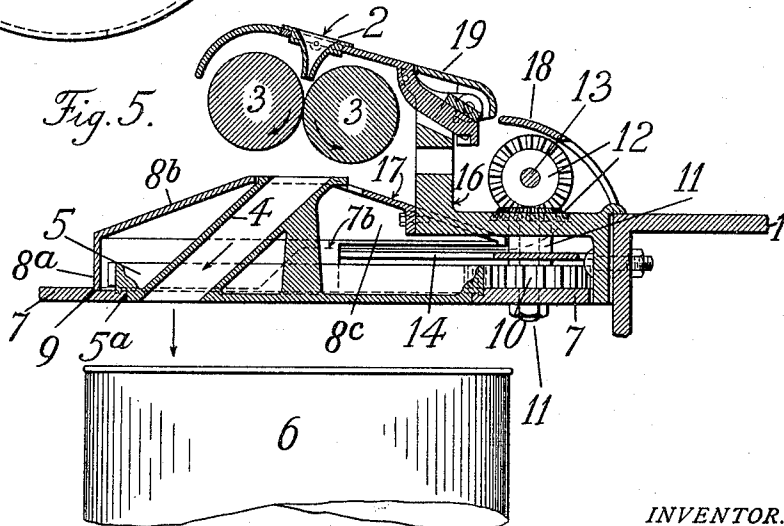
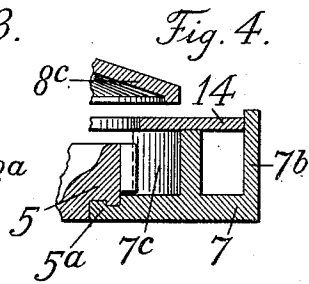
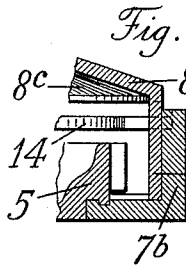
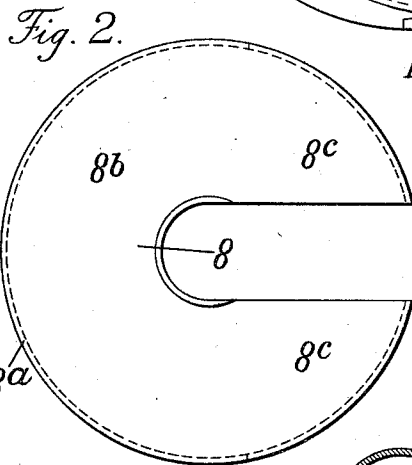
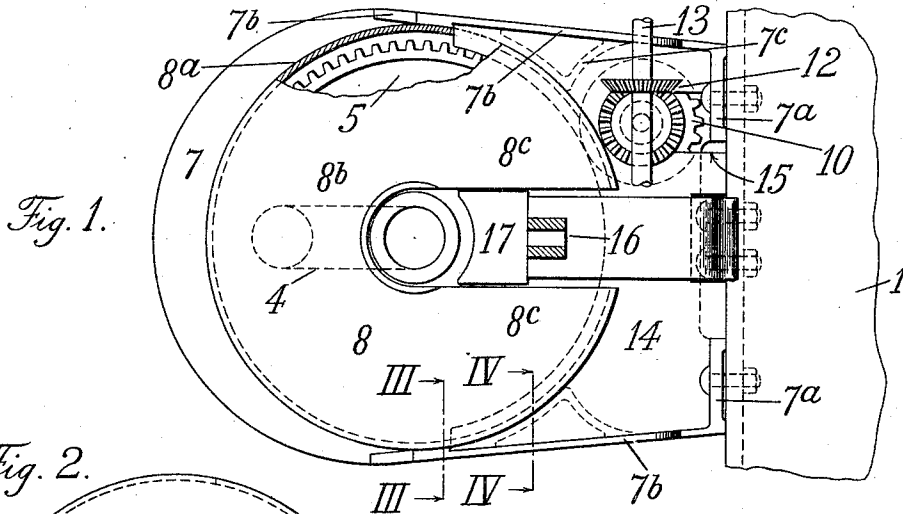


O. L. OWEN.
COILER HEAD.

APPLICATION FILED NOV. 10, 1909.

1,005,745.

Patented Oct. 10, 1911.



WITNESSES:

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COILER-HEAD.

1,005,745.

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To all whom it may concern:

Be it known that I, OSCAR L. OWEN, a citizen of the United States of America, and a resident of Whitinsville, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Coiler-Heads, of which the following is a full and concise specification, as required by statute.

