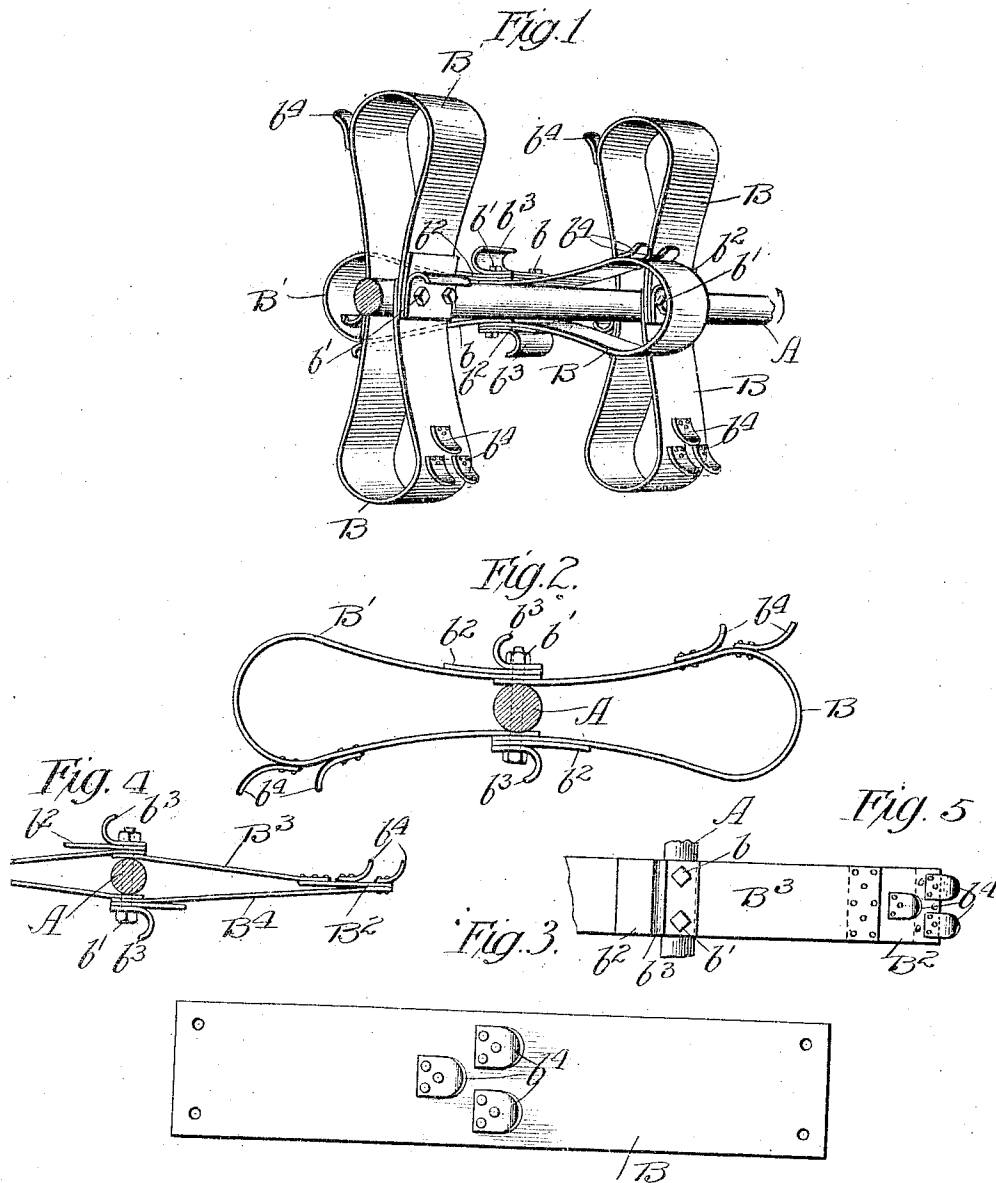


J. W. KOHLHEPP.
 FLEXIBLE BEATER AND SCRAPER.
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Witnesses
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UNITED STATES PATENT OFFICE.

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FLEXIBLE BEATER AND SCRAPER.

971,049.

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To all whom it may concern:

Be it known that I, JOHN W. KOHLHEPP, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Flexible Beaters and Scrapers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to beaters for that class of machines set forth in my applications for "Carcass scraping and polishing machines", filed on the 29th day of March, 1907, Serial No. 365,416, and "Hog scrapers", filed on the 18th of May, 1906, Serial No. 317,451, in which rotative shafts each provided with more or less flexible beaters having scrapers secured thereon, are used and in which the rotation of the shafts impels the scrapers and beaters against the animal carcasses supported in operative relation thereto for the purpose set forth. Heretofore I have employed frequently for beaters, canvas belting or chains of suitable length or belting having chains secured thereon. These have been rigidly bolted on the shaft that the same may act to some extent centrifugally to strike or beat the hair from the carcasses. In either construction, however, the beaters yield too readily from contact with the carcasses and as a result if the carcasses are "rough" or in other words, are of tough or old hogs killed late in the season, sometimes the hair and bristles are not entirely removed. Also, after continued use single beater arms are subject to another objection, namely, they twist laterally or glance sidewise when striking the carcass, thus instead of scraping longitudinally of the carcass, a stroke at an angle with the carcass is obtained which not only decreases the efficiency of the beaters but the blades of adjacent beaters clash together marring and cutting the same, which in turn sometimes tears or injures the skin of the carcasses acted upon.

