

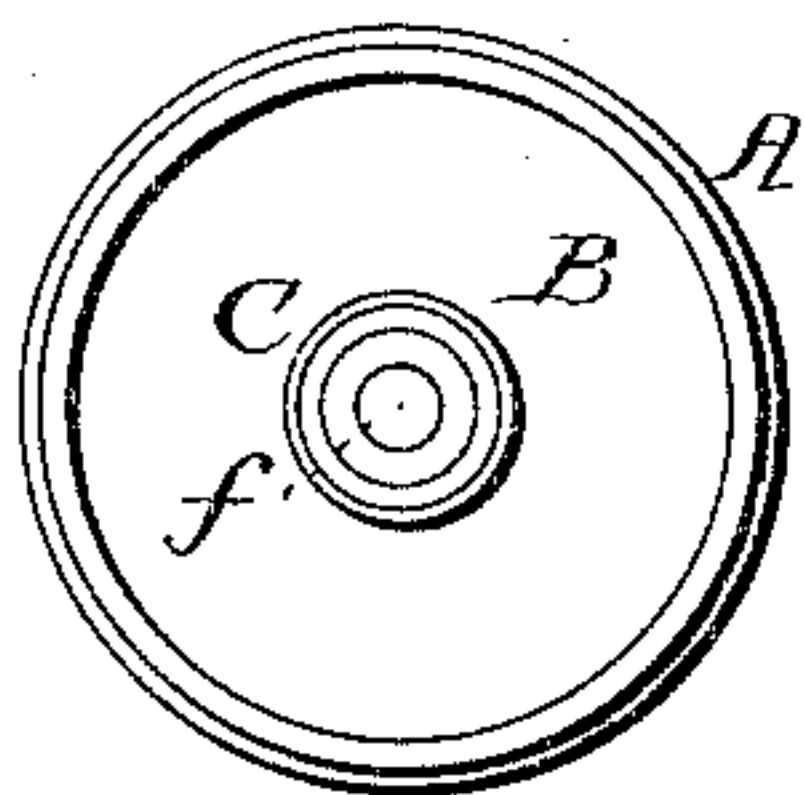
J. M. Riley

Furniture Caster,

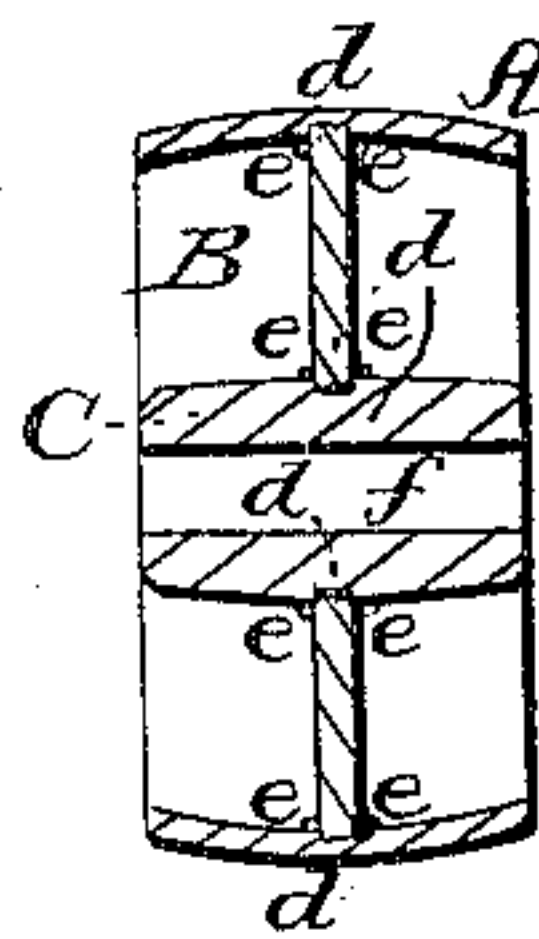
N^o 57,941.

Patented Sept. 11, 1866.

