WIRE ROPE OR CABLE MAKING MACHINE

Fig. 2.

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This invention has reference to wire rope or cable making machines, in which a plurality of wire strands, wires or the like are laid up together helically in the usual manner, to form the rope or cable; and it has reference more particularly to machines of the above kind in which the twisted wires, strands or cords coming from the twisting mechanism and forming the rope or cable, are drawn by a drawing reel or the like between oppositely disposed rollers.

In a machine for making wire ropes or cables according to this invention, the means for assembling and pressing the wires or strands of the twisted or formed rope or cable, which is disposed between the rotative part by which the wires or strands are twisted about one another, and the rope or cable drawing reel or the like, consists of grooved rollers carried in separate bearings movable in relation to one another and constituting a rolling die surface, through or over which the rope is drawn by the drawing wheel or reel.

Further, the bearings of the grooved rollers are connected together, and have adjusting means by which they are moved directly towards one another, or away from one another; while a further feature consists in the grooved rollers being supported at their peripheries by rollers in the bearings.

In making wire ropes or cables by machines of the kind concerned as heretofore constructed, the exterior wires of the strands, rope or cable are liable to become deformed or damaged, which constitutes a serious defect; and the primary object and effect of this invention is to overcome the same, and provide improvements by which ropes will be produced which are unaffected detrimentally by the action of the “die” upon them by which they are collected or brought and pressed together.

In the case of there being two grooved rollers as above described, disposed directly above one another, they may be carried in two separate bearings or carriers, as stated, one standing on and above a base, and the other inverted extending downwards from its “base”. The upper bearings may be guided and held by bolts or standards projecting up from the base of the lower bearing in which they are fixed and passing through the upper “base”; and the parts are adjustable in relation to one another by screwing the bolts or bars into the lower base by heads on the upper ends of same, or by like means. The lower bearing base will be held down in position on a part of the frame or the like of the machine.

In one arrangement, the two grooved rollers have spindles which work in holes in the sides or cheeks of the bearings, and other free rollers are provided in connection with them, and are spaced apart, and carried in the bearings, and on these rollers the peripheries of the grooved rollers bear, and they may take the main thrust of the grooved rollers, or the greater portion of same.

The dies will be disposed on the delivery side of the rotating head through which the various strands or wires pass from the usual rotative “sun and planet” or like mechanism of the machine to the die.

The machine according to this invention can be used for making cables or ropes to be used for supporting loads or weights, lifting, hauling and like purposes; or for making electric cables.

The invention, the nature of which is above described, is illustrated in the annexed drawings, in which Figure 1 a general side elevation the part of a wire rope or cable making machine concerned with this invention, is shown, with the improvements applied to it; and Figures 2 and 3 are front and side elevations of the assembling and pressing mechanism according to the invention.

Referring to the drawings, 1 is a toothed wheel, mounted on a shaft 3 supported and revolving in the bearing 2, and having apertures in it through which the strands or wires, which are to be laid up on one another or twisted together, are passed; the shaft 3 being that which supports the usual cradles carrying the bobbins on which the strands or wires are wound, and which revolve with the shaft 3, and from which the individual wires or strands are fed in the wellknown way.

The toothed wheel 1 is driven by a lower pinion 4 suitably driven from the driving gear of the machine.

5 is the cable or rope pulling and winding on drum, mounted on the base frame 6 of the machine, it being driven in any suitable known way; and between this drum, and the wheel 1 and the bearing head 2, through which the strands or wires pass, the assembling and pressing die mechanism, generally designated 7, is placed, it being in the case shown in Figure 1 mounted on a horizontal support 8 carried by the frame of the machine, and along which if desired it may be adjusted as desired.

With regard to the mechanism given in Figures 2 and 3, these illustrate in detail one form and construction of the mechanism 7. 10 are the rotative parts which constitute the rotative former or die, being in the form of two grooved rollers, as shown, which are disposed directly
above one another, so that the peripheries of the
two rollers on each side of the grooves 11, nearly
or completely touch, and thus form together a
circular aperture 12, which constitutes the ro-
tative die aperture.

The rollers 10 are supported in upper and low-
er bearings 13, 14, their supporting spindles 15
lying in holes in the sides of the bearings, whilst
on each side of the vertical central plane of the
device above and below the upper and lower roll-
ers respectively there are two supporting rollers
or roller bearings 16, the ends of which lie in
the holes in the sides of the bearings 13, 14, and
on the peripheries of which the sides or flanges
of the rollers 10 rest. Both the spindles 15, and
rollers 16, are held in place by plates 17 secured
to the outside faces of the cheeks of the bear-
ings.

Thus the pressure to which the rollers 10 are
subjected, tending to press them apart in the as-
sembling and pressing action, is mainly carried
by the upper and lower supporting rollers 16; and
the spindles 15 may, if desired, have a small
amount of play within the holes in the bearings
in which they lie and work; or the rollers them-
selves may revolve upon the spindles.

The lower bearing 14 has a base 18, and the
upper bearing which is an inverted bearing, has
an upper “base” or cross head 19, and the two
are held together and adjusted in relation to one
another by threaded rods 20, the lower ends of
which screw into threaded holes in the base 18;
and these screws are turned by their heads 21,
which have holes through them as shown, in
which the turning bar or tommy may be intro-
duced for effecting the adjustment.

In the case shown in Figures 2 and 3, the base
of the lower bearing is supported upon a plate
support 22, to which they are screwed by bolts
as shown; whereas in Figure 1 these bearings of
the rollers 10 are supported by plates or bars
8 as described, the plate 22 being carried suitably
from the base of the machine.

What is claimed is:
1. An assembling and pressing means to be in-
terposed between the twisting element and draw-
ing reel of a machine for making wire ropes or
cables, said assembling and pressing means in-
cluding aligned bearing elements having their
adjacent ends spaced apart and of relatively in-
verted V-form, a grooved roller mounted sub-
stantially in the apex of each bearing element,
the respective rollers extending beyond the bear-
ing elements and substantially in contact, the
peripheral surface of each roller being formed
with an annular channel, the channels of the
two rollers cooperating to form a substantially
circular die aperture, and means connecting the
bearing elements wholly beyond the rollers and
positioned in line with the axial plane of the
rollers for adjusting the bearing elements and
thereby the rollers relative to each other.

2. An assembling and pressing means to be in-
terposed between the twisting element and draw-
ing reel of a machine for making wire ropes or
cables, said assembling and pressing means in-
cluding grooved rollers, upper and lower roller
bearings integral with the upper and lower car-
riers, the carriers having outwardly extending
flanges, connecting bolts connecting the two
flanges together and constituting adjusting
means for moving the roller bearings in relation
to one another, rollers also carried in the bear-
ings and supported at their ends in the side
cheeks of the bearings and on the surfaces of
which the grooved rollers rest and revolve.

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