A squeegee or like cleaning appliance, particularly for cleaning window panes and floors, comprises a holder attached to a handle for removably holding a cleaning element of which one edge is held in a U-section mount. The holder comprises two clamping jaws of which at least one is movable for gripping the mount of the cleaning element between them, a clamping lever being hingeably attached to one of the clamping jaws and having a handle portion which projects through a window in the said clamping jaw. The handle portion is manually operable to wedge the lever against the other of the clamping jaws for locking the same in gripping position.

7 Claims, 5 Drawing Figures
SQUEEGEE OR LIKE CLEANING APPLIANCE, PARTICULARLY FOR CLEANING WINDOW PANES AND FLOORS

BACKGROUND OF THE INVENTION

This invention relates to a squeegee or like cleaning appliance, particularly for cleaning window panes and floors.

A cleaning appliance has already been proposed which comprises clamping jaws coupled by an arm and urged apart by a coil spring. A widened outside end of this arm loosely bears against one clamping jaw, whereas its other end is pivoted to a hand lever in the form of an eccentric. This permits the clamping jaws to be closed and locked contrary to the thrust of the coil spring. Cleaning appliances based on this principle of construction have major drawbacks. Firstly the clamping mechanism is relatively complicated in so far as it comprises several parts which must all be assembled with the expenditure of time and labor, and which therefore increase the cost. Moreover, the hand lever projects a relatively long way from the other parts of the appliance. When the appliance is used to clean underneath furniture this lever is not merely a nuisance but may even cause actual damage to the furniture or to the floor. Finally when provided with a short handle the appliance is awkward to hold, again because the hand lever is in the way. In the case of a different cleaning appliance the cleaning element is gripped by the clamping jaws by virtue of the thrust of a hand lever and of a leaf spring which bears on the movable jaw. It has been found in practice that the power of such a leaf spring is often insufficient to hold the cleaning element in place reliably. Another known cleaning appliance has a fixed channel-section holder. One flap of the holder is hinged and forms a clamping jaw for gripping the cleaning element in the holder. In this clamping device a reliable grip on a sponge rubber cleaning element is not assured for the principal reason that such elements nearly always vary in thickness. Moreover, owing to its length the clamping lever is awkward to operate and it is also liable to be rendered non-functional by rust.

SUMMARY OF THE INVENTION

It is an object of the present invention to simplify the design of cleaning appliances of the above-specified kind, particularly with regard to the clamping device for the cleaning element and the handle lever for operating the same.

Yet another object of the invention is to dispose the operating element of the clamping device that it is not in the way when the appliance is used for cleaning underneath furniture and also that it is not a nuisance to the person handling the appliance.

To attain these objects the present invention provides a squeegee or like cleaning appliance, particularly for cleaning window panes and floors, which comprises a holder attached to a handle for removably holding a cleaning element of which one edge is held in a U-section mount, said holder comprising two clamping jaws connected to the handle of the appliance, of which at least one is movable for gripping the mount of the cleaning element between them, a clamping lever being hingebly attached to one of said clamping jaws on said holder and having a handle portion which projects through a window in said clamping jaw to which said lever is attached, and which is manually operable to wedge said lever against the other of said clamping jaws for locking the same in gripping position. Preferably the clamping lever is a bellcrank lever.

According to another feature of the invention the clamping lever may be made of wire, the centre portion forming a handle and the ends of said wire working in eyelets formed by a curved edge of the clamping jaw to which the clamping lever is attached.

The clamping device of a cleaning appliance as proposed by the invention differs from the eccentric type lever used in prior appliances in that it comprises only one single part, namely the clamping lever itself. This greatly facilitates the work of assembly, particularly bearing in mind that all that has to be done is to insert the lever into eyelets formed by the curved edge of one of the jaws. The proposed clamping device also permits the appliance to be fitted with a short handle because the presence of the clamping lever is not in the way when the appliance is thus held by a short handle.

Yet another feature of the invention consists in providing the clamping jaw with a countersunk portion for accommodating the handle portion of the clamping lever in locking position.

The handle portion of the clamping lever projects from this indented countersink only far enough to be concomitantly gripped. Consequently the cleaning appliance can be pushed underneath furniture without the handle portion of the clamping lever being in the way.

