

Aug. 23, 1955

R. M. SCOTT

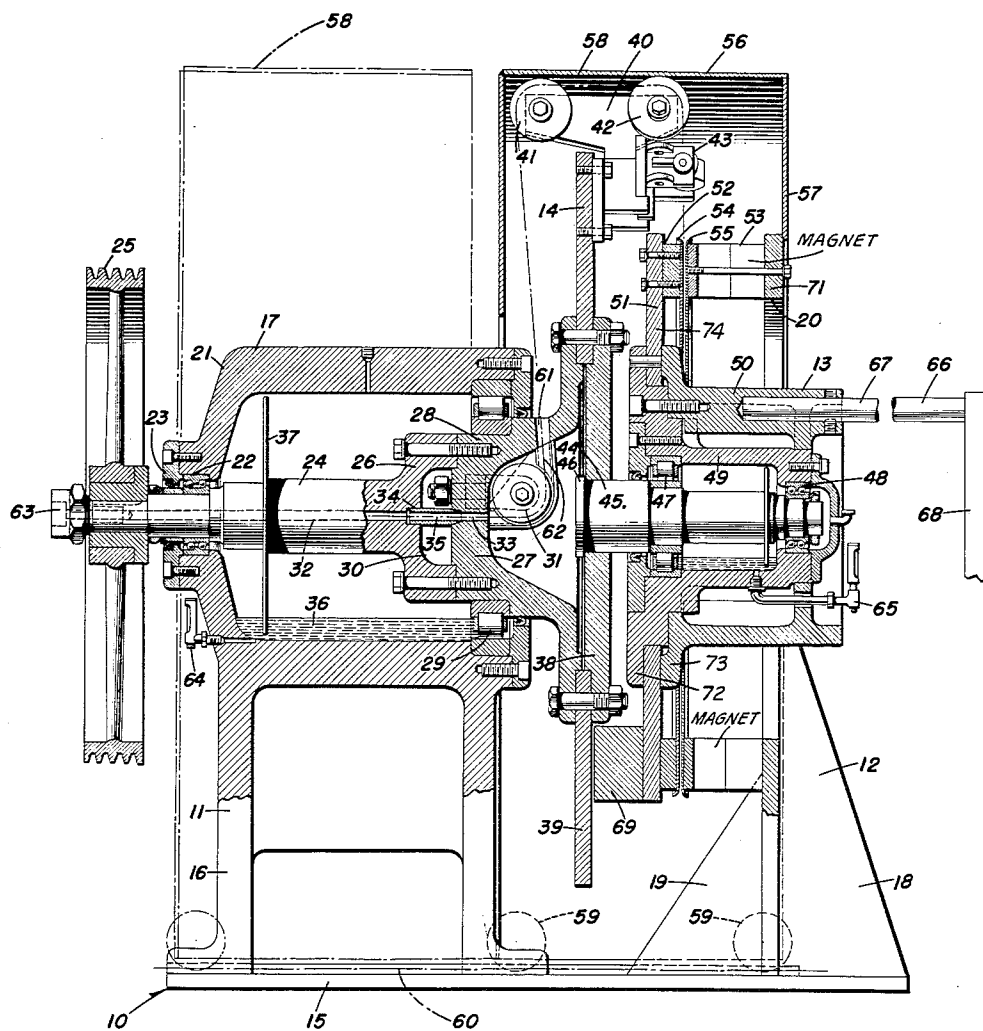
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APPARATUS FOR COILING WIRE

Filed Nov. 17, 1951

4 Sheets-Sheet 1

FIG. 1.



