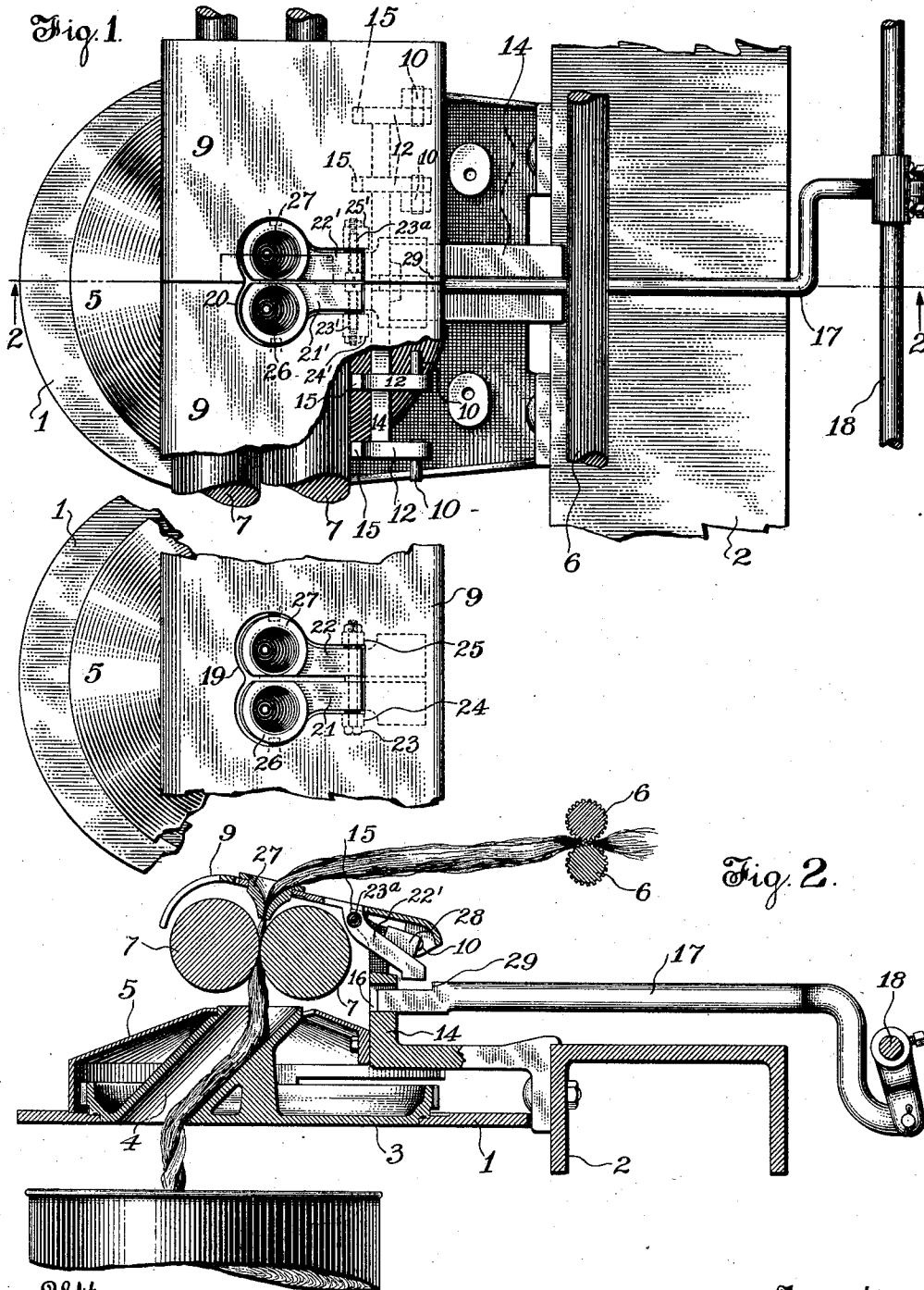


E. H. ROONEY.
DRAWING FRAME.
APPLICATION FILED AUG. 12, 1911.

1,053,224.

Patented Feb. 18, 1913.

2 SHEETS-SHEET 1.



Witnesses:
Leon H. Horner.
Harmon C. Nelson

Inventor
E. H. Rooney
By Attorney
McKee & McKee

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2 SHEETS—SHEET 2.

