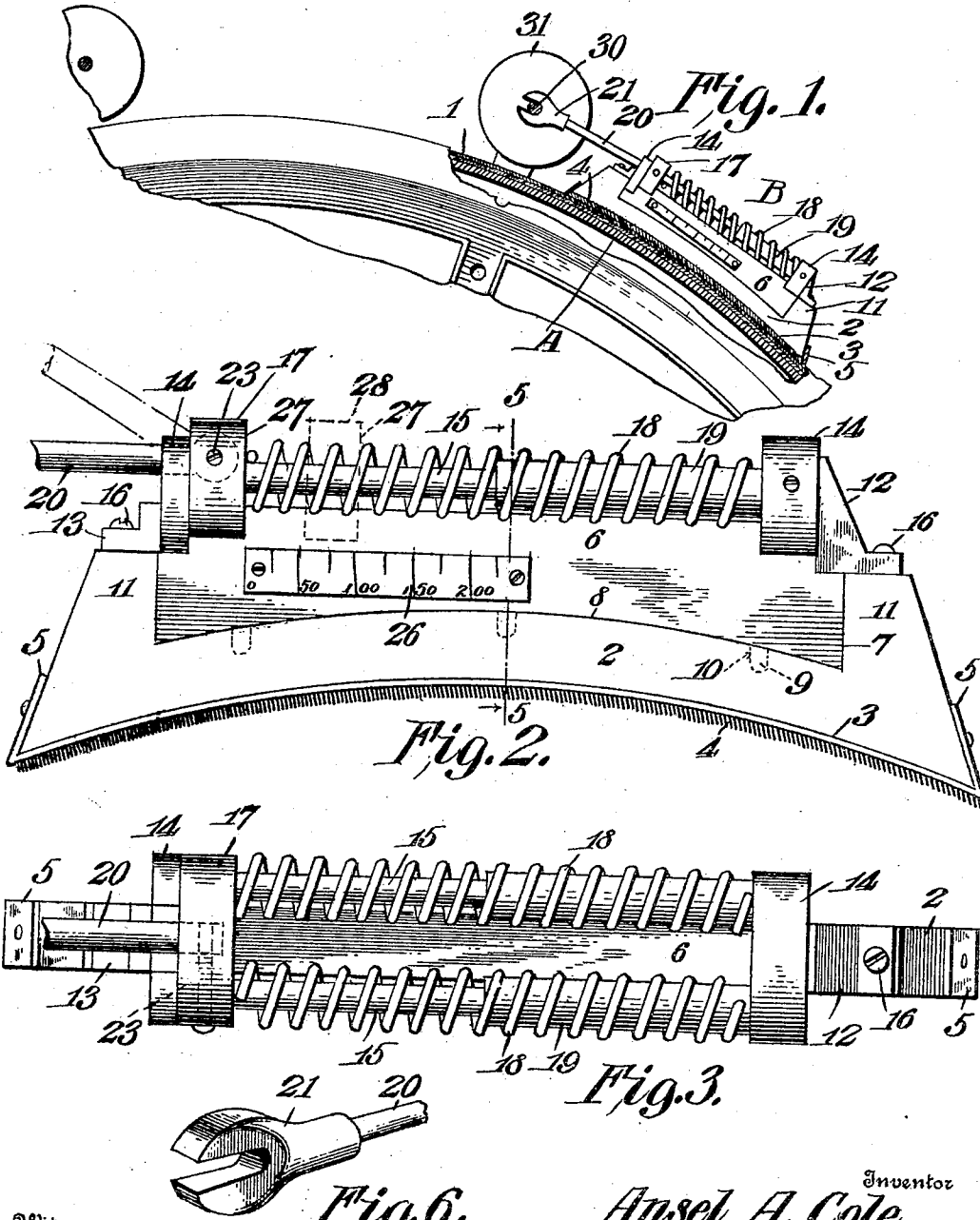


A. A. COLE.
CARD FILLET TIGHTENER.
APPLICATION FILED JAN. 27, 1909.

936,218.

Patented Oct. 5, 1909.
2 SHEETS—SHEET 1.



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Fig. 6.

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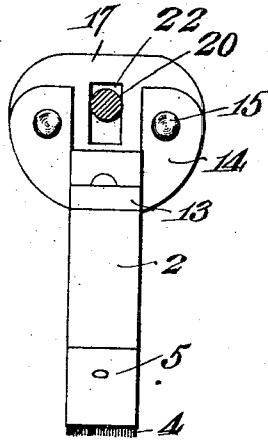


Fig. 4.

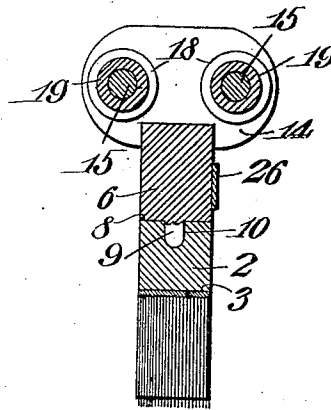


Fig. 5.

