Sept. 4, 1934. F. M. LINGO 1,972,452

PAPER CLIP

Filed Oct. 23, 1933

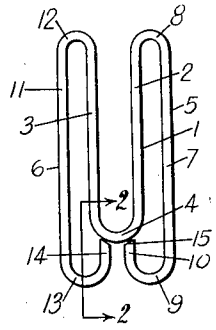


Fig. 1

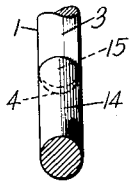


Fig. 2

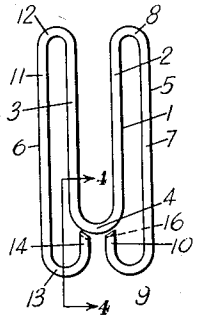


Fig. 3

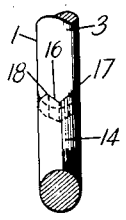


Fig. 4

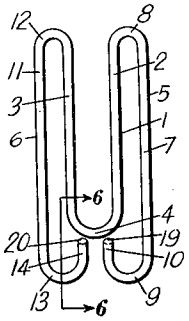


Fig. 5

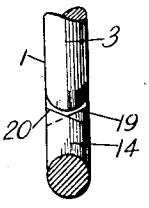


Fig. 6

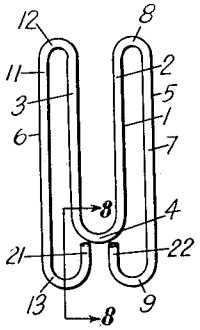


Fig. 7

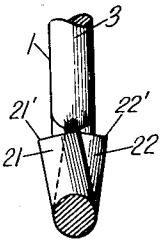


Fig. 8

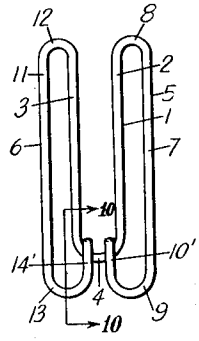


Fig. 9

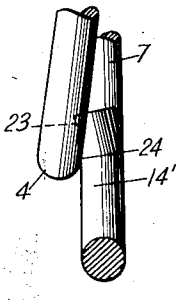


Fig. 10

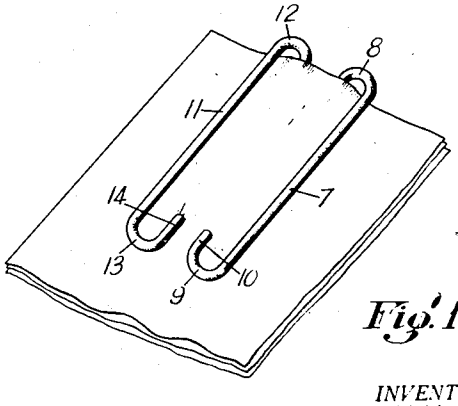


Fig. 11

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PAPER CLIP

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Application October 23, 1933, Serial No. 694,752

10 Claims. (Cl. 24—261)

My invention relates to a paper clip. It has to do more particularly with a paper clip which is made of wire, the wire being tempered so that it will have sufficient spring properties and the clip being of such a form that it will grip a single sheet of paper or several sheets of paper or other such members.

There have been a large number of paper clips devised in the past but all of such prior art clips have been possessed of certain disadvantages. In the first place, some of the prior art clips are of such a type that it is difficult to apply them to a sheet of paper or other such member. Another disadvantage of prior art clips resides in the fact that even when they have been applied to the paper they do not sufficiently grip the paper and consequently will readily slip off the paper. Also, due to the fact that these clips do not effectively grip the paper and due to the structure of the prior art clips, when one of these clips was applied to a sheet of paper and other papers piled above or below said first-named sheet, there was always a tendency for the sheets above or below the one with the clip thereon to slip underneath the clip and become attached to the first-mentioned sheet having the clip thereon. In other words, even when a clip was applied to a sheet of paper there was a constant tendency for other sheets to slip between the gripping jaws of the said clip. Another disadvantage of prior art clips resides in the fact that such clips are usually of such a shape that if a number of clips are placed in a receptacle together they will interlock with each other and it will be necessary to separate them before they can be used. Still another bad feature of prior art clips is that they are usually of such a structure that they will readily be bent out of proper shape and thereafter will be useless. Also, due to the structure of such prior art clips, when one of these clips was placed on a sheet of paper which was subsequently placed in an envelope, there was always the danger present of a free end of the wire, of which the clip is composed, of sticking through the envelope. Other disadvantages have been possessed by prior art paper clips.