Fig. 3.

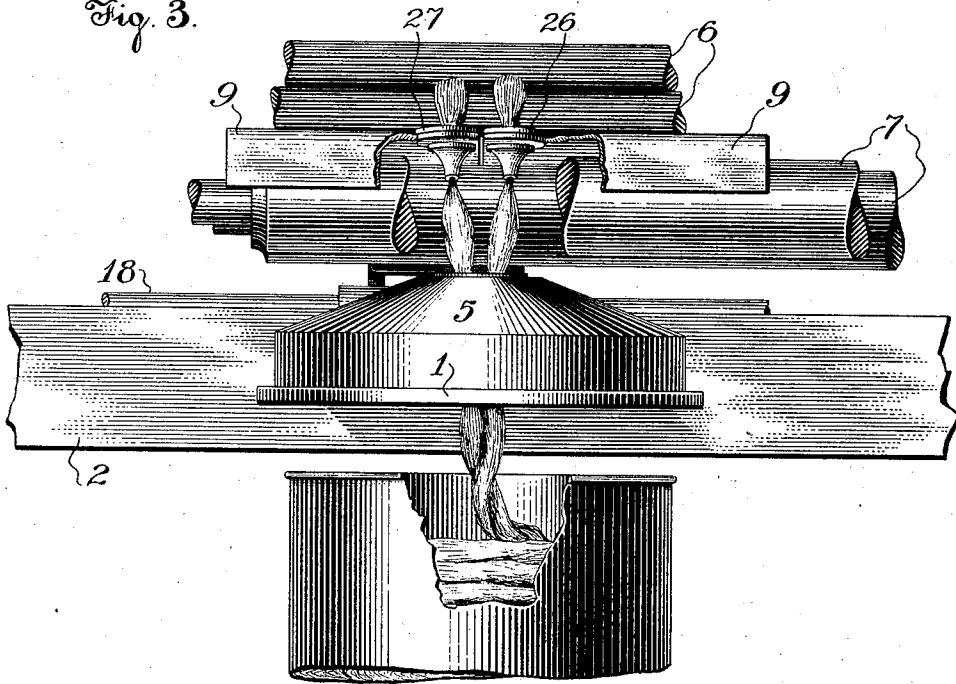
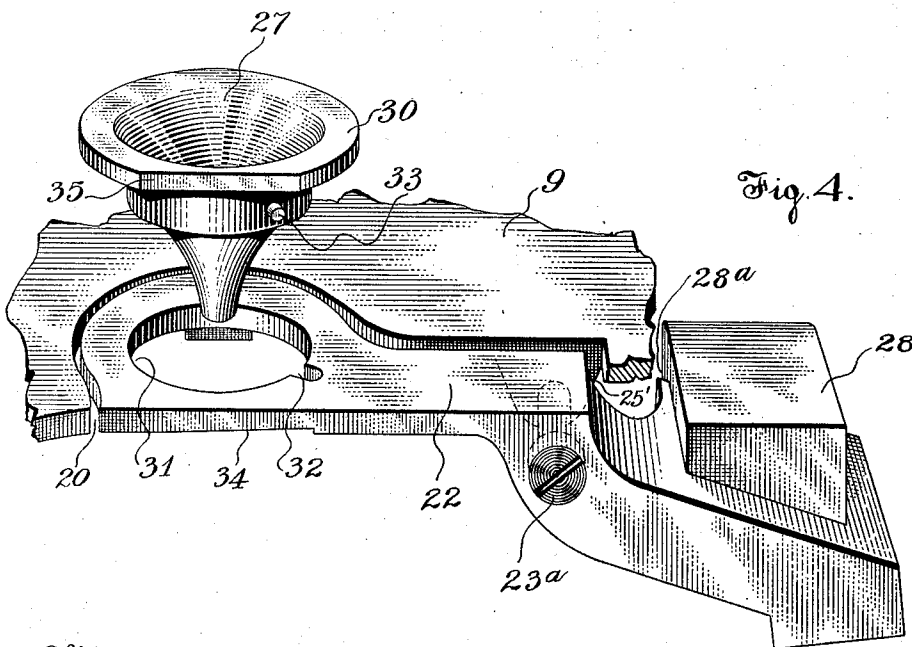


Fig. 4.



