A. KENWORTHY.

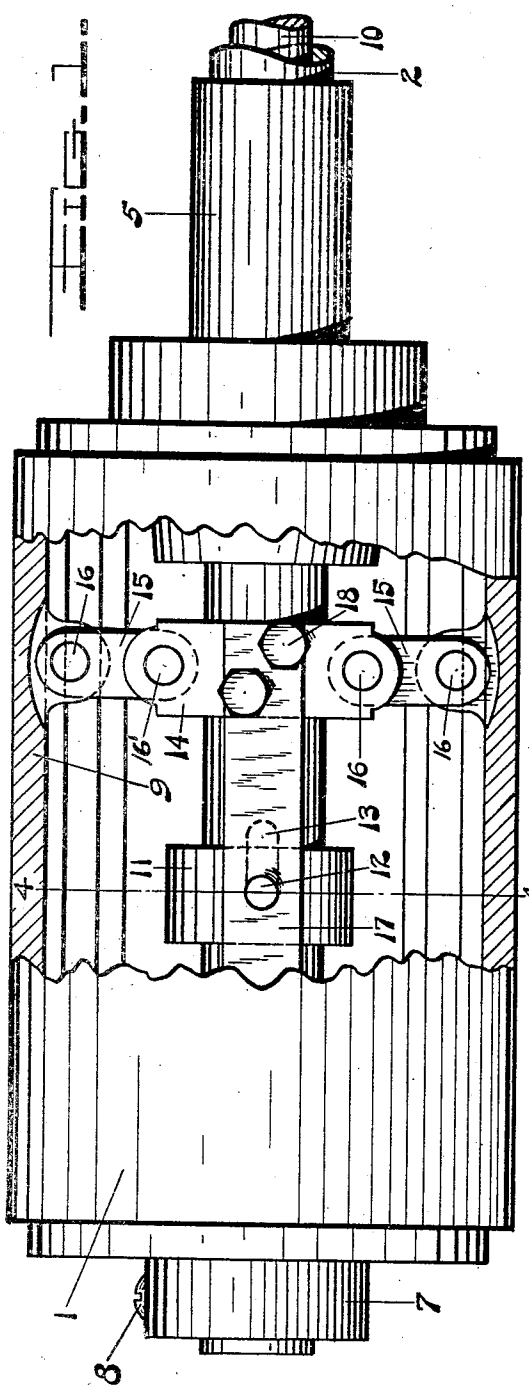
COLLAPSIBLE BLOCK.

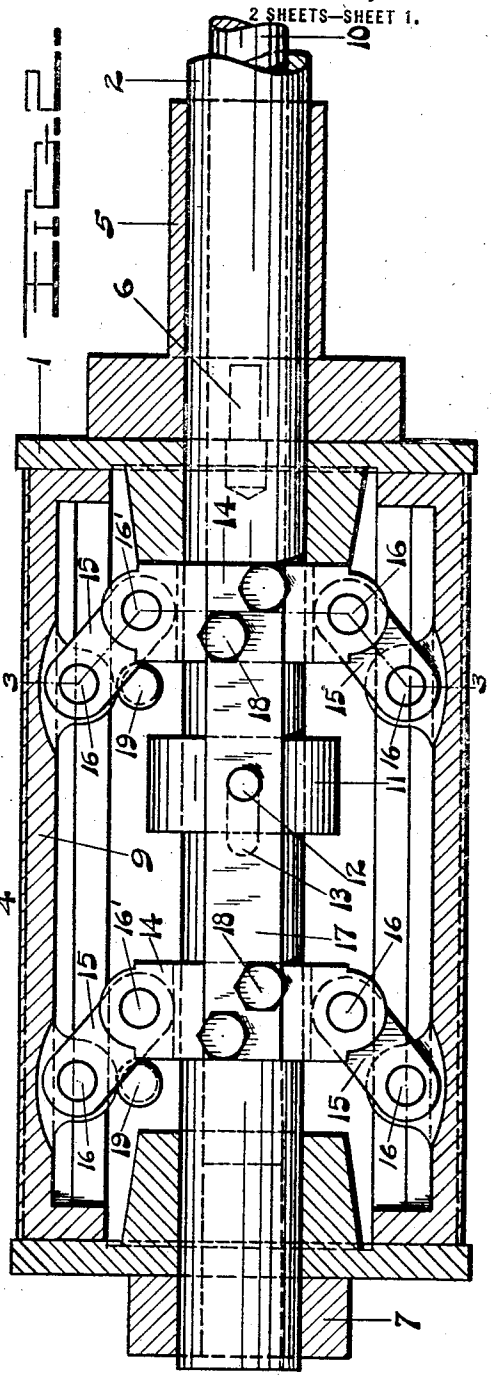
APPLICATION FILED SEPT. 26, 1919.

