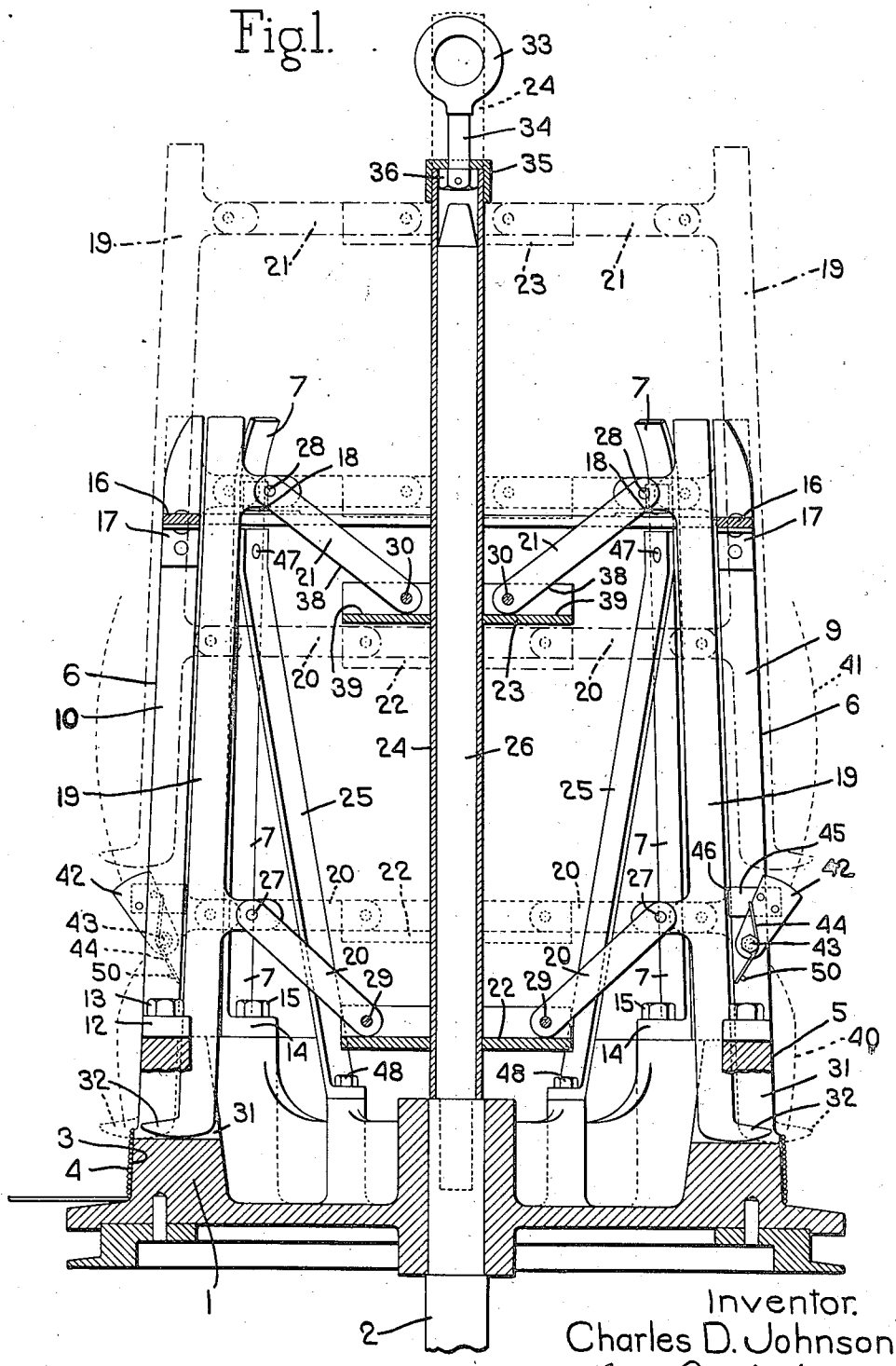
June 16, 1936. C. D. JOHNSON 2,044,574

STRIPPER FOR WIRE RECEIVING BLOCKS

Filed Oct. 4, 1934 2 Sheets-Sheet 1

Fig.1.