It is an object of this invention to provide a flexible beater in which the beater while resilient, affords somewhat greater resistance than has heretofore been the case so they may not yield so readily when striking the carcass.

It is further an object of this invention to provide a beater capable of exerting maximum pressure at all times against the carcasses in removing the bristles, scurf, etc., and with which it is impossible to make a glancing blow or for the beater to twist laterally.

It is a further object of the invention to reinforce such beater by means of a web of similar material, one end of which is connected on the opposite side of the shaft from the beater proper and the other end of which is connected with the end of the beater adjacent the knives.

It is further an object of the invention to afford a construction in which the beaters each consist of a web of suitable material such as canvas belting on which are secured scraping knives, and in which the ends of the web or webs are connected on opposite sides of the shaft to afford a bracing effect and to resist the rearward bending of the beaters.

It is finally an object of this invention to provide an exceedingly durable beater capable of withstanding continued and severe usage without losing its resiliency, which keeps its normal shape indefinitely and which retains its stiffness or pressure.

The invention embraces many novel features and consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a fragmentary perspective view of a shaft provided with beaters embodying my invention. Fig. 2 is a view taken in transverse section of the shaft showing two of the oppositely disposed beaters. Fig. 3 is a face view of the web or belting showing the scraping knives in place and the belting or web detached from the shaft. Fig. 4 is a reduced fragmentary view similar to Fig. 2. Fig. 5 is a fragmentary face view of the same.

As shown in the drawings: A indicates a portion of one of the shafts of a scraping and dehairing machine such as described in my prior applications, on which are secured flexible beaters and scrapers indicated by B-B', which stand outwardly approximately at right angles from the shaft and are rigidly secured thereto. Each of the beaters in the construction shown in Figs. 1, 2 and 3 comprises, as shown, a single strip of cotton or other suitable belting or fabric,

the ends of which are punched, as shown in Fig. 3, to provide apertures therethrough for the bolts b' whereby the beaters are secured on the shaft. As shown in Fig. 2, the ends of the beaters are applied to the shafts so that the rear ends of the strips forming one beater overlap the front end of the strips forming the oppositely disposed beater. Plates or strips b^2 of suitable stiff yet resilient material are secured outside the rear lap of the beater and one end of each plate extends outwardly along each rear lap of each beater, as shown in Figs. 1 and 2, to reinforce the same and to assist the resiliency of the belting or other material to prevent bending close to the shaft. An outer curved metallic plate b^3 is next secured on the shaft by the same bolts and the hooked or convex side thereof directed toward the extremity of the reinforcing plate b^2 so that should the beater be forced rearwardly by contact with the carcass, this also assists in holding the same from the shaft. Near the outer end of each beater are provided curved scraping blades b^4 , which are conveniently arranged alternately in two or more rows transversely the beater.

In the construction shown in Figs. 1, 2 and 3, it is evident as the beater is bent somewhat rearwardly in passing the carcass the bend at the outer end of the beater is changed in form and may extend beyond the knives. I therefore for some purposes, prefer to construct the beaters as shown in Figs. 4 and 5, with the knives b^4 either on the end of the beater web B^3 or upon a short web of the belting or fabric B^2 , with which the webs or belting B^3 and B^4 are rigidly secured by riveting. These are engaged on opposite sides of the shaft as before described.

The operation is as follows: In either construction the rotation of the shafts tends to throw the beater centrifugally outward, bringing the knives with more or less violence in contact with the carcass, previously scalded, so that the knives act to beat, scrape and pull the hair, bristles, scurf, etc., therefrom. The rearwardly directed end of the beater web serves to brace and exerts considerable pressure against the front web which greatly assists the beaters in resisting the tendency to spring rearwardly by contact with the carcass and returns the beaters to normal preventing buckling of the same

or short bending of the outer ends of the beaters. Obviously, therefore, the rear web may be said to be a somewhat resilient brace for the scraping end of the beater and serves to greatly augment the utility thereof.

Of course, various details of construction may be varied. I therefore do not purpose limiting this invention otherwise than necessitated by the prior art.

I claim as my invention:

1. In a device of the class described a shaft, oppositely disposed beaters secured thereto, each constructed of a piece of flexible belting bent to form a loop and having their ends secured on opposite sides of the shaft, said opposed beaters having their ends overlapped, curved scraping blades secured at one end to one side of the beaters and a short reinforcing flexible member on the rear side of each beater to prevent short bending of the beater.

2. The combination with a shaft of a beater comprising a resilient and flexible strip of material having the width of the strip directed longitudinally of the shaft and the ends folded against opposite sides of the shaft forming a loop in the beater, a plate curved at the outer end, means securing the ends of the strip and plate to the shaft, and blades secured to the beater at the loop.

3. A beater of the class described comprising a piece of flexible material forming a loop with the ends connected on opposite sides of the beater shaft, and scrapers rigidly secured near the outer end of said beater.

4. In a device of the class described a shaft, a beater comprising a strip of resilient and flexible material having one end on one side of the shaft and the opposite end on the opposite side of the shaft providing a loop which lies outwardly from the shaft, means for securing the ends of the beater to the shaft, scraping blades secured to the beaters adjacent the loop and a member secured to the shaft to prevent short bending of the beater.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

JOHN W. KOHLHEPP.

Witnesses:

K. E. HANNAH,
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