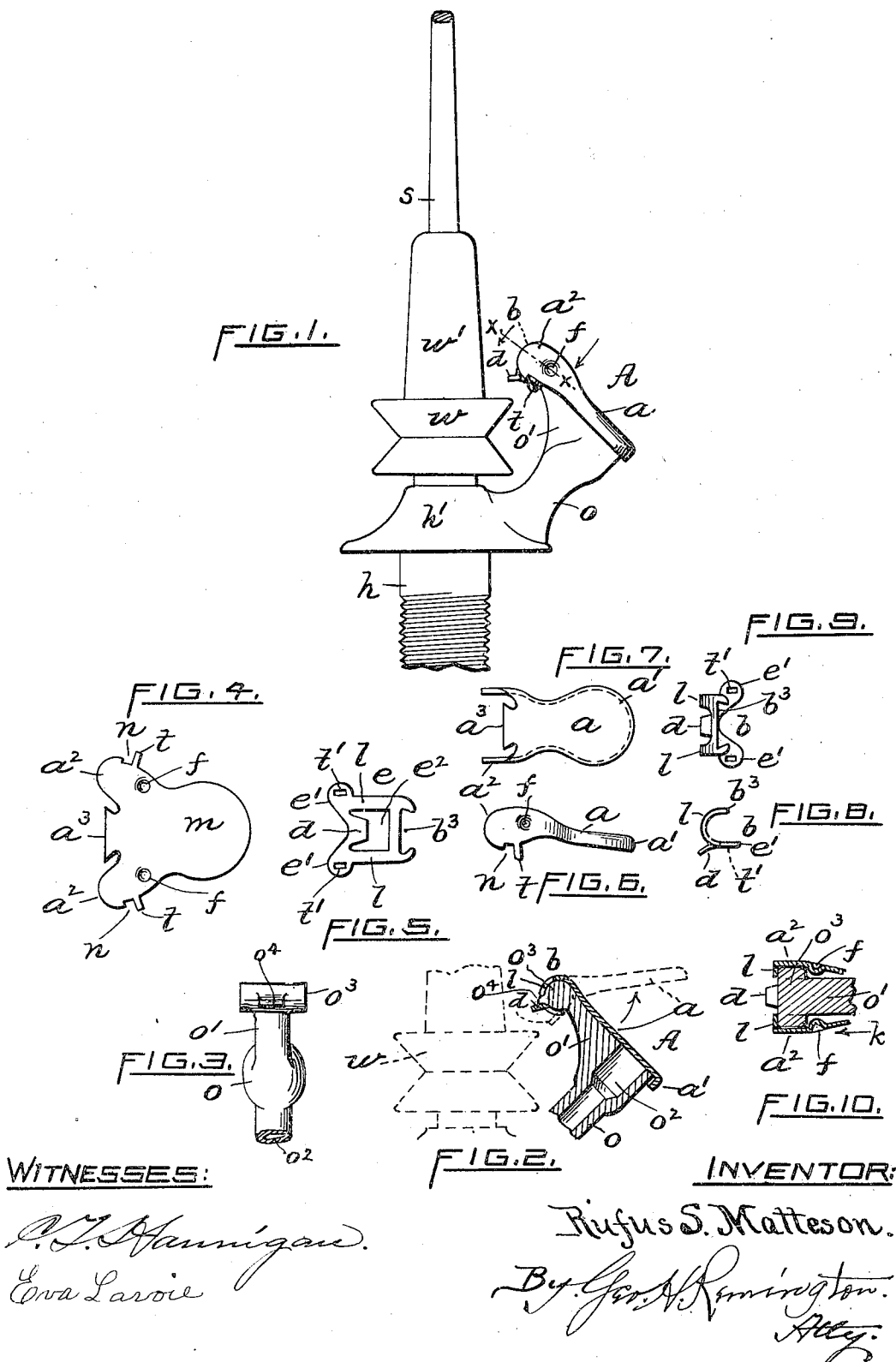


R. S. MATTESON.
DOFFER GUARD FOR SPINNING AND TWISTING MACHINES.
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953,387.

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UNITED STATES PATENT OFFICE.

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DOFFER-GUARD FOR SPINNING AND TWISTING MACHINES.

953,387.