Witnesses:
Leon H. Horner.
Harmon O. Nelson.

Inventor
E. H. Rooney
By Attorney
McKee & Jones

UNITED STATES PATENT OFFICE.

ELWIN H. ROONEY, OF WHITINSVILLE, MASSACHUSETTS, ASSIGNOR TO THE WHITIN MACHINE WORKS, OF WHITINSVILLE, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

DRAWING-FRAME.

1,053,224.

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Patented Feb. 18, 1913.

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To all whom it may concern:

Be it known that I, ELWIN H. ROONEY, a citizen of the United States, residing at Whitinsville, county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Drawing-Frames, of which the following is a full and concise description.

The invention is an improved drawing-frame having double condensing trumpets in the place of the single trumpet now ordinarily used, and consists in the arrangement and relation of the parts of such apparatus whereby various advantages are obtained, which will be apparent to those skilled in this art from the following detail description and the drawings which form part hereof.

In the ordinary drawing-frame, each coiler-head is supplied with a single trumpet which is commonly secured to or mounted in a lever which is counterbalanced as by means of an adjustable weight so that it will be maintained in proper working position under conditions of normal or working tension of the sliver passing through the trumpet. Such a lever is adapted to oscillate about its pivot in response to abnormal changes of the sliver tension either in the nature of a decrease or an increase of such tension, to cause a coöperation of elements whereby the machine is stopped. By my invention a pair of such sliver-guides is provided in the place of one, to deliver separate slivers passing therethrough to the calender-rolls at closely adjacent points, and into the same coiler gear and sliver can, it being my purpose to provide a machine of simple and durable construction which will simultaneously lay two such coils of sliver within the can.

In the accompanying drawings I have illustrated a preferred embodiment of my invention, wherein—

Figure 1 is a top plan view of a single coiler-head with a pair of sliver-guides or trumpet levers, certain parts being broken away, a second coiler-head with a pair of sliver-guides being also partly shown; Fig. 2 is a section taken upon line 2—2 of Fig. 1; Fig. 3 is an end elevation looking from the left in Fig. 1, certain parts being broken away; and Fig. 4 is a perspective view of one of the trumpet-holding levers mounted in position with its condensing trumpet shown removed therefrom.

The usual parts of the drawing-frame illustrated, comprise the coiler-gear plate 1, which is rigidly supported in projecting relation from the roller beam 2 and carries the revoluble coiler-gear 3, rim-journaled on the margin of a large circular aperture in the plate. The coiler-gear is formed with a diagonal channel or sliver tube 4 extending from an upper central point thereof to a lower point close to the periphery so that the slivers passing down said tube, as the gear is revolved, are thereby laid in coils in the sliver can placed beneath. The removable protecting cover for the coiler gear is shown at 5. The drawing-rolls are marked 6, and the usual delivery-rolls, whereby the sliver is conducted to the mouth of tube 4, are marked 7. The rolls 7 are protected by a roll cover 9, which may be continuous in one piece common to several adjacent coiler-heads or may be divided in sections which meet at the center of each head. The roll covering means are hinged on the underside adjacent to their rear edges, as by pins 10, to the rearwardly extending arms 12 of the roll-cover stands or brackets 14, so that the hinge joints are protected from dirt. The bracket 14 is a fixed part bolted to the roller beam and overhangs the edge of the coiler-gear 3, there being one such bracket at the end of each section of the roll cover, provided with arms for supporting each section, as shown by Fig. 1, or there may be as many brackets as there are coiler heads, each being adapted to support the cover sections thereof in a position immediately over the calender rolls, the forward ends of the arms 12 being extended to provide abutment faces 15 on which the cover rests when in working position, permitting it to be turned back, however, on its hinges whenever desired. The upright post of the stand 14 is slotted as shown at 16, to receive or support the end of a constantly reciprocating sliding-bar 17 constituting the member of the controlling means through which the sliver-guide exerts its control of the motion of the machine, the bar 17 being ordinarily connected to the wag-shaft 18 of the usual stop-motion mechanism. The machine is stopped when the movement of the bar is stopped by the coaction therewith as an abutment, of a sliver-guide or trumpet lever acting in response to abnormal increase or decrease in the tension of the sliver.

