

(No Model.)

P. R. GOTTSTEIN.

BARREL.

No. 318,370.

Patented May 19, 1885.

Fig. 1.

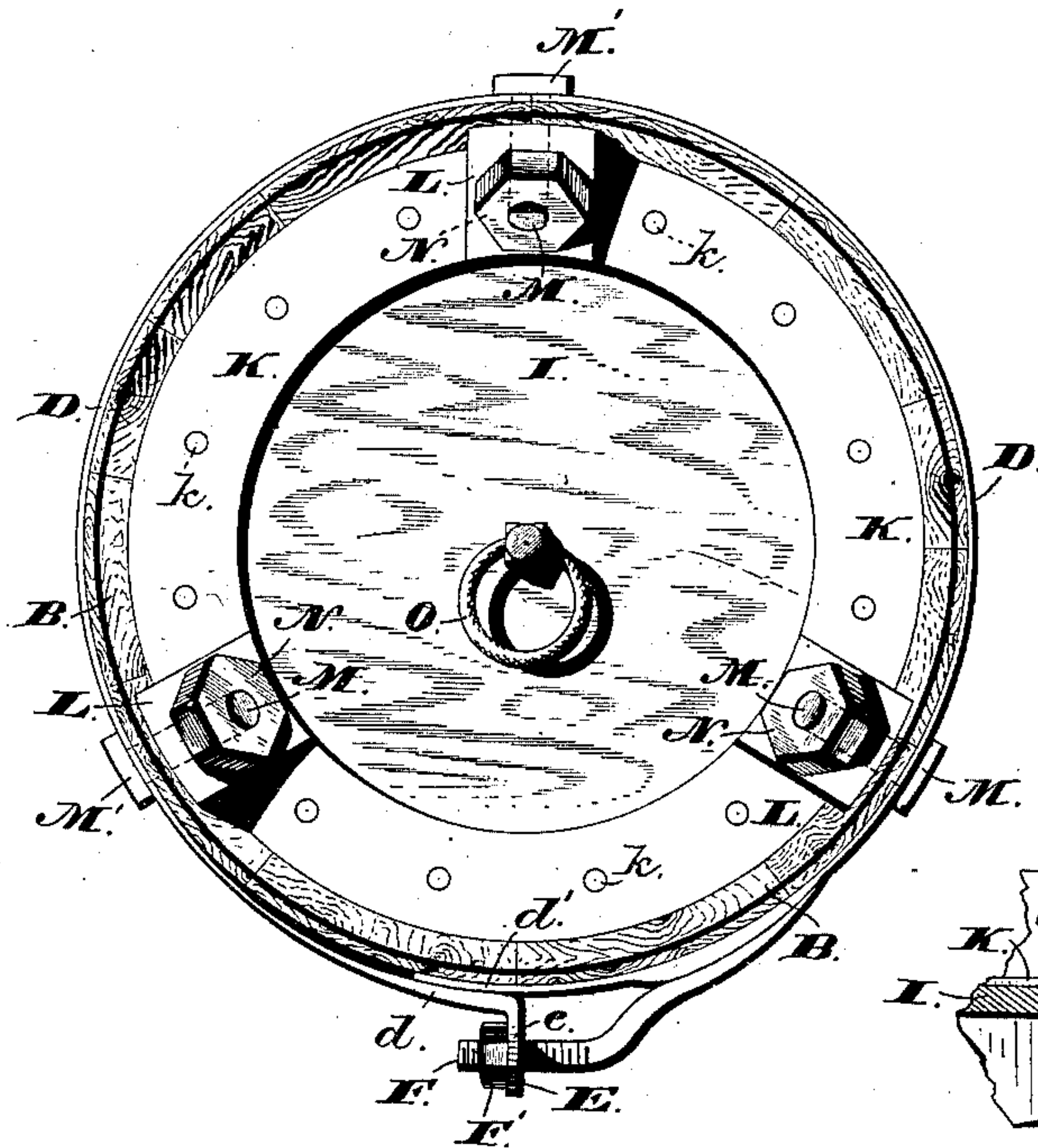


Fig. 3.