1,337,017.

Patented Apr. 13, 1920.

2 SHEETS—SHEET 1.





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2 SHEETS—SHEET 2.

FIG. 5.

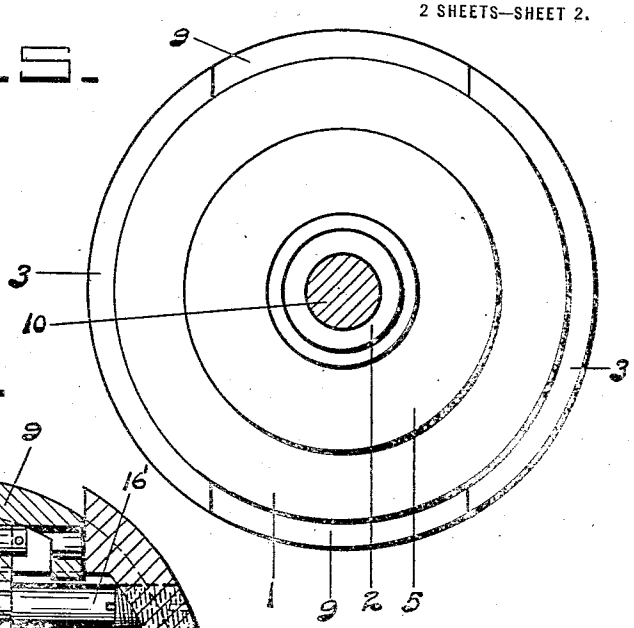


FIG. 3.

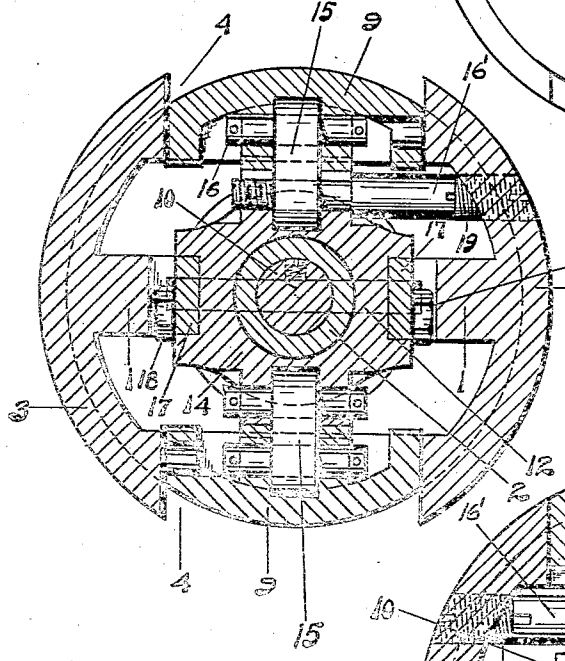
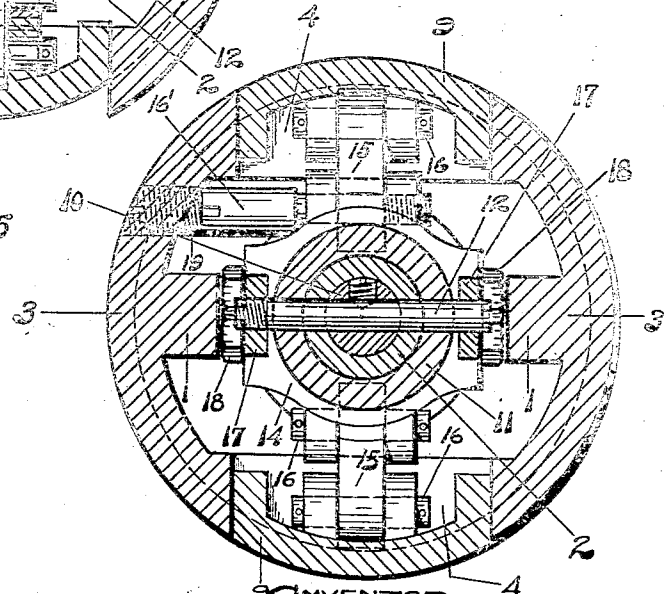