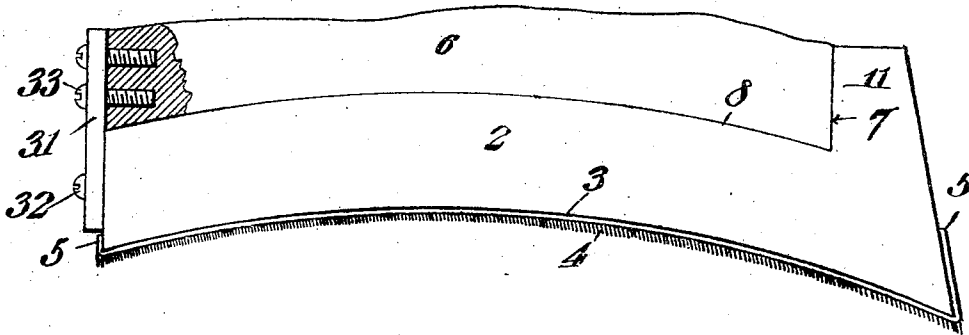


Fig. 7.

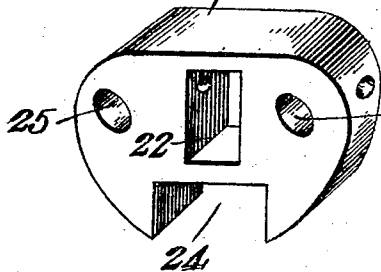


Fig. 8.

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UNITED STATES PATENT OFFICE.

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CARD-FILLET TIGHTENER.

936,218.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed January 27, 1909. Serial No. 474,546.

To all whom it may concern:

Be it known that I, ANSEL A. COLE, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Card-Fillet Tighteners, of which the following is a specification.

This invention relates to an apparatus designed especially for tightening fillets on cylinders and doffers of carding machines.

The invention has for one of its objects to provide a device of this character which is extremely simple and inexpensive in construction, reliable and efficient in use, and so designed as to be operated with a minimum of labor, and whereby the fillets can be tightened with despatch.

A further object of the invention is the provision of a tightening device consisting of a gripping member or shoe having a facing consisting of a piece of fillet whose teeth are adapted to be interlocked with the teeth of the fillet to be tightened, in connection with a device for placing tension on a shoe.

An additional object of the invention is to provide a holder on which interchangeable shoes can be mounted for use in connection with cylinders and doffers of different diameters, the holder and shoe being movable against the pressure of tensioning springs inserted between the holder and a fixed part of the carding machine that serves as an abutment against which the device re-acts.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a side view of the device shown applied to the fillet of a cylinder. Fig. 2 is an enlarged side elevation of the device. Fig. 3 is a plan view thereof. Fig. 4 is an end view of the tightener. Fig. 5 is a section on line 5—5, Fig. 2. Fig. 6 is a perspective view of the slotted end of the link or member adapted to engage a fixed part of the machine when the tightener is in applied position. Fig. 7 is a side view of an inter-

changeable shoe. Fig. 8 is a perspective view of the compression head of the device.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawings, A designates a cylinder of a card machine, or, it may represent a doffer, and on the cylinder A is the usual card clothing or cover 1 which is made in a strip or fillet, as will be readily understood, and applied to this fillet is the tightening device designated generally by B whereby the clothing can be placed under tension in fastening the fillet to the cylinder.

The flats and other suitable parts of the machine are removed during the tightening operation for permitting free access to the cylinder and the ready manipulation of the tightening device. The tightening device comprises an arcuate shoe 2 that has a concave face 3 of the same curvature as the cylinder, and the face 3 is covered with a piece of fillet 4 extending the full length of the face 3 and having its extremities 5 tacked to the ends of the shoe, the wire teeth on the facing strip 4 being so inclined as to interlock with the teeth of the fillet on the cylinder, so that the latter can be tightened by applying pressure to the shoe.

Interchangeable shoes may be employed to suit the diameters of the cylinders and doffers on which the fillets are to be tightened. The shoe 2 is applied to a holder 6 that is in the form of a plate arranged to enter a recess 7 in the top of the shoe, and projecting from the bottom face 8 of the holder, which is preferably concave to correspond with the convex wall of the recess 7, are dowel pins 9 arranged to engage in sockets 10 of the shoe whereby the latter is prevented from lateral displacement and firmly held in place on the holder. On the upper extremities of the terminal lugs 11 of the shoe are secured brackets 12 and 13 which are each provided with a plate 14 that are disposed parallel to each other at opposite ends of the holder and constitute supports for the ends of the parallel bars 15 arranged over the top of the holder and rigidly secured to the plates 14 of the brackets. The shoe 2 is secured to the brackets by screws 16 which, upon removal, permit the shoe to be removed downwardly from the holder 6.