The invention is an improvement in coiler heads for cotton drawing frames or similar machines, and its object is to provide an improved protective covering for the coiler gear and its driving pinion, so constructed and arranged that the said parts are effectively shielded from falling dirt or accidental contact by persons when the covering is in place, and can be quickly exposed to unobstructed access by removing the said covering, either in whole or in part as may be desired and it is a further object to arrange and provide a single coiler gear cover adapted to protect at the same time both the front and back halves of the said coiler gear, being also capable of being readily and bodily removed so as to expose thereby the whole of the gear and hence facilitate its cleansing or removal.

To the above ends the invention involves the construction and arrangement of parts shown and described herein and more particularly defined in the appended claims.

In the drawings, Figure 1 is a horizontal section taken on a plane just below the delivery-rolls of a coiler-head containing the present invention, the parts below the delivery-rolls being shown in plan view with certain portions broken away for clearness. Fig. 2 is a detail plan of the removable coiler-gear cover, separated from the head; Fig. 3 is a vertical section on line III—III of Fig. 1 on an enlarged scale; Fig. 4 is a similar view on line IV—IV of the same figure; and Fig. 5 is a vertical central section of the coiler-head, taken at right-angles to the roller-beam and showing the delivery rolls, their cover and its associated trumpet mechanism.

Referring to the above figures, it will be understood by those familiar in this art that the coiler-head shown, is intended to be fixed or applied to a fixed frame part of a machine which operates upon and delivers a continuous cotton sliver, for instance to

the roller-beam of a drawing frame as represented by the drawings, and that it is adapted to receive the continuous sliver from such machine and deposit it in coils in a suitable can or receptacle. The sliver enters the coiler-head through the trumpet 2, by which it is directed into the delivery rollers 3, just beneath it. The latter draw the sliver through the trumpet and deliver it into the mouth of the sliver-tube 4 which forms a part of the revolving coiler-gear 5. This tube is formed by an inclined bore in the body of the gear extending from a central upper point thereof, to a lower point near its circumference, so that as the gear is revolved, the sliver passing down through the tube is thereby laid in continuous coils in the sliver can 6. The coiler-gear is rim-journaled, as shown at 5^a, upon the margin of a circular hole in the horizontal coiler-gear plate 7, and the latter is mounted in projecting relation from the roller-beam, as for instance by means of two end flanges 7^a which are integrally formed on the plate and securely bolted to the front face of the roller-beam (see Fig. 1). The plate is formed with two upright side-rims 7^b which extend forwardly from the roller-beam, that is to say, from the attachment flanges 7^a, with which they are preferably integral, to a point adjacent the opposite sides of the coiler gear, where they are beveled off, to the plane of the plate as indicated by the dotted lines of Fig. 5. These side-rims serve the purpose of strengthening the coiler-gear plate, since they are marginal flanges thereof, and they also operate to close in and protect the coiler-gear at its sides, and for this latter purpose they are made to cooperate with the removable cover 8 of the coiler-gear. The said cover is shown in plan view separated from the head in Fig. 2. It is formed with an upright front wall 8^a surmounted by a semi-conical roof 8^b, both roof and wall being shaped to inclose the front half of the coiler-gear. The front wall 8^a extends circularly around to the opposite sides of the gear somewhat more than 180°, where its ends meet or overlap respectively with the forward ends of the side rims 7^b, being preferably between the rims and the gear thus completing the side closure of said gear.

