Dec. 22, 1931. W. WALBRÖHL 1,837,931

BRUSH OF STEEL WIRE SPRINGS

Filed Oct. 7, 1929

Fig.1.

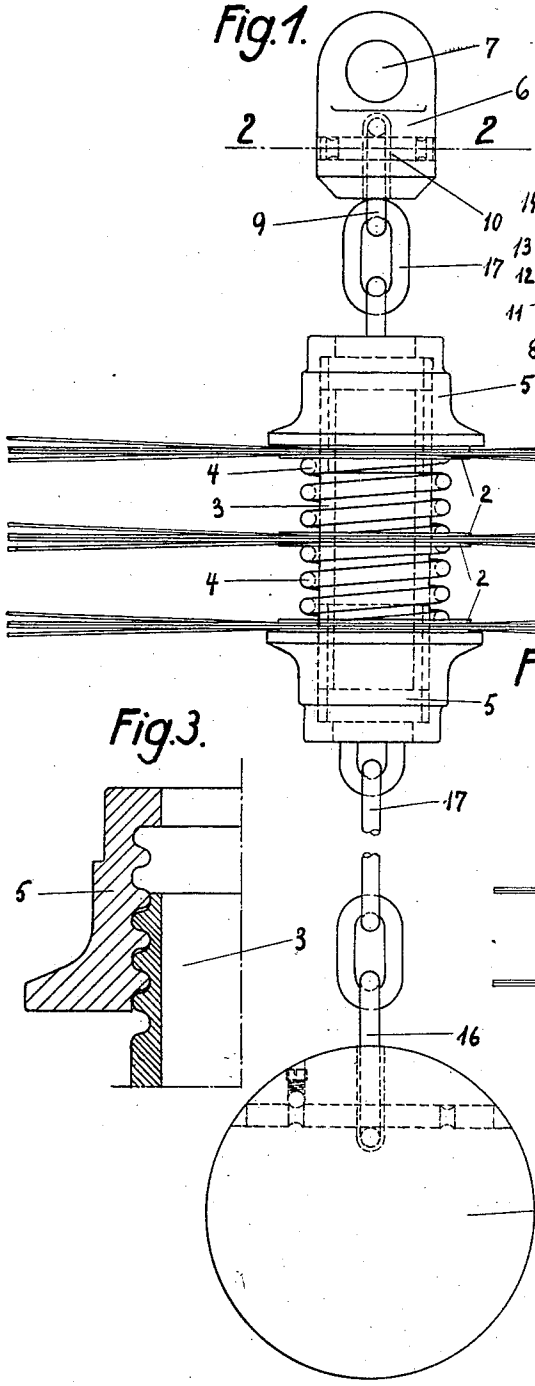


Fig.2.

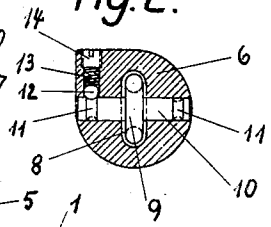
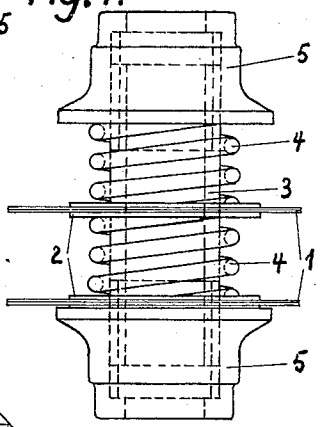


Fig.3.

Fig.4.



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BRUSH OF STEEL WIRE SPRINGS

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This invention relates to a brush of steel wire springs, specially designed for sweeping chimneys or for similar purposes. In brushes of this type it is common to make the brush body of several disc-shaped elements carrying the springs so that the discs of each element, having a hole at the centre, are mounted on a common bolt and fixed on the same by means of nuts.

Such brushes having once been finished, form not easily alterable brush bodies. In the sweeping of chimneys narrowings of cross section sometimes prevent the brush from passing. As brushes from steel wire spring adapt themselves with greater difficulty to narrowings of cross section, than brushes of elastic material it would be necessary to have on the spot several brush bodies with different springs to interchange the same, when necessary. It is disagreeable for a chimney sweep to carry along several brushes and to interchange the same, when necessary.

