

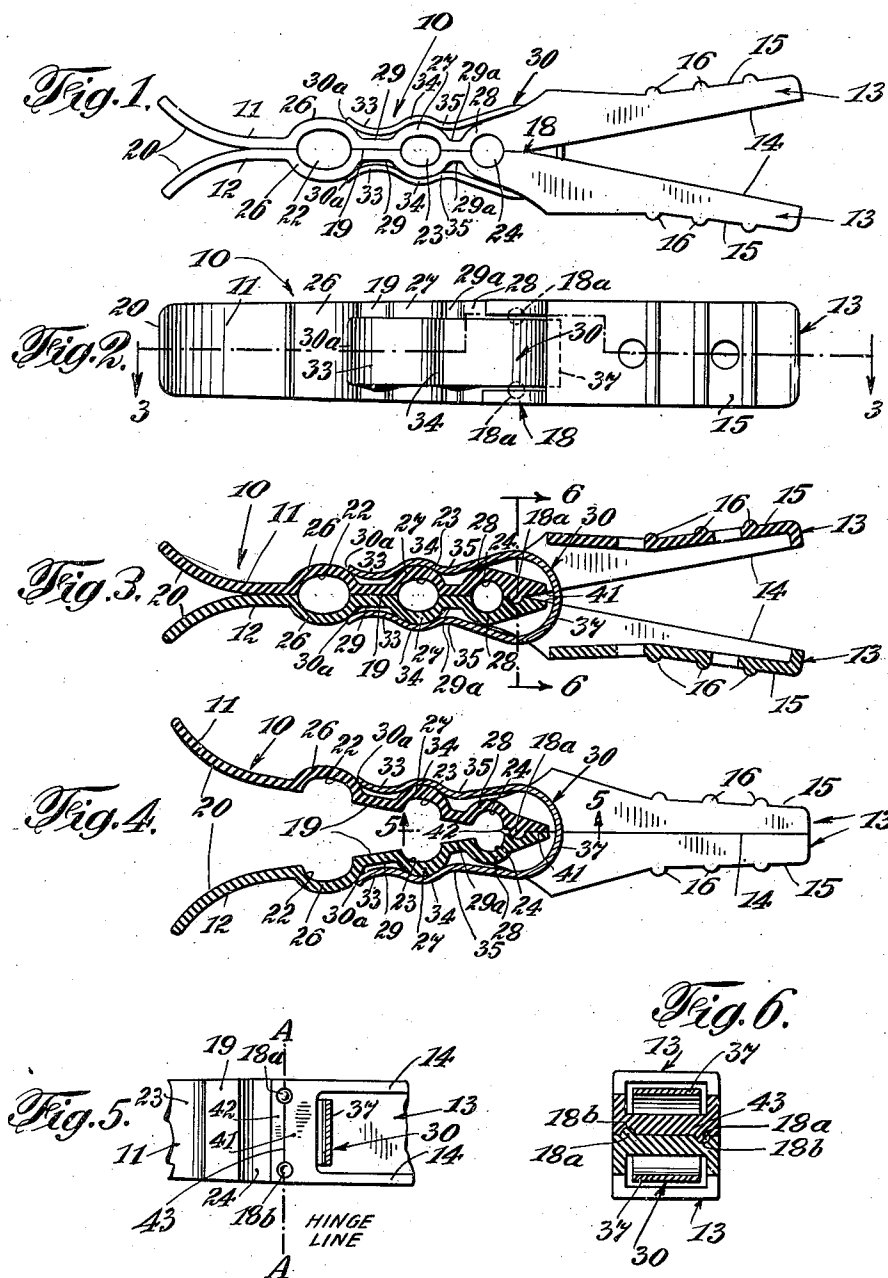
Feb. 8, 1949.

M. MACCAFERRI

2,461,333

CLOTHES PIN

Filed May 28, 1947



INVENTOR.
Mario Maccaferri
BY C. P. Goepel
his ATTORNEY

UNITED STATES PATENT OFFICE

2,461,333

CLOTHESPIN

Mario Maccaferri, Rye, N. Y.