One of the objects of my invention is to provide a paper clip of the type indicated which is of such a structure that it may be readily applied to a sheet of paper, or several sheets of paper, or other such members, and which will firmly grip the member or members to which it is applied and which will not readily slip off such member or members.

Another object of my invention is to provide a paper clip of the type indicated which is of such a structure that a lockmouth will be produced between the gripping jaws of the clip so that there will be no danger of other papers slipping between the jaws of the clip after it has been applied to the desired member.

Another object of my invention is to provide a paper clip of the type indicated which is of such a structure that if a number of these clips are placed in a receptacle together or are piled together, there will be no danger of the clips interlocking with each other.

Still another object of my invention is to provide a clip of the type indicated which will be of a sturdy structure and which cannot readily be bent in such a manner that it will be subsequently ineffective to grip the member desired, and consequently which is of such a type that it can be used over and over again.

In its preferred form my invention contemplates the provision of a paper clip which is made of a single piece of wire. This wire is preferably tempered to such a degree that it will have sufficient spring tension which will cause it to resume its original shape after it has been bent out of shape. The clip is made in such a manner that the gripping jaws will firmly grip the paper and there will be practically no danger of the clip slipping off the paper unless removed by the fingers. Also, a lockmouth is produced between the gripping jaws so that no papers will slip therebetween, unless purposely done with the fingers. Also the clip is of such a structure that there will be no long unprotected free ends which might stick through an envelope when a paper with my clip thereon is placed therein. The free ends of the wire are fully protected, and another advantage of this structure resides in the fact that it will be impossible for several of these clips to interlock with each other.

The preferred embodiment of my invention is shown in the accompanying drawing wherein similar characters of reference designate corresponding parts and wherein:

Figure 1 is a plan view showing a clip made in accordance with my invention.

Figure 2 is a section taken substantially on line 2—2 of Figure 1 and illustrating how the gripping members of the clip will normally lie in the same plane.

Figure 3 is a plan view of a clip made in accordance with my invention in which the two short prongs which are adapted to grip one side of the paper are provided with small grooves in their extreme upper ends so that they will more firmly

grip the sheet of paper and to prevent the clip from slipping off the paper.

Figure 4 is a section taken substantially on line 4—4 of Figure 3 and more clearly showing the grooves in the upper ends of the short prongs.

Figure 5 is a plan view of a clip made in accordance with my invention, the upper end of one of the prongs being beveled in a direction reverse to the direction in which the upper end of the other prong is beveled, so that no matter which side of the paper the prongs are disposed on, there will be a tendency for the end of one of the prongs to dig into the paper to prevent slipping of the clip therefrom.

Figure 6 is a section taken substantially on line 6—6 of Figure 5 and showing more clearly how the upper ends of the prongs are reversely beveled.

Figure 7 is a plan view of a paper clip made in accordance with my invention and having the prongs reversely inclined.

Figure 8 is a section taken substantially on line 8—8 of Figure 7 showing how one of the prongs is inclined in one direction and the other prong is inclined in an opposite direction in order that one of the prongs will tend to dig into the sheet of paper no matter on which side the prongs are disposed.

Figure 9 is a plan view of a clip made in accordance with the principles of my invention and showing the two short prongs projecting up between the legs of the central loop disposed thereabove.

Figure 10 is a section taken substantially on line 10—10 of Figure 9 and showing how the upper ends of the prongs are bent rearwardly in order that they extend in between the legs of the loop so that they will tend to dig into the paper to prevent the clip from slipping therefrom.

Figure 11 is a perspective view showing a clip made in accordance with my invention applied to a sheet of paper.

