

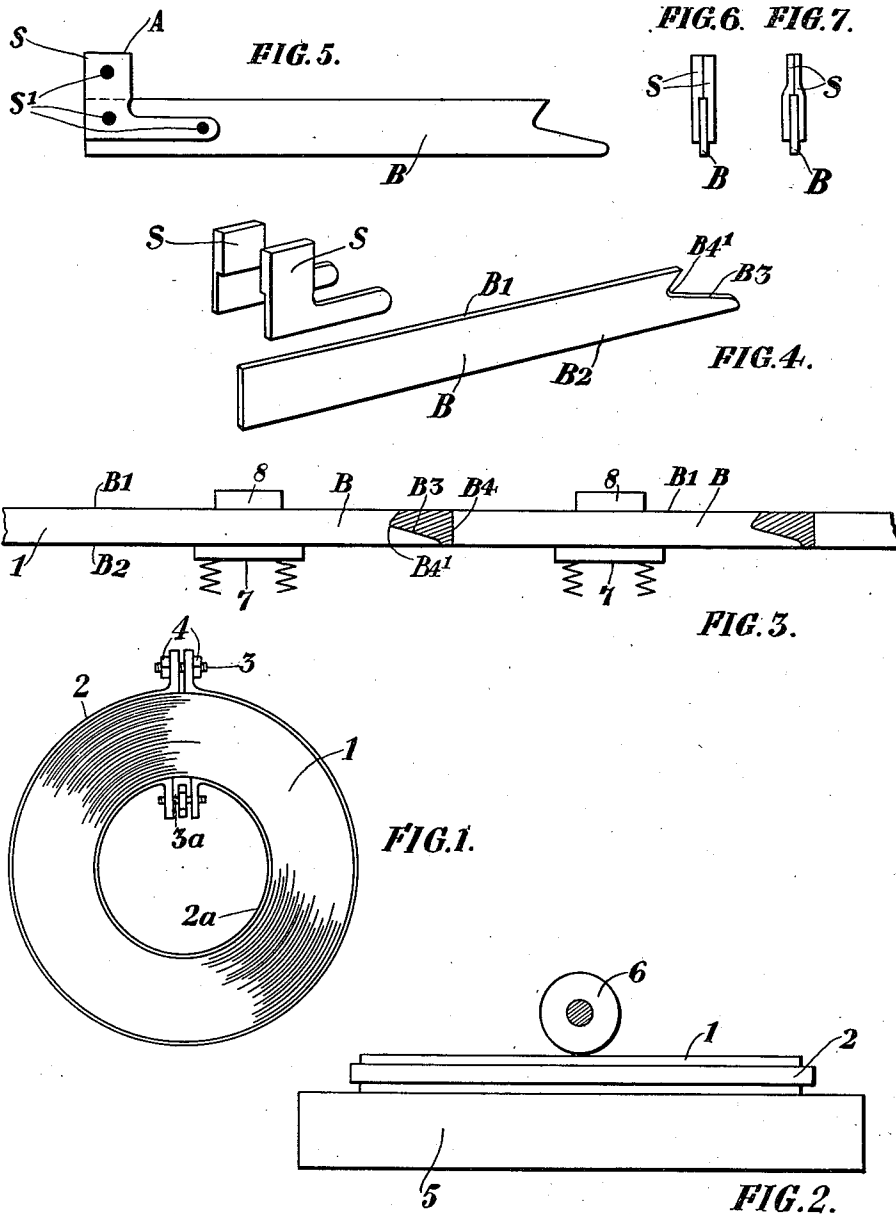
Sept. 16, 1941.

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2,256,428

METHOD OF PRODUCING JACK SINKERS FOR STRAIGHT BAR KNITTING MACHINES

Filed April 8, 1940



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UNITED STATES PATENT OFFICE

2,256,428

METHOD OF PRODUCING JACK SINKERS
FOR STRAIGHT BAR KNITTING MA-
CHINES

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Application April 8, 1940, Serial No. 328,540
In Great Britain April 3, 1939

3 Claims. (Cl. 29—170)

This invention comprises an improved method of producing jack sinkers for straight bar knitting machine and also results in the production of a jack sinker of novel construction. The principal object of the invention is to provide a method of producing a jack sinker as above equal in strength and quality to sinkers of this type as hitherto produced, which is much simpler and considerably cheaper than previously known methods.

Hitherto jack sinkers as above have comprised a central blade member and two side portions which have been fixed to the central blade, usually one on each side thereof, at the rear end of the blade, by riveting or welding the side pieces and central blade together. The central blade has been provided with an upwardly projecting rectangular butt at its rear end and this butt has been strengthened or reinforced by the said two side pieces. By virtue of the central blade member having the integral upwardly projecting butt at its rear end it has hitherto been necessary to stamp the said central blade from a strip of material equal in width at least to the distance from the lower edge of the blade to the top edge of the butt and in fact it has been customary in stamping out the said blade to employ a punch and die equal in size and shape to the complete sinker blade. This process has necessitated the use of comparatively large and expensive punches and dies and as the sinker blade material is extremely hard it is frequently necessary to replace these expensive tools. Furthermore the provision of the projecting butt on the central blade has rendered the subsequent finishing of the blade to the extremely accurate limits which are essential for the sinker rather difficult and expensive.