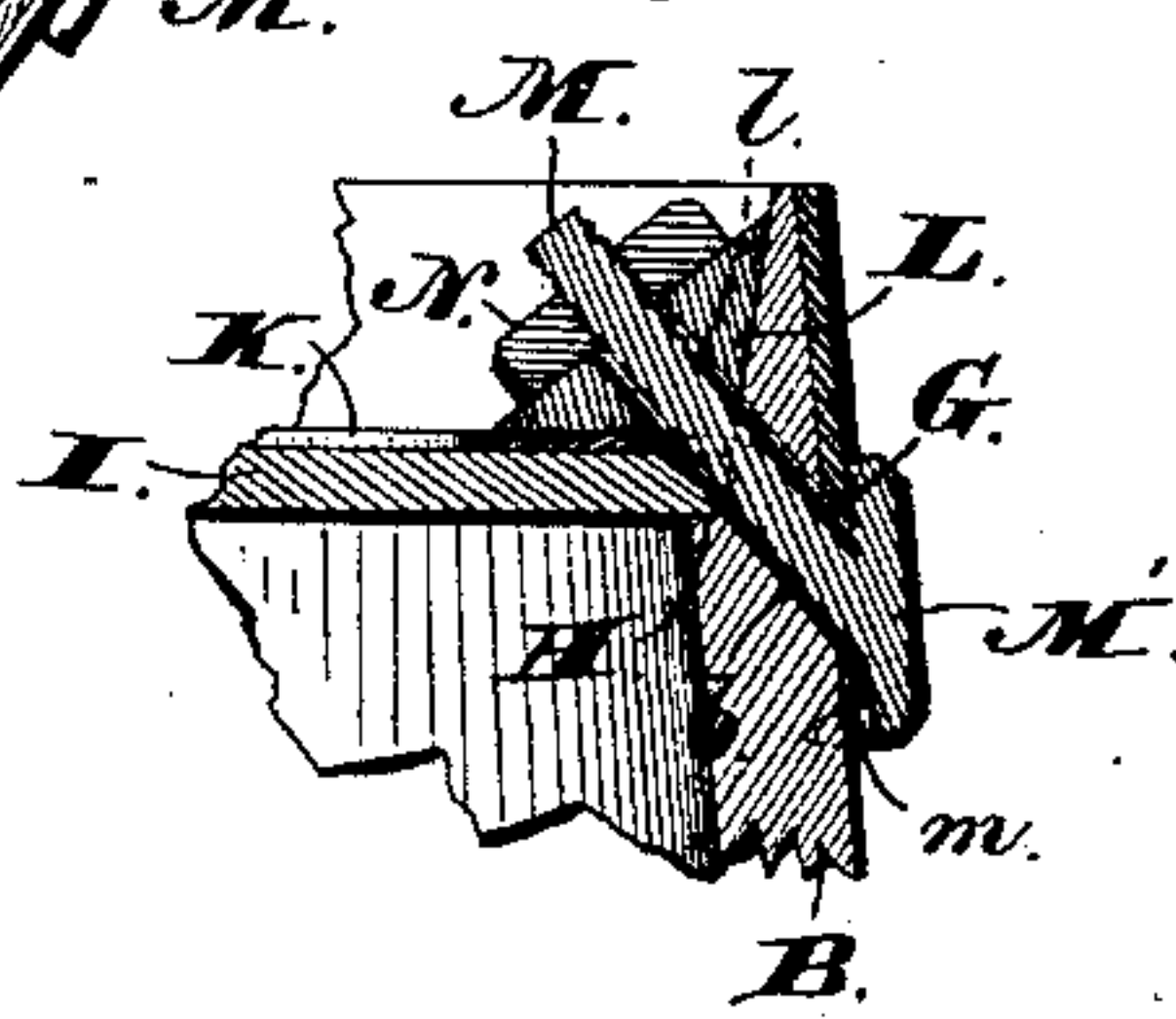
