No. 834,104. PATENTED OCT. 23, 1906.

C. H. BORDEN.

TELEPHONE BRACKET.

APPLICATION FILED AUG. 29, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

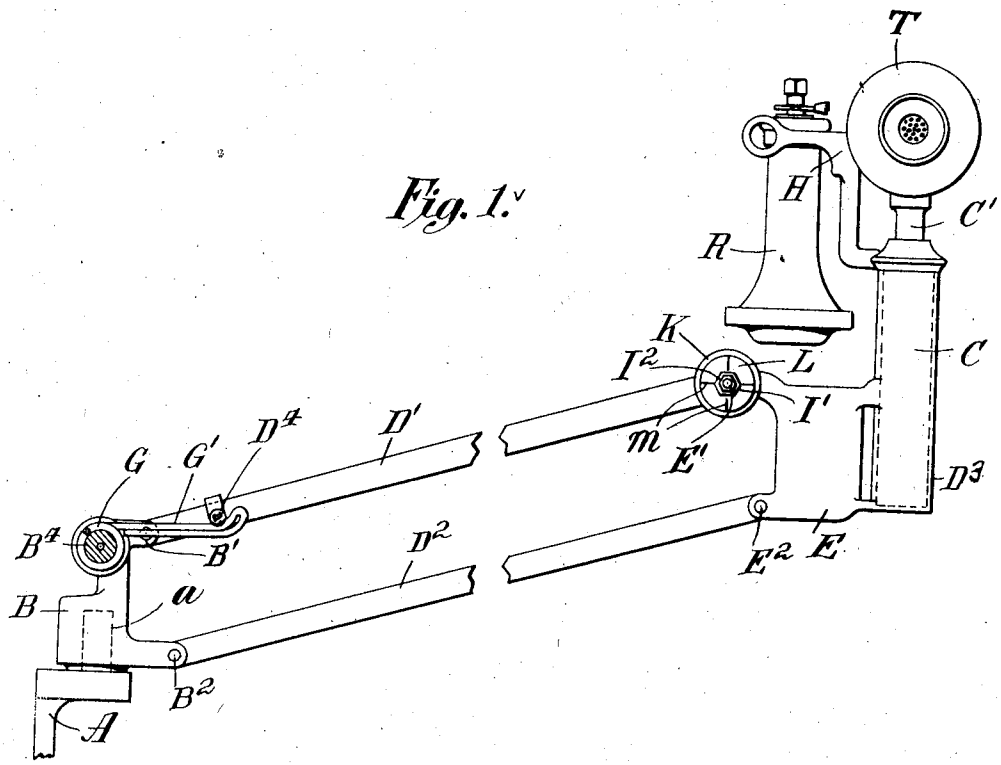


Fig. 2.

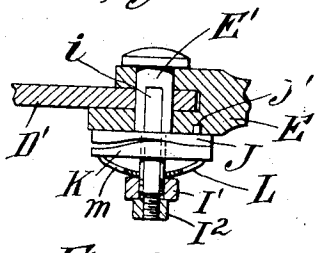


Fig. 4.

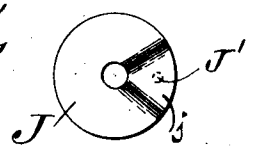


Fig. 5.

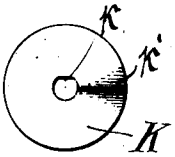


Fig. 3.

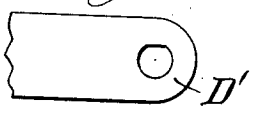
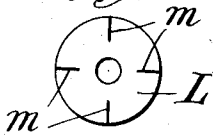


Fig. 6.



Attest:

Edgeworth Greene

T. A. Birchhead

by

Inventor:

CHARLES H. BORDEN.

Atty's.

No. 834,104.

PATENTED OCT. 23, 1906.

C. H. BORDEN.

TELEPHONE BRACKET.

APPLICATION FILED AUG. 29, 1905.

2 SHEETS—SHEET 2.

Fig. 7.