Application May 28, 1947, Serial No. 751,028

5 Claims. (Cl. 24-137)

1

This invention relates to clothes pins and more particularly of the kind consisting of pivoted jaws controlled by a spring, the jaws being made of a suitable plastic material.

Clothes pins of this general type have been attendant with considerable difficulty in connection with the breaking down of the springs.

The invention consists in a specially shaped spring arranged to hold the jaws closed, and to permit opening of the jaws, which spring is correlated to a hinge for the jaws, so as to subject the spring to the least possible strain, and also to enable the spring to press forcibly on the forward ends of the jaws.

More particularly the invention includes the combination of the improved spring and jaws having bulges to be engaged by ends of the spring, the spring having a reentrant curve to take up the resiliency.

The invention will be further described, an embodiment thereof shown in the drawings, and the invention will be finally pointed out in the claims.

In the accompanying drawings,

Fig. 1 is a side view of the improved clothes pins;

Fig. 2 is a top view;

Fig. 3 is a horizontal section taken on line 3-3 of Fig. 2, with the jaws in closed position;

Fig. 4 is a similar view with the jaws in open position;

Fig. 5 is a horizontal fragmentary view taken on line 5-5 of Fig. 4, seen in the direction of the arrows, and

Fig. 6 is a transverse section taken on line 6-6 of Fig. 3.

Similar characters of reference indicate corresponding parts throughout the various views.

Referring to the drawings, the clothes pin 10 is preferably made of suitable plastic material. It consists of two jaws 11 and 12. Each jaw is identical with the other. Each consists of a handle portion 13 inclined to the horizontal at its inner surface 14, and having its outer surface substantially parallel as at 15. On the outer surface 15, cross ridges 16, for example, are provided to enable the fingers to readily grip the same. Other forms of gripping means may be employed. At the inner end of the inclined end portion 14, a hinge device 18 is provided. The face of the jaw then extends substantially horizontally as at 19 to a curved entrance portion 20. The horizontal portions 19 of the two jaws 11 and 12, have cut outs 22, 23 and 24. These cut outs or gaps form outer curved surfaces 26, 27, and 28. Be-

2

tween the outer curved surfaces 26, 27, and 28 flat parts 29 and 29a are provided.

A spring 30 of general elongated U shape, but of ogee or S or reverse shape, has its ends 30a shaped to fit against the outer bulge 26. The spring 30 has a curved part 34 which abuts against and extends over the bulge 27. The spring 30 then has a semicircular curve 35, which merges into the curved part 37 which is common to both legs of the spring 30. This curved disposition of the parts has the advantage of placing the spring closing pressure as far forward of the jaws as possible, in order to get a good closing pressure, and enables a gentle opening of the jaws, without subjecting the spring to unnecessary wear.

When pressure is applied to the jaws 15, the bulge 27 which having its outer curvature of substantially cylindrical shape and having the curved portion 34 of the spring 30 curved in conformity therewith, presses the spring portions outwardly, and translates the tension given to the spring, to the portion 35, the facing peaks of which then move towards the jaws, or towards the flat portion 29a, without, however, contacting therewith. In consequence, the common portion 37 is subjected to very little movement. This reentrant portion 35, when under tension, seeks to remove such tension, by pressing upon the bulge 27, and thereby close the jaws. The spring 30 from the reentrant portion 35 to its ends 30a, translates a part of this reaction pressure upon the further or outer part of the jaws.