The conical roof 8^b is truncated and open

at its top, forming a semi-circular rim adapted to surround the boss of the coiler-gear which forms the mouth of the sliver-tube 4, and is provided with two rearwardly extending portions 8° on each side of the rim, which overhang beyond the ends of the front wall 8^a and over the rear half of the coiler-gear 5. These extensions provide between them an open space or slot, preferably a parallel-sided slot, of sufficient width to accommodate the tube-mouth, so that the cover may be slid over and withdrawn from the coiler-gear in obvious manner. When resting on the horizontal plate, as shown in the drawings, the weight of the front wall and the main semi-conical part of the roof is sufficient to counterbalance the weight of the overhanging extensions 8° so as thus to maintain the cover with adequate stability in an upright position on the plate and with its overhanging portions held safely out of contact with the revolving coiler gear. In its normal or closed position the cover 8 rests in a circular counter-sink 9 formed in the top surface of the coiler gear plate and in such position its interior rim surrounds the tube mouth rather closely, but without touching it. The pinion 10 which drives the coiler-gear is disposed in the space back of it and between the side-rims 7^a, being itself journaled on a stud 11 and driven through the beveled pinions 12 on the horizontal drive-shaft 13, but the said pinion may be driven in other suitable ways according to the construction of the machine. In the case of drawing frames it is preferred to locate the drive-shaft 13 above the coiler-gear plate as in the example taken for illustration. The space in which the pinion 10 is located is inclosed, and the pinion protected, by a shield 14 which spans the side-rims and extends front and back from the roller-beam to the rear margin of the coiler gear, its front edge being preferably formed on the arc of a circle and underlapping the rearward overhangs 8° of the removable cover. In this position the front edge overhangs the rim of the coiler gear. The shield and cover form together a protecting shelter for the gear and its pinion which is continuous, except for the tube-mouth slot, from the roller-beam to the outer side of the coiler-head.

The shield 14 may be supported in place in various ways, but it is preferred to rest it removably upon the tops of two hollow fillet blocks marked 7° and appearing in Figs. 1 and 4. These blocks are formed on the coiler-gear plate adjacent the side-rims, but are of less height than the latter so that the shield may rest upon them and between the rims as clearly indicated by the detailed section of Fig. 4. It is thus held against lateral displacement. To permit its removal it is provided with a slot 15 which

accommodates the stud-shaft 11, when the drive-shaft 13 is disposed as shown above the plate. When this shaft is below the plate the slot in the shield may be omitted.

The bracket 16 which supports the usual top cover of the delivery rolls 3, is centrally located on the roller-beam, with respect to the coiler head, so that it extends forwardly into the open tube mouth slot of the cover and either of itself or by means of attached parts with which it is provided, form a closure thereto, thus completing the shelter of the coiler-gear and its driving pinion. In the form of head taken for illustration the said top-cover bracket extends part way into the tube mouth slot and is provided with a small extension 17 bolted to its end and extending the rest of the way. The bracket 16 is desirably located under the drive shaft 13 and hence so that it projects into or part way into the tube mouth slot, and its width is, therefore, suited to the slot so as to fit the same more or less closely, but the width of the small extension 17 is not thus limited and may overlap the tube mouth slot if desired to make a more complete closure for the gear. Ordinarily such arrangement will not be necessary, and in the drawings the said extension is illustrated as within and substantially filling the slot. The forward end of the extension approaches close to but without touching the top of the sliver tube-mouth, and with the semi-circular opening in the coiler gear cover, forms practically a continuous circular opening within which the tube mouth may revolve. In setting the removable coiler-gear cover in place, its tube mouth slot is guided over the tube mouth and the cover is pushed back until the ends of its front wall 8^a strike the extreme forward ends of the shield-plate 14, thereby pushing that plate back to its proper position, in which position the shield forms an abutment, limiting the inward movement of the cover and holding the same from contact with the tube mouth boss, the cover itself being held against accidental lateral movement by the engagement of its front wall 8^a with the countersink 9 above described or with any other equivalent abutment means serving the same purpose. Although the shield plate is removable as above described, it is thus locked in place by the cover and can only be removed when the latter has been lifted from its countersink or abutment means. On the removal of the cover, however, the shield may be easily grasped by the hand and removed, thus fully exposing all of the driving mechanism of the head. When the coiler gear is driven by a drive-shaft located above it, such as the drive-shaft 13, this latter shaft is protected by a curved shield 18 extending from the roller-beam to the top cover

of the delivery rolls, thus also sheltering the slot 15, formed in the shield plate 14 to accommodate its removal from the stud-shaft 11. The shield 18 is likewise removable and it will be observed that the entire protection of the coiler mechanism is accomplished in part by fixed members of the machine frame, for instance the top cover bracket 16, and in part by cover members which though normally safely confined in position, are yet easily removed.

I claim the following:

1. In a coiler head, a coiler-gear, a fixed coiler-gear plate having upright side rims forwardly extending to opposite points of the periphery of the coiler-gear thereon, in combination with a removable coiler-gear cover having a front wall extending around the front of said gear and cooperating with said side rims to form therewith a side closure to said coiler gear and its driving pinion.

2. In a coiler-head, the combination with a coiler-gear, of the plate supporting the same, having upright side rims forwardly extending to the opposite sides of the periphery of said gear, a removable cover for said gear having a front wall extended around the front thereof and projecting between said gear and the side rims, and an abutment limiting the inward movement of said removable cover.

