June 9, 1959 H. N. IRVINE 2,889,607

SPRING TOOTH CLIP

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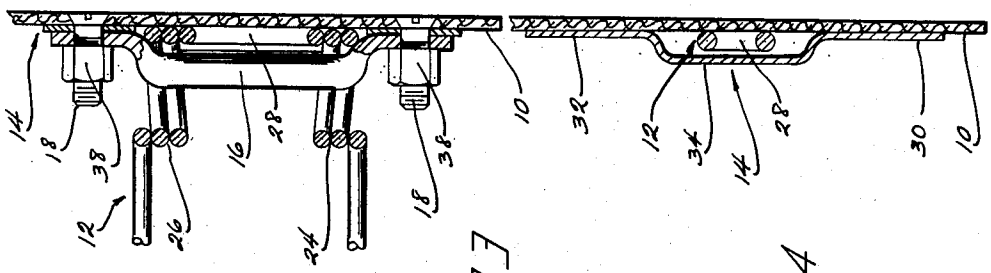
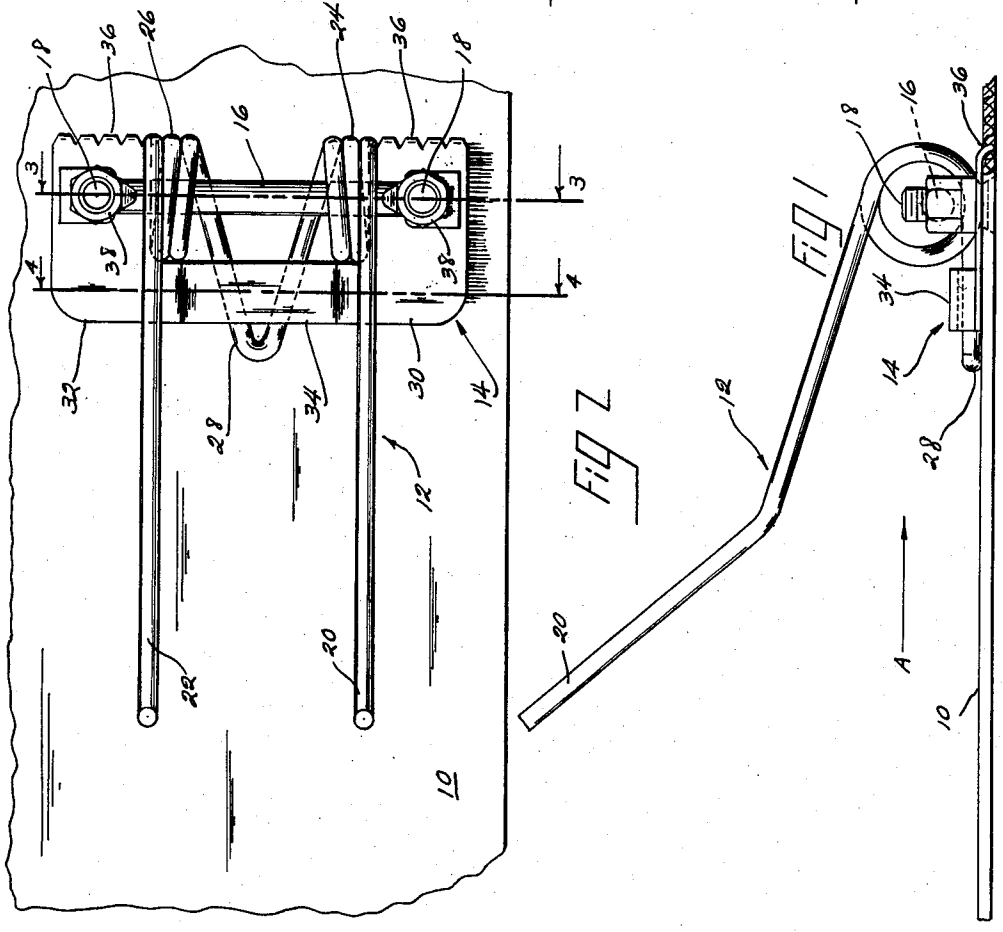


FIG 3 FIG 4



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SPRING TOOTH CLIP

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6 Claims. (Cl. 24—253)

This relates to clips used to secure crop-engaging spring fingers to aprons of harvesting machines and especially to the rubber-and-fabric type of aprons used on draper pickup implements.

Another object of this invention is to provide an anchoring means that will secure the spring fingers against displacement in a direction transverse to that of travel of the apron, and also against rotation when encountering obstructions.

Another object is to secure the spring fingers against displacement without interfering with the freedom of the fingers to function.

Another object is to provide anchor means that will not be apt to be torn from the fabric apron when encountering an obstruction.

Further objects and advantages of the invention will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawings wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention.

Referring to the drawings:

Fig. 1 is a side elevational fragmentary view partly in section of a portion of the upper "run" of a draper apron showing the clip and finger of the invention assembled thereto.

Fig. 2 is a plan view of a fragment of an apron showing the clip and finger secured thereto.

Fig. 3 is a view partly in section taken at 3—3 of Fig. 2.

Fig. 4 is a section taken at 4—4 of Fig. 2.

Referring to the drawing, 10 is a draper apron of rubber and fabric or other suitable material that is of sufficient flexibility to be trained over a pair of drums, and travels in a rearward direction shown by arrow A of Fig. 1, which is toward the feeding mechanism of the harvester.

