

G. F. HUTCHINS.
PRINTING DRUM.

APPLICATION FILED NOV. 27, 1911.

Patented Aug. 6, 1912.

2 SHEETS-SHEET 1.

1,034,914.

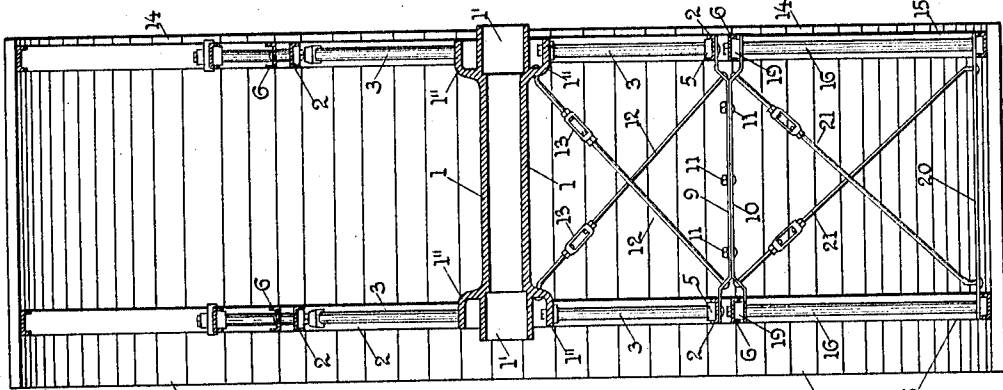


Fig. 2.
a-o-c

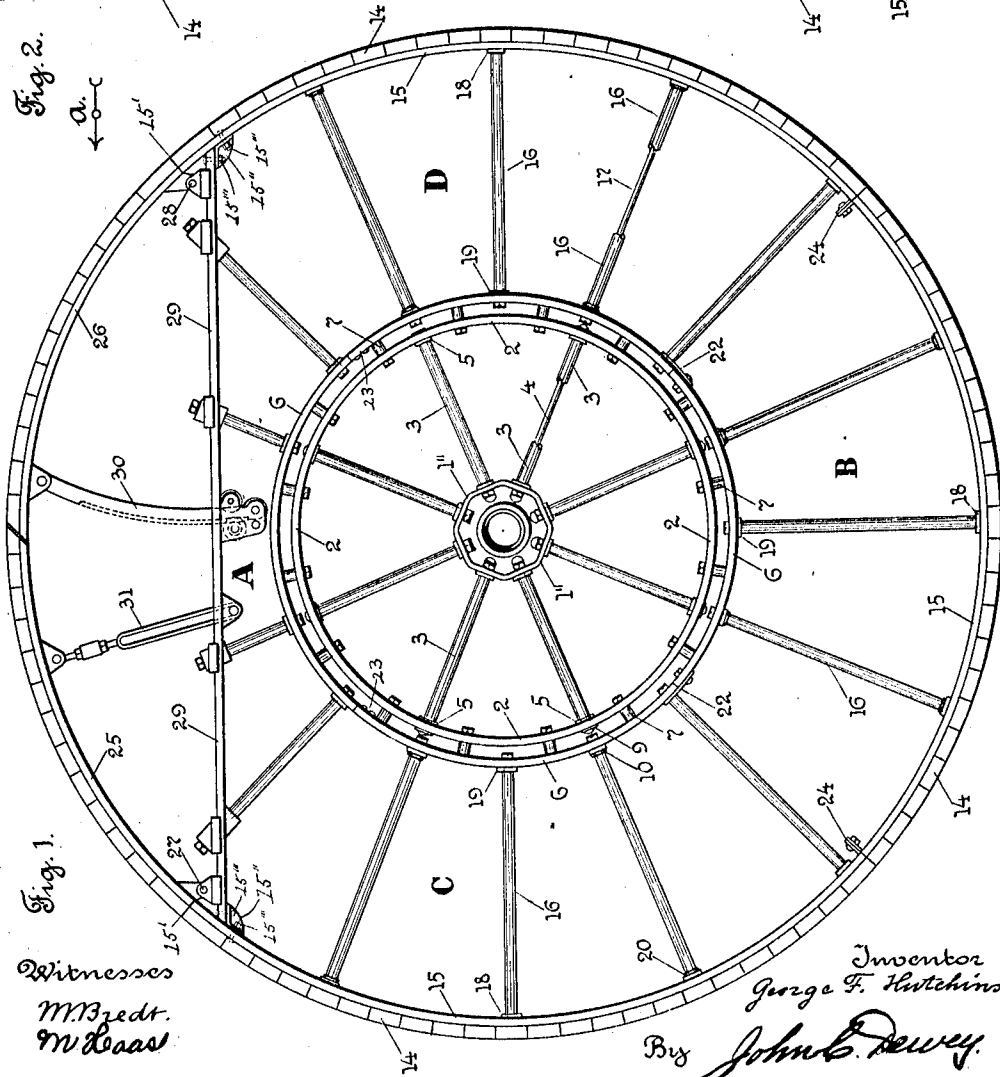