3. In a coiler head, the combination with a coiler-gear and the coiler-gear plate therefor having side-rims, of a shield spanning said rims in the rear of said coiler gear, a removable coiler-gear cover having a front wall extending around the front of said gear and abutting against the edge of said shield.

4. In a coiler head, the combination with a coiler-gear plate, a coiler-gear thereon and its driving pinion, of a removable shield covering said pinion and extended forwardly toward said gear, combined with a removable cover for said coiler-gear adapted to lock said removable shield in place, and means for holding said cover against horizontal displacement on the coiler-gear plate.

5. In a coiler-head, a roller beam, a coiler-gear, a coiler-gear plate projecting from the roller beam and provided with upright side rims extending forwardly from the roller beam and terminating at the sides of the periphery of the coiler-gear journaled thereon, and a driving pinion for said gear between said side rim, in combination with a shield plate spanning said side rims and covering the space between said gear and the roller beam.

6. In a coiler-head, a coiler-gear and plate provided with upright side rims forwardly extending to the sides of the coiler-gear, and one or more supporting ledges on

said plate of less height than said side rims, in combination with the driving pinion of said gear, disposed between said side rims, and a shield removably supported on said ledges between the said side-rims.

7. In a coiler-head, a coiler-gear and plate, and a removable cover for the coiler-gear thereon formed with a front wall and roof shaped to surround and inclose the front half of said gear and rearwardly extended roof portions overhanging the rear half of said coiler gear and spaced apart by an open slot suitable to accommodate the tube-mouth of said coiler gear.

8. In a coiler-head, a coiler gear, a plate supporting the same, a removable cover for said gear also supported on said plate and formed with a roof and front wall shaped to inclose the front half of the coiler-gear and with rearwardly extending roof portions spaced apart by a parallel sided tube-mouth slot, and overhanging the rear half of said gear.

9. In a coiler-head, a coiler-gear and plate and a coiler-gear cover removably resting on said plate and having an upright front wall terminating at the opposite sides of the periphery of said gear and surmounted by a roof having portions extended rearwardly, overhanging beyond the ends of said front wall and spaced apart by a central tube-mouth slot.

10. In a coiler-head, a roller beam, a coiler-gear, a coiler-gear plate mounted in projecting relation from the roller-beam and provided with a removable shield extending from said beam to the inner margin of the coiler-gear on said plate, in combination with a removable coiler-gear cover having a front wall and roof shaped to surround and inclose the front half of the coiler gear and provided with rearwardly extending roof portions overhanging the rear half of said gear and the front margin of said removable shield.

11. In a coiler-head, a removable coiler-gear cover formed with a front wall and roof adapted to surround and inclose the front half of the coiler gear and provided with rearwardly extended roof portions overhanging the rear half of the coiler gear and spaced apart by a tube-mouth slot, in combination with a closure for said tube-mouth slot mounted in a fixed position over the coiler gear and behind the tube-mouth thereof.

12. In a coiler head, a roller beam, a coiler gear, a plate mounted in projecting relation from the roller-beam and supporting the coiler-gear, a driving pinion therefor, a removable cover for the front half of the coiler gear provided with extended roof portions overhanging the rear half thereof and forming a tube-mouth slot between them, in combination with a fixed bracket

projecting from the roller beam and into said tube-mouth slot and a shield beneath said bracket protecting said driving pinion.

13. In a coiler head, a removable coiler-gear cover formed with a front wall and roof adapted to inclose the front half of the coiler-gear and with rearwardly extending roof portions overhanging the rear half of said gear and spaced apart by an opening suitable to accommodate the tube-mouth of said gear, in combination with a delivery-roll top-cover and a fixed support therefor located behind the tube-mouth, and occupying said opening in the cover.
14. In a coiler-head, a coiler gear, a plate supporting the coiler-gear, a driving pinion therefor and a shield over the rear portion

of said plate, covering said driving pinion, in combination with a removable coiler-gear cover formed with a front wall and roof shaped to inclose the front half of the coiler-gear and provided with overhanging roof portions extended over the rear half of said coiler gear to a point adjacent the said shield, the said overhanging roof portions providing between them an open tube-mouth slot.

In testimony whereof, I have signed this specification in the presence of two witnesses.

OSCAR L. OWEN.

Witnesses:

ROBERT L. METCALF,
JOHN F. MCGINNISS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."