The hinge 18 consists of a spherical projection 18a and a spherical recess 18b. Each jaw 11 or 12 has one projection and one recess, arranged on a line A-A transversely of each jaw (Fig. 5). The projection 18a of one fits into the recess of the other jaw. To the right of line A-A in Fig. 5, each jaw has a short flat surface 41, which is inclined to the horizontal, as shown in Figs. 3 and 5. Preferably this inclination is in line with the inclined surface 14. When the jaws 11 and 12 are closed as in Fig. 3, the inclined surfaces 41 form an angular bite. When the jaws are entirely open, these surfaces 41, abut, and prevent further opening of the jaws. The line A-A, as shown in Fig. 5, is coincident with the angle line 43 formed by a horizontal surface 42 and the inclined surface 41. The base of the projection 18a is about one-half on the surface 42 and about one-half on the inclined surface 41. So, also the recess 18b is about one-half in the surface 42 and the other half in the surface 41.

The various cut outs 22, 23, and 24, form passages for steelwire or rope lines. The first one

22 is to clamp clothes on a rope line. The central one 24 may be used to clamp the pin without clothes on the clothes line and leave it there, overnight, so to say, ready to be used for clothes.

The curved entrance portions 20 enable the jaws to be pushed over the clothes on the line, until the cut outs embrace the clothes.

I have described an embodiment of my invention, but obviously various changes may be made in the details disclosed without departing from the spirit of the invention as set out in the following claims:

I claim:

1. In a clothes pin, the combination of a pair of hinged pivoted jaws, each jaw having a cylindrically shaped outward bulge, and a U shaped spring embracing the pivoted ends of the jaws and having each leg provided with an outward curved portion extending over and hugging said bulge, and having an inward semi-circular or ogee curve between said outwardly curved portion and the common portion forming part of each leg.

2. In a clothes pin, the combination of a pair of hinged pivoted jaws, each jaw having a cylindrically shaped outward bulge, and a U shaped spring embracing the pivoted ends of the jaws and having each leg provided with an outward curved portion extending over and hugging said bulge, and having an inward semi-circular or ogee curve between said outwardly curved portion and the common portion forming part of each leg, each leg having an extension beyond the curved portion towards the tips of the jaws.

3. In a clothes pin, a pair of jaws in mirror reverse, a hinge for said jaw, each of said jaws having at one side a curved entrance portion, a cut out, a flat surface, and a surface inclined to the flat surface, the flat surface of one jaw abutting the flat surface of the other jaw, and the cut out of one jaw forming with the cut out of the other jaw, a clothes line opening, and a semi-cylindrical bulge on the other side, combined with a U shaped spring having its U embracing the hinge and extending beyond the hinge to said inclined surfaces, and having a semi-cylindrical portion in each leg for huggingly embracing the semi-cylindrical bulge of each jaw, said spring having a reentrant portion of semi-

circular form between said first named semi-circular portion and the U of the spring.

4. In a clothes pin, having a pair of jaws each having a clothes line gripping portion, a hinge portion, and a handle portion, the handle portion having finger seats with flanges extending from the margins of said seats, and said handle portion extending to the hinge portion, and having an opening adjacent said hinge portion, the flanges of each handle portion abutting when pressed together, said hinge portion having a flat surface with a projection on one jaw matching a corresponding recess in the flat surface of the other jaw, the combination of a U shaped flat spring tensioned to hold the gripping portions against each other and pressing upon the exteriors of the gripping portion, and passing through the openings in the handle portions, the U of the spring enclosing the hinge portions and parts of the gripping portions, said spring having on each leg of its U, a re-entrant portion between the U and the pressure point of the leg upon the gripping portion.

5. In a clothes pin having two matching jaws in abutting relationship with a hinge portion of a projection on one jaw registering with a recess on the other jaw, a gripping portion axially at one side of the hinge portion, and a handle portion axially at the other side of the hinge portion, the combination of a plurality of projections on the exterior side of each gripping portion, and a U shaped flat spring having its U embrace the hinge portion and its legs extend over one of said projections and against another projection of said plurality of projections, each leg having a re-entrant portion.

MARIO MACCAFERRI.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,303,961	Sprague	Dec. 1, 1942

FOREIGN PATENTS

Number	Country	Date
145,423	Switzerland	Feb. 28, 1931