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To all whom it may concern:

Be it known that I, RUFUS S. MATTESON, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Doffer-Guards for Spinning and Twisting Machines, of which the following is a specification.

This invention relates to improvements in doffer-guards for spindles of spinning and twisting machines, and it consists in the novel construction and combination of parts, all as more fully hereinafter set forth and claimed.

The object of the invention herewith is to provide the bolster-case and oil-spout members employed in connection with spindles of the class of machines referred to with a swinging doffer-guard possessing greater strength, lightness and efficiency over articles of this general character as heretofore devised.

In the accompanying sheet of drawings, Figure 1 represents a side elevation of a spindle-support having my improved doffer-guard associated or combined therewith. Fig. 2 is a transverse central sectional view taken through the oil-spout and guard, corresponding with Fig. 1. Fig. 3 is a partial side elevation of the oil-spout itself, viewed from the rear, the doffer-guard being omitted. Figs. 4 and 5 represent the two peculiar shaped flat sheet-metal blanks before being converted into the doffer-guard. Fig. 6 is a side view of the main or cap member of the guard as produced from the blank shown in Fig. 4. Fig. 7 is a corresponding top plan view of it. Fig. 8 is an end view of the other member of the device after bending. Fig. 9 is a corresponding top plan view; and Fig. 10 is a plane sectional view, taken on line *x x* of Fig. 1.

In Fig. 1 my improved doffer-guard, A, is shown as being mounted on an arm or extension o^1 of the oil-spout member o , the latter being integral with the usual base h^1 and bolster-case h . The whirl w , its sleeve w^1 and the spindle-blade s are or may be constructed, arranged and supported in any suitable or well-known manner. The oil-spout, cast integral with the base, is provided with a duct, o^2 , adapted to communicate with the bolster chamber. The said

arm extends upwardly at an angle from the spout and terminates in a horizontally disposed cylindrical member, o^3 , located contiguous to and above the whirl, its length exceeding the width of the arm, thus forming outer trunnions, on which the doffer-guard is pivotally mounted.

The following describes the construction, arrangement and manner of operation of my improved doffer-guard A, the same consisting of the two bent interlocking members a and b , struck up or formed from thin, ductile sheet metal, as low-grade steel.

The main or cap member a is produced from the flat blank m , shown in Fig. 4. It is provided at the front end with two oppositely disposed wings or ears, a^2 , each having a notch, n , and a short lug, t , adjacent to it. The front end is also provided with a central member, a^3 , having a dove-tail form. Figs. 6 and 7 represent the finished cap or cover a , transformed from the blank m . The major portion of the periphery of the blank is bent downward to produce the lip or flange a^1 and the two laterally separated front end ears a^2 . When thus bent, the said notches n and lugs t are positioned at the lower edge of the ears, all as clearly shown. The other member, b , of the device is shaped from the small blank e , shown in Fig. 5. A recess, b^3 , is formed in one end of the blank to receive the said member a^3 , the other end being provided with oppositely disposed ears, e^1 , each pierced with an opening, t^1 . The body portion is also pierced with the large central opening e^2 , disposed so as to produce the two outer narrow parallel connecting members l , and the inwardly extending central tongue d . Figs. 8 and 9 represent the member b of the device, converted from the blank e . It is bent to a substantially semi-circular form, its length being equal to the lateral distance between the ears a^2 of the cap. When thus bent a portion of each ear, e^1 , of member b is adapted to engage the corresponding notch n , while the lug t is adapted to register with and enter the opening t^1 at the bottom. At the same time the said dove-tail shaped portions, a^3 and b^3 , of the members a and b are also adapted to interlock with each other at the top. In bending the member b to the finished form, the said tongue, d , then becomes an outwardly extending part

adapted, when in use, to constitute a stop or guard to prevent the spindle from lifting unduly while doffing.

As before stated, I prefer to employ an oil-spout having an upwardly inclined extension, o^1 , terminating at its free end in a horizontal bar, o^3 , whose length is the same, or slightly less than that of the member b ; that is to say, the bent side members l , together with the connecting end ties, constitute bearings for the trunnion portions of the bar, the latter obviously being stationary.