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Fig.2.

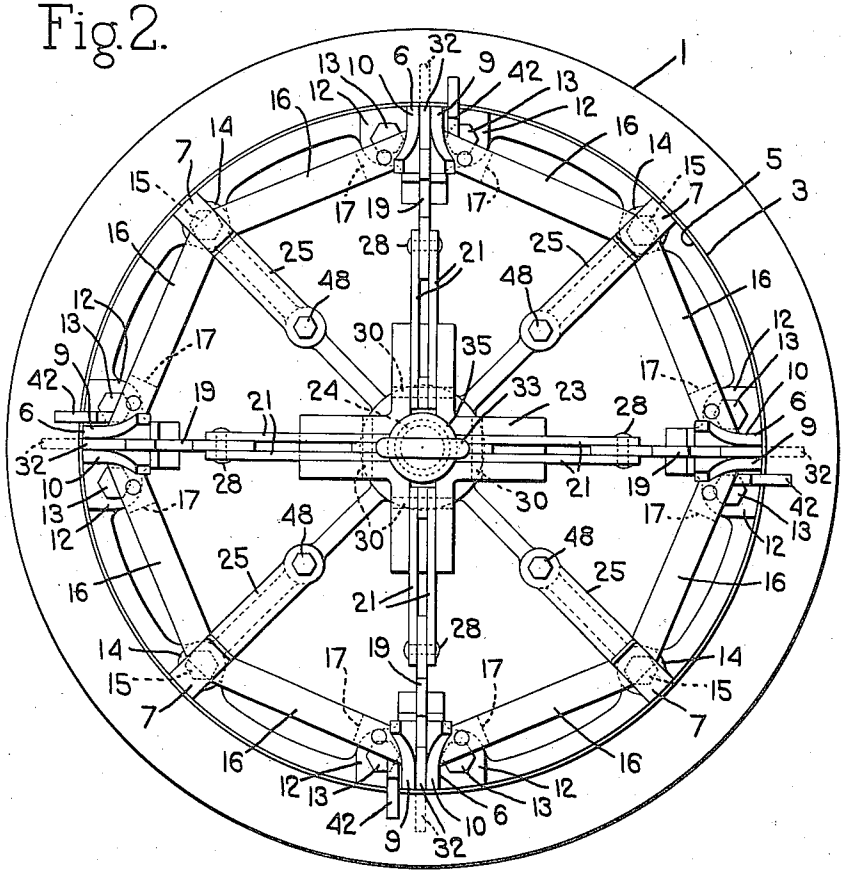


Fig.3.

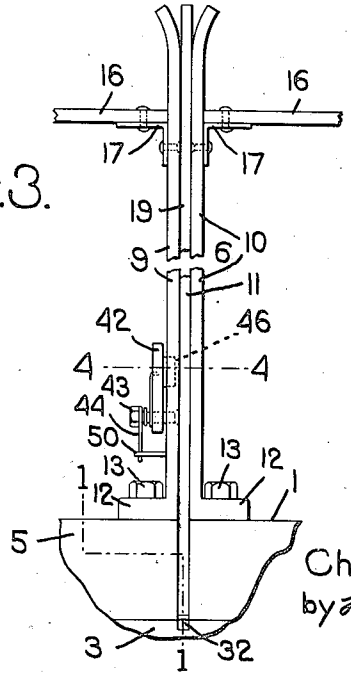
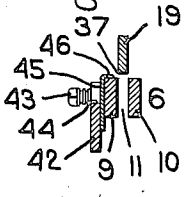


Fig.4.



