Dec. 17, 1929. H. M. NAUGLE ET AL 1,740,260

COIL HOLDER

Filed June 25, 1927 4 Sheets-Sheet 1

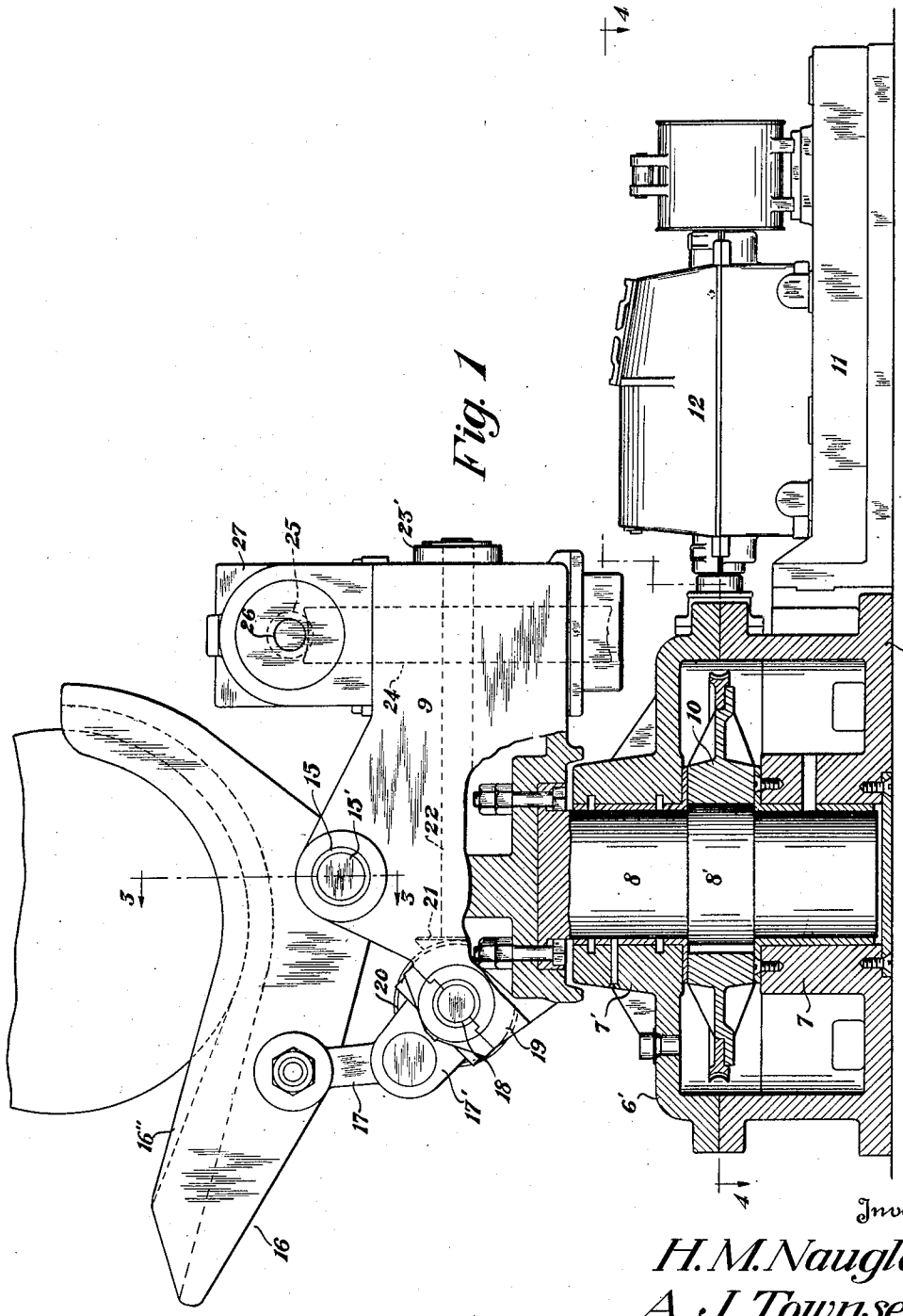


Fig. 1

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COIL HOLDER

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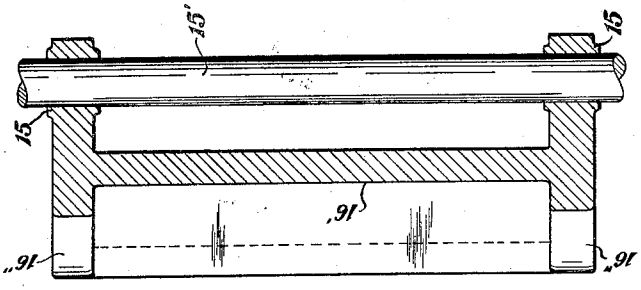