A plurality of spring fingers 12 are spaced transversely across apron 10, and in rows along the length of the apron. A clip 14, retainer 16, and bolts 18, complete the assembly of each finger with the apron. Only one assembly is shown as it is typical of the others. Finger 12, is of tempered steel wire and of the shape shown; the size of wire should be suitable for the purpose. Finger 12 comprises a pair of tines 20 and 22 which are furnished with a plurality of coils 24 and 26 in order to provide the necessary resiliency. Coils 24 and 26 terminate in a V-shaped loop 28 intermediate tines 20 and 22, and which provides a foot in contact with apron 10, and comprises a means of stabilizing the finger 12 by cooperation with clip 14.

Clip 14, comprises a base portion having wings 30 and 32 which lie in the plane of the surface of apron 10. An intermediate portion 34 connecting wings 30 and 32, is formed as shown in Figs. 1, 2 and 4, the purpose of

which is to hold loop 28 in substantial contact with apron 10, but permit a degree of freedom.

The rearward edges of wings 30 and 32 are provided with V points 36 which are formed downwardly as shown in Figs. 1 and 2. When clip 14, is being assembled on apron 10, points 36 embed themselves in the surface of apron 10 to prevent shifting of the clip 14 relative to the apron.

A retainer 16 of generally cylindrical cross section extends transversely through coils 24 and 26, and substantially contacts the lower portions of coils 24 and 26, thereby maintaining contact between the latter and the surface of apron 10. However retainer 16 provides sufficient freedom for coils 24 and 26 so as to permit slight freedom for fingers 12 to move right or left as shown in Fig. 2. Retainer 16, is bent downwardly toward clip wings 30 and 32 and is flattened at the ends as shown in Figs. 1, 2 and 3 to permit fastening of the retainer to the clip; holes being provided therefor.

A pair of bolts 18, of the flat head type pass through apron 10, wings 30 and 32 and the holes in retainer 16, nuts 38 being provided in order to fasten the assembly securely to the apron 10. Bolts 18 have heads that require countersinking, and therefore will be assembled flush with the lower surface of the apron 10.

The above being a complete description of an illustrative embodiment of the invention, what is claimed as new and desired to be secured by Letters Patent of the United States is:

1. A means for securing a spring finger to an endless conveyor apron, said finger comprising spring wire formed with a pair of spaced coils having the axes thereof parallel to the surface of said apron and mutually connected by a loop in said wire lying in the plane of said surface, in combination, a clip of sheet metal having a central aperture co-extensive with, and embracing said coils and defining a wing at each end of said clip and an intermediate web formed over said loop, a retainer extending through said coils beyond the ends thereof and over said wings, said retainer, said wings, and said apron having aligned apertures, and fastening means passing through said apertures to secure said retainer, finger, and clip to said apron.

2. A means for securing a spring finger to an endless conveyor apron, said finger comprising spring wire provided with a pair of spaced coils having the axes thereof parallel to the surface of said apron and connected by a loop in said wire lying in the plane of said surface, in combination, a clip of sheet metal having an aperture embracing said coils and defining a wing at each end of said clip and a web connecting said wings and formed over said loop, a retainer extending through said clips beyond the ends thereof and over said wings, said retainer, said wings, and said apron having aligned apertures, and fastening means passing through said apertures to secure said retainer, finger, and clip to said apron.

3. A means for securing a spring finger to an endless conveyor apron, said finger comprising spring wire provided with a pair of spaced coils lying in planes substantially normal of said apron and connected by a loop in said wire lying in the plane of said surface, in combination, a clip of sheet metal having a central aperture embracing soid coils and defining a wing at each end of said clip and a web over said loop, a retainer extending through said coils beyond the ends thereof, said retainer, said wings, and said apron having aligned apertures, and fastening means passing through said apertures to secure said retainer, finger, and clip to said apron.

4. A means for securing a spring finger to a conveyor apron, said finger comprising spring wire provided with a pair of spaced coils lying in planes approximately perpendicular to the surface of said apron and connected

by a loop in said wire lying in the plane of said surface, in combination, a clip of sheet material having an aperture embracing said coils and defining a wing at each end of said clip connected by a web formed over said loop, a retainer extending through said coils to a point over said wings, said retainer, said wings, and said apron having apertures, and fastening means passing through said apertures to secure said retainer, finger, and clip to said apron.

5. A means for securing a spring finger to a conveyor apron, said finger comprising spring wire provided with a pair of spaced coils having the axes thereof parallel to the surface of said apron and connected by a loop lying in the plane of said surface, in combination, a clip of sheet material having an aperture embracing said coils and defining a wing at each end of said clip and a web formed over said loop, a retainer extending through said coils beyond the ends thereof, said retainer, said wings, and said apron being provided with apertures and fastening means passing through said apertures to secure said retainer, finger, and clip to said apron.

6. A means for securing a spring finger to a conveyor apron, said finger comprising spring wire provided with a pair of spaced coils in contact with the surface of said apron and mutually connected by a loop in said wire lying in the plane of said surface, in combination, a clip of sheet metal having a central aperture embracing said coils and defining a wing at each end of said clip and an intermediate web formed over said loop, a retainer extending through said coils beyond the ends thereof and over said wings, and fastening means to secure said retainer, finger, and clip to said apron.

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