

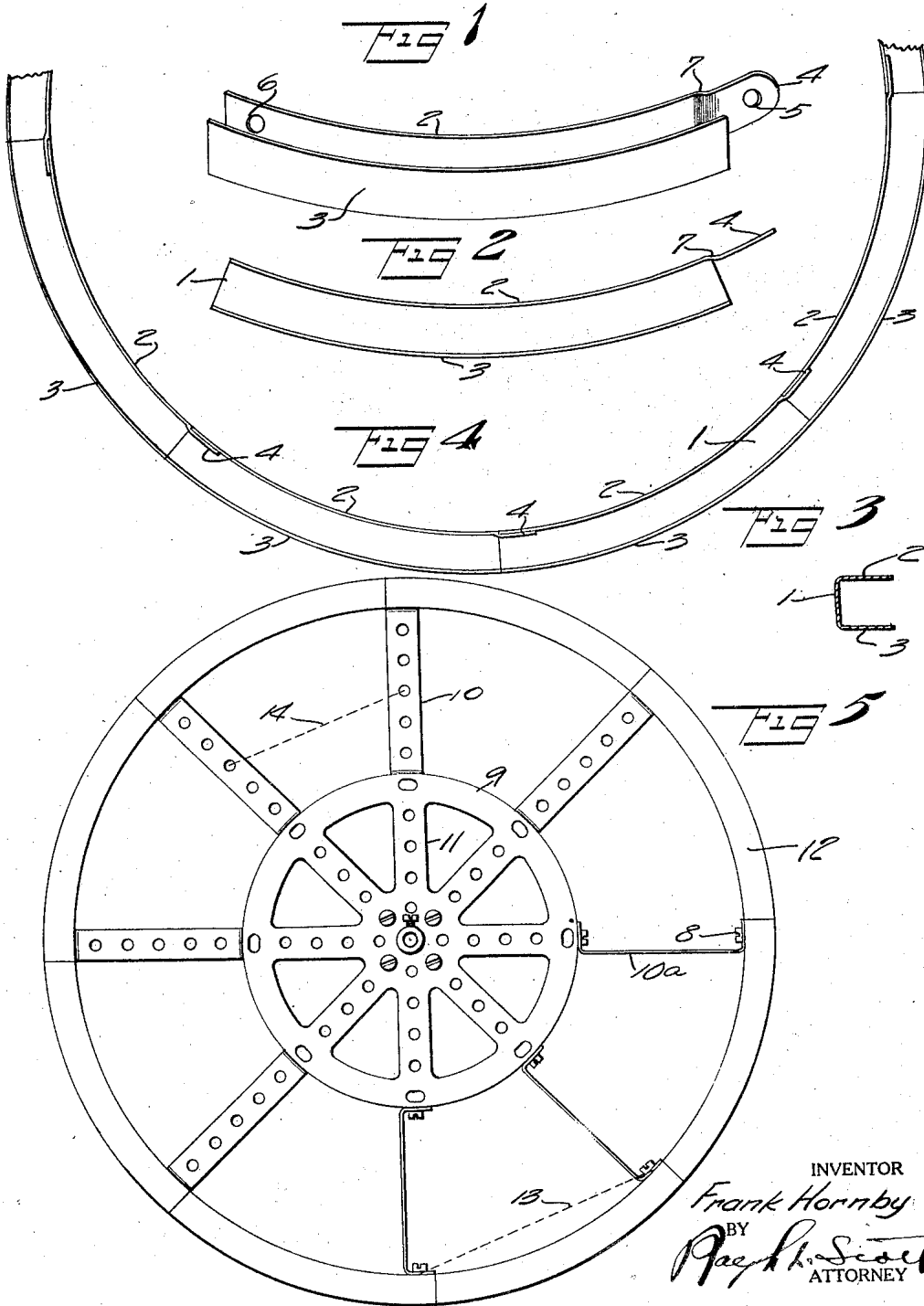
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CURVED CHANNEL SECTION

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# UNITED STATES PATENT OFFICE.

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## CURVED CHANNEL SECTION.

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This invention relates to constructional outfits for the building of working models, toys or the like, such outfits containing various perforated parts with small bolts and nuts for holding them in assembled position. It is very desirable that each of the elements in such outfits be capable of fulfilling several different functions, so that the total number of different parts may be kept at a minimum. It is also desirable that the elements be such as to permit of economical manufacture, as by stamping from sheet metal. The part or element forming the subject of the present invention responds to this desirability,—it can be used in a variety of ways, and it can readily be made from sheet metal.

The inventive idea involved is capable of receiving a variety of mechanical expressions, the preferred form being shown in the accompanying drawings. It is to be understood, however, that the drawings are for the purpose of illustration only, and are not to be taken as defining the limits of the invention, reference being had to the appended claims for this purpose. In the drawings—

Fig. 1 is a perspective of the element,

Fig. 2 is a plan view,

Fig. 3 is a cross section of Fig. 2,

Fig. 4 is a plan view of a number of the elements assembled together; and

Fig. 5 is a plan of a wheel structure showing the elements in use.