Fig. 5

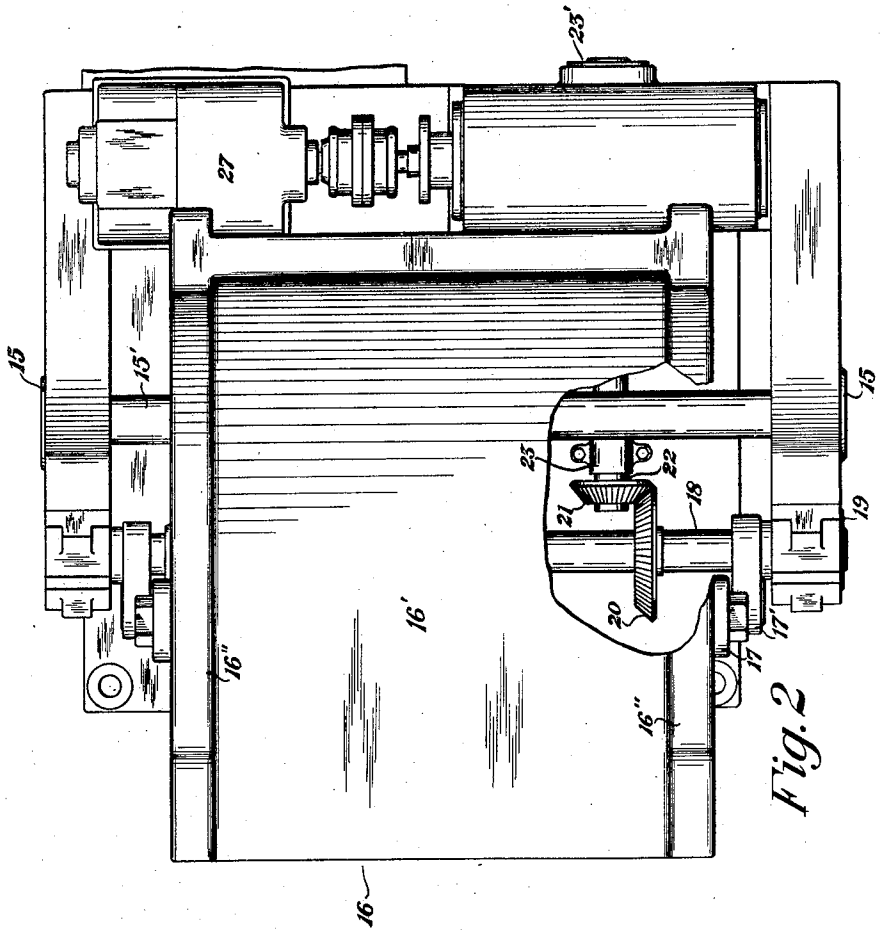


Fig. 2

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COIL HOLDER

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