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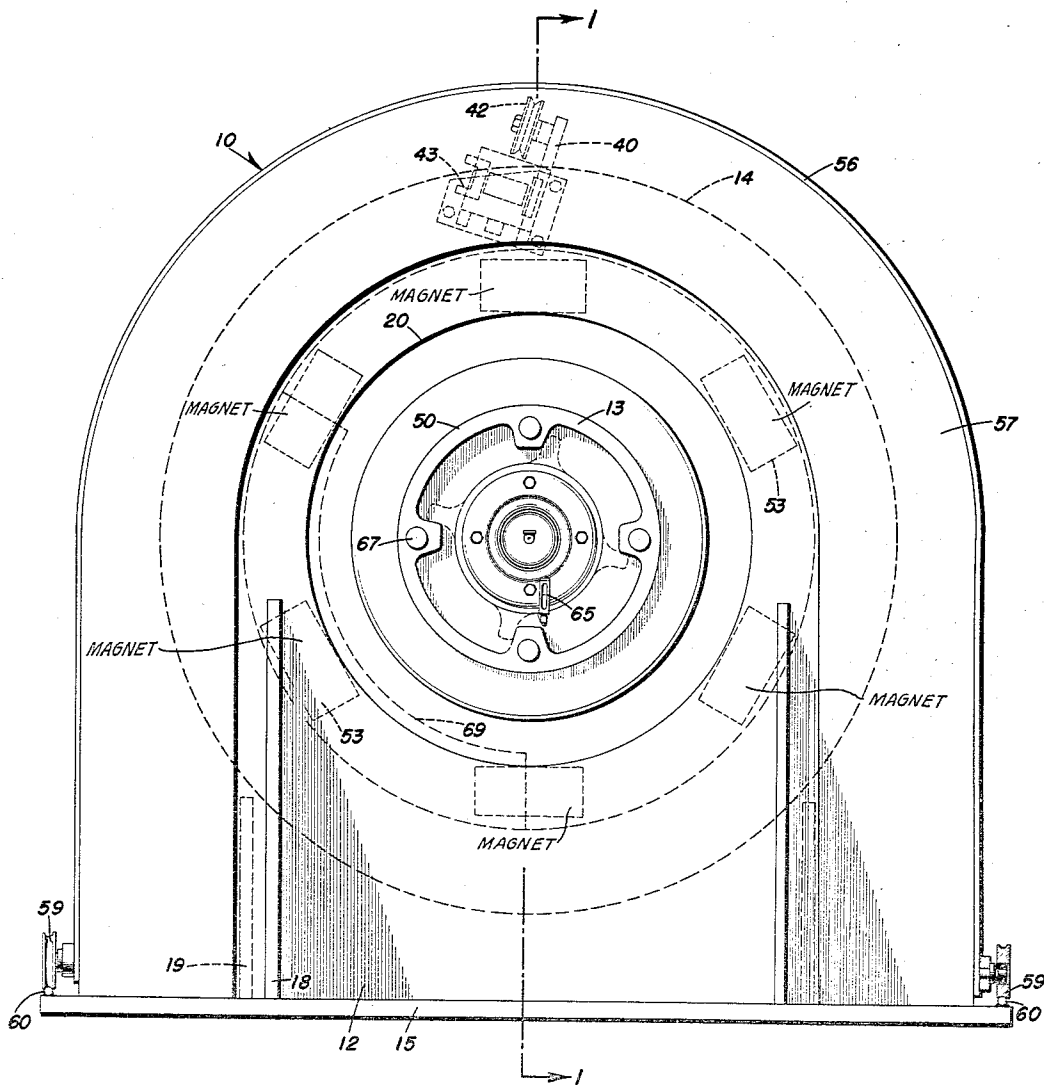
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APPARATUS FOR COILING WIRE

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4 Sheets-Sheet 2

FIG. 2.



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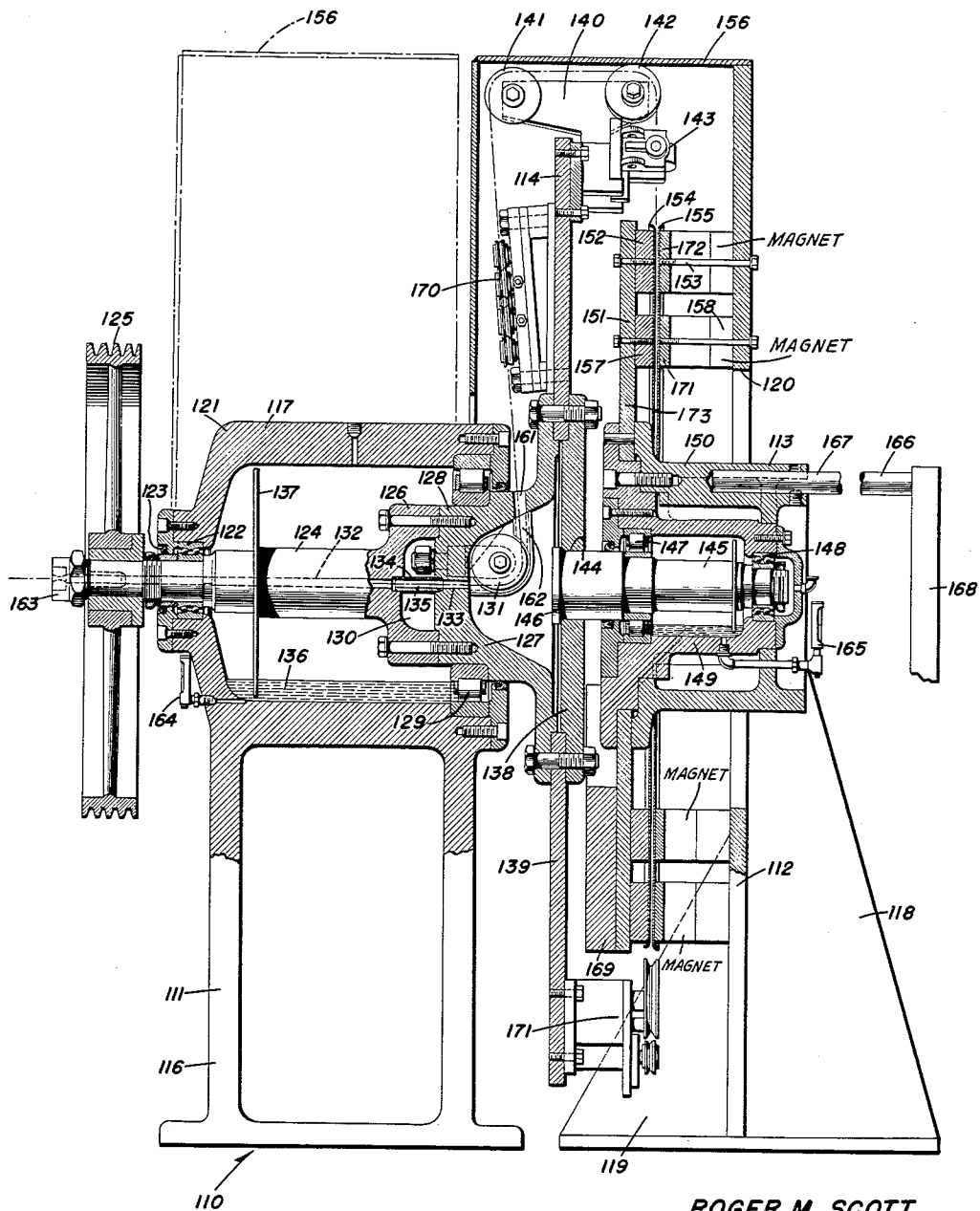
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APPARATUS FOR COILING WIRE

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4 Sheets-Sheet 3

FIG. 3.