In assembling and mounting the improved doffer-guard device A on the said supporting trunnion o^3 , the piece b is first placed in position at the back of the latter, followed by positioning the cap member a from the top, thereby readily interlocking the said dove-tailed portions together at that point, the lugs t at the same time extending through the openings t^1 . The free ends of the lugs are next easily bent and clenched under the ears e^1 by suitable tools, thus attaching the device to the oil-spout arm. Each ear a^2 may be indented laterally from the outer side to produce a short inwardly extending lug, as f , substantially as shown sectionally in Fig. 10, to prevent the doffer-guard from being unseated when moved in the arrow direction k . The pivot or trunnion and the guard proper, d , are disposed with relation to the whirl so that the element d , when the device is in its normal position, shown in Fig. 1, serves to hold the spindle in its seat during the doffing or cop-removing operation, and, when the cover a , which is self-dropping, is tilted or swung to the position indicated by dotted lines in Fig. 2, it also permits the spindle, &c., to be readily removed when desired. The doffer-guard is adapted to be operated by the whirl itself while the spindle is being inserted in the bolster.

In order to prevent the member d from being accidentally bent upward from any cause, and the consequent disarrangement of the device, I provide the rear side of the part o^3 with a short horizontal integral projection or stop, o^4 , the same constituting an abutment adapted to engage the upper side of the element d when the doffer-guard is in the normal position. See Figs. 2 and 3.

My improved doffer-guard is comparatively inexpensive to manufacture, due to the fact that the parts a and b thereof are formed from thin sheet-metal and are adapted to be assembled and attached together without any machine work whatever. It will be seen, too, that I dispense with insertible joint-pins, heretofore employed for attaching analogous swinging members to the stationary supports.

What I claim as my invention is:

1. As an improved article of manufacture,

a doffer-guard comprising a cap or cover member and a complementary member constructed to interlock therewith at one end to form a bearing capable of angular movement when mounted on a fixed support; said device having an outwardly extending lip, integral therewith, constituting the guard proper.

2. A doffer-guard of the character described, the same comprising a one-piece cap or cover member formed from sheet-metal, and a sheet-metal companion member bent to a substantially semi-circular form transversely provided with a suitably disposed outwardly projecting lip, constituting the guard proper; said members being constructed to interlock with each other to form a substantially annular bearing.

3. The doffer-guard herein described, formed from sheet metal, the same comprising a cover member having downwardly bent edges terminating at one end in laterally separated ears, a companion member having a substantially semi-circular form transversely disposed between said ears and constructed to interlock therewith, and a guard proper produced by bending outward a portion of the wall of said companion member.

4. In a spindle-support of the character described, the combination with an oil-spout having an upwardly extending arm provided with a horizontally disposed trunnion, of a cap member, normally covering the oil-spout, having a downwardly bent peripheral rim or flange terminating at one end in laterally separated ears having said trunnion therebetween, and a companion member secured to said cap and forming therewith a bearing capable of angular movement on the trunnion; said companion member being provided with an outward extension or lip constituting the guard proper, which, when in its normal position, projects inward beyond the outer edge of the spindle-whirl for the purpose hereinbefore set forth.

5. The combination with a bolster-case having an oil-spout provided with an extension terminating in a horizontally disposed pivot or trunnion, of a sheet-metal cap member, a sheet-metal companion member secured to an end of the latter and forming therewith a movable bearing inclosing said trunnion, and an outwardly projecting lip, constituting the guard proper, bodily movable with the bearing.

6. The combination with a spindle-support having an oil-spout and a journal or trunnion integral therewith, of a self-dropping, swinging, sheet-metal doffer-guard mounted on said trunnion and normally resting on and closing the oil-spout; said doffer-guard consisting of a cap member and a companion member having means integral therewith adapted for securing or interlocking

them together, means for limiting the swinging angular movements of the doffer-guard, and an outwardly projecting element or lip, integral with said companion member, constituting the guard proper, for the purpose set forth.

7. In a spindle-support of the character described, provided with a suitably disposed arm or extension having a trunnion part and a stop member, a swinging combined doffer-guard and cover mounted on said trunnion part, provided with a short rearward extension

constituting the guard proper, disposed below said stop member, and having the outer edge portion of the cover bent downward to produce a peripheral flange, substantially as described and for the purpose set forth.

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

RUFUS S. MATTESON.

Witnesses:

GEO. H. REMINGTON,

CHARLES W. BOARDMAN.