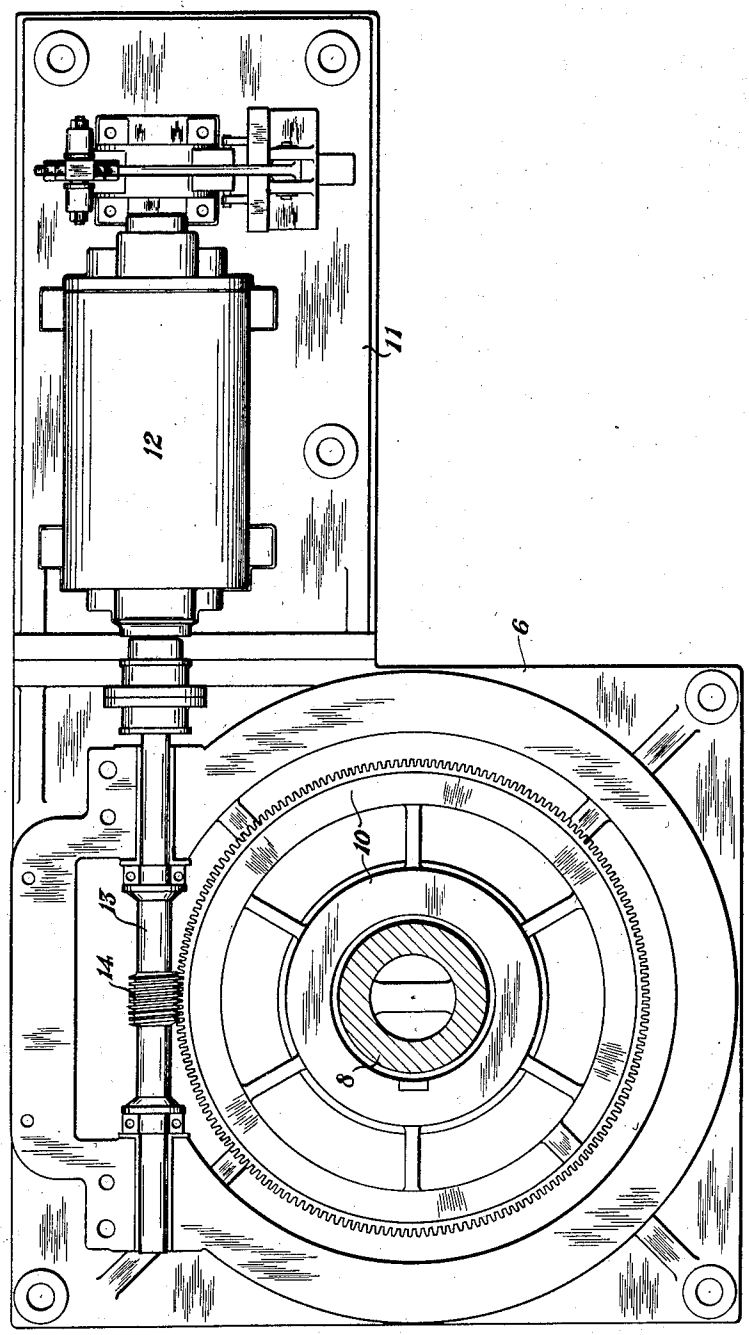


Fig. 4

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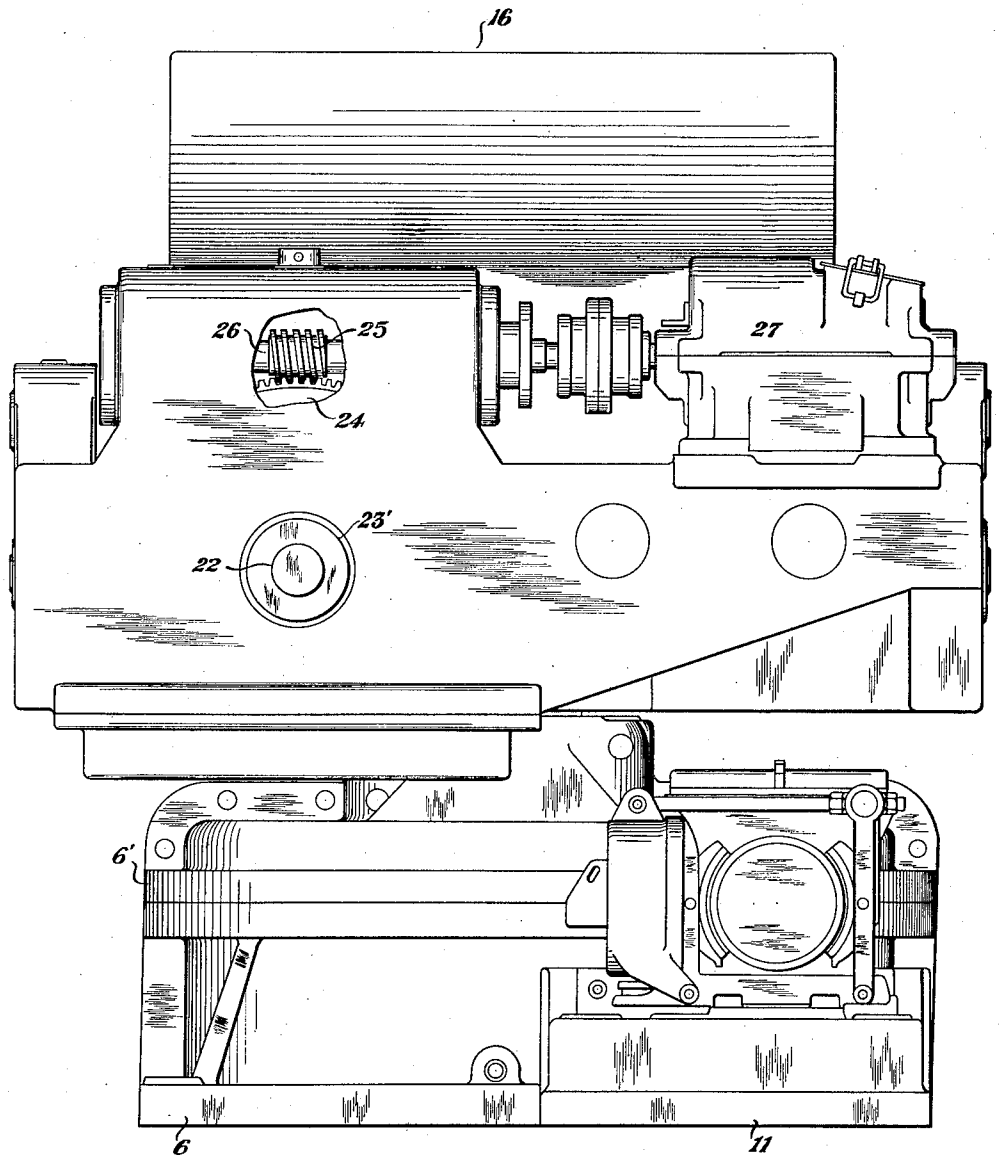