BRIEF DESCRIPTION OF THE DRAWING

An embodiment of the invention will now be described by way of example and with reference to the accompanying drawing, in which:

FIG. 1 is a top plan view of a squeegee or like cleaning appliance according to the invention;

FIG. 2 is a side elevation of part of the appliance;

FIG. 3 is a side elevation of part of the appliance, of which a portion is represented in a section taken on the line III — III of FIG. 1;

FIG. 4 is yet another part sectional side elevation of the appliance without the cleaning element and showing the clamping lever in its inactive position, and

FIG. 5 is a view of the appliance from underneath.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawing the illustrated squeegee or like cleaning appliance comprises a holder 1 which consists of two clamping jaws 2 and 3. The clamping jaw 2 is rearwardly extended to form a short handle 4 which is provided with a sheath 5 of rubber-elastic material. The clamping jaw 2 and the short handle 4 are an integral component. The short handle 4 is a hollow cylinder and forms a socket for the reception of the end of a shaft-like handle extension 6. The clamping jaw 3 is attached to the clamping jaw 2 by two bolts 7 and 8 which pass with clearance through the clamping jaw 3, and which are held in the clamping jaw 2 so that they have all-round mobility. The threaded ends of the bolts 7 and 8 carry nuts 9 and 10 which secure the clamping jaw 3 on the bolts 7 and 8. The reference numeral 11 designates a cleaning element in the form of a squeegee made of a foam rubber or like sponge-like material or of a flexible rubber strip, and fitted into a U-section...
mount 12. The mount 12 of the squeegee is firmly gripped between the two clamping jaws 2 and 3. The squeegee 11 and its mount 12 are tightly gripped between the clamping jaws 2 and 3 when a clamping lever 13 is operated, which in the illustrated embodiment is a bellcrank lever made of a bent length of wire. The centre portion of this length of wire is bent to form a handle portion 14. The outwardly bent ends 15 of the clamping lever 13 are inserted into eyelets 16 formed by curling over the edge of the clamping jaw 3. The handle portion 14 of the bellcrank lever projects through a window 17 in the clamping jaw 3. The window 17 is contained in an area 18 which is indented inwardly and countersunk.

The clamping lever 13 functions as follows:

When the mount 12 and its cleaning element 11 have been placed between the clamping jaws 2 and 3 the handle portion 14 of the clamping lever 13 is pushed forwards towards the leading edge of the clamping jaw 3 until it makes contact with the interior of the clamping jaw 2 (FIG. 3). During this deflection the clamping lever 13 lifts the forward end of the clamping jaw 3 sufficiently for this jaw to grip the mount 12 of the cleaning element 11 by pressing the mount against the other clamping jaw 2. In clamping position the major part of the handle portion 14 of the clamping lever 13 is inside the countersunk area 18 of the clamping jaw 3 (FIG. 5). If the cleaning element 11 and its mount 12 are to be replaced, the handle portion 14 of the clamping lever 13 is tilted back into its former position. This causes the clamping jaw 3 to release the mount 12 together with the cleaning element 11 so that the latter can be removed from its mount and replaced.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The embodiment is therefore to be considered in all respects as illustrative and not restrictive.

What is claimed is:

1. A squeegee, particularly for cleaning window panes and floors, comprising
   a. an exchangeable substantially strip-shaped cleaning element,
   b. first and second clamping jaws,
   c. means for pivotally securing said clamping jaws together for movement about a fulcrum,
   d. gripping means on each of said first and second clamping jaws on one side of said fulcrum for gripping opposite sides of said cleaning element,
   e. an aperture in said first clamping jaw,
   f. a clamping lever having a generally U-shaped configuration and including a handle portion at one end thereof,
   g. means located at the side of said fulcrum opposite said one side thereof for pivotally securing the end of said clamping lever opposite said handle portion to said first clamping jaw at the side of said first clamping jaw adjacent said second clamping jaw,
   h. said clamping lever being arranged to pivot between a locking position in which the portion thereof at about the apex of said U-shaped configuration presses against said second clamping jaw at said opposite side of said fulcrum to bias said gripping means of said clamping jaws towards each other to grip said cleaning element and a release position in which said clamping jaws may freely pivot permitting said gripping means to move away from each other to release said cleaning element,
   i. said clamping lever being arranged such that only said handle portion extends through said aperture in said first clamping jaw when said clamping lever is in said locking position and a part of said clamping lever is drawn through said aperture during pivotal movement of said clamping lever to said release position.

2. A squeegee as defined in claim 1 wherein said clamping lever is a bellcrank lever.

3. A squeegee as defined in claim 1 wherein said means for pivotally securing said clamping lever comprises a pair of spaced eyelets formed by a curled edge of said first clamping jaw and said clamping lever comprises an elongated wire member shaped such that the center portion thereof forms said handle portion and the opposite ends of said wire member are pivotally secured in said eyelets.

4. A squeegee as defined in claim 1 wherein a portion of said first clamping jaw surrounding said aperture is countersunk in the direction of said second clamping jaw forming a recess in said first clamping jaw and said handle portion is arranged such that at least a portion thereof is accommodated within said recess when said clamping lever is in said locking position.

5. A squeegee as defined in claim 4 wherein said handle portion has a greater dimension than said aperture in at least one direction whereby a portion of said first clamping jaw adjacent said aperture prevents said handle portion of said clamping lever from passing through said aperture when said clamping lever is moved to said locking position.

6. A squeegee as defined in claim 5 wherein a handle for manually operating said squeegee is attached to one of said first and second clamping jaws.

7. A squeegee as defined in claim 4 wherein said means for pivotally securing said clamping jaws together includes means for adjusting the distance between said first and second clamping jaws.