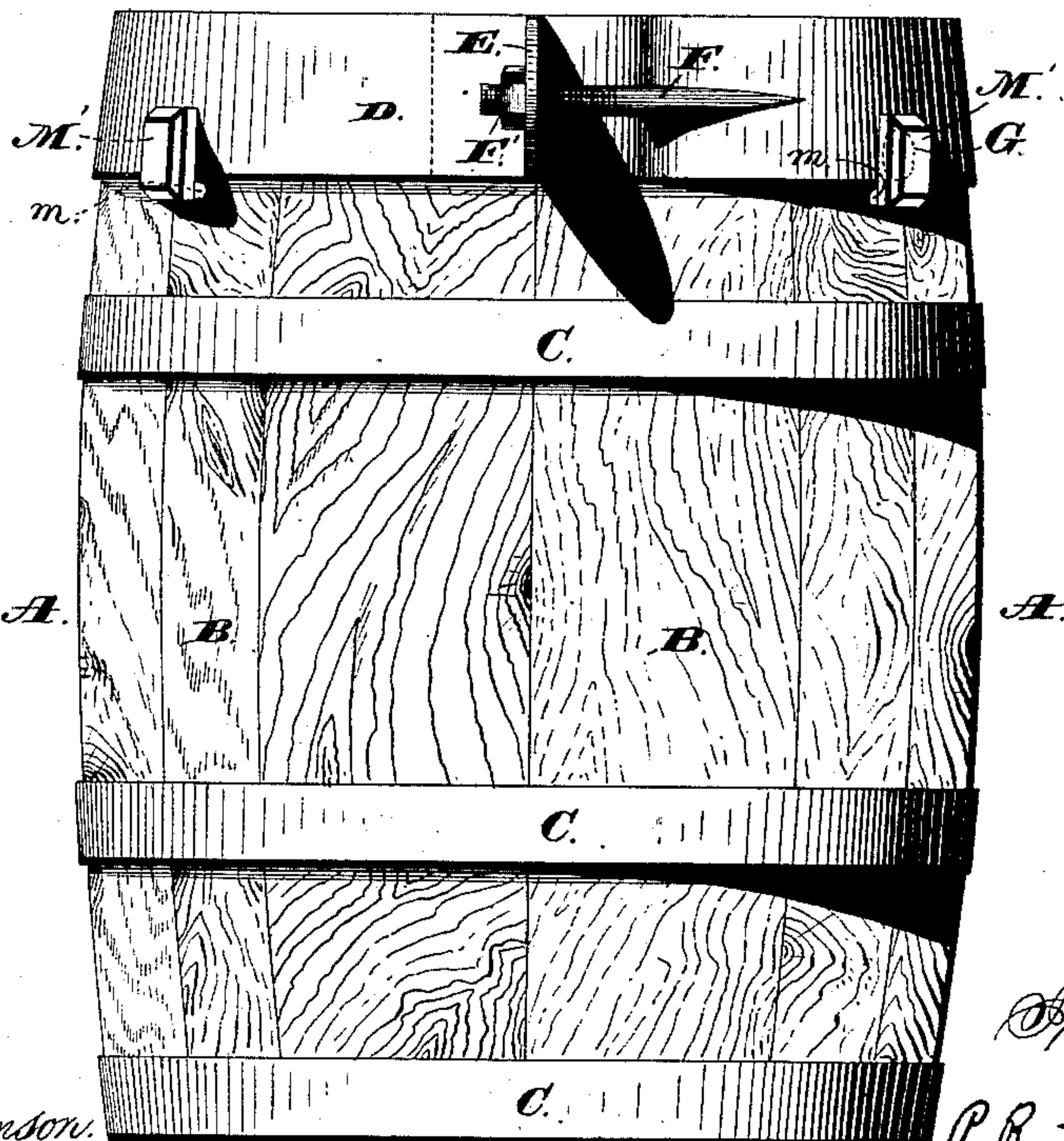


