(No Model.)

G. O. CURRIER.

DEVICE FOR HOLDING CARD CLOTHING ON THE GRINDING MACHINES.

No. 398,497. Patented Feb. 26, 1889.

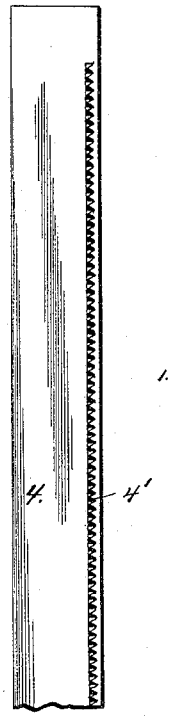


Fig. 3.

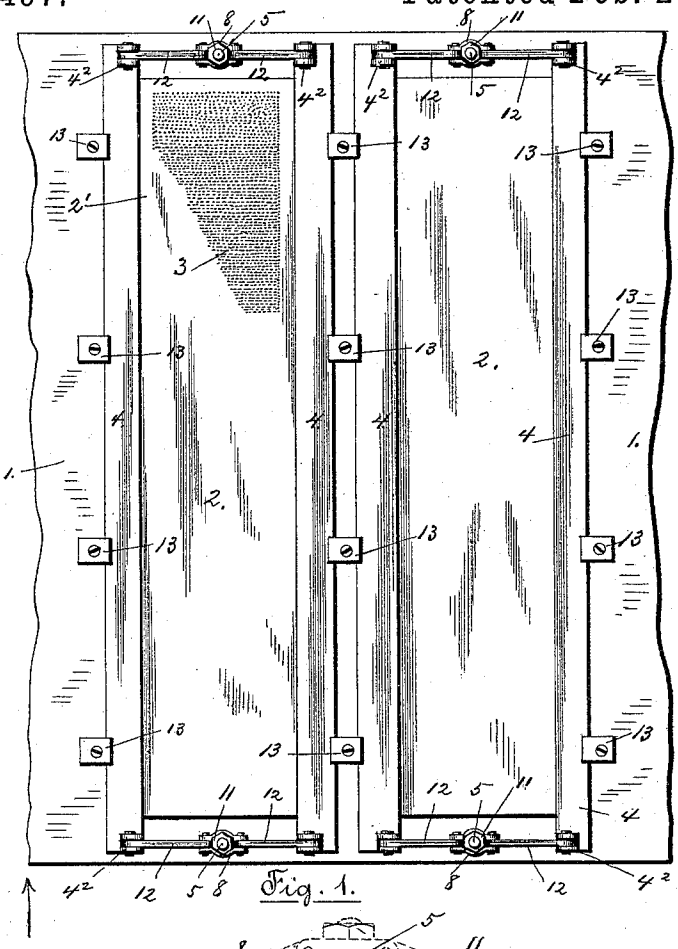


Fig. 1.

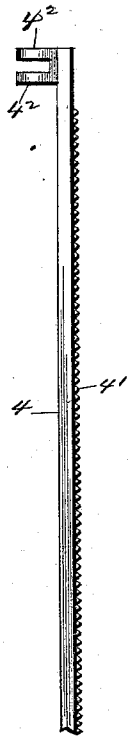


Fig. 4.

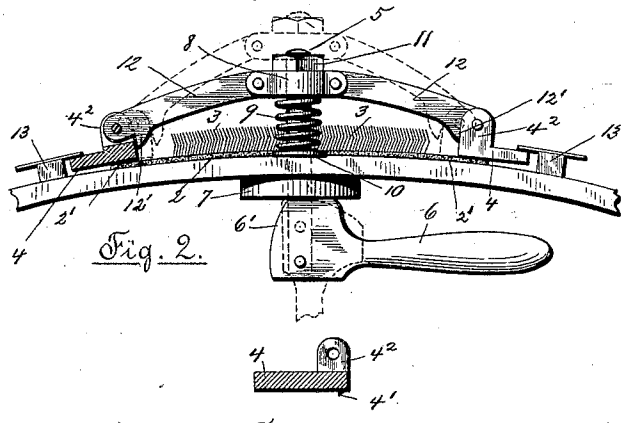


Fig. 2.

Fig. 5.

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UNITED STATES PATENT OFFICE.

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DEVICE FOR HOLDING CARD-CLOTHING ON GRINDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 398,497, dated February 26, 1889.

Application filed October 15, 1888. Serial No. 288,119. (No model.)

To all whom it may concern:

Be it known that I, GEORGE O. CURRIER, a citizen of the United States, residing at Leicester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Devices for Holding Card-Clothing on a Grinding-Cylinder; and I do hereby declare that the following is a full, clear, and exact description thereof, which, in connection with the drawings making a part of this specification, will enable others skilled in the art to which my invention belongs to make and use the same.

In the manufacture of finished card-clothing ready for immediate use it is necessary to grind or sharpen the ends of the projecting wires or teeth, and to do this the card-clothing is placed upon and secured to the face of a large cylinder, which is arranged to revolve in front of the grinding-machine, which grinds off or sharpens the ends of the projecting wires. The sheets of card-clothing during the grinding operation have to be held firmly on the face of the revolving cylinder, and at the same time tightly stretched thereon, so that the wire teeth may be properly sharpened.

My invention relates to an improved device to be attached to the grinding-cylinder and adapted to stretch the sheets of card-clothing very tightly on the face thereof and hold the same securely in place thereon.

The object of my invention is to produce a device simple in construction and operation and easily applied to the ordinary revolving cylinder used in grinding the teeth of card-clothing, which shall stretch the sheets of card-clothing upon the face of the cylinder and hold them down in place thereon during the grinding operation; and my invention consists in certain novel features of construction and operation of said device, as will be hereinafter fully described, and the nature thereof indicated by the claims.