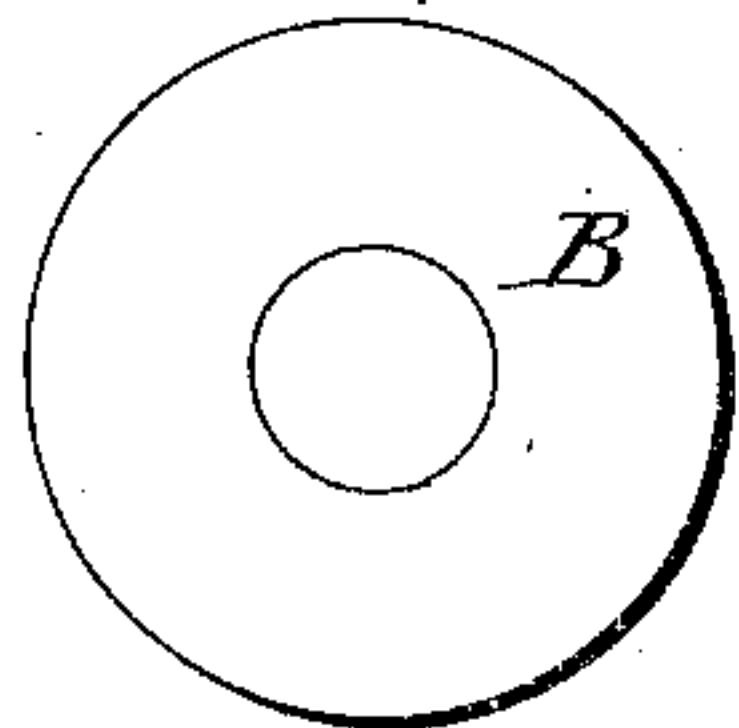
Fig; 1.



Fig; 2.



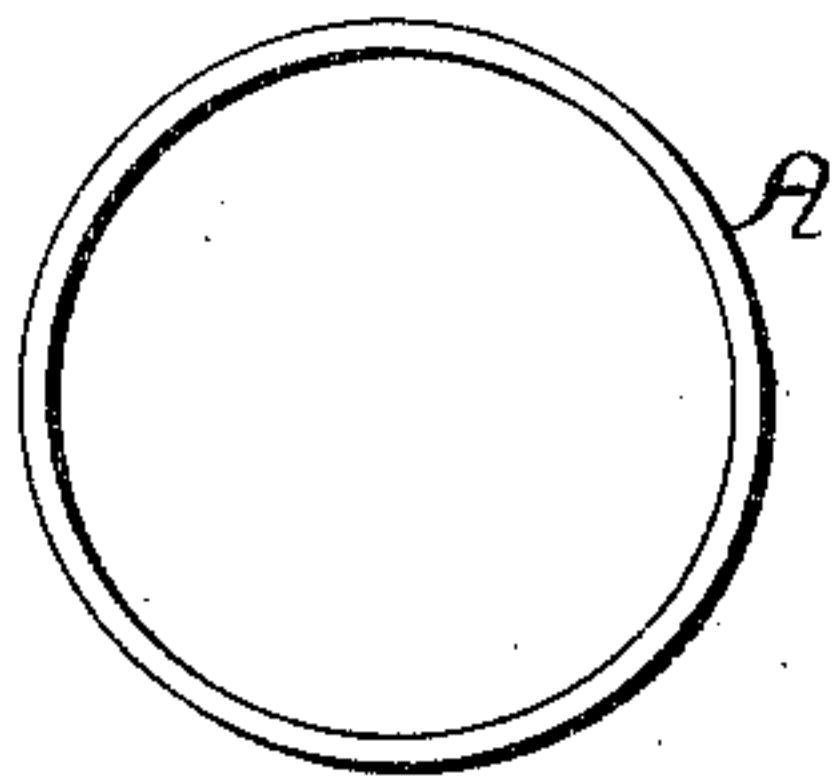
Fig; 3.



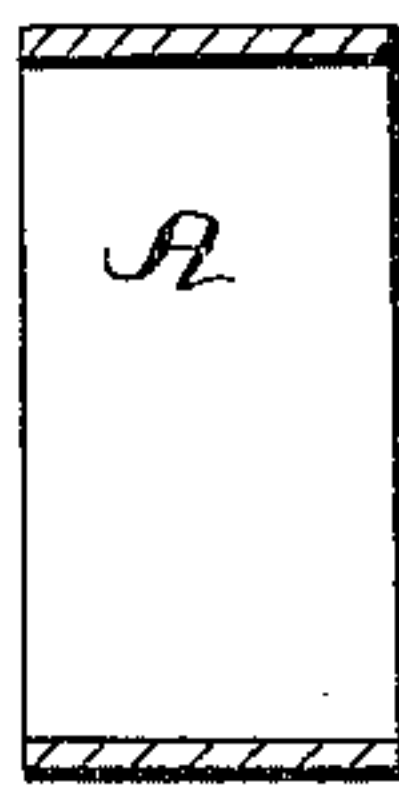
Fig; 4.



Fig; 5.



Fig; 6.



Fig; 7.



Fig. 8.



Inventor;

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Witnesses;

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UNITED STATES PATENT OFFICE.

JOHN M. RILEY, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN CASTERS.

Specification forming part of Letters Patent No. **57,971**, dated September 11, 1866; antedated September 2, 1866.