The brush, according to the invention, consists, in a manner known per se, of steel spring elements fixed between discs having each a hole at the centre. From such brush elements brushes of different thickness can be made by mounting the desired number of elements on a screw bolt on which they are then fixed by means of nuts. According to the invention the several elements on the screw bolt are separated by springs, preferably spiral springs, and held on the bolt by disc-like nuts. It is easy to remove some brush elements or to add other brush elements, in order to decrease or increase the elasticity of the brush. With this object in view one of the nuts is unscrewed, the brush separated from the rope, and certain elements removed or inserted. This can be easily done on roofs.

In order to avoid the necessity to carry wrenches, the nuts are arranged so that they can be easily screwed on or off by hand.

With this object in view clearance is left between the sides of thread, preferably square thread. The ease of turning of the nuts ensured thereby is not objectionable while using the brush, as by the spiral springs inserted between the brush elements a kind of screw-lock is produced. When the brush connection has not been loosened for a long time, it might happen, that it would be difficult to loosen the connection by hand, owing to rust, soot or the like. According to the invention this difficulty has been overcome. The bolt of a sweeping brush is generally perforated at the centre to let a chain pass, and to the lower end of the chain a ball is fixed, a thimble being fixed to the other end of the chain. In the sweeping of a chimney the ball is pulled up and then allowed to drop suddenly so that the brush bodies are forced through the chimney.

By the above described arrangement of spiral springs between the brush elements, the nuts are pressed apart in the longitudinal direction of the bolt. When the ball is lifted as well as when it is dropped, it strikes against the nut which is thus pushed forward, against the springs, a distance equal to the clearance in the thread so that the nuts are loosened in the thread.

According to the invention the ball and the thimble are each connected with the corresponding chain link by an easily removable cross pin so that the chain can be easily detached from the ball or from the thimble. Closed connecting elements welded together cannot be used between the chain, ball and thimble, and open connecting elements like spring hooks are not sufficiently strong so that the connecting means according to the invention is very practical. The thimble is preferably made of such shape that it uniformly strikes against the corresponding nut of the brush body.

An embodiment of the invention is illustrated by way of example in the accompanying drawings in which:

Fig. 1 shows a chimney brush with beating device.

Fig. 2 is a cross section on line 2—2 of Fig. 1 showing the thimble.

Fig. 3 shows on considerably enlarged scale parts of the screw bolt and nut.

Fig. 4 shows on reduced scale the brush body.

The brush elements are composed of sets

of steel wires 1 held between discs 2, having each a hole at the centre. These sets of wires are mounted on a tubular body 3. Each element may consist of one or several sets of wires. The brush comprises for instance, as shown in Fig. 1, three elements each composed of sets of wires and spaced by spiral springs 4 surrounding the tubular body 3. On each end of the tubular body 3 a nut 5 is screwed.

The chain 17 extends through the nuts and the tubular body.

As shown in Fig. 3 a certain clearance exists between the sides of the threads.

The thimble 6, in the eye 7 of which a rope is to be detached, is preferably as shown in Fig. 2, of cylindrical shape. The thimble 6 has in one of its end faces a cavity 8 designed to receive a link 9 of the chain. This link is secured in position by a cross pin 10. The cross pin is secured in its position by a ball 12 engaging with an annular groove 11 of the pin and pressed into this groove by the action of a spring 13 and screw 14. The pin 10 can be easily pushed out by a slight pressure exerted on one end by means of a pointed article, a nail or the like. The ball 15 is fixed on the link 16 of the chain 17 in a similar manner as the thimble is fixed on its chain link. To remove from the brush body, for instance, the set of wires nearest the thimble, this thimble is detached from the chain 17, the brush body removed from the chain, the corresponding nut 5 unscrewed, the brush set of wires removed, the nut screwed on again, and the thimble connected with the chain.

To add another set of wires to the brush body one proceeds accordingly.

The nuts are securely held on the brush body by the pressure of the springs 4.

When the sweeping brush is used, ball and thimble strike alternately against the nuts 5 so that the threads cannot clog.

A further advantage of the springs 4 is, that they form an elastic counter bearing for the brush elements, when these are exposed to considerable stress. The brush body can also be mounted on a rod and screwed on the same by a nut.

I claim:—

A brush of steel wire springs, comprising in combination brush elements each composed of a set of wires, a tubular externally threaded body on which said elements are mounted, spiral springs between said elements and surrounding said tubular body, and a nut on each end of said tubular body.

In testimony whereof I affix my signature.

WILHELM WALBRÖHL.