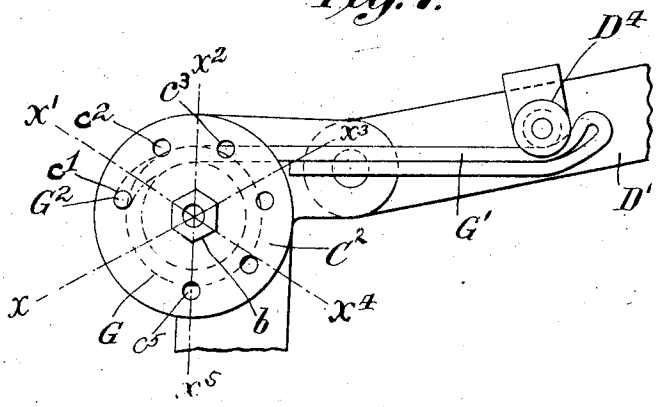
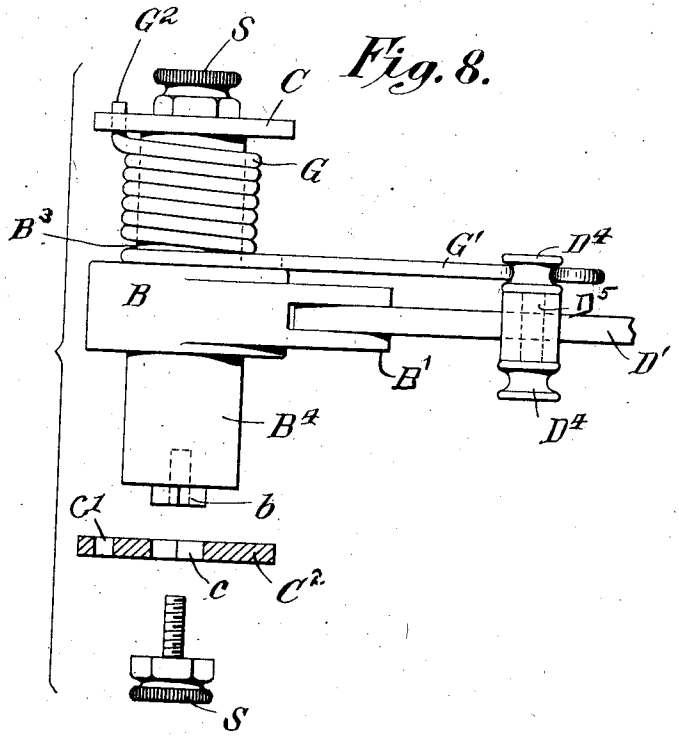


Fig. 8.



Attest:

Edgworth Greene

P. W. Brickhead

by

Inventor:

CHARLES H. BORDEN.

Howson & Howson,

Atty's.

UNITED STATES PATENT OFFICE.

CHARLES H. BORDEN, OF STAMFORD, CONNECTICUT.

TELEPHONE-BRACKET.

No. 834,104. Specification of Letters Patent. Patented Oct. 23, 1906.

Application filed August 29, 1905. Serial No. 276,249.

To all whom it may concern:

Be it known that I, CHARLES H. BORDEN, a citizen of the United States of America, residing in Stamford, in the county of Fairfield and State of Connecticut, have invented a certain new and useful Improvement in Telephone-Brackets, of which the following is a specification.

The improvement relates to that class of brackets for telephones or other articles which embody a parallel-ruler-motion device and counterbalancing-spring, such that the telephone can be raised and lowered and moved horizontally in various directions; and my invention relates more particularly to the compensating means whereby the holder will remain at any desired elevation.

My improved bracket, like many others, is adapted to be attached to any sufficiently-strong stationary support, as a wall or desk.

In the accompanying drawings, Figure 1 is an elevation of the holder. Fig. 2 is a horizontal section through my improved compensating friction-cam. Fig. 3 is a side view of a portion of a parallel bar detached. Fig. 4 is a face view of the cam of Fig. 2. Fig. 5 is a view of the cam-washer. Fig. 6 is a corresponding view of the disk spring. Fig. 7 is a side elevation of a spring-adjusting means, and Fig. 8 is a plan view of the same with some of the parts separated and removed.

Referring to the drawings, A is a bracket intended to be secured to a desk, wall, or other suitable support, and it has a pin *a* extending vertically from it. On this pin is pivotally mounted a base or turn-table B, having slotted arms B′ and B^2, in which bars D′ and D^2 are pivoted to swing vertically. The outer ends of these bars are similarly pivoted to the telephone-support E at E′ and E^2. The support E preferably has a tubular part D^3, which holds the telephone-base C (consisting of the stem C′, which supports the transmitter T and the switch-hook H, upon which the receiver R is hung) and permits it to be freely turned in a horizontal plane to bring the mouthpiece into any desired position. The arms or projections B′, B^2, E′, and E^2 are so located that the bars D and D′ can be raised to a vertical position, and as they form a parallelogram the telephone will be held upright whatever the position of the bracket.