Fig. 2.



Witnesses:

Jas. C. Hutchinson.

Henry C. Hazard.

Inventor:-

P. R. Gottstein

by Prindle & Russell
Attorneys

UNITED STATES PATENT OFFICE.

PETER R. GOTTSTEIN, OF HOUGHTON, MICHIGAN.

BARREL.

SPECIFICATION forming part of Letters Patent No. 318,370, dated May 19, 1885.

Application filed February 19, 1885. (No model.)

To all whom it may concern:

Be it known that I, PETER R. GOTTSTEIN, of Houghton, in the county of Houghton, and in the State of Michigan, have invented certain new and useful Improvements in Barrels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows a plan view of a barrel with its head arranged fastened in accordance with my invention; Fig. 2, a view of the same in elevation, and Fig 3 a detail sectional view showing the construction and operation of one of the fastening-bolts.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide an improvement in barrels; and to this end it consists in the construction, arrangement, and combination of parts, as hereinafter specified.

My barrel, as shown in the drawings and set forth hereinafter, is intended and adapted especially for use as a mineral barrel for the transportation of ore; but it is obviously, also, adapted for containing and carrying various substances and materials besides ores. Where, as in some of the copper mines of Michigan, it is necessary to transport the mineral or ore containing the metal from the stamping-mill to the smelting-furnace, it has been customary heretofore to use ordinary whisky or oil barrels in which the crushed mineral is packed. In order to pack the mineral in one of these barrels the hoops at one end must be taken off, and then the head be taken out. The hoops are then replaced and the barrel is filled. When the barrel is filled, these hoops must be moved again, the head put in place, and the hoops then driven on again. The barrels of mineral are then shipped to the smelting-works, where the hoops at the end have to be taken off again to allow the head to be removed so that the barrel can be emptied. During this repeated knocking off and replacing of the hoops they become injured and broken so that the barrels have to be sent to the cooper-shop, occasioning delay and expense in repairing. As the mineral often becomes compacted into a solid mass in the barrel, and is often frozen in transportation, it is often diffi-

cult to get it out of these barrels, and sometimes impossible without breaking or badly injuring the barrel. The repeated knocking off and putting on of the hoops, as heretofore, where ordinary whisky or oil barrels have been used, not only injures the hoops and barrels rapidly, but occasions much loss of time. To obviate all these difficulties and objections I have devised a barrel the head and end hoop of which can be readily and quickly removed and fastened again firmly in place without loss of time and without any injury to the barrel or the head or hoops thereof in the process. I thereby save both cooperage and time.

My barrel, while being more convenient in use and easier to remove the contents from, I find can be used many times longer than the ordinary barrels heretofore used.

In the drawings, A designates the barrel, and B B the staves thereof. These staves are at the bottom, and everywhere, except at the upper end of the barrel, held in the usual way by hoops C C. The bottom end of the barrel is also of the usual construction. Around the top of the barrel is the end hoop, D, made adjustable, as shown. It is formed of a metal strip whose ends *d d'* overlap. One of these ends, *d*, preferably the one overlapping or outside of the other, is provided with an outwardly-turned rigid ear or lug, E, having an opening, *e*, through it, and the other is provided with a screw-threaded tongue or rod, F, adapted to be passed through the spring *e* in lug E. A nut, F', on the outer end of the tongue, is adapted to be screwed up against the outer side of the lug, so as to draw the tongue F through the lug, and cause the strap ends to overlap each other more and the hoop to be smaller. The hoop as thus constructed can obviously be easily and quickly put in place on the barrel end and tightened up, and then as easily and quickly loosened and removed without any necessity of hammering and knocking it. Through this hoop, which I preferably make of one-eighth inch hoop-iron, are several holes, G G, near the lower edge of the hoop. They are, as shown, made elongated or elliptical, with the longer axis of the ellipse upright or at right angles to the hoop. Within the end of the barrel there is an annular rabbet forming a shoulder, H, up-