FIG. 4.



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UNITED STATES PATENT OFFICE.

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COLLAPSIBLE BLOCK.

1,337,017. Specification of Letters Patent. Patented Apr. 13, 1920.

Application filed September 26, 1919. Serial No. 326,628.

To all whom it may concern:

Be it known that I, ABEL KENWORTHY, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Collapsible Blocks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a new and improved collapsible block, having for its object, among other things to produce a block for winding or coiling metal that will have collapsible portions, which, when moved to their collapsed positions will readily permit the removal of the coiled metal from the block; and to accomplish these, and other ends, with mechanism of simple design, that may be economically assembled and readily operated.

In the drawings, reference to which is hereby made, and wherein like figures of reference designate like parts in the several figures;

Figure 1 is an elevation of my improved block, a portion thereof being broken away to expose the interior mechanism;

Fig. 2 is a longitudinal sectional view thereof, taken upon line 2—2 of Fig. 5;

Fig. 3 is a transverse sectional view, taken upon line 3—3 of Fig. 1;

Fig. 4 is a sectional view, taken upon line 4—4 of Fig. 1; and Fig. 5 is an end elevation of my improved block with the shoes in their extended positions and the central shaft in section.

In the prior art collapsible blocks have generally been of more or less complicated structures, costly to make, operated with considerable difficulty and so designed as to make an uneven winding surface, due to faulty joints. These objections have been overcome in this invention, the winding surface is entirely smooth and unbroken, whereby the possibility of a buckle or wrinkle in the wound metal is entirely eliminated.

In the practice of my invention, I provide a body member 1, which is mounted upon a hollow shaft 2 and provided with integral sections 3, each having an exterior surface concentric with the axis of said shaft and with an open space 4—4 therebetween. Also mounted on said shaft is the bushing 5, which is rotatable in a journal (not shown) in a well known manner and separably secured to the body member 1 by one or more dowel pins 6.

Endwise movement of said body member on said shaft away from the bushing 5 is prevented by the collar 7 secured to said shaft by a set screw 8 or its equivalent.

Movable between the sections 3 and in the openings 4—4 are the shoes 9 having an outer surface of the same curvature as that of the sections 3, so that when said shoes are in their outermost position, the surface of said sections and shoes make a complete circle concentric with the axis of the shaft and as the joint between said shoes and sections is tight, that is, the inner walls of the section and outer walls of the shoes being flush with each other, there is no break in the surface of the block to initiate a ripple or buckle.