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STRIPPER FOR WIRE-RECEIVING BLOCKS

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Application October 4, 1934, Serial No. 746,763

12 Claims. (Cl. 205—20)

This invention relates to wire-receiving blocks or drums such as are used to receive wire after it has been subjected to some treatment such as a galvanizing operation or a coating or plating operation or even a wire-drawing operation, and it has particular reference to a novel stripper attachment or device to be used in connection with a vertical wire-receiving block and by means of which the wire which is accumulating on the block can be raised to the upper portion of the block while the block is still rotating and the wire is being wound thereon. The invention is especially applicable to a wire-receiving block on which wire is wound as it comes from a galvanizing bath or a coating bath, because it provides means whereby the wire which is accumulating on the block may be raised to and retained at the upper part of the block in bundle formation without stopping the block and thereby stopping the movement of the wire through the galvanizing, coating or other bath.

If in the operation of galvanizing, tinning or coating wire by drawing it through a suitable bath, the vertical block on which the wire is wound is stopped in order to lift the wire accumulating on the block to the upper portion thereof and hook or tie it in this position, as is sometimes done in wire mills, the hot metal is apt to "freeze" in the wipers during the time that the block is stopped with the possibility that when the block is started up again the "freezing" will be of such an extent as to cause breakage of the wire. Furthermore, if wire is being treated by being drawn through an acid cleaning solution and then through an aqueous plating solution, and the block is stopped for the purpose of "hooking up" the wire which is accumulated on it, the portion of the wire which remains in the baths during the "hooking up" operation becomes over-treated with the result that this portion of the wire will not be uniform with the portions of the wire which are passed through the bath continuously without stopping. A vertical wire-receiving block is preferred by many wire manufacturers over a horizontal one because the bundle of wire which accumulates on a vertical block is better than that which is developed on a horizontal block. However, because of the disadvantage of stopping the vertical block to "hook up" the wire as it accumulates thereon, it is a common practice to operate the vertical block so as to produce relatively small wire bundles thereon.

With my improvements the wire which is accumulating on the block can be readily lifted to the upper portion of the block, while the block is still rotating, each quantity of wire which is so lifted being automatically retained in its elevated position. In this way a relatively large bundle of wire can be accumulated on the vertical block without stopping the block to "hook up" the wire. With my invention, therefore, it is possible to accumulate as large a bundle of wire on the vertical block as could be accumulated on the horizontal block, and because of the vertical arrangement of the block, the bundle of wire thereon is much neater and more compact than will result from the use of the horizontal block.

In order to give an understanding of the invention I have illustrated in the drawings a selected embodiment thereof which will now be described after which the novel features will be pointed out in the appended claims.

Fig. 1 is a sectional view through a wire-receiving block embodying my invention with the section taken on the line 1—1, Fig. 3;

Fig. 2 is a top plan view thereof;

Fig. 3 is a fragmentary view;

Fig. 4 is a section on the line 4—4, Fig. 3.

In the drawings 1 indicates generally a wire-receiving block which is shown as fast on the driving shaft 2 that is supported and driven in any suitable way. The block 1 is provided with the usual wire-receiving surface 3 on which the wire 4 is received as it is delivered thereto, said wire 4 being wound tightly around the wire-receiving surface 3 a plurality of times thereby to provide sufficient frictional engagement to draw the wire through the apparatus by which the wire is being treated. Such apparatus may be one having one or more baths through which wire is drawn for cleaning it and then coating it either with a hot metal coating or with a coating resulting from drawing the wire through an aqueous coating solution, or the apparatus may even be one in the nature of a wire-drawing apparatus.

The portion 5 of the block above the wire-receiving surface 3 has a diameter slightly less than that of the wire-receiving surface 3 and during the wire-treating operation the wire gradually accumulates on the portion 5 of the block as will be understood by those skilled in the art, and as shown at 40.

As stated above one feature of my present invention relates to means by which the wire accumulating on the portion 5 of the block may be raised to the upper portion thereof while the block is rotating and is still receiving wire, so that as fast as the wire accumulates on the block, it may be raised to the upper portion thereof in bundle formation without the necessity of

stopping the block. Another feature of the invention relates to means by which as the accumulating wire is thus repeatedly raised to the upper portion of the block without stopping the latter, such wire will be automatically retained at the upper portion until a bundle of sufficient size has accumulated on the block.

