No. 669,142. Patented Mar. 5, 1901.

J. P. LOVE.

SUSPENDING DEVICE.

(Application filed June 4, 1900.)

(No Model.)

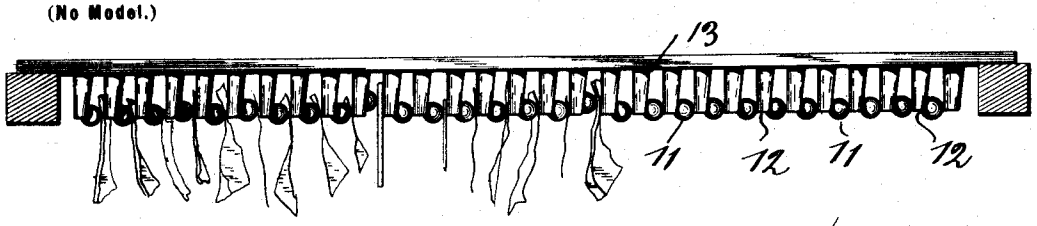


Fig. 1.

Fig. 2.

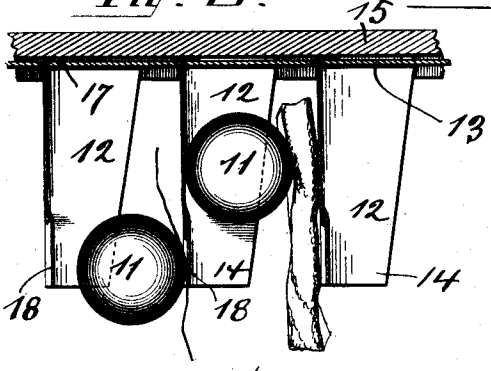


Fig. 3.

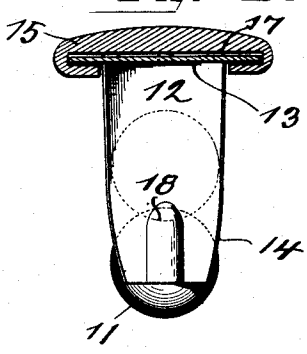


Fig. 4.

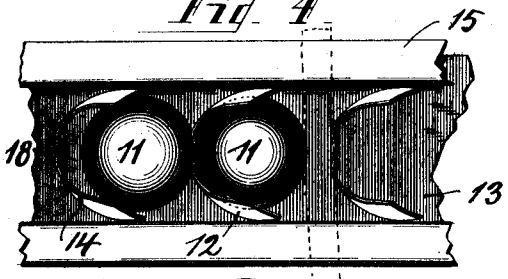


Fig. 5.

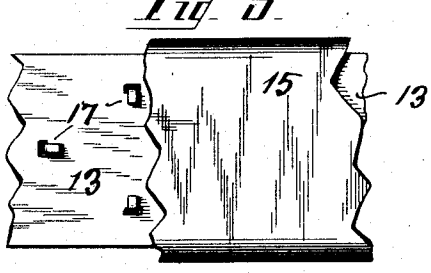


Fig. 6.

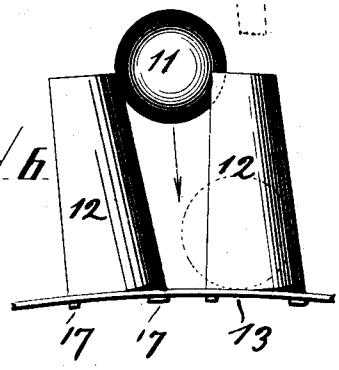


Fig. 7.

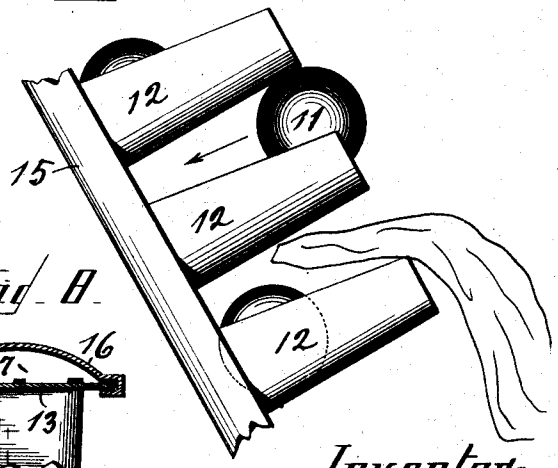
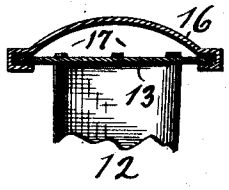


Fig. 8.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES P. LOVE, OF CINCINNATI, OHIO.

SUSPENDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 669,142, dated March 5, 1901.

Application filed June 4, 1900. Serial No. 18,941. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. LOVE, a citizen of the United States, and a resident of Cincinnati, Hamilton county, State of Ohio, have invented a certain new and useful Suspending Device, as set forth in the annexed specification; and I do hereby declare the following to be a clear, full, 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, attention being called to the accompanying drawings, with the reference-numerals marked thereon, which form also a part of this specification.

This invention relates to a device for suspending, so as to be quickly removable, articles of limited weight and limited thickness. It is intended more particularly for suspending articles in form of sheets—like paper, cloth, fabric, and of other materials—and may be used for suspending while drying, or for other purposes, photographic prints, garments, pictures, pasted articles, &c.