With reference to the drawing and particularly to Figures 1 and 2, I have shown a paper clip which is made in accordance with my invention and which is preferably of the shape shown. This clip is preferably made of a single piece of wire which is tempered to such a degree that it will have sufficient spring tension which will make it resilient so that it will always tend to return to its original shape when it is bent out of shape. This wire may be of any desired and satisfactory diameter or thickness. It can be bent into the shape shown by any known or suitable process.

As shown in Figure 1 this clip embodies a central main loop member 1 which is substantially of U-shape. This loop 1 consists of legs 2 and 3 which are arranged parallel with each other and which are joined together at their lower ends by means of a curved portion 4. Thus, the upper end of the loop will be open and the lower end thereof closed.

On one side of the loop 1 a loop 5 is formed and on the other side of the loop 1 a loop 6 is formed. The loop 5 is formed by the leg 2 of loop 1 and a leg 7 which extends parallel to the leg 2 and whose upper end is joined to the upper end of the leg 2 by means of a curved portion 8. The leg 7 extends downwardly past the closed lower end of the main loop 1 a short distance. Then this leg is bent inwardly to produce a curved portion 9 at the lower end thereof and is then bent upwardly to form a straight prong 10. This prong 10 is quite short in order that it will be very strong.

The loop 6 at the other side of the loop 1 is formed in a similar manner by the leg 3 of the loop 1 which is joined to a leg 11 at its upper end by a curved portion 12. The leg 11 is parallel to the leg 3. This leg 11 extends downwardly past the lower end of the loop 1 and is bent in a manner similar to that in which the leg 7 is bent to form a curved portion 13 at the lower end thereof and an upwardly extending straight prong 14 identical to the prong 10.

The legs of the loops 5 and 6 are preferably disposed fairly close together and the space between the legs of each of these loops is less than the space between the legs of the main loop 1.

Since the legs of the loop 1 are disposed close to the outer legs of the two side loops when the loop 1 is pressed forwardly or rearwardly in order that it can be applied to a paper, it will tend to return to its original shape, and will have a considerable amount of spring tension. It will be understood that the clip is formed in such a manner that all of the various loops, the legs thereof, and the prongs 10 and 14 will lie in the same plane. As previously stated, the prongs 10 and 14 are made comparatively short so that they will possess a comparatively great amount of strength. The loop 1 is of a considerable length in comparison to the prongs so that the lower end of the loop may be readily pressed in either direction by the finger out of alignment with the prongs 10 and 14, in order that the clip can be readily applied to the paper.

The prongs 10 and 14 extend upwardly and are preferably parallel to the legs 7 and 11, respectively. They extend to a point just slightly below the lower end of the loop 1. The upper ends of the prongs may be cut in such a manner that they will be curved as indicated at 15 to correspond to the contour of the lower end of the loop member 1. However, if desired, they may be merely cut off straight. It is desirable that the upper ends of the prongs lie closely adjacent to the lower end of loop 1 so that the ends of the prongs will normally be protected by the loop. Since there will be only a slight space between the upper ends of the prongs and the lower end of the loop there will be substantially no danger of the clips interlocking with each other. The prongs are spaced inwardly a slight distance from the sides of the main loop 1. In other words, the space between the two prongs is less than the space between the two legs of the main loop 1.

When using this clip it is slipped on the edge of the paper by pressing either rearwardly or forwardly on the lower end of the loop 1 to cause it to move out of alignment with the prongs 10 and 14 and the paper may then be slipped between the lower end of the loop and the prongs. The loop may occupy a position at either side of the paper and the prongs will be disposed on the opposite side of the paper. It will not matter which way the clip is placed on the paper since it is only necessary that the prongs be on one side thereof and the loop on the other side. As previously stated, the lower end of the loop is bent either rearwardly or forwardly out of alignment with the prongs when it is placed on the paper. Due to the temper of the wire it will have sufficient spring tension therein to cause the lower end of the loop 1 to move back into its initial position where it will be disposed in the same plane with the prongs 10 and 14. The tendency for the loop to return to its original position will cause a firm gripping action on the paper between the lower end of the loop 1 and