The base portion 5 of the block having the wire-receiving surface 3 is provided with a skeleton extension which forms a storage space for storing wire as it accumulates on the block. This skeleton extension comprises a plurality of posts 6, 7 which rise from and are secured to the upper surface of the portion 5 of the block. The posts 6 are shown in the form of twin posts, each post 6 having the two sections 9, 10 forming a space 11 between them to receive the stripper arms, presently to be referred to. Each section 9 and 10 of each post 6 is provided at its lower end with a foot portion 12 which rests on the upper surface of the block body and is secured thereto by suitable bolts 13.

I have shown in the drawings four twin posts 6 which are arranged 90° apart and the posts 7 are shown as located between the posts 6. Each post 7 has at its lower end a foot portion 14 which rests on the upper surface of the block body and is secured thereto by a suitable bolt 15. These posts are tied together at their upper ends by tie bars 16 thereby making a rigid skeleton structure. As herein shown these tie bars are secured to the twin posts 6 through the medium of angle iron connecting braces 17 which are riveted both to the tie bars 16 and to the sections of the posts 6 as shown in Fig. 3. These tie bars 16 are connected to the posts 7 in any suitable way as by means of angle iron brace members 18. The posts 7 are braced by suitable braces 25 which are riveted at their upper ends to the posts as shown at 47, and at their lower ends are bolted to the body portion 5 of the block as shown at 48.

The stripper device by which the wire accumulating on the lower portion of the block is raised to the upper portion thereof while the block is still rotating comprises a plurality of stripper arms 19, there being one for each of the twin posts 6. Each stripper arm 19 is connected by two links 20, 21 to two heads 22, 23 that are fast on a central tubular member 24 which in turn telescopes over a guiding extension 26 rising from the center of the block body and rigid therewith. This guiding member 26 is in the form of a pin or rod which freely fits within the tubular member 24.

The links 20, 21 are pivotally connected to the stripper arms at 27, 28 and are pivotally connected to the heads 22, 23 as shown at 29 and 30. The connection between the stripper arms 19 and the tubular member 24 is such that when the tubular member is in its lowered position shown in full lines Fig. 1 resting against the central hub of the block body, the stripper arms 19 will be in their retracted position in the rear of the posts 6. The lower ends of the stripper arms 19 extend below the surface of the block body and are received in slots 31 formed in said body. The lower extremity of each stripper arm is provided with the outwardly-extending toe or wire-lifting portion 32, said toe being of such dimensions that when the stripper arms are in their retracted position shown in full lines Fig. 1 the tip of the toe will be within the limits of the peripheral surface of the block.

The upper end of the tubular member 24 has a connection swivelled thereto by which said tubular member can be raised. This connection is shown as an eye bolt 33 having a stem 34 which extends through a cap 35 which closes and is rigid with the upper end of the tubular member 24. The stem 34 of the eye bolt is provided with a collar or nut 36 which engages the under side of the cap 35. This eye bolt is thus swivelled to the tubular member 24 thereby providing for relative turning movement of the tubular member 24 and eye bolt about their common axis.

The presence of the stripping arms does not interfere in any way with the ordinary operation of the block because these stripper arms are normally situated in the rear of the posts 7 and thus do not interfere with the normal operation by which the wire is accumulated on the portion 5 of the block and on the skeleton portion provided by the posts 6, 7. The lifting of the wire accumulating on the wire-receiving portion of the block to the upper portion thereof is accomplished by raising the tubular member 24, this being done by attaching a suitable lifting tackle to the eye bolt 33. The initial rising movement of the tubular member to carry the heads 22, 23 into the dotted line position serves to straighten the links 20, 21, which constitute toggle elements, and bring the lower edges 38 of the links against the supporting surfaces 39 of the heads 22, 23. This operation will force the stripper arms 19 outwardly into the dotted line position, in which position the front edges 37 of said stripper arms are substantially flush with the outer edges of the twin post sections 9, 10.

