(No Model.)

J. W. ALLDERIGE.

PAPER CLIP.

No. 392,394. Patented Nov. 6, 1888.

Fig. 1.

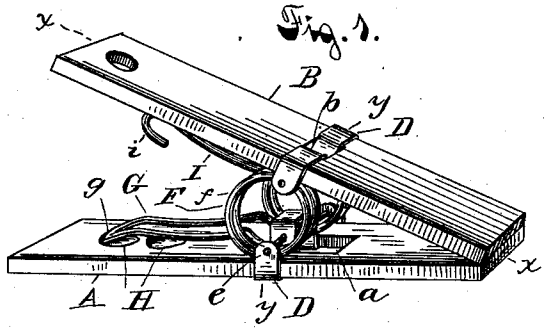


Fig. 2.

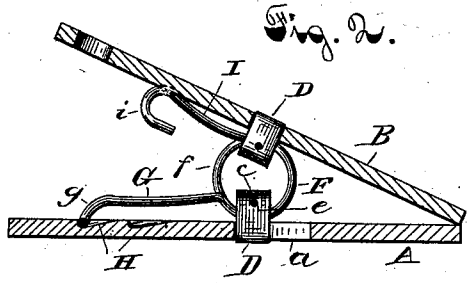


Fig. 4.

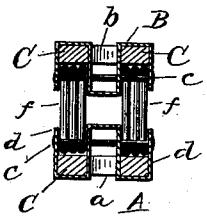


Fig. 5.

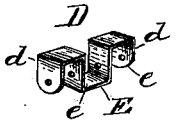
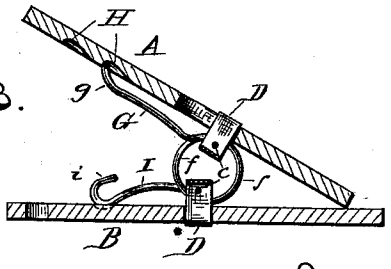


Fig. 3.



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PAPER-CLIP.

SPECIFICATION forming part of Letters Patent No. 392,394, dated November 6, 1888.

Application filed August 21, 1888. Serial No. 283,311. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. ALLDERIGE, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Paper-Clips; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to that class of articles known as "paper-clips," and has for its object to provide a pair of jaws with a coil-spring applied between them at about midway their length in such a way that by closing the handles opposite to the clamping end the spring will be recoiled upon itself, and when released its reaction upon the jaws will be of sufficient force to hold any suitable article within its clamping end.

The principal object of my improvement, however, is to provide suitable means for holding the coil-springs in position during the operation of the jaws and in holding the jaws and spring in contact during the process of adjustment; and it consists in the construction hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of the clip embodying my improvement. Fig. 2 is a longitudinal section of Fig. 1 on the line *x x*. Fig. 3 is a longitudinal section showing the arms in a different position. Fig. 4 is a cross-sectional view of Fig. 1 on the line *y y*. Fig. 5 is a perspective detail view of one of the clip-holding devices.

Like letters of reference refer to corresponding parts in each figure of the drawings.

A and B represent the two holding-arms of the clip, which are preferably straight and may be of wood, hard rubber, or any other desired suitable material, and are of a sufficient length to form inclined contacting jaws at one end and laterally-extending handles at the opposite end.

The arm A has an adjusting-slot, *a*, at about its center, which is elongated in the direction of its length toward its jaw end, occupying about one-third of the width of the arm, while the arm B has a slot, *b*, at its center of about one-third the size of that in arm A.

A clip, D, of sheet or other metal, is made in the form of a yoke, having U-shaped ends *d* extending in one and the same direction, while a center portion, E, of a like form, extends in the opposite direction. The ears *e* of the clip are parallel to each other, and are longer than the thickness of the arms A and B, and are provided with holes on the same plane with each other, registering one with the other, within which a rivet-pin is adapted to be secured. These clips are placed upon the arms from the outer side, so that the central U-shaped portion, E, of the clip will pass through the slots in an inverted position, while the end portions of the clips will lock over and their ends pass inward beyond the sides C of the arm, forming the sides of the slots. Within the recesses thus formed by the ears *e* of the clip projecting inwardly beyond the surface of the arms there is placed a coiled or spiral spring, F. This spring is formed in two sections, *f*, comprising, preferably, about three coils each, which are of a width just sufficient to fit within the recesses formed by the extending ears of the clip on the inside of the arms and to rest against the side portions, C, of the slots therein. These coils are secured within the recesses by rivet-pins *e* passing through the holes in the ears of the clips and over the wires of the sections, holding the coils down upon the arms and preventing their riding up on each other, or in otherwise getting out of place during the operations of opening and closing or adjusting the jaws.

The two sections *f* of the coil are formed integral by means of a long loop-arm, G, extending backward from the inside of the coil-sections, having its rear extremity, *g*, bent downward and backward, adapted to fit into recesses or bearings H, formed one in front of the other on the inner side of the handle of the arm having the long or adjusting slot *a* therein. The ends of the coils are extended backward upon the inner side of the arm from the outer sides of the sections, forming hook-arms I, having their extreme portions bent inward to form hooks *i*, which are adapted to hold the clip suspended upon a line or other suitable means. The outer sides of the hooks

i rest against the inner surface of the arm B, and, together with the loop-arm G, form the bearings for holding the ends of the coils during its operation. By this construction it will be observed that the constant tension of the two coil-sections upon the spring-arms, pressing against the handles, keeps the jaws of the clip firmly crowded one upon the other, adapting them to firmly grasp and hold papers and all other suitable articles.

When it is desired to get a greater bearing-surface upon one of the clip-arms than upon the other, to increase the holding character of one of the jaws upon the other, as shown in Fig. 3, in holding certain kinds of articles, the arm A, having the clip D movably fixed through its slot and over its sides C, is moved backward. The clip D, immovably fixed in the slot of arm B, rigidly holds the two coil-sections of the spring and the clip on the arm A during the operation of adjustment. By this means the long loop-arm G of the spring is drawn forward into another recess, where it is securely held.

To readjust the clip, so as to bring the end of its jaws together, the long loop-arm G is grasped with the thumb and finger and slightly raised as the arm B is pulled back, when the end of the loop-arm slides into the rear slot and is retained there by the pressure of the coil upon the arms.

It will be observed that in this construction of clip all of the parts are inseparably secured together, avoiding the danger of their becoming separated and lost in transit, or or the arms slipping out of the metal yoke-clip during the process of adjustment, and that the spiral coils of each section are firmly held down side by side, so that the same tension and strain are upon each coil alike.

I am aware that coil-springs have heretofore been used between arms to form a paper-clip; but such I do not claim, broadly; but,

Having fully described my invention, what I do claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a paper-clip having arms united by a coil-spring, of slots in the arms having clips therein and over the sides of the arms, said clips having rivet-pins extending through inwardly-projecting ears and over the coils, as set forth.

2. The combination, with holding-arms united by coil-springs, of slots in the arms, one of said slots being longer than the other and having yoke-shaped clips therein and over the sides of the arms, with rivet-pins through inwardly-projecting ears on the clips and over the coils, as set forth.

3. The combination, with holding-arms united with sectional coil-springs connected by a loop extending back on the arm, of slots in the arms, the slot in one arm being longer than in the other arm, yoke-shaped clips having parallel projecting ears at right angles to the length in said slots and over the sides of the arms, and rivet-pins extending through the ears and over the coils of the sections, the clip in the short slot being rigidly secured to the arm and the one in the long slot being adjustable on the arm, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. ALLDERIGE.

Witnesses:
CHARLES H. ADAMS,
W. L. HORTON.