp, not shown, is attached to the outer arm H which is pivoted to the inner arm I. Associated with the arm H is the clamping device H^1 consisting simply of two pieces, one on each side of the arm H, and clamped together by the thumb screw H^2. This clamp also engages an end piece H^3. This end piece is hollow and is screwed onto the end of the rod H^4 (see Fig. 9). The rod H^4 has a collar H^5 thereon which engages the end of the spring H^6. A washer H^7 is associated with the rod H^4 and engages a projection H^8 on arm H. The rod H^4 is pivoted at I^1 to a link I^2 connected with the inner arm I. The clamp H^1 frictionally clamps the part H^3. If now the arm H is moved in the direction of the arrow, the collar H^5 will move away from the clamp and the spring will be compressed by the projection H^8 engaging the washer H^7 which is slidable along the rod H^4, thus compressing the spring. The parts are held in position by the frictional clamp. A slight pressure on the parts starts them, and the spring assists in moving them back to their initial position. The collar H^5 is screw threaded onto the rod H^4 so that the tension of the spring may be adjusted.

It will be noted that the lamp is held in any desired position by the friction of the parts. In view of the fact that the lamp has considerable weight, and that the bracket is often made quite long, considerable friction is required for this purpose. The spring makes it unnecessary to have the parts tight, so that it reduces the amount of friction necessary, and hence much less friction is necessary when this device is used. This is very beneficial because the looseness of the parts made possible by the spring lift prevents corrosion and wearing away of the parts at the frictional contacts. It also reduces the corroding effect due to the plating material when such is used. The spring lift acts, as it were, as a balancing device, and can be tightened up when the load becomes heavier instead of tightening the frictional device. The arms C^2 and C^3 are provided at their ends with end pieces C^4, C^{11}, C^{12}, C^{13} screw threaded thereon, and the lengths of these parts may thus be adjusted so as to secure the right proportions. For example, the coupler C^4 connected with the arm C^2 at the point where it

is connected with center piece C^1 is fixed against rotation. The end piece at the other end is free to rotate by removing the screw which connects it to link E^3, and hence it can be rotated to lengthen or shorten the arm C^2 to level up the knuckle E^2, and hence the lamp, and when of the proper length may then be attached to the link E^3 by said screw. It will be noted that the two arms B^1 and B^2 project into the end-piece from opposite directions.

I claim:

1. A bracket comprising a split end-piece made up of two separate parts having engaging parts adapted to be fastened to a flat fixed support, a movable part mounted on said separate parts and comprising two arms projecting part way into said end-piece from opposite directions.

2. An end-piece for adjustable brackets adapted to be attached to a support, and made up of two parts adapted to be clamped together, the two parts hollowed out at one end to form a receiving space when clamped together, substantially parallel to the support, and adapted to receive a portion of the bracket and hold it in position.

3. An adjustable bracket comprising a longitudinally split end-piece adapted to be fastened to a support, the two parts thereof hollowed out at one end to form a receiving space when they are clamped together substantially parallel to the support, a movable part mounted on said end-piece, a projection on said movable part and a stop on said end-piece whereby the movement of the movable part is limited, the projection and stop arranged to limit the movement of said movable part in both directions.

4. An adjustable bracket comprising an end-piece adapted to be fastened to a support, an arm mounted thereon, a projection on said arm below said end-piece, a stop on said end-piece whereby the movement of the arm is limited, and an adjusting device for moving the arms toward said end-piece so as to keep the projection and stop in operative position with relation to each other.

5. An adjustable bracket comprising an end-piece adapted to be connected to a support, a laterally movable arm mounted thereon, two projecting pieces pivotally connected with said laterally movable arm, and a spring lift device connected with one of said pieces and interposed intermediate its ends.

6. An adjustable bracket comprising two substantially parallel arms pivotally connected in position at their ends, a frictional clamping device connecting them together and a spring lift device associated with one of said arms and provided with a part which engages said clamping device, said spring connected with said arm so as to tend to lift it.