During this spreading or outward radial movement of the stripper arms 19 the toes 32 thereof are forced through the coils of wire at the point where the wire-receiving surface 3 joins the portion 5 of smaller diameter as shown by dotted lines in Fig. 1, thereby separating the accumulated mass of wire indicated at 40 in Fig. 1 from the coils of wire being wound on the wire-receiving surface 3. This movement also brings the lower edges 38 of the links against the supporting surfaces 39 of the heads 22, 23, thereby maintaining the toggle elements 20, 21 in their straightened position. Continued rising movement of the tubular member 24 will lift the stripper arms from the dotted line position to the dot and dash line position in Fig. 1, such movement elevating or lifting the mass of wire indicated at 40 in Fig. 1 to the position shown by dotted lines 41. Because of the swivel connection between the eye bolt 33 and the tubular member 24, this operation of manipulating the stripper arms and raising them into the dot and dash line position can be performed while the block 1 is still rotating and while wire is still being received thereby. Continued rising movement of the tubular member 24 will lift the stripper arms and thereby lift the wire load indicated at 40 in Fig. 1 which has accumulated above the wire-receiving surface 3. The fact that the eye bolt 33 is swivelled to the tubular member 24 permits this lifting operation to be performed while the block is still rotating, since when the eye bolt is attached to the hoisting tackle the tubular member 24 may rotate freely relative to the bolt as the block rotates.

Means are provided for supporting this load of wire in its raised position shown at 41 while the block continues in operation. For this purpose I have shown wire-supporting dogs 42 which are pivoted to the twin posts 6 at 43, each dog

being acted on by a spring 44 which tends to hold it in its outward operative position shown in Fig. 1 but which permits it to swing backwardly into inoperative position.

Each wire-receiving dog 42 is provided with a stop projection 45 provided with a lip 46 adapted to engage the rear edge of one section of the twin posts, such lip limiting the spring-impelled movement of the retaining dog. As the accumulated mass 40 of wire is raised by the lifting arms the bundle of wire will force the dogs 42 backwardly against the action of the springs 44 and when the bundle of wire has been carried above the dogs they will move outwardly into their operative position under the influence of said springs 44. When the accumulated wire has thus been lifted above the dogs 42 then the tubular member 24 and the lifting arms may be lowered which will result in leaving the bundle 40 of wire resting on the dogs 42 as shown at 41. In this way the load of the accumulating wire may be taken off from the wire line as frequently as desired and the wire may be thus accumulated in a bundle 41 which is supported by the dogs 42 until such time as it is desired to strip the wire entirely from the block.

With my improvements, therefore, it is possible to operate the block 1 continuously and without stopping until a relatively large bundle of wire has accumulated thereon, and as the wire accumulates at the point 40 to repeatedly lift the accumulated wire to the upper part of the block into the bundle formation as shown at 41 while the block is still rotating and without stopping it.

I claim:

1. A device of the class described comprising a rotary block having a wire-receiving surface on which the wire is wound, and means capable of operation independently of the rotative movement of the block and operative both while the block is rotating and while it is at rest to lift the wire load accumulating above the wire-receiving surface and separate it bodily therefrom.

2. A device of the class described comprising a rotary vertical block having a wire-receiving surface to receive wire as it is drawn through a wire-treating device, said block having a portion above the wire-receiving surface for storage of wire, means carried by the block and capable of operation independently of the rotative movement of the block and operative both while the block is rotating and while it is at rest for lifting bodily the wire which accumulates on the block above the wire-receiving surface to the wire storage portion of the block, and means also carried by the block for retaining the wire in its raised position.

3. A device of the class described comprising a rotary block having a wire-receiving surface to receive wire as it is drawn through a wire-treating apparatus, said block having a portion above the wire-receiving surface for storage of wire, means capable of operation independently of the rotative movement of the block and operative both while the block is rotating and while it is at rest for lifting as a unit the wire which accumulates on the block above the wire-receiving surface to the wire storage portion of the block, and wire-supporting dogs also carried by the block for supporting the wire in its raised position.