Referring to the drawings, Figure 1 is a plan view of a detached portion of the face of a grinding-cylinder with two of my devices for holding the sheets of card-clothing thereon applied thereto. Fig. 2 represents on an enlarged scale an end view, partly in section, of one of the holding devices, looking in the direction of the arrow, Fig. 1, the dotted lines showing the position of the parts of the device when the card-clothing is not clamped to the face of the cylinder; and Figs. 3, 4, and 5 represent detail views of one of the holding-bars.

In the accompanying drawings, 1 represents a detached portion of the outer face of a card-cloth-grinding cylinder of any ordinary construction, to which is applied my improved device for stretching and clamping thereon a sheet of card-clothing, 2, with the wire teeth 3 shown extending out from a part thereof.

The device for stretching and clamping the sheet of card-clothing 2 on the face of the cylinder 1 consists of two bars, 4, extending parallel to the axis of the cylinder 1 nearly the full width thereof.

The bars 4 have sharp points or teeth 4′ upon their under side adapted to extend into the projecting edges 2′ of the strip of card-clothing 2, to stretch and hold the same down upon the face of the cylinder 1. At the outer edges of the face of the cylinder 1, midway between the ends of the bars 4, a stud, 5, extends up at right angles to the axis of the cylinder. Said stud projects through the cylinder-rim and has pivoted to its lower end a cam-lever, 6, which has its bearing against a washer, 7, encircling the stud 5 and interposed between the under side of the rim of the cylinder 1 and the cam end 6′ of cam-lever 6.

Upon the upper end of the stud 5 is an adjustable collar, 8, adapted to be moved up and down on said stud. A spiral spring, 9, encircles said stud 5, with its upper end bearing against the under side of the collar 8 and its lower end against a washer, 10, supported on the face of the cylinder 1. Said spring 9 serves to hold up the collar 8 on the stud 5. The upper end of the stud 5 is screw-threaded and provided with a nut, 11, which serves to hold down the collar 8 against the action of the spring 9, and also to adjust the position of the collar 8 on the stud 5 to vary the expansion of the bars 4 and the stretching of the strips of card-clothing 2.

The adjustable collar 8 has its opposite

edges slotted, and the inner ends of arms or braces 12 are hinged therein. Said arms 12 extend out from the collar 8, at right angles to the axis of the cylinder 1, and their outer ends are hinged between ears 4^2, extending up from the bars 4 at each end thereof. The outer ends of the arms 12, which are hinged to the bars 4, have downwardly-projecting shoulders 12′, adapted to fit over and bear against the inner top edge of holding-bars 4 when the same are forced apart, and serving to hold the same down close against the card-clothing when the bars 4 are forced apart. (See full lines, Fig. 2.)

Along the face of the cylinder 1, at regular intervals, are arranged holding-buttons 13, adapted to fit over the outer edge of the bars 4 and hold the same down close upon the face of the cylinder when the said bars are spread apart.

From the above description, in connection with the drawings, the operation of my device for holding sheets or card-clothing upon the face of the grinding-cylinder during the grinding operation will be readily understood by those skilled in the art, and, briefly, is as follows: The holding devices are applied to the face of the cylinder, as shown in Figs. 1 and 2, extending entirely around the cylinder, the cam-levers 6—one at the end of each holding device—are first drawn down, (see dotted lines, Fig. 2,) allowing the coiled spring 9 to act to raise up the adjustable collars 8 and draw the bars 4 toward each other. (See dotted lines, Fig. 2.) Sheets or strips of card-clothing 2—one strip for each device—are then placed upon the face of the cylinder, with their projecting edges 2′ extending under the holding-bars 4, to be engaged by teeth 4′. The cam-levers 6 are then drawn up into the position shown by full lines, Fig. 2, causing the collars 8 to be drawn down against the action of the spring 9 and spreading out the arms 12, forcing the holding-bars 4 apart, causing the teeth 4′ thereon to enter into the card-clothing and stretch the same tightly and hold it down securely in place upon the face of the cylinder, while the same revolves in front of the grinding-machine. The holding-bars 4 are held down firmly upon the card-clothing by means of the holding-buttons 13 and the shoulders 12′ on the spreading-arms 12.

By means of the nut 11, turning up and down on the studs 5, the position of the collars 8 may be varied and the expansion of the arms 12 and holding-bars 4 adjusted to stretch the card-clothing more or less, as desired.

The advantages of my improved device for holding sheets of card-clothing on the grinding-cylinder will be apparent to those skilled in the art. It is of very simple construction and operation and can be readily applied to grinding-cylinders of ordinary construction, and serves to stretch the sheets of card-clothing thereon and hold them down flat and fast upon the face of the cylinder as it revolves, and the wire teeth are sharpened by the grinding-machine.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device for holding sheets of card-clothing on a grinding-cylinder, consisting of two bars extending parallel to the axis of the cylinder and provided with teeth or sharp points on their under surface, in combination with a stud secured on the cylinder, an adjustable collar on said stud, hinged arms extending from said collar to said bars, and means for drawing down said collar to spread the arms and bars for the purpose stated, substantially as shown and described.

2. In a device for holding sheets of card-clothing on a grinding-cylinder, the combination, with two parallel bars, 4, having teeth on their lower surface, and arms 12, having downwardly-projecting shoulders 12′, for the purpose stated, and hinged at their outer ends to the ends of said bars 4, with their inner ends hinged to the adjustable collar 8, and said collar 8 supported on stud 5, and means for adjusting said collar, of said stud 5, extending up from the cylinder-face, a cam-lever, 6, secured upon the lower end of said stud for drawing down said stud and collar 8 to spread the bars 4 against the action of a spiral spring, 9, and said spring, all combined and operated substantially as shown and described.

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