the upper ends of the prongs. Thus, there will be no danger of the clip accidentally slipping from the paper, or bunch of papers, because this tendency of the loop to return to its original position in alignment with the prongs will produce an extremely firm gripping action. Also, a lockmouth is produced at that point between the lower end of the loop and the upper ends of the prongs. Since the loop 1 tends to return to its original position and the tension will be fairly great, there will be no danger of other papers slipping underneath the end of the loop 1 which will be on one side of the paper unless they are purposely slipped underneath the loop with the fingers. This will also be true of the prongs 10 and 14 which will be at the opposite side of the paper. The lockmouth will prevent slipping of any paper past said mouth and underneath the clip, even if said paper passes underneath the prongs. In other words, a lockmouth is produced in the manner indicated which will preclude accidental slipping of papers between the gripping members of the clip no matter on which side of the paper bearing the clip these other papers will be disposed. Also, it will be impossible for a paper to be slipped in a downward direction underneath the free ends of the prongs 10 and 14. This is due to the fact that the legs 7 and 11 are in the same plane as the prongs 10 and 14 (Figure 11) and the paper will merely slide along said legs 7 and 11 and will not pass underneath the ends of the prongs.

In Figures 3 and 4 I have shown a clip which is practically identical to the clip illustrated in Figures 1 and 2. However, in this instance, the extreme upper of each of the prongs 10 and 14 is provided with a V-shaped groove 16. This groove will form sharp projections 17 and 18 on the upper ends of the prongs. Consequently no matter which side of the paper the prongs occupy, any tendency for the clip to slip off the paper will cause either the sharp projections 17 or the sharp projections 18, depending upon which is the closer to the surface of the paper, to dig into the paper and counteract any tendency for the clip to slip off. This is due to the fact, as before, that the loop 1 tends to move back into its original position in the same plane with the prongs 10 and 14, after the clip has been applied to the paper.

Figures 5 and 6 show a clip which is practically identical with those disclosed in Figures 1 to 4 inclusive. However, in this instance, one of the prongs is provided with an upper end 19 which is beveled in one direction and the other prong is provided with an upper end 20 which is beveled in an opposite direction. When the clip is placed on the paper any tendency for it to slip off the paper will be resisted by one of the points formed on the ends of the prongs. It will be apparent that if the prongs are disposed on one side of the paper, one of these points will function to dig into the paper while if the prongs are disposed on the other side of the paper, the other point will function to dig into the paper. Thus, it will not matter which side of the paper the clips are disposed on since the point formed on one of the prongs will always be operative.

Figures 7 and 8 show a clip made in accordance with my invention. This clip is practically the same as those previously disclosed. However, one of the prongs will lean outwardly in one direction as indicated at 21, and the other will lean outwardly in a reverse direction as indicated at 22. The upper ends of these prongs are preferably flat so that sharp edges 21' and 22' will be formed adjacent the outer side thereof which will serve to dig into the paper. It will be apparent that if the prongs are disposed on one side of the paper the edge 21' will dig thereinto. However, if the prongs are disposed on the opposite side of the paper, the edge 22' will dig into the paper. Here again this is due to the fact that the loop 1 will tend to return to its original position after the clip is placed on the paper. In all of these clips a lockmouth is produced between the lower end of the loop 1 and the upper ends of the prongs.

In Figures 9 and 10 I have disclosed a clip which is slightly different from that previously described. The main structure of the clip is identical with that previously described. However, the prongs 10' and 14' are disposed closer together so that they will be within the legs 2 and 3 of loop 1. They project up past the lower end of the loop and the loop 1 will be bent rearwardly a distance equal to the thickness of the wire as indicated at 23 in Figure 10. The prongs 10 and 14 will occupy the same plane as the legs 7 and 11 of the clip. The loop 1 will tend to move back into its original position and consequently will contact with the rear surfaces of the prongs 10 and 14.

The prongs 10 and 14 will still be comparatively short so that they will possess considerable strength. As previously stated, these prongs will be close together so that they will lie within the legs 2 and 3 of the loop 1 and these prongs extend upwardly past the lower end of the loop. The extreme upper ends of the prongs are turned rearwardly as indicated at 24 so they will extend over the curved lower end 4 of the loop and will project back into the loop.