According to this invention, in the em-

bodiment thereof illustrated in the drawings, the roll-cover sections are slotted or cut away above each coiler-head to receive the sliver-guides. In the coiler-head shown in the lower part of Fig. 1, I have illustrated one such opening at 19 formed all in one section of the cover, and in the upper coiler-head of the same figure a similar opening 20 is formed partly in the end of one cover section and partly in the other, in both cases the general shape of the opening being the same. The cover sections are set in line with each other with their adjacent ends or edges meeting each other in a suitable manner to prevent the passage of dust between the same, so far as possible.

Within each recess or opening, 19 and 20, are mounted the sliver-guide levers in pairs, such as 21, 22, and 21', 22', respectively. The levers mounted in the recess 19 are pivotally secured to the underside of the cover in a suitable manner, as by being mounted upon the pin or bolt 23, which may be threaded or otherwise suitably secured in lugs 24, 25, formed upon the underside of the cover. Where the opening is formed in the junction of two cover sections, as shown at 20, one lever, such as 21', is pivoted upon a pin 23', mounted in a lug 24' on the underside of the cover section at one side of the lever, and the other lever 22' pivoted upon a pin 23^a mounted in a lug 25' formed on the underside of cover section 9 at the opposite side of the opening. The levers 21' and 22' and 21 and 22, each carry a condensing trumpet, as illustrated at 26, 27, mounted upon the margins of openings in the forward ends of the levers, and the levers are counterbalanced by weights 28 mounted upon the rearward extensions of the levers, which weights are preferably adjustable so that the balance of the levers may be changed according to different working conditions. When in working position, the forward portions of the sliver-guides fit closely within their respective recesses in the roll-cover section, the proximate edges or sides of the levers of each pair being parallel and closely adjacent. In the case of a pair of sliver-guides mounted at the junction of two cover sections, each lever may readily be mounted in position by raising one roll-cover out of line with the other and screwing the pivot pin 23' or 23^a into its lug from the end of the cover upon which the lever is to be mounted, the pin passing through the lever and the corresponding lug upon the underside of the cover, a suitable nut or other retaining means preferably being used to secure the setting. In the case of a pair of levers mounted in a single opening, such as 19, intermediate the ends of a cover section, the levers are mounted by passing the pivot-pin through both lugs and both levers, the latter being spaced

slightly apart to permit independent movement by means of a washer interposed between the two. As illustrated in Fig. 4, each counter-weight 28 is formed with an upper block and a single flange 28^a extending along the outer side face of its lever, by which it can be secured thereto in a known adjustable manner, such as a screw passing through a slotted opening in the flange and entering the lever.

A single sliding-bar 17 serves for each pair of levers, and is provided with a shoulder 29 broad enough to be engaged by the tail of either lever of the pair when one or the other drops into line therewith. The failure of the supply of sliver passing through the trumpet of either lever of a pair, or an abnormal decrease in the sliver tension, causes the rear end of the lever to drop into the path of lug 29, by virtue of the counter-balancing effect of the weight, thereby obstructing the forward movement of the sliding bar, and stopping the machine.

The forward trumpet holding ends of sliver-guide levers are so formed as to fill their respective openings in the roll-cover as fully as possible to prevent the passage of dirt through the openings. Preferably I provide removable trumpets of the character illustrated whereby trumpets of different sizes are readily interchangeable by hand. In the construction illustrated, the trumpets are provided at their upper ends with annular flanges 30 which are adapted to rest upon the upper margins of the circular apertures 31 in the trumpet levers. Each trumpet lever is provided with a vertical slot 32 opening into the circular opening 31, and the trumpet is provided with a projection 33 extending outwardly from the barrel thereof, which pin or projection may be allowed to pass through the slot 32 in mounting the trumpet in its lever. The underside of the lever adjacent to the opening 31 is provided with a gently sloping cam surface shown at 34 in Fig. 4, which coacts with the pin 33 to lock the trumpet in position after the same has been rotated into its working position. The edge of the flange 30 of each trumpet is shaped to form a plane surface, as shown at 35 in Fig. 4, the plane surface 35 of the trumpets of each pair of levers being closely adjacent and parallel when the levers are mounted in position, so that the formation of any considerable openings through the roll-cover through which dust might fall, is prevented and the trumpets readily contribute their sliver to the same point in the bite of the rolls 7. The trumpets may be mounted in position in their respective levers or removed therefrom by hand upon oscillating one lever of a pair about its pivot to bring the flange 30 of its trumpet out of line with