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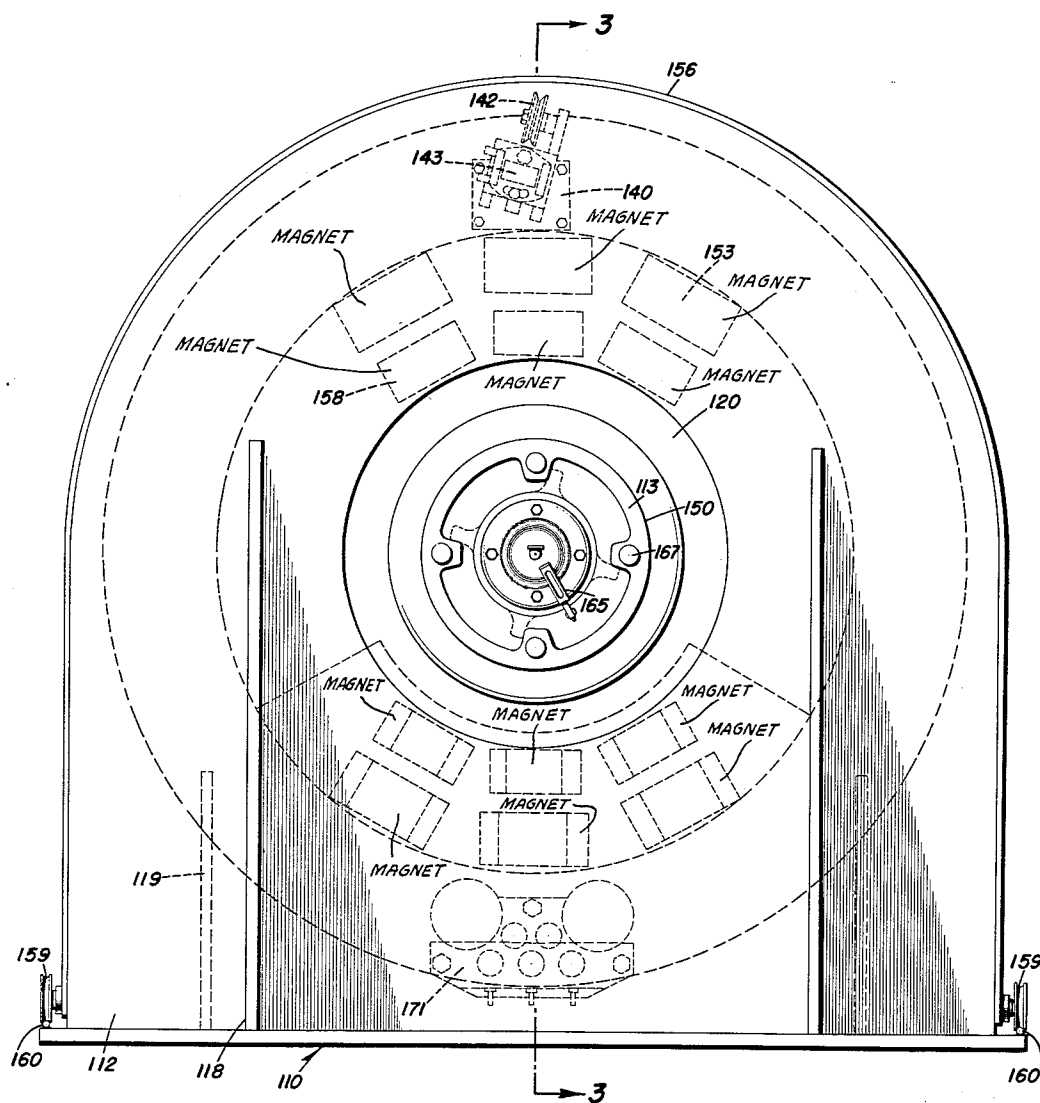
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APPARATUS FOR COILING WIRE

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4 Sheets-Sheet 4

FIG. 4.



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APPARATUS FOR COILING WIRE

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Application November 17, 1951, Serial No. 256,944

11 Claims. (Cl. 242—78)

This invention relates to dead blocks and more particularly to an apparatus for coiling the finished product of a wire-drawing machine.