It will be apparent that a paper may be readily slipped into this clip by pressing the loop 1 a slight distance away from the prongs. When the paper is slipped into the clip it will be gripped between the end of the loop and the prongs. Any tendency for the paper to slip out of the clip will be overcome by the fact that the inturned ends of the prongs will tend to dig into the paper to prevent removal of the clip. Due to the fact that the loop 1 will tend to return to its original position and due to the inturned upper ends of the prongs a lockmouth will be produced between the prongs and the lower end of the loop 1. This will preclude accidental slipping of papers into the clip.

It will be understood from the above description that I have provided a paper clip having many advantageous features. In the first place, the clip which I have devised may be readily applied to a paper and will firmly grip the paper so that it will not readily and accidentally slip therefrom. In several of the clips which I have illustrated, the tendency for the clip to slip from the paper will be resisted by members which tend to dig into the paper. However, when necessary my clip may be readily removed by spreading the gripping members apart with the fingers. Another advantage of my clip structure resides in the fact that a lockmouth is produced between the gripping members so that there will be no danger of accidental slipping of papers underneath the gripping members of the clip.

Another advantageous feature of my invention is the fact that the clip is made in such a manner that there will be no danger of several of these clips interlocking with each other. The free ends of the wire will always be protected by the lower

end of the loop 1 when the clip is not in use. When it is in use, the fact that the loop 1 will always tend to return to its original position will cause the free ends of the wire to dig into the paper rather than to stick out, which is very undesirable.

My paper clip is made in such a manner that it is of a very sturdy construction and may be used over and over again. The portions of clips which usually more easily become bent or distorted are those long arms adjacent the free ends of the wire. However, in my clip the prongs are formed at the free ends of the wire and these prongs are short so that they will be very strong. Also the ends of the prongs are protected by the loop 1 and further, they tend to dig into the paper.

Having thus described my invention, what I claim is:

1. A paper clip made of a single piece of tempered wire, said clip comprising a central U-shaped loop having its lower end closed and its upper end open, the legs of said U-shaped loop being substantially parallel with each other and the upper ends thereof being connected by curved portions to the upper ends of outer leg members which extend in a downward direction and which are disposed in substantially spaced parallel relation to the legs of said U-shaped loop, said U-shaped loop being disposed between said outer leg members, said outer leg members extending downwardly a short distance below the closed lower end of said U-shaped loop and then being bent inwardly and upwardly to form upwardly extending prong members, said prong members being comparatively short and having their upper ends disposed adjacent the closed lower end of said U-shaped loop, said prong members being substantially parallel with each other and with said outer leg members.

2. A paper clip made of a single piece of tempered wire, said clip comprising a central U-shaped loop having its lower end closed and its upper end open, the legs of said U-shaped loop being substantially parallel with each other and the upper ends thereof being connected by curved portions to the upper ends of outer leg members which extend in a downward direction and which are disposed in substantially spaced parallel relation to the legs of said U-shaped loop, said U-shaped loop being disposed between said outer leg members, said outer leg members extending downwardly a short distance below the closed lower end of said U-shaped loop and then being bent inwardly and upwardly to form upwardly extending prong members, said prong members being comparatively short and the upper ends thereof terminating at points just below the lower end of said U-shaped loop, said prong members being substantially parallel with each other and with said outer leg members, the entire clip being made flat so that all portions thereof will normally lie substantially in the same plane.

3. A paper clip made of a single piece of wire, said clip comprising a central substantially U-shaped loop having its lower end closed and its upper end open, the upper ends of the legs of said U-shaped loop being connected to the upper ends of outer leg members which extend in a downward direction and between which the U-shaped loop will be disposed, said outer leg members extending downwardly a short distance below the closed lower end of said U-shaped loop and then being bent inwardly and upwardly to form upwardly extending prong members, said prong members being comparatively short and having their upper ends disposed adjacent the closed lower end of said U-shaped loop.