Fig. 1.

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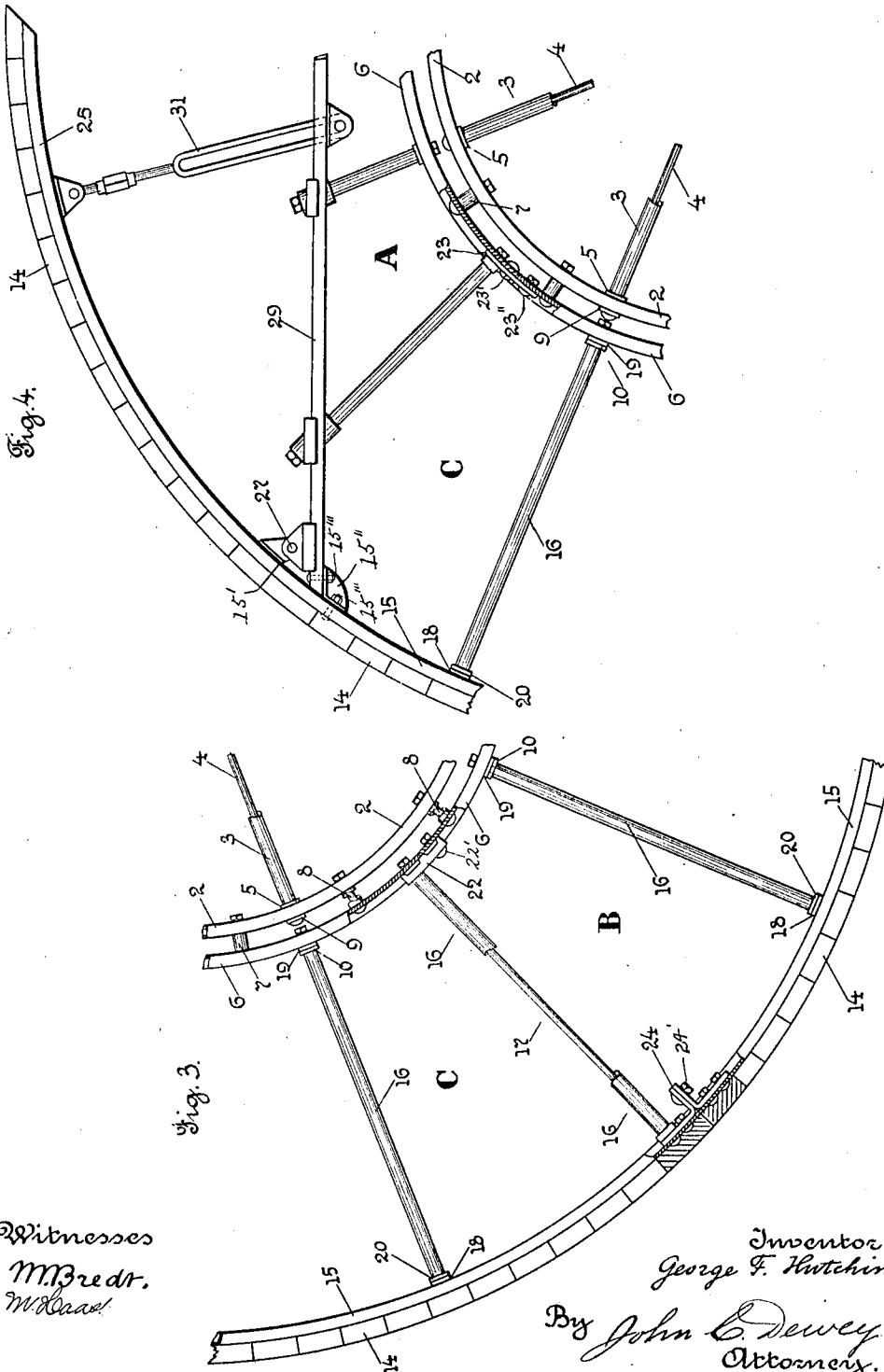
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UNITED STATES PATENT OFFICE.