Any suitable counterbalancing means may be employed—as, for instance, a pair of coiled springs G, which are shown mounted on cylindrical projections B^3 B^4 on opposite sides of the base B adjacent to the arm B′. Each spring has one end G′ extended along the bar D to engage a roller D^4, mounted on a pin D^5, secured in the bar. The other end G^2 of the spring is bent laterally to engage any one of a series of holes c' c^2, &c., in a rotarily-adjustable disk C^2. This disk has a central opening *c* of hexagonal or other regular polygonal form to fit a boss *b*, Figs. 7 and 8, on the end of the projections B^3 B^4, and when put on this boss it is held in place by a headed screw S. The holes c' c^2 c^3, &c., are at equal distances from the center of the disk, but at relatively less distances apart circumferentially than the radial lines x x' x^2, &c., passing through the angles of the opening *c*, as shown in Fig. 7. If the opening *c* were hexagonal, as shown, and the holes c' c^2 c^3, &c., spaced five-sixths of the distance from one radial line x to the next one, x', it is evident that if the disk were on the boss *b*, as in Fig. 7, with the hole c' as shown, and then the disk were removed from the boss and turned to the left one-sixth of the way around the next hole c^2 would occupy a position one thirty-sixth of a circle in advance of that formerly taken by the hole c'. Turning the disk to the next position on *b* will give an advance of two thirty-sixths of a circle. If the disk is turned in the opposite direction, the reverse will occur. Hence if it is desired to increase the tension of the spring a trifle release the end G′ from the roller D^4, turn the screw S sufficiently to allow the disk C^2 to be removed from the boss *b*, and then turn it one place to the left, put the next hole over the end G^2 of the spring, and then replace the disk, screw, and other end G′. If more tension is wanted, it can be had by further advancing the disk as just described. Of course each spring must be adjusted similarly. This device gives a fine adjustment, though the parts are relatively coarse and strong.

If the bracket supporting the telephone were placed in its highest position, (*i. e.*, with the bars D′ D^2 vertical,) it would require but little tension of the springs G to balance or hold it in place; but if it were lowered to a horizontal position a greatly-increased tension of the springs would be needed, and if lowered still farther less and less power would be necessary to balance the telephone. It will also be seen that as the bracket descends

from the highest to the lowest point the tension of the springs will increase continually. In order to compensate for these variations in position of the bracket and tension of the springs and properly balance the telephone, the pivot E′ for one of the bars D′, is made in the form of a bolt flattened on one side, as shown at *i*, and turns freely in the arm of the support E, but turns with the bar D′, as the hole in the latter through which the bolt extends is made to fit it snugly. Mounted on the outer end of the bolt are two disks J and K, each having a cam-face on one side, but plane on the other. The plane face of cam J is placed against the side of the arm E, and it is held from turning by a dowel-pin J′. The hole in the center of this cam is round, thus permitting the bolt to turn in it. Cam K is next put on the bolt with its cam-face next to that of cam J, and as its center hole *k* fits the bolt it is compelled to turn with it. Against the plane face of cam K is put a disk or star spring L, which when pressed against said cam K by a nut I′ and lock-nut I² will hold the cams together with a yielding pressure. By this construction the cam J travels with the part E, while the cam K moves with the bar D′. One of the cams—for instance, J—has a depression *j* in its face, while the other cam K has a correspondingly raised part *k*′. When the bracket is at a horizontal position, these cams are located so that the part *k*′ is in the depression *j*, allowing spring G to exert its full power; but if the bracket should be raised it would cause this raised part *k*′ of the cam K to ride up out of the depression *j* of cam J, and thus separate the cams, which in turn compress the spring L, and so offer resistance to the turning of the joint at E′, and consequently overcome the power of spring G in proportion to the strength of the spring L and inclination of the cam-surfaces. The same effect is produced by lowering the bracket below the horizontal.

The construction of the telephone-support at the end of the bracket forms the subject of a separate application filed by me February 8, 1906, and bearing the Serial No. 300,165.

I claim as my invention—

1. An adjustable bracket for telephones, &c., comprising a parallel-ruler-motion device with a counterbalancing-spring means, in combination with frictional cam-faces on relatively moving parts of the device, and a spring to press the faces together, whereby the varying tension of the counterbalancing-spring in the different positions of the bracket is compensated.

2. An adjustable bracket for telephones, &c., comprising a parallel-ruler-motion device with a counterbalancing-spring means, in combination with a friction-cam to compensate for the varying tension of the spring in the varying positions of the bracket, said friction-cam consisting of two frictional cam-faces combined with one of the pivots of the bars of said parallel-motion device, and on relatively moving parts of the device.

3. An adjustable bracket for telephones, &c., comprising a parallel-ruler-motion device with a counterbalancing-spring means, in combination with friction-cams to compensate for the varying tension of the spring in the varying positions of the bracket, said friction-cams comprising two disks on relatively moving parts of the device and having cam-shaped bearing-faces and a spring to press said disks together.

4. An adjustable bracket for telephones, &c., having a parallel-ruler-motion device with a coiled counterbalancing-spring, in combination with a fixed symmetrically-polygonal pin, and a disk having an opening of corresponding shape to fit on the pin, and means of attaching the end of the spring to the disk at spaced distances apart, relatively differing from the spacing of the points of the polygon.

5. An adjustable bracket for telephones, &c., having a parallel-ruler-motion device with counterbalancing-spring means, in combination with means for regulating the tension of said spring means, said regulating means comprising projections on the base of said parallel-ruler-motion device, coiled springs about said projections, and perforated disks at the ends of said projections through which the ends of said springs may pass, said disks being adapted to be adjusted rotarily about the ends of said projections.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

C. H. BORDEN.

Witnesses:
WALTER R. BEACH,
PAUL H. BLAIR.