4. A device of the class described comprising a rotary vertical block having a wire-receiving surface to receive wire as it is drawn through a wire-treating apparatus and also having a wire storage portion above the wire-receiving surface, means capable of operation while the block is rotating but operative independently of the rotation thereof to lift the wire which accumulates above the wire-receiving surface to the wire storage portion of the block, and means also carried by the block to support the wire in its raised position.

5. A device of the class described comprising a rotary block having a wire-receiving surface to receive wire as it is drawn through a wire-treating apparatus and also having a wire storage portion above the wire-receiving surface, means capable of operation while the block is rotating but operative independently of the rotation thereof to lift to the wire storage portion of the block the wire which accumulates from the wire-receiving surface, and wire-supporting dogs pivotally carried by the block and operating to support the wire in its raised position.

6. A device of the class described comprising a rotary drawing block having a body portion provided with a wire-receiving surface to receive wire as it is drawn through a wire-treating apparatus, posts secured to and rising from the body portion and providing a wire-storage portion, stripper arms associated with certain of the posts, and means operative while the block is rotating to move the stripper arms outwardly to cause them to engage the wire accumulated above the wire-receiving surface and then to raise the arms to separate the wire from said wire-receiving surface.

7. A device of the class described comprising a rotary block having a body portion provided with a wire-receiving surface to receive wire as it is drawn through a wire-treating apparatus, posts secured to and rising from the body portion and providing a wire storage portion, stripper arms, and means operative while the block is rotating to move the stripper arms outwardly to cause them to engage the wire accumulated above the wire-receiving surface and then to raise the wire to said wire storage portion.

8. A device of the class described comprising a rotary block having a body portion provided with a wire-receiving surface to receive wire as it is drawn through a wire-treating apparatus, posts secured to and rising from the body portion and providing a wire storage portion, stripper arms and means operative while the block is rotating to move the stripper arms into a position to engage the wire accumulated above the wire-receiving surface and then to raise said arms thereby to raise the wire to the wire storage portion.

9. A device of the class described comprising a rotary block having a body portion provided with a wire-receiving surface to receive wire as it is drawn through a wire-treating apparatus, posts secured to and rising from the body portion and providing a wire storage portion, stripper arms, means operative while the block is rotating to move the stripper arms into a position to engage the wire accumulated above the wire-receiving surface and then to raise said arms thereby to raise the wire to the wire storage portion and means supporting the wire in its raised position.

10. A device of the class described comprising a rotary drawing block having a portion provided with a wire-receiving surface to receive wire as it is drawn through a wire-treating apparatus and also provided with a wire storage portion above the wire-receiving surface, stripper

arms separable from the drawing block and means operative while the block is rotating to move the stripper arms outwardly to cause them to engage the wire accumulated above the wire-receiving surface and then to raise the arms to separate the accumulated wire from said wire-receiving surface.

11. A device of the class described comprising a rotary drawing block having a wire-receiving surface to receive wire as it is drawn through a wire-treating apparatus and also having a wire storage portion above the wire-receiving surface, stripping elements separate from the drawing block and normally situated inside the wire-receiving surface and means capable of operation while the block is rotating to move the stripper elements outwardly to cause them to engage the wire accumulated above the wire-receiving surface and then to raise said elements to separate the accumulated wire from the wire-receiving surface.

12. A device of the class described comprising a rotary drawing block having a wire-receiving surface to receive wire as it is drawn through a wire-treating apparatus and also having a wire storage portion above the wire-receiving surface, stripping elements separable from the drawing block and normally situated inside the wire-receiving surface, means capable of operation while the block is rotating to move the stripper elements outwardly to cause them to engage the wire accumulated above the wire-receiving surface and then to raise said elements to separate the accumulated wire from the wire-receiving surface and means carried by the block to support the wire in its raised position.

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