In the art of drawing wire, the raw material is passed through a series of dies of successively diminishing diameters, there being a drawing block between each successive pair of dies. The drawing block serves to store the wire between dies and also to determine the amount of back pull and forward pull that exists on the wire as it passes through each die. After the reduction of the wire in such a series of dies and drawing blocks, it is desirable to form the wire into coils for ease of transportation and storage. It is possible, of course, to pass the wire onto a revolving block which is similar to the drawing blocks described above. However, it is necessary, after a coil of wire has been built up on any finishing block, to cut the wire and remove the coil of wire so built up; with a revolving finish block the dangers inherent in so cutting and removing the coil are evident. It is undesirable, of course, to stop the machine every time a coil has been produced. The answer to this problem is found in the provision of a so-called "dead" block; that is to say, the finishing block remains stationary and the wire is fed onto it peripherally by means of a guide member which revolves around the block. It can be seen, then that in such an apparatus the wire will move axially along the block away from the point onto which it is fed and can be cut and removed from the block without difficulty, since the wire and block are stationary to all intents and purposes. Now, for such a dead block to operate in the manner desired, it must have a free end from which the coil may be removed; since this limitation must be met, then only the other end of the block remains for providing the necessary support. The guide member must be positively driven with respect to the dead block, so this means that the wire must enter the system co-axially with the guide member, or else some means, usually very intricate, must be provided for enabling the wire to pass through the driving means at every revolution of the guide member. The entrance of the wire into the system in such a manner leaves only one way of supporting the dead block, i. e., by mounting it rotatably on and co-axially with the guide means. When this is done, a problem still remains as to how the dead block can be kept stationary relative to the floor since the peripheral pull on the wire being coiled tends to rotate the block. One method proposed in the past involves the provision of a counterweight which is designed to set up a torque in the block which balances the torque due to wire tension. The greatest difficulty experienced in the use of such a device is that the torque is not constant due to changes in wire tension and in the distance from the axis of the block of the point to which the wire is directed; such changes in torque cause the counterweight to oscillate with resultant breakage of the wire. Another solution which has been put forth is that of slotting the dead block and permitting the arms of a turnstile which is fixed relative to the floor to slide successively in the slot,

a coil being removable from the block between successive arms of the turnstile. In addition to the intricacy of such an apparatus, the dangers inherent in such a method of operation are obvious. The present invention obviates the difficulties of the prior art in a manner which will be evident from the description which follows.

It is therefore an outstanding object of the present invention to provide a dead block for the coiling of elongated material which block has no dangerous appurtenances and which permits continuous removal of coiled material therefrom.

It is another object of this invention to provide a novel means of preventing the rotation of a dead block relative to the surface to which the machine is attached.

A further object of the instant invention is the provision of a fixing means for a dead finishing block on a wire drawing machine.

Another object of the present invention is the provision of a finishing block for a continuous wire-drawing machine which permits the removal of wire in bundles or otherwise at any time during the operation of the machine with complete safety to the operator.

Still another object of this invention is the provision of a machine for continuously winding wire on one end of a drum and permitting its removal from the other end in coils or the like without stoppage of the machine.

Generally speaking, the present invention consists of providing magnetic forces between the dead block and a member fixed relative to the floor; the wire in rotating about the block as it is fed thereon, is free to pass through the magnetic field which is the only restraining connection between the dead block and the floor. In the preferred embodiment, this is accomplished by providing the dead block with a radial flange adjacent the end opposite the free end; a restraining member is fastened to the floor and surrounds the dead block adjacent the said flange. The flange and the restraining member are provided with matching magnetic members. The dead block is restrained from rotation relative to the restraining member and the wire, as it moves about the dead block with the guide members, is free to move onto the dead block through the space between matching magnetic members.

With these and other objects in view, as will be apparent to those skilled in the art, the invention resides in the combination of parts set forth in the specification and covered by the claims appended hereto.

Referring to the drawings illustrating two embodiments of the invention and in which like reference numerals indicate like parts,

Fig. 1 shows a vertical sectional view of an apparatus embodying the present invention taken on the line 1—1 of Figure 2.

Fig. 2 is a front elevation of the apparatus shown in Figure 1.

Figure 3 is a vertical sectional view of another embodiment of the instant invention taken on the line 3—3 of Figure 4.

Figure 4 is a front elevation of the apparatus shown in Figure 3.

Referring first to Figures 1 and 2, the dead block apparatus, generally designated 10, is shown as comprising a main body member 11, a restraining member 12, a block 13, and a spider 14. The main body member 11 and the restraining member 12 are mounted on a flat base 15 which, in turn, is bolted to the floor. The main body member has a generally box-like substructure 16 which constitutes a support for an integral housing 17. The housing 17 is of generally short, tubular construction and is held with its axis generally parallel to the floor. The restraining member 12 is plate-like in character and has triangular flanges 18 and 19 extending at right angles to the surface thereof and forming

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legs in the lower portion. The restraining member proper is arranged perpendicularly to the axis of the housing 17 of the main body member and is provided with a circular aperture 20 which is concentric with said axis. Generally speaking the upper edge of the restraining member is a circular arc and the side edges are vertical and tangential to the arc.