Fig. 5

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UNITED STATES PATENT OFFICE

HARRY M. NAUGLE AND ARTHUR J. TOWNSEND, OF CANTON, OHIO, ASSIGNORS, BY MESNE ASSIGNMENTS, TO THE AMERICAN ROLLING MILL COMPANY, OF MIDDLETOWN, OHIO, A CORPORATION OF OHIO

COIL HOLDER

Application filed June 25, 1927. Serial No. 201,534.

In the manufacture of stripsheets, coils may be formed at the end of each major operation, and such coils may have a width and also a diameter of from three to four feet and a weight of from one to three tons; and it is desirable to deliver the same in various directions from the delivery side of the coiling mechanism.

The present invention relates to motor driven means for receiving and holding a coil, and then turning and delivering it in a desired direction; and the object of the improvement is to so construct and arrange such means that a coil can be rolled to and from the same without the use of lifting or conveying means for transferring or turning the coil.

An embodiment of the invention may and preferably does include a base frame, a turntable frame swiveled thereon, a rocking hopper mounted on the turntable frame, a motor with gearing connections for rotating the swiveled frame, and another motor with gearing connections for oscillating the rocking hopper.

Such an embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section of the turntable hopper;

Fig. 2, a plan view, partly in section of the hopper portion of the same;

Fig. 3, a section of the hopper on line 3—3, Fig. 1;

Fig. 4, a plan view of the base frame on line 4—4, Fig. 1, showing a plan of the turntable motor, and

Fig. 5, a rear end elevation of the turntable hopper partly broken away to show the oscillating gearing.

Similar numerals refer to similar parts throughout the drawings.

The base frame is preferably made in two parts 6 and 6′, in which are formed bearings 7 and 7′ for the vertical spindle 8 extending downward from the turntable frame 9; there being a collar-like enlargement 8′ on the spindle extending outward between the bearings 7 and 7′ of the base frame, upon which enlargement is secured a worm wheel 10.

Upon a suitable base 11 at one side of the base frame is mounted a reversible electric motor 12, from which a shaft 13 extends alongside the worm wheel 10; which shaft is provided with a worm 14 meshing with the worm wheel for rotating the turntable one way or another.

A coil holder or hopper 16 is superimposed upon the turntable 9 as by bearings 15 provided in the sides of the turntable frame 9, in which are journaled the ends of a shaft 15′ on which is pivotally mounted the coil holder or hopper 16. A link 17 depends from each side of the coil holder forward of the pivotal shaft 15′, which links connect with crank arms 17′ on a rock shaft 18 having its ends journaled in bearings 19 in the sides of the turntable frame, and provided with a beveled gear wheel 20 meshing with a beveled gear pinion 21 on the end of a countershaft 22 journaled in bearings 23 and 23′ in the turntable frame.

A worm wheel 24 is secured on the countershaft 22 in rear of the coil holder, and meshes with a worm 25 on a shaft 26 extending axially from a reversible motor 27 also mounted on the turntable frame; by means of which gearing connections the coil holder may be oscillated to rock one way or another on the pivotal shaft 15′.