7. The combination with two substantially parallel arms, pivotally supported at their ends, of a frictional clamping device connecting them together, a spring associated with one of said arms and engaging a stop fixed thereto, and a movable part on said arm engaged by the other end of the spring, said movable part engaging said frictional clamp.

8. The combination with two substantially parallel arms, pivotally supported at their ends, of a frictional clamping device connecting them together, a spring associated with one of said arms and engaging a stop fixed thereto, a movable part on said arm engaged by the other end of the spring, said movable part engaging said frictional clamp, and an adjusting device associated with said spring for varying the tension thereof.

9. The combination with two substantially parallel arms, pivoted at their ends to a supporting device, of a spring lift device comprising a spring associated with one of said arms, two inclosing shells for said spring which overlap each other, one fastened to the arm, both of said shells provided with engaging parts by means of which the spring is confined, a sleeve slidably mounted on said arm and screw threaded into the end of one of said shells, and a frictional clamping device connecting the two arms together and engaging said sleeve.

10. The combination with two substantially parallel arms, pivoted at their ends to a supporting device, of a spring lift device, comprising a spring associated with one of said arms, two inclosing shells for said spring which overlap each other, one fastened to the arm, both of said shells provided with engaging parts by means of which the spring is confined, a sleeve slidably mounted upon said arm and screw threaded into the end of one of said shells, a frictional clamping device connecting the two arms together and engaging said sleeve, and means for preventing the rotation of said slidable sleeve.

11. An adjustable bracket comprising an end-piece adapted to be attached to a support, a laterally movable part consisting of two arms separated at their inner ends and rotatably mounted upon said end-piece, a projection on one of said arms and a stop on the end-piece which engage when the parts are in a predetermined position so as to limit the movement of the laterally movable part, and a screw connected with one of said arms and threaded in the other arm whereby they may be adjusted with relation to each other.

12. An adjustable bracket comprising a laterally movable part, a support therefor, a split center-piece rotatably mounted upon said laterally movable part, two projecting arms one pivoted thereto at one end, the other of said arms connected to the split center-piece by means of cone-shaped projections on said split center-piece which enter cone-shaped openings in the said arm, and a screw passing through the said center-piece

and arm and threaded into one so as to be adjusted to vary the frictional contact between them.

13. An adjustable bracket comprising two substantially parallel arms, pivotally connected to a supporting part, one of the arms provided with cone-shaped openings, the supporting part provided with cone-shaped projections which extend therein, and a screw passing through the parts and threaded in one so that the parts may be clamped to produce a frictional contact, a frictional clamping device connecting the two arms together, and a spring lift device associated with one of said arms.

14. The combination with two substantially parallel arms of a supporting device to which one end of each arm is pivotally connected, a frictional clamping device connecting the two arms together intermediate their ends, and a spring lift device associated with one of said arms, and located between the said pivoted end and the frictional clamp.

15. The combination with two pivoted arms in proximity to each other of a frictional clamping device connecting them together, and a spring lift device associated with said frictional clamping device comprising a spring, and a connection between the spring and said frictional clamping device whereby the tension of the spring is varied when the arms are moved.

16. An adjustable bracket comprising two movable parallel arms, a frictional device and a lifting spring associated with said arms, the frictional device and lifting spring acting independent of each other.

17. An adjustable bracket comprising two movable parallel arms, one above the other, a lifting spring therefor supported upon and carried by a lower arm.

18. An adjustable bracket comprising two arms connected so as to move together, a lifting spring connected with one of said arms, and a casing surrounding said spring.

19. An adjustable bracket comprising two arms pivotally connected to a suitable support, a lifting spring surrounding one of said arms and means independent of the spring for opposing the lifting action of the spring.

THEODORE SMITH.

Witnesses:
HOMER L. KRAFT,
E. K. REYNOLDS.