The housing 17 of the body member 11 is, as has been said, of tubular shape. One end is closed by an integral end member 21 and this member is provided with an axial bearing 22 and a seal 23 therefor. In the bearing 22 rides a shaft 24 arranged concentrically with the axis of the housing of the body member. The shaft 24 extends externally of the housing and is provided with a sheave 25 mounted on the extending portion. The shaft 24 is also provided with an axial bore 32 of small diameter extending throughout its length. The shaft extends through the housing to a point adjacent the end thereof opposite the end member 21; at that point it is provided with an enlarged end 26 which is bolted to the spider 14. The portion of the spider which is so bolted to the shaft constitutes a cup-like hub 27 which has a closed, generally cylindrical portion 28 which is supported in the housing 17 by means of a bearing 29. The enlarged end of the shaft is provided with an axial recess 30 which provides clearance between the shaft and the hub for the mounting means for a guide pulley 31. The hub is provided with an axial bore 33 which is of the same size as that through the shaft and which is, of course, coaxial therewith. The shaft and the hub are joined by a plug 34 which has a bore 35 so arranged it forms one continuous passage with the bores 32 and 33. The inside of the hub has the guide pulley 31 residing therein and the bore 33 opening therein. The housing 17 is ordinarily provided with a pool 36 of lubricating oil and a splash disk 37 mounted on the shaft 24 to keep the oil distributed over the surfaces within the housing.

The hub 27 is provided with an annular flange which extends therefrom perpendicularly to the axis of the housing. Bolted to this flange and serving as a cover for the cup-like hub is a mounting plate 38 of generally disk-like shape. Clamped between the said flange and the said mounting plate by the same bolts that hold them together is an annular plate 39 which extends perpendicularly to the axis of the housing 17. Mounted on the annular plate 39 at a point adjacent the outer edge is a bracket 40 which supports guide pulleys 41 and 42. The guide pulley 41 is situated outwardly of the annular plate and is on the side thereof which faces the housing 17. The guide pulley 42 is also situated outwardly of the annular plate, but resides on the side thereof away from the housing. The pivots of the two guide pulleys are parallel, thus providing that they lie in the same plane. An adjustable die 43 of a well-known type may be mounted on the bracket 40 also.

The mounting plate 38 is provided with an axial bore 44 and in this bore is fixedly held a stub shaft 45. The stub shaft has an annular shoulder 46 and is tightly fitted in the bore 44 so that it rotates with the mounting plate. The block 13 is pivotally mounted on the outwardly extending stub shaft by means of bearings 47 and 48. These bearings are mounted within a tubular inner member 49 constituting part of the block 13. The enclosure between the bearings contains oil and the portion of the stub shaft enclosed therein is provided with an oiling disk. Proper seals are provided externally of the bearings. The block 13 further comprises an outer member 50 which fits over the tubular inner member 49 in telescoping relation. The inner member 49 and the outer member 50 have annular flanges 72 and 73 used to bolt the two together. An annular armature disk 51 is clamped between the two flanges by the same bolts which serve to hold the inner and outer members together and forms a flange 74 which extends generally

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perpendicularly to the axis of the shaft 45. Adjacent the edge of the armature disk 51 and on the side thereof facing the housing 17 is fastened a counterweight 69. On the side of the armature disk 51 facing away from the housing 17 are fastened a series of pole pieces 52, whose characteristics will be described more fully hereinafter. In the preferred embodiment there are six, equally-spaced pole pieces.

Returning again to the restraining member 12, the block 13 extends through the aperture 20 and the restraining member and the armature disk are parallel and spaced from each other. Exactly opposed to each pole piece 52 is a magnet 53, to be described more fully hereinafter. The faces of the pole pieces and the magnets are separated by a small distance and are covered by brass guide sheets 54 and 55, respectively. The guide sheets are of annular shape and are bent away from each other at their outer peripheries; they are fastened by welding or otherwise to the faces of their respective pole pieces or magnets.

A guard 56 is provided which extends around the moving parts, particularly the spider 14, for reasons of safety. The guard 56 comprises a front panel 57 which is welded or otherwise attached to the restraining member 12 and a movable portion 58 which is mounted on rollers 59 riding on tracks 60 for movement to a rearward position, shown in dotted lines, when access is desired to the mechanism of the apparatus.

A bore 61 is provided in the hub 27, the axis of said bore being at right angles to the axis of the housing 17. The pulley 31 which is mounted within the hub is situated so that the axes of the bores 33 and 61 are tangential to its outer periphery. A sheath 62 extends from bore to bore and passes around the pulley; the sheath is of tubular construction and has material removed on the inside of the curve formed as the sheath passes around the pulley so that the tube opening formed by such removal of material is closed by the pulley.

A fixed die 63 may be fastened to the rearward end of the shaft 24 in alignment with the bore 32 which passes axially therethrough. The oil reservoirs in the housing 17 and the inner member 49 are supplied with oil level indicator gages 64 and 65, respectively. An extension 66 is fastened to the free end of the block 13 and has several posts 67 joined at their outer ends by a tie plate 68.

The pole pieces 52 are formed of a magnetizable material such as soft iron and are of generally rectangular shape. They are arranged around the outer edge of the armature disk 51 with their longest dimension extending tangentially thereto. The magnets 53 are of the permanent type formed of a well-known nickel-cobalt-aluminum alloy and, in the preferred embodiment, are of horseshoe shape. The magnets are fastened to the restraining member proper with their poles adjacent the pole pieces 52. A magnet strap 71 may extend across the poles of the magnet to assist in the mounting.