GEORGE F. HUTCHINS, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, A CORPORATION OF MASSACHUSETTS.

PRINTING-DRUM.

1,034,914.

Specification of Letters Patent.

Patented Aug. 6, 1912.

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To all whom it may concern:

Be it known that I, GEORGE F. HUTCHINS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Printing-Drums, of which the following is a specification.

My invention relates to printing drums, and particularly to that class of drums used in the manufacture of tapestry carpets, to print upon the warps the different colors and designs desired.

The object of my invention is to improve upon the construction of printing drums of the class referred to, as ordinarily made, and more particularly to provide them with a demountable rim, which in case of a drum of large diameter, will facilitate the transportation of the drum, and getting the drum into a building and into operative position.

In my improved printing drum, I provide a central hub, and a central portion, of cylindrical shaped hoops, rigidly attached to said hub. I also provide an outer portion, comprising cylindrical shaped hoops made in detachable sections, and rigidly and removably attached to the first mentioned hoops, and a third set of cylindrical shaped hoops made in detachable sections, and rigidly attached to the second mentioned set of hoops, and having wooden planks attached thereto, and forming the outer portion over which the warps to be printed pass.

My invention consists in certain novel features of construction of my printing drum, as will be hereinafter fully described.

I have only shown in the drawings a printing drum, detached, of my improved construction, sufficient to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawings:—Figure 1 is a front elevation of a drum, detached, of my improved construction. Fig. 2 is a central vertical section of the drum shown in Fig. 1, looking in the direction of arrow *a*, same figure; some of the parts shown in Fig. 1 are left out of this figure. Fig. 3 shows, on an enlarged scale, a detached portion of the demountable rim, shown in the lower part at the left in Fig. 1, and, Fig. 4 shows a detached portion of the demountable rim,

shown in the upper portion at the left in Fig. 1.

In the accompanying drawings, 1 is the hub of the drum, preferably made of tubular cast iron, which is recessed at its end, at 1', see Fig. 2, for roller bearings, not shown, of the usual and well known construction. The hub 1 is in this instance provided with flanges 1'', which are adapted to receive the spokes and braces, which connect the iron hoops and transverse braces with said flanges 1''. The hoops 2 of the internal drum, are wound or rolled up, of channel, or U shaped iron of the regular size, in the usual way. The spokes, which extend from the hub flanges 1'' to the hoops 2, are made in this instance of tubes or pipes 3, through which extend rods 4, having washers 5 thereon. The rods 4, which are rigidly attached at one end to the hub flanges 1'', and at the other end to the hoops 2, firmly connect the hoops 2 to the hub flanges 1''.

At a predetermined distance from the hoops 2 are a pair of hoops 6, which, through the tubes 7, and bolts 8, are rigidly and removably connected to the internal hoops 2, see Fig. 3.

Transverse metal tie plates 9 and 10 are preferably used, which extend from the hoops 2 and 6 on one side, to the hoops 2 and 6 on the other side of the drum, see Fig. 2, and are bolted together by screw bolts 11. The tie plates 9 and 10 are offset at their outer ends, to allow tension rods 12 to extend from one side of the tie pieces 9, to the flanges 1'' on the hub 1, on the other side of the drum, forming an X brace, which is made adjustable by buckles 13, see Fig. 2, thus rendering the drum more firm and stable.