the corresponding flange of the other trumpet of the pair. Or, in the case of the levers mounted at the adjacent edges of a pair of sections of the roll-cover, either cover section may be raised out of line with the other to facilitate the mounting or removal of a trumpet. Either trumpet of a pair may be removed, upon moving the same out of line with the other trumpet of the pair, by rotating the same by hand to bring the locking pin into line with the slot formed in the trumpet lever when the trumpet may be removed by a direct lift.

It will be understood that the invention is not limited to the details of construction above described in connection with the preferred embodiment of my invention illustrated, but that various modifications and changes in the proportions and arrangements of the parts may be made without departing therefrom.

I claim:

1. In a drawing frame, the combination with a coiler-head and conducting rolls therefor, of hinged cover means for said rolls, having an opening formed therein, and a pair of sliver-guides comprising counterbalanced levers pivoted to said cover means and mounted in parallel relation within said opening.

2. In a drawing frame or like sliver-working machine, the combination with a coiler-head and conducting rolls therefor, of hinged cover means for said rolls, having an opening formed therein, and a pair of sliver-guides comprising counter-balanced levers pivoted to said cover means and mounted in said opening, and condensing trumpets carried one by each of said levers, adjacent to each other, the upper rims of said trumpets being cut away on their proximate sides, forming straight surfaces substantially in line with each other.

3. In a drawing-frame or like sliver-working machine, the combination with a pivoted roll cover having a cut-away portion extending laterally from the end thereof, of a sliver-guide comprising a counter-balanced lever pivoted to the underside of said cover and positioned closely within and extending through said cut away portion with one side thereof substantially in the same plane as said cover end, and a removable condensing trumpet mounted in an aperture in the end of said lever and having a straight face parallel with the aforesaid plane.

4. In a drawing-frame or like sliver-working machine, the combination with a pair of rolls, of a pair of hinged covers therefor mounted end to end and each disposed above both rolls, a stand to which said roll covers are hinged, a pair of condensing trumpets

and a trumpet holding lever for each, and means for pivotally securing one lever to the under side of one cover and the other lever to the underside of the other cover in such position that the levers are disposed in parallel relation within suitable recesses in said roll covers with the inner edge of each lever located substantially in the plane of the proximate ends of the roll covers.

5. In a drawing frame, the combination with a coiler-head and conducting rolls therefor, of hinged cover means for said rolls, having an opening formed therein, a power-controlling mechanism comprising a reciprocating bar, and a pair of sliver-guides comprising counterbalanced levers pivoted to said cover means, mounted in parallel relation within said opening, and each adapted to oscillate upon excessive change of sliver tension into position to obstruct movement of said bar.

6. In a sliver working machine, the combination with a roll cover stand, of conducting rolls, cover means therefor hinged to said stand and having an opening formed therein, and a pair of sliver guides comprising counterbalanced levers pivoted to said cover means, mounted in parallel relation within and closely filling said opening.

7. In a sliver working machine, the combination with a roll cover stand having a slide-bar slot therein, of conducting rolls, cover means therefor hinged to said stand and having an opening formed therein, a power controlling mechanism comprising a reciprocating bar mounted to slide within said slot, and a pair of sliver-guides comprising counter-balanced levers pivoted to said cover means, mounted in parallel relation within said opening, and each adapted to oscillate, upon excessive change of sliver tension, into position to obstruct movement of said bar.

8. In a drawing frame, the combination with a coiler head and conducting rolls therefor, of a cover means for said rolls hinged by the rear marking thereof and adapted to be turned upwardly from said rolls, an opening in the said cover means and a pair of trumpet levers mounted with their forward trumpet holding arms occupying and substantially filling the opening, and a single stop motion member adapted to be engaged by one or both said levers.

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

ELWIN H. ROONEY.

Witnesses:

ROBERT L. METCALF,
OSCAR L. OWEN.