In the operation of the apparatus described above, the wire which is to be coiled on the block is fed into the bore 32 of the shaft 24. In most cases, only one of the dies 43 or 63 are used at any one time. If the die 63 is used, the wire must be threaded through it first. The wire is pushed into the bore 32, passes through the bore 35 of the plug 34, and then passes through the bore 33 in the hub 28. The wire, still being pushed by the operator, passes from the bore 33 into the sheath 62, around the pulley 31, and is guided by the sheath into the bore 61. The wire is then passed over the pulley 41, and then over the pulley 42. If the die 43 is used, the wire is then passed through that die. Then the wire is passed between the guide sheets 54 and 55 to the outer member 50 of the block 13 where it is fastened. The apparatus is then ready for coiling.

The shaft 24 is driven by means of a motor-driven belt passing around the sheave 25. Since the shaft 24 is bolted

to the spider 14, the latter also revolves about the axis of the shaft. When the spider 14 revolves, the stub shaft 45 also revolves. Since the free end of the wire is fixed to the block 13 and the spider carries the pulleys 41 and 42 around with it, the wire is wound on the block. As the wire is wound on the block it is under tension and exerts a tangential force on the periphery of the block. This tends to turn the block. Now the block is mounted on the stub shaft 45 which, as has been said, revolves with the spider; however, the bearings 47 and 48 between the stub shaft and the block permit the block to be independent of the stub shaft revolution. Nevertheless, since the block has a torque exerted upon it by the wire, it tends to turn in the same direction that the spider is revolving. In the present invention, however, the block is restrained from partaking of such a revolution by the fact that it is furnished with the pole pieces 52 which are restrained from movement from their positions within the lines of force of the magnets 53. The guide sheets 54 and 55 provide for the wire passing smoothly between the pole pieces and the magnets and prevent the wire from catching on edges of these parts. The wire is, of course, magnetized slightly as it passes through the lines of force of the magnets; however, it has been found that the amount of magnetization is so slight as to have no effect on the commercial value of the wire. The flange on the outer member 50 of the block 13 is formed with a smooth inclined surface and the apparatus is arranged so that the wire is fed onto this surface and feeds down the flange onto the cylindrical surface of the outer member. From there the wire is progressively pushed outwardly toward the free end of the block by the pressure of successive layers of wire being introduced at the flange end of the block. The forces exerted on the block by the wire may move it slightly so that the pole pieces are not exactly aligned with the magnets, but the magnet forces prevent this from taking place more than a limited extent. The coiled wire passes from the outer member 50 onto the extension 66 where it is gathered into bundles of the desired size and is cut to remove the bundle. There is no necessity for the wire being reattached to the block after being so cut because the friction forces between the remaining coiled wire and the block surface are great enough to permit considerable tension in the wire as it feeds onto the block without slippage of the wire already accumulated on the block. The guard 56, which was removed for the initial threading of the wire through the machine, is replaced before the apparatus is put in operation.

Referring next to Figures 3 and 4 wherein is shown another embodiment of the invention, the dead block apparatus, generally designated 110, is shown as comprising a main body member 111, a restraining member 112, a block 113, and a spider 114. The main body member 111 and the restraining member 112 are mounted on the floor. The main body member has a generally box-like substructure 116 which constitutes a support for an integral housing 117. The housing 117 is of generally short, tubular construction and is held with its axis generally parallel to the floor. The restraining member 112 is plate-like in character and has triangular flanges 118 and 119 extending at right angles to the surface thereof and forming legs in the lower portion. The restraining member proper is arranged perpendicularly to the axis of the housing 117 of the main body member and is provided with a circular aperture 120 which is concentric with said axis. Generally speaking, the upper edge of the restraining member is a circular arc and the side edges are vertical and tangential to the arc.

The housing 117 of the body member 111 is, as has been said, of tubular shape. One end is closed by an integral end member 121 and this member is provided with a bearing 122 and seal 123 therefor. In the bearing 122 rides a shaft 124 arranged concentrically with the axis of the housing of the main body member. The shaft

124 extends externally of the housing and is provided with a sheave 125 mounted on the extending portion. The shaft 124 is also provided with an axial bore 132 of small diameter extending all the way therethrough. The shaft extends through the housing to a point adjacent the end thereof opposite the end member 121; at that point it is provided with an enlarged end 126 which is bolted to the spider 114. The portion of the spider which is so bolted to the shaft consists of a cup-like hub 127 which has a closed, generally cylindrical portion 128 which is supported in the housing 117 by means of a bearing 129. The enlarged end of the shaft is provided with an axial recess 130 which provides clearance between the shaft and the hub for the mounting means for a guide pulley 31. The hub is provided with an axial bore 133 which is of the same size as that through the shaft, which is coaxial therewith. The shaft and the hub are joined by a plug 134 which has a bore 135 so arranged that the three bores form one continuous passage. The inside of the hub has the guide pulley 131 residing therein and the bore 133 opening therein. The housing 117 is ordinarily provided with a pool 136 of lubricating oil and a splash disk 137 mounted on the shaft 24 to keep the oil distributed over the surfaces within the housing.

The hub 127 is provided with an annular flange which extends therefrom perpendicularly to the axis of the housing. Bolted to this flange and serving as a cover for the cup-like hub is a mounting plate 138 of generally disk-like shape. Clamped between the said flange and the said mounting plate by the same bolts that hold them together is an annular plate 139 which is arranged perpendicularly to the axis of the housing 117. Mounted on the annular plate 139 at a point adjacent the outer edge is a bracket 140 which supports guide pulleys 141 and 142. The guide pulley 141 is situated outwardly of the annular plate and is on the side thereof which faces the housing 117. The guide pulley 142 is also situated outwardly of the annular plate, but resides on the side thereof away from the housing. The pivots of the two guide pulleys are parallel, thus providing that they lie in the same plane. An adjustable die 143 of a well-known type may be mounted on the bracket 140 also.