To all whom it may concern:

Be it known that I, J. M. RILEY, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Casters; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an end view of a caster-wheel made according to my invention. Fig. 2 is a longitudinal section through Fig. 1. Fig. 3 is a plan view of the blank composing the plate of the caster. Fig. 4 is an axial section of the plate. Fig. 5 is an end view of the tube that forms the circumference or rim of the caster. Fig. 6 is a longitudinal section of such tube. Fig. 7 is an end view of the wire blank that forms the hub of the caster. Fig. 8 is a peripheral view of such blank.

Similar letters of reference indicate like parts.

The object of this invention is the improvement of casters for furniture; and it consists in making and forming their wheels from separate parts, and uniting such parts and finishing the wheels in dies. The rim, the plate, and the hub of the wheel are made separate from each other and are afterward united by pressure in suitable dies. After they are firmly united a hole is drilled through the hub, when the wheel is ready for use.

Fig. 1 represents in end view a caster-wheel complete and ready for use. Fig. 2 is an axial section of the same. The wheel is made up of three separate pieces, to wit: one piece which forms the rim, one which forms the hub, and one which forms the plate. They are united by pressure between dies. The rim A is, in this example, made of a section of a tube of wrought metal, but it may be made by cutting a blank of proper length and width from a sheet of rolled metal, and making a rim from such blank by bringing its ends together and soldering them. If the rims are to be made of sections like the one shown in Figs. 5 and 6, I take a tube of proper diameter and saw or cut it up into sections of suitable length. The plate B, which unites the rim and hub, is cut of the form shown in Fig.

3, directly from a sheet of metal of suitable thickness for the purpose required, the hole in the center being cut out at the same time the blank is cut out. Such hole in the blank is to be of a diameter that will receive the section of wire that forms the hub. The hub C is made of a section of a rod or wire of suitable diameter. I take a solid rod or wire of the right diameter and cut it up in sections of a proper length, like the one seen in Figs. 7 and 8, equal to the length of the section A of the tube.

The several parts having been cut out to their proper sizes to fit each other—that is to say, the plate B being of such a diameter as to fit within the section which forms the rim, and the hole made in the center of the plate being of a proper size to receive the wire which forms the hub—they are next put together, the plate B being fixed in the section A, midway of the length of such section, and the section C of wire being so placed in the central opening of the plate that its ends are even with the ends of the section that forms the rim. They are afterward placed between dies of a proper form, and pressure is made on them to bring them to the shape required and to unite them to each other. The upper and lower dies may be of equal size and of like form, and in that case, if the part C is inserted only part way in the plate B, and the latter is inserted only part way in the section A, the dies, on coming together, will bring the several parts into their proper places and relations to each other. The dies may be so shaped as to make the circumference of the rim A slightly convex in cross-section, or the rim may be left straight by giving the dies the proper shape for that purpose. It may be more convenient, before placing them between such dies, to bring the several parts together in their proper places and relations in a press of suitable construction, but this is left to the discretion of the manufacturer.

I lay no claim to the use or construction of such press or machine for fitting said parts to each other; nor do I lay claim to any particular form of dies for pressing and uniting them together. After the wheel has been taken from the dies I drill a hole, *f*, through the hub to enable the wheel to be placed on an

axle, as usual. I do not, however, confine myself to solid wire in making the hub, but I sometimes use hollow wire or strong tubing, of suitable size, for making the hubs. The dies are to be so made as to compress the plate B with more force than is brought to bear on the ends of the hub and rim, and the pressure made on the plate must be sufficient to expand the said plate and force its periphery into the inner side of the rim, and also to force the edge of the opening of said plate into the body of the hub, as indicated by the letters *d* in Fig. 2, thereby locking the plate both to the rim and the hub. The pressure on the plate serves to harden it and to give it greater stiffness and strength.

Those surfaces of the dies which come against the faces of plate B are a little rounded off or beveled on the edges which are adjacent to the angles marked with the letters *e* in Fig. 2, so as to allow ridges or beads to be formed on the plate along the lines of such angles when the plate is compressed, as above stated. By this arrangement allowance is made for the expansion of the plate when under pressure, thereby avoiding the danger of bursting the rim of the wheel or of injuring the dies, as might be the case if

the resistance of the plate to pressure was entirely unyielding in its character. Moreover, these beads have the effect of strengthening the joints of the plate along the angles, and add also to the good appearance of the wheel. If desired, for the sake of greater precaution against fracture, the joints of the plate with the hub and rim may be soldered. I also subject caster-wheels which have been made by casting to like compression between dies, for the purpose of hardening the plate and giving a smooth appearance to the wheel, thereby saving the trouble and expense of turning and finishing such cast wheels in a lathe, as at present practiced.

I claim as new and desire to secure by Letters Patent—

Making caster-wheels by preparing the rim, the plate, and the hub in separate pieces, and uniting them to each other under pressure, substantially as above set forth.

The above specification of my invention signed by me this — day of September, 1865.

JOHN M. RILEY.

Witnesses:

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