The demountable, or outer drum, has the outer periphery or surface 14, over which the warps to be printed pass. This periphery is usually made of wooden planks mounted upon the outer hoops 15. Spokes, which consist of tubes 16, connect the hoops 15 and 6, by means of rods 17, and washers 18 and 19 on each end. A transverse tie bar 20, preferably made of flat metal, extends from one side to the other, see Fig. 2, and connects the hoops 15. Tension rods 21 extend between the tie bar 20, and the offset in the tie bar 10, thus forming an X brace to stiffen the drum.

The inner hoops 6 of the outer drum, are

in this instance made in four sections, which are secured together in the direction of their length, in this instance at two places by plates 22 secured at one end by the rod 17, and a nut thereon, and at the other end by a separate bolt 22', see Fig. 3, and in this instance at the two other places by a plate 23, secured at one end by the rod 17 extending therethrough, with a nut thereon, and also by a bolt 23', and at the other end by a second bolt 23'', see Fig. 4. The outer hoops 15 of the outer portion, are secured together in this instance at two places by the angle irons 24, attached thereto at their ends, and the bolt 24' connecting said angle irons, see Fig. 3. The joint at the other ends of the side sections, as shown in Fig. 1, at 15' is where the doors or hinged portions 25 and 26 are attached.

In Fig. 1, at the top of the drum, are the two doors or hinged portions 25 and 26, which open inwardly and are hinged at 27, and 28, in stands secured on the bridge piece 29, in the usual and well known way. Angle plates 15'' are secured to each end of the bridge piece 29, and to the section of the outer drum, by bolts 15'''. To one of the hinged portions 26 is pivotally attached the rack 30, in the usual way. To the other hinged section 25 is pivotally attached the slotted connector 31, in the usual way. By removing the hinged pins 27 and 28, the two doors or hinged portions 25 and 26 may be removed, after removing the pins, connecting the rack 30, and slotted connector 31, with the bridge piece 29.

From the above description in connection with the drawings, the manner of constructing and putting together my improved drum, will be readily understood by those skilled in the art. The hub or central portion is made as one part, and the outer portion, forming the outer drum, is made in this instance in four parts, designated in this instance by the letters A, B, C, and D. The section A includes the upper part of the outer drum, and the bridge piece 29, and also the hinged doors or portions 25 and 26, which as above stated, may be disconnected by removing the hinged pins 27 and 28. The section C in this instance covers about one-fourth of the outer drum on the left hand side thereof in Fig. 1, and the section D, the corresponding portion on the right hand side in Fig. 1, and the section B, the corresponding portion at the

lower part of the outer drum in Fig. 1. Sections A, C, B, and D are secured together by the plates 22 and 23 on the outer side of the hoops 6, and the angle plates 24 and the plates 15'' on the inner side of the hoops 15, and the connecting sections A, C, B, and D, are attached to the central portion by the bolts 8 extending through the tubes 7, shown in Fig. 3.

The advantages of my improvements will be readily appreciated by those skilled in the art. I provide a printing drum in which the outer portion is made in sections, which are detached from each other for transportation, and are rigidly attached together, and attached to the central portion, when the drum is to be set up for use.

It will be understood that the details of construction of my improvements may be varied if desired.

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

1. A printing drum, comprising a central hub, and cylindrical hoops rigidly attached to said hub, and an outer drum, made in detachable sections, and separate from said cylindrical hoops, and removably attached to said hoops.

2. A printing drum, comprising a central hub, and cylindrical hoops rigidly attached to said hub, and an outer drum made in detachable sections, and comprising an inner set of cylindrical shaped hoops, made in detachable sections, and rigidly and removably attached to said first mentioned cylindrical hoops, and an outer set of cylindrical shaped hoops, made in detachable sections, and rigidly attached to said second mentioned set of cylindrical shaped hoops.

3. In a printing drum, the combination with the central hub, cylindrical hoops, and rigid connections between said hub and hoops, of a second series of cylindrical hoops, made in detachable sections, and rigidly and removably attached to the first mentioned hoops, and a series of outer hoops made in detachable sections, and connections intermediate said outer hoops and said second mentioned hoops, to rigidly attach said hoops together.

GEORGE F. HUTCHINS.

Witnesses:

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