The mounting plate 138 is provided with an axial bore 144 and in this bore is fixedly held a stub shaft 145. The stub shaft has an annular shoulder 146 and is fixed in the bore 144 so that it rotates with the mounting plate. The block 133 is pivotally mounted on the outwardly extending stub shaft by means of bearings 147 and 148. These bearings are mounted in the inner end surfaces of an inner member 149 constituting part of the block 113. The enclosure between the bearings contains oil and the portion of the stub shaft enclosed therein is provided with an oiling disk. Proper seals are provided externally of the bearings. The block 113 further comprises an outer member 150 which fits over the tubular inner member 149 in telescoping relation. The inner member 149 and the outer member 150 each have an annular flange which is used to bolt the two together. An annular armature disk 151 is clamped between the two flanges by the same bolts which serve to hold the inner and outer members together and forms a flange 173 which extends generally perpendicularly to the axis of the shaft 145. Adjacent the edge of the armature disk 151 and on the side thereof facing the housing 117 is fastened a counterweight 169. On the side of the armature disk 151 facing away from the housing 117 are fastened a series of outer pole pieces 152 and a series of inner pole pieces 157, similar to the pole pieces 52 described in the first embodiment of this invention. In the preferred embodiment there are six pole pieces in each series, grouped in three at diametrically opposite edges of the armature disk.

Returning to the restraining member 112, the block 113 extends through the aperture 120 and the restraining member and the armature disk are parallel and spaced from each other. Exactly opposed to each pole piece 152

or 157 is a magnet 153 or 158, respectively, similar in nature to the magnets 53 described with relation to the first embodiment of the invention. The faces of the pole pieces and the magnets are separated by a small distance and are covered by brass guide sheets 154 and 155, respectively. The guide sheets are of annular shape and are bent away from each other at their outer peripheries; they are fastened by welding or otherwise to the faces of their respective pole pieces or magnets.

A guard 156 is provided which extends around the moving parts, particularly the spider 114, for reasons of safety. In this embodiment the restraining member 112 constitutes the forward wall of the enclosure for the moving parts and the guard 156 fits closely therearound. The guard is mounted on rollers 159 which ride on tracks 160 for movement to a rearward position, shown in dotted lines, when access is desired to the mechanism of the apparatus.

A bore 161 is provided in the hub 27, the axis of the said bore being at right angles to the axis of the housing 117. The pulley 131 which is mounted within the hub is situated so that the axes of the bores 133 and 161 are tangential to the outer periphery of the pulley. A sheath 162 extends from bore to bore and passes around the pulley; the sheath is of tubular construction and has material removed from the inside of the curve formed as the sheath passes around the pulley so that the tube opening formed by such removal of material is closed by the pulley.

A fixed die 163 may be fastened to the rearward end of the shaft 124 in alignment with the bore 132 which passes axially therethrough. The oil reservoirs in the housing 117 and the inner member 149 are supplied with oil level indicator gages 164 and 165 respectively. An extension 166 is fastened to the free end of the block 113 and has several posts 167 joined at their outer ends by a tie plate 168.

As in the case of the embodiment of Figure 1, the pole pieces 152 and 157 are formed of a magnetizable material such as soft iron and are of generally rectangular shape. However, the inner pole pieces 157 are smaller than the outer pole pieces 152, so that each set of inner and outer pole pieces lies roughly along a sector of the armature disk. The magnets 153 and 158 are of similar material to those of the previous embodiment, but the inner magnets 158 are smaller than the outer magnets 153 and they are arranged in the same way as the pole pieces, i. e., the long dimensions are perpendicular to radii of the disk and the poles of the horseshoe lie opposite the ends of the respective pole pieces.

In the present embodiment, a multi-roll wire straightener 170 of a well-known type is fastened to the side of the annular plate 139 of the spider 114 on the side thereof facing the housing 117 back-to-back with the bracket 140. Furthermore, a similar wire-straightener 171 may be mounted on the annular plate on the side facing the block 113, but diametrically opposite edge from the bracket 140.

The operation of this embodiment is similar to that of the embodiment illustrated in Figure 1, except that, when the wire straightener 170 is used, the wire passes through that member as it goes from the bore 161 to the pulley 141. When the wire straightener 170 is used, the wire passes through that member as it goes from the pulley 142 or the die 143 to the block 113. Magnet straps 171 and 172 may be provided to assist in fastening the magnet to the restraining member proper and also to provide a flow path for the lines of force between poles.

As a practical matter, of course, the number and size of the magnets must be chosen to fit the particular operating conditions. The table given below gives some indication of the magnitudes of the factors involved in the design of a dead block consistent with the present invention:

Table A

Preset angle of dead block, degrees.....	10	15	20	25
Torque from counterweight, ft. lbs.....	50	75	99	123
Die pull resisted by cwt. in lbs.....	75	112	148	183
No. of small magnets to hold cwt.....	3	4	5	6
Torque from magnets, ft. lbs.....	66	88	110	132
Die pull resisted by magnets, lbs.....	99	132	165	198
Max. die pull from combination.....	174	244	313	381

While certain novel features of the invention have been shown and described and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes in the forms and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention.