The bottom 16′ of the coil holder extends substantially straight forward a substantial distance beyond the side of the base and turntable frames, so that when lowered into substantially horizontal position, a coil may be rolled on to the holder from an adjacent table; from the rear end of which straight portion, the bottom curves, preferably from a point forward of the pivotal shaft 15′, over the same and upward to an upright direction well in rear of the same, so as to form a stop for a coil rolled upon the holder. The vertical axis of the turntable passes substantially centrally through the hopper as may be seen by an inspection of Fig. 1 of the drawings.

Upright sides 16″ are provided on the sides of the holder so as to form a trough or hopper in which a coil is retained when rolled upon the holder; and after a coil has been stopped by the upwardly curved portion of

the bottom, the forward end of the hopper may be rocked upward by operation of the motor 27, far enough to prevent the coil from rolling forward from the hopper formed by the rearward curved portion thereof.

When a coil is held in this position on the turntable frame, the same may be rotated one way or another by operation of the motor 12, so as to direct the forward straight portion of the holder in any desired direction, whereupon the same may be lowered into horizontal position or into a downward direction by an operation of the motor 27, so as to deliver the coil in any desired direction; it being understood that if the forward straight portion of the coil holder is lowered to be inclined forward and downward, the coil will automatically roll therefrom on to such a table or chute as may be provided for receiving the same.

By these means a coil may be received and held in the hopper 16 and then turned on a vertical axis and delivered in any given direction, by mere rolling operations and without any lifting or conveying means whatever.

We claim:—

1. A coil holder formed as a hopper with upright sides and a bottom extending straight forward and curved upward rearward, means mounting the hopper on a horizontal axis, means mounting the horizontal mounting means on a vertical axis passing substantially centrally through the hopper, means for rocking the hopper on the horizontal axis, and means for rotating the horizontal mounting means on the vertical axis.

2. A coil holder formed as a hopper with upright sides and a bottom extending straight forward and curved upward rearward, a horizontally disposed shaft on the hopper, a turntable, means on the turntable mounting the horizontal shaft, means mounting the turntable on a vertical axis passing substantially centrally through the hopper, means for rocking the hopper on the horizontal shaft, and means for rotating the turntable on the vertical axis.

3. A coil holder formed as a hopper with upright sides and a bottom extending straight forward and curved upward rearward, a horizontally disposed shaft on the hopper, a turntable, bearings on the turntable mounting the horizontal shaft, means mounting the turntable on a vertical axis passing substantially centrally through the hopper, means for rocking the hopper on the horizontal shaft, and means for rotating the turntable on the vertical axis.

4. A coil holder formed as a hopper with upright sides and a bottom extending straight forward and curved upward rearward, a horizontally disposed shaft on the hopper, a turntable, bearings on the turntable mounting the horizontal shaft, a vertical spindle on the turntable having an axis passing substantially centrally through the hopper, means mounting the vertical spindle, means for rocking the hopper on the horizontal shaft, and means for rotating the turntable on the vertical spindle.

5. A coil holder formed as a hopper with upright sides and a bottom extending straight forward and curved upward rearward, a horizontally disposed shaft on the hopper, a turntable, bearings on the turntable mounting the horizontal shaft, a vertical spindle on the turntable having an axis passing substantially centrally through the hopper, a base, bearings formed in the base mounting the vertical spindle, means for rocking the hopper on the horizontal shaft, and means for rotating the turntable on the vertical spindle.

6. A coil holder formed as a hopper with upright sides and a bottom extending straight forward and curved upward rearward, a horizontally disposed shaft on the hopper, a turntable, bearings on the turntable mounting the horizontal shaft, a vertical spindle on the turntable having an axis passing substantially centrally through the hopper, a base, bearings formed in the base mounting the vertical spindle, a motor mechanically connected with the hopper for rocking the hopper on the horizontal shaft, and a motor mechanically connected with the vertical spindle for rotating the same.

7. A coil holder formed as a hopper with upright sides and a bottom extending straight forward and curved upward rearward, a horizontally disposed shaft on the hopper, a turntable, bearings on the turntable mounting the horizontal shaft, a vertical spindle on the turntable having an axis passing substantially centrally through the hopper, a base, bearings formed in the base mounting the vertical spindle, a motor mounted on the turntable mechanically connected with the hopper for rocking the hopper on the horizontal shaft, and a motor mounted on the base mechanically connected with the vertical spindle for rotating the same.

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