The new element consists of a curved channel section having a circular arcuate periphery extending through a fraction of a circle; while the periphery may extend through any arc, it most desirably extends through an aliquot part of a circle, such as 45° (as shown), 60° or 90°.

In the drawings is shown a section having a base 1, an inner curved wall 2, and an outer curved wall 3. Integral with one of these walls, preferably the inner, is an extension or lug 4 having formed therein a perforation 5. At the opposite end of the wall carrying the lug is another like perforation 6, so positioned that it will register with the perforation 5 in the lug of an adjoining section when the two are brought into proper relation,—the lug 4 of one section overlapping the wall of the second section when the parts are assembled. The lug 4 is preferably inset the thickness of the

metal, as shown at 7, but it may be disposed in the opposite direction if desired.

In practice it has been found most advantageous to have each section an arc of 45°. Eight such sections may then be assembled to form a complete circle with a continuous channel, each lug 4 overlapping the wall of the next adjoining section, the inset of the lugs permitting the sections to be accurately aligned, and the perforations 5 and 6 of adjoining sections coinciding to receive small bolts 8 by which the elements are secured together. When so assembled the sections form a complete ring available as a wheel race and for a multiplicity of other uses in model building.

In a constructional outfit of the kind here involved, the perforations in the various elements are preferably equi-distant from each other and spaced apart in accordance with a predetermined standard of measurement, the unit of measurement usually being one-half inch from center to center of adjoining perforations. That the new element may be available for the greatest number of uses, the perforations 5 and 6 in each section are preferably spaced along a chord in keeping with the standard of measurement. With such spacing a single section may be secured in place on a flat element provided with standard perforations, in the building of an arched roof, for example; or two sections may be joined to each other, and then likewise to a flat element to form an arc twice the length of the former.

To illustrate one of the more simple and common uses for the new element, in Fig. 5 is shown a structure having as its foundation a circular girder element 9 provided with a bush-wheel having the usual hub and set-screw. Secured to the circumference of this girder, and extending radially therefrom are the double bent strips 10, forming an extension of the spokes 11 of the circular girder. The face of these strips 10 may be either in a plane with the spokes 11, or turned at an angle thereto as shown by the strips marked 10<sup>a</sup>. Secured to the outer ends of the double bent strips 10 and to each other are the channel sections 12,—one bolt 8 serving to unite two sections with each other and with a strip 10. The device thus formed may be mounted on a shaft and used as a fly-wheel, or as a pulley with a belt running on the circumference, or it may

be rotated by a chain running in the channel.

In the preferred form, where the perforations 5 and 6 in each section are spaced along a chord in keeping with the standard of measurement obtaining in other elements of the outfit, a flat perforated strip element of the proper length, may be inserted along the chord 13, and held in place by passing the bolts 8 through the end perforations in such a strip. And in an assembly such as shown in Fig. 5, it will be found that numerous other spaces, for example such as indicated by the line 14, are multiples of the standard unit of measurement, and thus afford opportunity for attachment to the assembly of various other standard parts for any desired purpose.

Having thus described the invention, the following is claimed:

1. A curved channel section for use in the construction of toys or the like, comprising a sheet metal blank having a circular arcuate periphery extending through an aliquot part of a circle, and means comprising an extension of one wall of the section, a perforation in said extension, and a like perforation in the opposite end of said wall positioned to register with the perforation in the extension of a second section, whereby a plurality of sections may be detachably secured together in position forming a complete circle.

2. A curved channel section for use in the construction of toys or the like, comprising a sheet metal blank having a circular arcuate periphery extending through an aliquot part of a circle, and means comprising an extension of one wall of the section, a perforation in said extension, and a like perforation in the opposite end of said wall positioned to register with the perforation in the extension of a second section, whereby a plurality of sections may be detachably

secured together in position forming a complete circle, said two perforations in each section being spaced along a chord corresponding in length to a multiple of a predetermined standard unit of measurement.

3. A curved channel section for use in the construction of toys or the like, comprising a sheet metal blank having a circular arcuate periphery extending through a fraction of a circle, and means comprising an extension of the shorter wall of the section, a perforation in said extension, and a like perforation in the opposite end of said wall positioned to register with the perforation in the extension of a second section, whereby a plurality of sections may be detachably secured together in position forming a circle.

4. A curved channel section for use in the construction of toys or the like, comprising a sheet metal blank having a circular arcuate periphery extending through an aliquot part of a circle, and means comprising an inset extension of one wall having therein a perforation positioned to register with a like perforation in the opposite end of the same wall of another section, whereby a plurality of sections may be secured together in position forming a complete circular channel.

5. A curved channel section for use in the construction of toys or the like, comprising a sheet metal blank having a smooth arcuate periphery extending through an aliquot part of a circle, one wall of the section having a lug offset the thickness of the blank, a perforation in said lug, and a like perforation in the opposite end of said wall positioned to register with the lug perforation of a second section when a sufficient number of sections are brought together in position to form a complete circle.

In testimony whereof, I have signed my name to this specification.

FRANK HORNBY.