The invention having been thus described, what is claimed as new and desired to secure by Letters Patent is:

1. Apparatus for coiling wire, comprising: a main body member, a spider rotatably mounted on said main body member, a block rotatably mounted on said spider, a restraining member adjacent said block, and magnetic means associated with said block and said restraining member to restrain their rotation relative to each other.

2. An apparatus for the coiling of wire, comprising: a fixed main body member, a spider rotatably mounted on said main body member, a block rotatably mounted on said spider, a restraining member adjacent said block, said restraining member being fixed relative to said main body member, and magnetic means associated with said block and said restraining member to restrain their rotation relative to each other.

3. An apparatus for the coiling of wire, comprising: a fixed main body member, a spider rotatably mounted on said main body member, a block rotatably mounted on said spider, the axes of rotation of said spider and of said block being aligned, a restraining member adjacent to said block and fixed relative to said main body member, and magnetic means for restraining rotation of said block and said restraining member relative to each other.

4. An apparatus for the coiling of elongated material, comprising: a fixed main body member, a driven spider rotatably mounted on said main body member, a block for receiving the elongated material rotatably mounted on said spider, the axis of rotation of said block being aligned with the axis of rotation of said spider, a restraining member located adjacent said block and fixed relative to said main body member, and magnetic means for restraining rotation of said block and said restraining member relative to each other.

5. An apparatus for the coiling of elongated material, comprising: a fixed main body member, a driven spider having a hollow shaft, said shaft being rotatably mounted in the main body member and being adapted to convey the elongated material therethrough, a guide pulley mounted on the outer periphery of said spider for receiving the elongated material from said hollow shaft, a block for receiving the elongated material rotatably mounted on said spider, the axis of rotation of said block being aligned with the axis of rotation of said spider, a restraining member located adjacent the block and fixed relative to said main body member, and magnetic means for restraining rotation of said block and said restraining member relative to each other.

6. An apparatus for the coiling of wire, comprising: a fixed main body member, a driven spider of generally disk-like configuration having a hollow shaft projecting from one side thereof and a stub shaft projecting from the other side thereof, said shafts being aligned and perpendicular to the spider, the hollow shaft being rotatably journaled in the main body member and being adapted to guide the elongated material onto the spider, a block for receiving the elongated material from the spider rotatably mounted on the said stub shaft of the spider, a restraining member located adjacent said block and fixed relative

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to said main body member, and magnetic means for restraining rotation of said block and said restraining member relative to each other.

7. An apparatus for the coiling of wire, comprising: a fixed main body member, a driven spider of generally disk-like configuration having a hollow shaft projecting from one side thereof and a stub shaft projecting from the other side thereof, said spider also having a guide pulley means attached to the outer periphery thereof, said shafts being aligned and perpendicular to the remainder of the spider, the hollow shaft being rotatably journaled in the main body member and being adapted to guide the elongated material onto the spider and to the said guide pulley means, a block for receiving the elongated material from the guide pulley means of the spider journaled on said stub shaft of the spider, a restraining member surrounding said block at the portion thereof adjacent said spider and fixed relative the said main body member, and magnetic means for restraining rotation of said block and said restraining member relative to each other.

8. An apparatus for the coiling of wire, comprising: a main body member, a spider rotatably mounted on said main body member, a block rotatably mounted on said spider, said block having a radial flange extending therefrom, a restraining member having a surface adjacent said block, pole pieces and magnets attached to the flange and the restraining member, said pole pieces and magnets being arranged in opposition to restrain rotation of the block and the restraining member relative to each other.

9. An apparatus for the coiling of wire, comprising: a fixed main body member, a spider rotatably mounted on said main body member, a block rotatably mounted on said spider, the axes of rotation of said spider and of said block being aligned, a restraining member located adjacent said block and fixed relative to said main body member, pole pieces and magnets attached to the block and the restraining member to restrain relative rotation therebetween.

10. Apparatus for the coiling of elongated material, comprising: a fixed main body member, a driven spider rotatably mounted on said main body member, a block for receiving the elongated material rotatably mounted on said spider, the axis of rotation of said block being

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aligned with the axis of rotation of said spider, said block having a radial flange at the end thereof adjacent the spider, a restraining member located adjacent said flange and fixed relative to said main body member, pole pieces attached to said flange and arranged around the outer edge thereof, and magnets attached to said restraining member, the pole pieces and magnets being arranged in opposition to restrain relative rotation between the block and the restraining member.

11. An apparatus for the coiling of wire, comprising: a fixed main body member, a driven spider of generally disk-like configuration having a hollow shaft projecting from one side thereof and a stub shaft projecting from the other side thereof, said shafts being aligned and perpendicular to the spider, the hollow shaft being rotatably journaled in the main body member and being adapted to guide the elongated material onto the spider, a block for receiving the elongated material from the spider, said block being rotatably mounted on said stub shaft and having a radial flange adjacent the spider, a restraining member located adjacent said flange and fixed relative to said main body member, pole pieces mounted on said flange, and magnets mounted on said restraining member, the pole pieces and magnets being arranged in opposition to prevent relative rotation between the block and the restraining member.

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