Oct. 26, 1937. J. PLATT 2,097,254

CARDING FLAT

Filed Nov. 23, 1935

Fig. 1

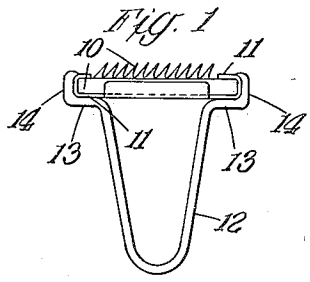


Fig. 2.

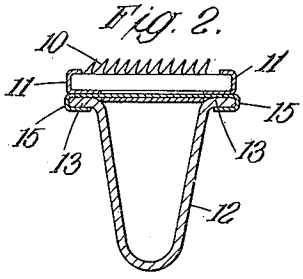


Fig. 3.

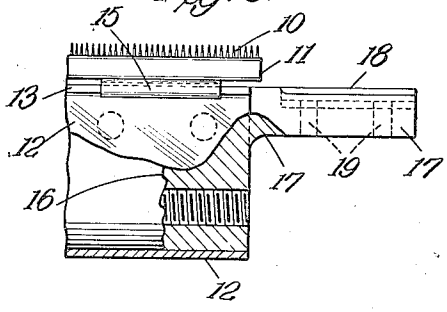


Fig. 4.

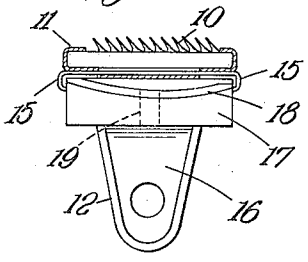


Fig. 5.

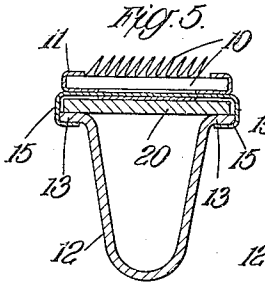


Fig. 6.

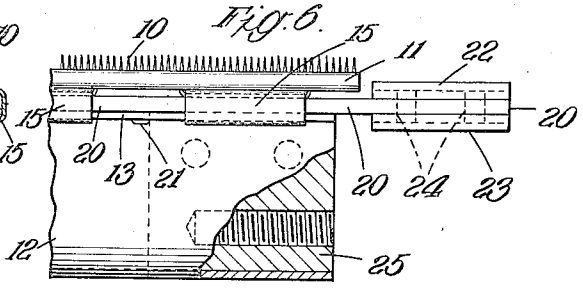
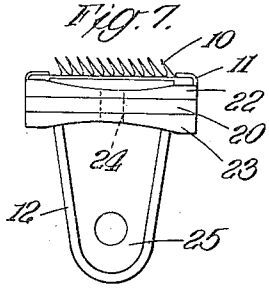


Fig. 7.



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CARDING FLAT

John Platt, Harrow, England

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In Great Britain November 23, 1934

2 Claims. (Cl. 19—113)

This invention relates to carding flats. Heretofore carding flats have been constructed of cast iron with the result that they are very easily breakable and breakages frequently occur in transit and in some instances during the operation of a carding machine, due for example to knotted cotton being drawn into the machine. The chief object of the present invention is to provide an improved construction of carding flat which is very durable and which for ordinary purposes is practically unbreakable and is not likely to be damaged by bending or deflection or in any way that would result in the carding machine being damaged.

According to one feature of the present invention, the carding flat is constructed of sheet material having a sectional form that offers great resistance to deflection or bending and at the same time is not likely to be fractured by ordinary usage or by rough handling in transit, fitting or the like. The flat may therefore be made of a ductile metal such as sheet steel or iron, preferably cold rolled mild steel, and this may in one example be shaped with parts that are to form the seating or seatings for the flat top that merges into a U-shaped extension of somewhat parabolic formation so that in cross-section the flat comprises the U-shaped or "parabolic" extension with the seatings at the free extremities to receive the flat top. The flat top may be secured on the seatings in any appropriate manner, for example by turned-over edges of the seatings that are clamped along the edges of the flat top. Alternatively, the flat top may be provided with lateral strips that can be clamped on to the said seating.

According to a further feature of the invention, a strip may be riveted or otherwise secured to the said seatings and the flat top may be clamped on to the strip, for example by lateral pieces that embrace the strip and the seatings. The flat top may be constituted by a series of toothed strips which are secured together in a channel or by any appropriate means to provide a flat or top as covered by United States Patent No. 1,709,038. In some instances a flat might be constituted by providing a series of toothed strips in a sheet metal section similar to that hereinbefore referred to and securing the several strips in position in any appropriate manner. Alternatively, the ordinary flat having resilient or bent teeth set in a flexible or cloth foundation may be supported in a sheet metal flat or section as hereinbefore described; in this case it may be desirable to provide a seating plate extending across the aforesaid seatings or ledges for the purpose of supporting the flexible top.