Slidably mounted on the guide rod or bars 15 is a cross head 17. Interposed between the cross-head 17 and plate 14 of the bracket 12 and surrounding the guide rods 15 are
 5 stiff compression springs 18 that have their ends bearing against the said plate 14 and cross head 17. On the rods 15 are sleeves 19 normally bearing against the plate 14 of the bracket 12 to serve as stops for limiting the
 10 movement of the cross-head during the compression of the springs. Connected with the cross-head is a pitman rod 20 which has on its free end a slotted head 21 for engagement with a suitable fixed part of the card ma-
 15 chine. The compression head 17 has an opening 22 into which the rod 20 extends and the rod is connected with the head by a pivot screw 23, Fig. 2, arranged in the head. The head 17 has a recess 24 in its bottom so
 20 as to straddle the top edge of the holder 6 and slide back and forth thereon, and at opposite sides of the opening 22 are apertures 25 through which the guide rods 15 extend.

On one side of the holder is a scale 26 for
 25 indicating in pounds the tension subjected by the device on the fillet, the inner face 27 of the cross-head 17 serving as an index to coöperate with the division marks on the scale to indicate the tension. When the
 30 cross-head is in the position shown in Fig. 2, there is obviously no tension exerted, as the inner face of the cross-head is opposite the zero point on the scale, and when the cross-head is moved to the right, as for instance
 35 to the dotted line position 28, Fig. 2, the front face will be opposite the hundred mark of the scale to thereby indicate that a tension of one hundred pounds is exerted on the fillet.

In applying the device, the same is posi-
 40 tioned on a suitable part of the fillet and the teeth of the shoe and fillet firmly interlock by pressing the device against the cylinder, and the head 21 of the pitman rod is engaged
 45 with a suitable fixed part of the card machine, as for instance, the journal shaft 30 of one of the supporting rollers 31 for the flats of the machine, the said shaft 30 constituting a fixed abutment against which
 50 the device re-acts when tension is applied to the fillet. The shoe will be disposed with its length parallel to the longitudinal dimension of the fillet so that the tension on the fillet will be in the direction of its
 55 length. When the device is thus positioned as shown in Fig. 1, the attendant manually turns the cylinder A in an anti-clockwise direction so that the shoe 2 and holder 6 will tend to move in the same direction
 60 against the tension of the stiff helical springs 18. During this movement, the plate 14 of the bracket 12 moves toward the relatively-fixed cross-head 17 so that the springs are contracted, and in so contracting, a power-

ful tension is exerted on the fillet. The cyl- 65
 inder is held in this position with the tension on the fillet so that the loose part of the latter can be tacked or otherwise suitably fastened in place on the cylinder.

The holder, including the plate portion 6, 70
 brackets 12 and 13, and plates 14, preferably constitute a single piece metal casting; and the shoe may be made of wood, metal or any other suitable material. The shoe, instead of having terminal lugs 11 at both ends, may 75
 be provided with an attaching plate 31 as shown in Fig. 7, which plate is fastened by a screw 32 to the end of the shoe and projects upwardly therefrom over the end face of the plate portion 6 of the holder, and to 80
 this plate portion the connecting piece 31 is detachably secured by screws or bolts 33.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of 85
 the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I 90
 now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims. 95
 appended hereto.

Having thus described the invention, what I claim is:—

1. A card fillet tightening device comprising an arcuate shoe, a piece of fillet se- 100
 cured to the arcuate face of the shoe whereby the teeth thereof can be interlocked with the teeth of the fillet on the cylinder, means for engaging a fixed part of the machine, and an element between the said means and 105
 shoe for exerting a tension on the fillet by moving the cylinder.

2. In an apparatus of the class described, the combination of a holder, a shoe detachably secured thereto, parallel rods secured 110
 to the holder, a cross-head movable on the rods, compression springs on the rods bearing against the cross-head, and means connected with the cross-head for applying power to the springs. 115

3. An apparatus for tightening the fillet of a card machine, comprising a shoe adapted to be placed bodily on the fillet, a member adapted to engage a fixed part of the machine, and a compression spring acting be- 120
 tween the said member and shoe for exerting a tension on the fillet when the part to which the fillet is attached is moved with respect to the said fixed part of the machine.

4. In an apparatus of the class described, 125
 the combination of a shoe having an arcuate under face, a piece of card fillet secured to the under face to form a gripping element,

a holder on which the shoe is mounted, a fixed abutment on the holder, a cross-head guided on the holder, a compression element between the abutment and cross-head, a member connected with the cross-head for producing relative movement between the head and shoe to compress the compression element, and a scale with which the cross-

head coöperates as an index for indicating the tension exerted by the device.

In testimony whereof I affix my signature in presence of two witnesses.

ANSEL A. COLE.

Witnesses:

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ETHEL S. FRENCH.