Radial movement is imparted to these shoes from a shaft 10, longitudinally movable within the shaft 2 in a manner well known to the art, a collar 11 on the shaft 2, two shipper collars 14 slidably mounted on the shaft 2 and connected with the shoes 9 by the links 15 by means of the pintles 16. These shipper collars are connected by the straps 17 secured thereto by the bolts 18 and a pin 12 passing through said straps 17 and collar 11 unite all three of said collars into a single unitary structure, whereby the motion of one is transmitted to the other. The pin 12 also passes through a slot 13 in the shaft 2 and through a hole in the shaft 10. Endwise movement of the shaft 10 within the shaft 2 imparts a reciprocatory movement to the collar 11 and shipper collars 14 and shoes 9 are moved toward and away from the axis of said shaft according to the direction of movement thereof. The extended position of the shoes is shown in Figs. 1, 4 and 5 and their collapsed position in Figs. 2 and 3.

For winding, the shoes are held in their extended positions, and there locked by reason of the link pins moving slightly past the center, and after the metal has been coiled upon the block, endwise movement of the shaft 10 moves the shoes 9 toward the center thereof and the hold or grip of the metal upon the shoes is, of course, relaxed, and through it, upon the entire block, to a degree sufficient to permit the removal of the coiled metal from the block with the minimum of labor.

For convenience in assembly, two of the

pivot pins, severally designated, 16′ are of extended length, and threaded into the shipper collars, through openings in one of the sections 3 that are closed by the plugs 19.

If desired a single frame may be mounted on the shaft 2, as a substitute for the shipper collars, the straps therebetween and the collar 11.

Within the scope of the appended claims minor changes and alterations can be made within my invention, and I would therefore have it understood that I do not limit myself to the exact construction herein described and shown in the drawings, but claim all that falls fairly within the spirit and scope of the appended claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a collapsible block, the combination with a body member, having sections as a part thereof and mounted upon a hollow shaft; shoes mounted between said sections, each having an exterior surface of the same diameter as that of said sections; a shaft within said first shaft; shipper means mounted on said first shaft; links connecting said shipper means with said shoes; and means for connecting said shipper means with said last mentioned shaft.

2. In a collapsible block, the combination with a body member, having sections as a part thereof and mounted upon a hollow shaft; shoes mounted between said sections; each having an exterior surface of the same diameter as that of said sections; a shaft within said first shaft; a shipper collar mounted on said first shaft near each end of said shoe; links connecting each of said shipper collars with said shoes; and means for connecting said shipper collars with said last mentioned shaft.

3. In a collapsible block, the combination with a body member, having sections as a part thereof and mounted upon a hollow shaft; shoes mounted between said sections, each having an exterior surface of the same diameter as that of said sections; a shaft within said first shaft; a shipper collar mounted on said first shaft near each end of said shoe; links connecting each of said shipper collars with said shoes; a connection between said shipper collars; and a member uniting said connection and the shaft within said first shaft.

4. In a collapsible block, the combination with a body member, having sections as a part thereof and mounted upon a hollow shaft; shoes mounted between said sections; each having an exterior surface of the same diameter as that of said sections; a shaft within said first shaft; a shipper collar mounted on said first shaft near each end of said shoe; links connecting each of said shipper collars with said shoes; a connection between said shipper collar upon each side of said shaft; and a pin uniting said connections and passing through a slot in said hollow shaft and an opening in the other shaft that prevents relative movement therein.

5. In a collapsible block, the combination with a body member, having sections as a part thereof and mounted upon a hollow shaft; shoes mounted between said sections, each having an exterior surface of the same diameter as that of said sections; a shaft within said first shaft; a shipper collar mounted on said first shaft; links connecting said shipper collars with said shoes; and having a pivotal connection with said collars and said shoes; and means for connecting said collars with said last mentioned shaft, the arrangement of said parts being such that when said sections are in their extended positions, with their outer surfaces even with those of said sections, the center of the pivotal connections between said links and collars are slightly beyond the center of the pivotal connections of each of said links with said shoes.

In testimony whereof I have hereunto affixed my signature.

ABEL KENWORTHY.