According to a further feature of the invention, improved means are provided for supporting the flat at its ends. The said means are preferably such as to avoid the use of cast iron and an extension may be secured to the flat in any appropriate manner which may be covered or fitted with a renewable seating or bearing preferably of alloy steel which is hardened and tempered and so shaped as to provide the "heel and toe seatings" on the flat. When this feature is applied to a flat of the formation above described, a metal plug or insertion may be riveted, welded or otherwise secured within each end of the parabolic or U-shaped section of the flat. This plug or insertion may be formed with an extension that is provided or fitted with the renewable seating or covering of sheet alloy steel hardened and tempered as aforesaid, this renewable seating or covering being constituted by a suitably shaped strip having channel shaped ends or sides to fit over the extension which is suitably curved so as to be slightly concave, preferably on both its upper and lower surfaces. The renewable strip is curved on one surface to conform with and fit against the upper curved surface of the extension and the extremities or edges of the seating are disposed at the lower surface of the extension and form the heel and toe seatings for the flat. In the event of it being necessary to replace the "heel and toe" seatings, the aforesaid sheet metal fitting is withdrawn in any appropriate manner from the extension and it is replaced by another and similar seating strip which is pressed in position. In the modification employing a strip between the U-shaped base and the flat top the strip may be extended beyond the ends of the flat and may be provided with renewable "heel and toe" seatings on one side and bearings or seatings on the other side for engaging the star wheel or the like over which the flat is carried during its operation. According to the present invention the flat is considerably strengthened by the section and formation hereinbefore referred to so that it is particularly suitable for use in places where new flats are not readily obtainble or cannot be quickly or easily repaired. Further, the provision of the renewable seatings also avoids re-milling as is necessary with the usual form of seating or bearing which is provided on flats.

In order that the invention may be clearly understood and readily carried into effect, the

same will now be more fully described with reference to the accompanying drawing, in which:—

Figure 1 is an end view of one form of the carding flat according to this invention.

Figure 2 is a cross-sectional view of another form of the carding flat showing a modified method of retaining the flat top in position.

Figure 3 is a side view of one end of the carding flat partly in section showing one arrangement of the renewable seatings or bearings.

Figure 4 is an end view of the flat shown in Figure 3.

Figure 5 is a cross-sectional view of one form of the carding flat having a strip or plate interposed between the flat top and the base or foundation.

Figure 6 is a side view of the modified carding flat shown in Figure 5.

Figure 7 is an end view of the form shown in Figures 5 and 6 illustrating in particular the renewable seatings.

As shown in Figure 1 the flat comprises a toothed top constituted by a series of toothed strips **10** held within a channel-shaped strip or support **11**. This flat top is secured upon a hollow base or foundation **12**, preferably made of a ductile metal such as sheet iron or steel, preferably cold rolled steel of about 16 gauge. This base or foundation **12** is of U-shape or somewhat parabolic formation in cross-section and its upper part is provided with ledges or seatings **13** and flanges **14** which can be clamped on to the flat top when the latter is supported on the seatings **13**. In the construction shown in Figure 2, the foundation or base **12** is formed with seatings **13** upon which the flat top rests, but in this example the flat top is secured in position by means of laterally disposed strips of metal **15** which are inserted through slits in the base of the support **11** that carries the toothed strips **10** so as to project laterally, the laterally projecting portions being bent over to secure or clamp the flat top on the seatings **13** of the foundation **12**. In the construction illustrated in Figure 3, one arrangement of providing the renewable seatings or bearings is illustrated. In this case the flat top is secured in position in any appropriate manner, for example by the method shown in Figure 2 and within the end of the U-shaped foundation or base **12**, a plug **16** is inserted, the plug being secured in position by rivets or other means and being formed with a projecting end portion **17** that constitutes a support for a renewable seating or bearing **18**, preferably of sheet metal alloy, the seating being secured in position by means of rivets as shown at **19** in Figures 3 and 4. The surface of the renewable seating is suitably curved so as to be slightly concave, its edges being so disposed as to form the "heel and toe" bearings or seatings for the flat. In the examples illustrated in Figures 5, 6, and 7, a U-shaped base or foundation **12** is formed with seatings or ledges **13** as aforesaid. Interposed between the flat top and the base or foundation, however, is a steel strip **20** which is secured to the seatings **13**, for example by rivets **21**, and constitutes the surface on which the flat top is secured. By the provision of the strip **20** which is riveted or otherwise secured to the U-shaped base or foundation, the latter becomes tubular, thereby imparting considerable strength and rigidity to the flat. The flat top is secured on the strip or plate **20** by means of laterally extending strips **15** extending through slots in the top as in Fig. 2 and embracing the seatings **13** and the strip or plate **20**. The said strip or plate **20** projects beyond the ends of the flat and one end is shown in Figure 6. In this case, the projecting end of the strip **20** is adapted to receive renewable seatings **22** and **23** which are secured in position by means of rivets **24**, these seatings being suitably shaped so that one **22** constitutes the "heel and toe" bearing for the flat, whilst the other **23** is adapted to pass around the star wheel or the like during the travel of the flat in the carding machine. In this case also the ends of the U-shaped foundation or base may be closed by a plug **25** which in this example may form part of the aforesaid strip **20**, the said plug also being riveted in the U-shaped base if desired.

What I claim and desire to secure by Letters Patent of the United States is:—

1. A carding flat comprising a toothed top constituted by assembled toothed strips mounted in a support having slits, metal pieces inserted in said slits to form lateral extensions, and a foundation of hollow formation having seatings to receive the said top, the said lateral extensions being adapted to be clamped on to the said seatings.

2. A carding flat comprising a toothed top constituted by an assembled toothed strip in a channel shaped support, a hollow foundation for carrying said top, said support being slit to receive metal pieces that form lateral extensions for securing the top to the foundation, and projections on the foundation carrying renewable seatings.

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