on which the cover or head I rests when placed and fitted into the barrel end, as shown best in Fig. 3. The edge of the head is slightly inclined, so as to fit the rabbet closely when the head is forced down upon the shoulder. Upon the top of the head, around its edge, is the flat metal ring K, preferably of malleable iron, fastened to the head by means of nails or rivets *k k*. Upon this ring are the blocks L L L, corresponding in number with the holes G G G in the hoop D, and so situated on the ring as to come opposite while being above such openings when the head is forced down in place within the barrel end. Each of these blocks has its upper side beveled or inclined inward and downward, and is provided with an opening, *l*, passing down through the block in a slanting direction outward, so as to be in line with the corresponding hole G in the hoop. Holes or passages *b b* are made in the staves of the barrels, connecting the openings *l l* with holes G G.

Down through each opening *l*, passage *b*, and hole G passes a bolt, M, having on the lower end, which projects through the hole in the hoop, a head, M', inclined so as to engage the outer face of the hoop, and having its lower edge, extending below the hoop edge, provided with prongs or projections *m m*, engaging said hoop edge, and engaging and sticking into the stave just below the hoop. The upper end of each bolt is screw-threaded, and is provided with a nut, N, which can be screwed against the upper face of block L, so as to draw the bolt inward and upward to force the head on the lower end of the bolt against the hoop, and cause the claw on such head to engage the lower hoop edge and stick into the stave below. A hand-ring, O, is fixed to the head for convenience in handling it.

With my barrel as shown and described the head can be quickly removed upon the removal of the bolts, the hoop being left in place. The barrel can then be filled, and the head replaced and fastened by the bolts again. At the smelting-works, where it is to be emptied, the head is taken off, the barrel is laid upon its side, and, being gripped by hooks at its bottom end, is hoisted up so as to be upside down. The top hoop being in place, protects the barrel edge as it is drawn over the floor. When the barrel is swung up, the hoop is loosened and removed, and the contents of the barrel, even when caked or frozen, can be dropped out and removed without straining the barrel. When the barrel has finally become used up or broken, the adjustable detachable hoop, removable head, and the fastenings therefor can be taken off and applied to a new barrel. One head with its attachments and the hoop will outlast several barrels. The hoop by its construction is easily and readily adjustable to suit each new barrel.

Having thus described my invention, what I claim is—

1. In combination with the barrel and the hoop thereon provided with several openings, the removable head, the bolts passing up through the openings in the hoop and through the head, and provided with heads engaging the outer side of the hoop and nuts on the upper and inner ends of the bolts, above the barrel-head, substantially as and for the purpose described.

2. In combination with the removable head and the hoop on the barrel provided with several openings, the bolts extending upward and inward through such openings and the edge of the barrel-head, having on their lower ends heads provided with claws adapted to project inward under the lower edge of the hoop, and the screw-nuts on the upper ends of the bolts, substantially as and for the purpose described.

3. In combination with the removable head and the lugs or blocks on its upper side, around its edge, the hoop on the barrel end provided with openings, the bolts extending up through the openings in the hoop and the lugs and provided on their lower ends with heads having claws engaging the lower edge of the hoop, and the nuts on the upper ends of the bolts, all substantially as and for the purpose set forth.

4. In combination with the rabbeted barrel end, the removable head, the metal ring on its top, around its edge, the blocks on the ring, having their upper faces sloping inward, the hoop around the upper end of the barrel, having openings below the plane of the head, and bolts passing up through the openings in the hoop and its blocks and provided on their upper ends with screw-nuts and on their lower ends with heads to engage the hoop, substantially as and for the purpose described.

5. In combination with the removable head and the blocks thereon around its edge, the adjustable hoop around the upper end of the barrel, consisting of the band having thereon an adjustable connection between its ends, the holes in the hoop below the plane of the blocks on the head, the bolts passing upward and inward through the holes in the hoop, the staves of the barrel, and the blocks, and provided on their outer ends with heads having claws projecting under the lower edge of the hoop, and the screw-nuts on the upper ends of the bolts, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 4th day of February, A. D. 1885.

PETER R. GOTTSTEIN.

Witnesses:

C. B. GRANT,
A. R. GRAY.