4. A paper clip made of a single piece of wire, said clip comprising a central substantially U-shaped loop having its lower end closed and its upper end open, the upper ends of the legs of said U-shaped loop being connected to the upper ends of outer leg members which extend in a downward direction and between which the U-shaped loop is disposed, said outer leg members extending downwardly a short distance below the closed lower end of said U-shaped loop and then being bent inwardly and upwardly to form upwardly extending prong members, said prong members being comparatively short and the upper ends thereof terminating at points just below the lower end of said U-shaped loop, the entire clip being made flat so that all portions thereof will normally lie substantially in the same plane.

5. A paper clip made of a single piece of wire, said clip comprising a central substantially U-shaped loop having its lower end closed and its upper end open, the upper ends of the legs of said U-shaped loop being connected to the upper ends of outer leg members which extend in a downward direction and between which the U-shaped loop is disposed, said outer leg members extending downwardly below the closed lower end of said U-shaped loop and then being bent upwardly to form upwardly extending prong members.

6. A paper clip made of a single piece of wire, said clip comprising a central substantially U-shaped loop having its lower end closed and its upper end open, the upper ends of the legs of said U-shaped loop being connected to the upper ends of outer leg members which extend in a downward direction and between which the U-shaped loop is disposed, said outer leg members extending downwardly below the closed lower end of said U-shaped loop and then being bent inwardly and upwardly to form upwardly extending prong members, the entire clip being made flat so that all portions thereof will normally lie substantially in the same plane.

7. A paper clip of the type indicated having a U-shaped loop, prong members disposed in the same plane as said U-shaped loop and having their free ends disposed closely adjacent the closed end of said U-shaped loop, said loop being adapted to be pressed out of alignment with said prongs when applied to a paper and being of such a type that it will tend to return to its original position after it is applied to the paper thereby causing gripping of the paper between the end of the U-shaped loop and the ends of said prong members.

8. A paper clip made of a single piece of tempered wire, said clip comprising a central U-shaped loop having its lower end closed and its upper end open, the legs of said U-shaped loop being substantially parallel with each other and the upper ends thereof being connected by curved portions to the upper ends of outer leg members which extend in a downwardly direction and which are disposed in substantially spaced parallel relation to the legs of said U-shaped loop, said U-shaped loop being disposed between said outer leg members, said outer leg members extending downwardly a short distance below the closed lower end of said U-shaped loop and the free ends thereof then being bent inwardly and upwardly to form upwardly extending gripping portions, the said U-shaped loop having its lower end lying

adjacent the upper ends of said gripping portions, and being adapted to cooperate with said gripping portions to grip the paper therebetween, said gripping portions being very short in comparison with said U-shaped loop.

9. A paper clip made of a single piece of tempered wire, said clip comprising a central U-shaped loop having its inner end closed and its outer end open, the legs of said U-shaped loop being substantially parallel with each other and the outer ends thereof being connected by curved portions to the corresponding ends of outer leg members which extend in substantially spaced parallel relation to the legs of said U-shaped loop, said U-shaped loop being disposed between said outer leg members, said outer leg members extending past the closed end of said U-shaped loop and the free ends thereof being bent inwardly and then towards the closed end of said U-shaped loop to form gripping members, the closed end of said U-shaped loop and the ends of said gripping members lying adjacent each other and being adapted to cooperate with each other to grip the paper therebetween, the said gripping members and the said U-shaped loop being of greatly different relative lengths.

10. A paper clip made of a single piece of wire, said clip comprising a central U-shaped loop having its inner end closed and its outer end open, the outer ends of the legs of said U-shaped loop being connected to the corresponding ends of outer leg members, said U-shaped loop being disposed within said outer leg members, said outer leg members extending past the closed end of said U-shaped loop and the free ends thereof then being bent inwardly and then towards the closed end of said U-shaped loop to form gripping members, the closed end of said U-shaped loop and the innermost points of said gripping members lying adjacent each other and said members and said loop being adapted to cooperate with each other to grip the paper therebetween, the said gripping members and the said U-shaped loop being of greatly different relative lengths, said U-shaped loop and said gripping members lying normally in the same plane.

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