The device is constructed with a view to obtain the necessary hold on the article by covering only a very limited part of the surface thereof, which is of special advantage when used for drying purposes, and it is further such as to permit the engagement and detachment of these articles to be performed by the simplest manipulation.

The invention consists of such a device constructed as described and pointed out in the annexed specification and the claims following it and as illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the device in position ready for use. Fig. 2 is an enlarged longitudinal section of a portion thereof. Fig. 3 is a cross-section of the preceding figure. Fig. 4 is an under side view of Fig. 2. Fig. 5 is a top view thereof with parts broken away. Fig. 6, in an inverted side elevation, shows one of the steps of manufacture of this article. Fig. 7 shows one of the methods of manipulating the device for the purpose of releasing articles attached thereto, and Fig. 8 is the upper part of a cross-section of the device and shows a slightly-modified construction.

As to operation, my device depends upon the active effect of a loosely-supported rolling weight, while the same bears against one of the surfaces between which the same is confined and with the article to be suspended clamped between the two.

The leading part of my invention consists of the construction, formation, and shape of the parts between which the rolling weight is confined. This latter consists of a ball 11 contained in the space between two adjoining members 12, of which there may be more or less, all depending from a base 13, to which they are connected, properly spaced apart, with a ball confined in each space. These members may be described as semitubular or tubes open on one side, and their diameter is decreased toward their lower open ends, as shown at 14. (See particularly Fig. 3.) One object of this reduction is to prevent the ball from dropping out below; but the more important object is to give it a tendency to roll out laterally through the open or removed part of the tube. This tendency is restrained, however, by the rear or closed part of the next adjoining member 12, which is so spaced as to prevent the ball from leaving its confines entirely. In this manner the balls have an inherent tendency to lie against the closed part of members 12, and if any article of the kind intended is placed between them it will be held by the clamping action between the two. These balls may be of any suitable material, by preference elastic, like rubber, in which case they adjust themselves more closely and snugly to the shape and surface of the article to be held, thereby increasing the clamping action for such purpose, which is of especial advantage in case such article is of smooth material, like metal, for instance.

Members 12 and base 13 are preferably of sheet metal, and this latter is stiffened by slipping a grooved wooden bar 15 over it, as shown in Fig. 3, or one 16 of metal, as shown in Fig. 8. The connection of members 12 to base 13 may be by solder or by rivets 17, forming integral extensions of the former and occupying openings in base 13, or solder and rivets may be combined.

Fig. 1 shows the application and use of my device constituting a bar loosely supported at its ends and provided with a number of such suspending devices. The articles to be suspended are attached by simply pushing

them in from below between the balls and the solid part of the members 12, against which they rest. As soon as released it will be immediately held by the ball, which now rests against the article and presses the same against member 12. To detach any article it is only necessary to push the ball slightly upwardly, whereupon the article becomes free at once, or when all of them are to be detached at once the bar may be grasped and upset, as shown in Fig. 7, whereupon all balls roll away from the opposite members 12, and thereby release all articles. If the articles to be held are very thin or very smooth, the gripping action may be increased by slightly corrugating or depressing the contacting surface of members 12, as shown at 18. This also prevents the suspended articles from swaying, which if proceeding for some time would cause them to work loose. After members 12 have been attached to base 13, as before described, the device is completed by the insertion of the balls, which is done by slightly bending base 13, as shown in Fig. 6, thereby springing members 12 apart, so as to increase the space between them sufficiently to permit insertion of the balls. The stiffening-bar is finally attached, but may not be required in all cases—that is, particularly not in such where the device is only of limited length.

Having described my invention, I claim as new—

1. In a suspending device, the combination of a tubular member open on one side and at its lower end and also contracted toward this latter, a horizontally-disposed base, to the under side of which it connects with its upper end only, so as to depend freely therefrom and a ball contained in this tubular member and prevented from dropping out by the contracted part thereof and by an abutment opposite its open side.

2. In a suspending device, the combination of a series of members bent substantially each to a semitubular shape and disposed with a space between them, each open at upper and lower ends and contracted toward this latter, the laterally-open part of one tube being opposite the closed part of the other, a ball confined in the space between adjoining members and a supporting-base to which they all connect at their upper ends and which base also closes the open space thereat.

3. In a suspending device, the combination of a horizontally-disposed supporting-bar, a number of semitubular members connected to the under side thereof with a space between them and with the open part of one opposite the closed part of the other and being further all contracted toward their lower ends and a ball contained in the space between each two adjoining members, the supporting-bar being of yielding material which permits the same to be bent upwardly to spring the semitubular members depending therefrom apart thereby permitting insertion of the balls.

4. In a suspending device, the combination of a base 13, depending members 12, formed of sheet metal to substantially semitubular shape as shown connected thereto with a space between them and having depressions 18 at their lower ends and a ball contained in the space between them.

5. In a suspending device, the combination of a base 13 and depending members 12 of sheet metal and shaped as shown, these latter having their lower ends contracted and being connected to the former with a space between them, balls contained in such spaces and a strengthening-bar connected to base 13.

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

JAMES P. LOVE.

Witnesses:
T. G. AMPHLETT,
CHAS. B. BLACK.