The improved method provided by this invention consists in manufacturing the main blade member of the sinker from a parallel strip of material of the same width as the width of the said blade, or of a width which is only slightly larger to allow for it being ground to the exact width required for the said blade, parting the said strip into lengths equal to the overall length of the said sinker, forming one end of each length with the customary neb, throat and nose of a sinker and securing at the opposite end of the said blade a separate part adapted to serve as an operating butt for the sinker.

By the above method a jack sinker for a straight-bar knitting machine is produced embodying a main blade member which has no integral abutment projecting from either of its longitudinal edges and in which the butt for

enabling the sinker to be moved in its operation in the machine is comprised solely by one or more side pieces secured to the said blade member.

For the purpose of clearly describing the improved process and article according to this invention reference will now be made to the accompanying drawing wherein:

Fig. 1 is a plan view of a supply of the material from which the jack sinker blades are to be formed.

Fig. 2 illustrates a grinding operation on said material.

Fig. 3 illustrates a stamping operation on the said material and a means for accurately positioning same.

Fig. 4 is a perspective view of the separate parts of the jack sinker.

Fig. 5 is a side elevation of the finished sinker.

Figs. 6 and 7 are end elevations of two alternative constructions of the sinker.

The blade member of a jack sinker as above can be very cheaply manufactured in the following manner: The sinker blade material 1 may be purchased in coiled strip form, conveniently annular in shape, see Fig. 1, and the width of the strip should be very slightly larger than the finished width of the sinker blade B. The material in this form may be rigidly supported by an inner and outer metal ring 2 and 2a, the outer metal ring 2 being provided with suitable means, such as a screwed spindle 3 and nuts 4, for enabling it to be contracted and tightened around the outer face of the annular supply of coiled strip metal 1 and the inner ring 2a being provided with means, such as the oppositely threaded screw spindle 3a for enabling it to be expanded and tightened around the inner surface of the said annular supply of material. Thus rigidly supported—the two metal supporting rings being of smaller width than the width of the material, see Fig. 2, the annular supply of strip material is put on to the magnetized table 5 of a surface grinding machine and the two edges B1 and B2 of the coiled strip 1 are ground dead to size—by the one or more grinding wheels 6. These two edges represent the finished upper and lower horizontal edges of the sinker blade B and the extremely accurate dead parallel width of the sinker blade is thereby assured by this one simple grinding operation.

The supporting rings 2 and 2a are then removed from the annular supply of strip material 1 and the material is fed into a press provided with punch and die, shaped according to the shaded portion shewn in Fig. 3, which is one oper-

ation shapes the front edge B3 of the sinker, i. e., provides the said front edge with the customary neb, throat and nose of a sinker, and provides the rear straight vertical edge B4 of the preceding sinker blade. In order to assure the accurate positioning of the throat B4' of the sinker in relation to the longitudinal edges B1 and B2 of the sinker blade B means are preferably provided in the press for pressing either the upper or lower longitudinal edge of the blade against an accurately positioned abutment. Such positioning means may conveniently incorporate spring pressed members 7 which automatically hold the upper longitudinal edge B' of the sinker blade B against the abutment 8. The manufacture of the sinker blade is thus complete except for the usual rumbling and polishing operations.

Substantially L-shaped side pieces S, see Figs. 4 and 5, are then secured to the sinker blade as above, one on each side thereof, at the rear end of the said blade and these side pieces are conveniently secured to the said blade by a welding process in accordance with my U. S. A. Patent No. 2,179,888, patented Nov. 14, 1939, at the positions indicated at S1. The said side pieces may, however, if desired, be secured to the said blade by riveting the said side pieces and blade together at the positions S1, in the well known manner, and one side piece only may be provided if so desired. When secured in position on the sinker blade the one or two side pieces S provide the usual rectangular shaped butt or abutment A, Fig. 5, projecting upwardly from the upper longitudinal edge of the sinker blade at the rear end thereof and it is by means of this butt that the sinker is moved by the catch-bar and jack during its operation in the machine.

Conveniently each of the abutment pieces S may be made with two thicknesses, which may be provided by a grinding operation, see Figs. 4 and 6, so that when the upper parts of said pieces are placed face to face there is a space between their lower parts to accommodate the sinker blade B and the entire outer side faces of the side pieces, when the sinker is assembled, are parallel.

Alternatively, see Fig. 7, the upper part of each of the side pieces S which part projects upwardly from the sinker may be cranked inwardly to the extent of half the thickness of the sinker blade B.

It will readily be understood that the sinker blade material Fig. 1, may be obtained ready ground or made to the exact size required for the sinker blade B and in such case the grinding op-

eration described with reference to Fig. 2 could be dispensed with.

By virtue of welding the side pieces S directly together at their upper parts and through the sinker blade B in accordance with my U. S. Patent No. 2,179,888 at their lower horizontal parts, see Fig. 5, a particularly strong and durable construction of jack sinkers is provided.

I claim:

10 1. The method of producing jack sinkers for knitting machines, which comprises edge-grinding an elongated strip of blade-making material to bring its edges into parallelism throughout its length and to produce a width substantially equal to that of the finished blade; cutting predetermined lengths from said strip to constitute blade elements, by successively severing the strip transversely from edge to edge, while simultaneously therewith shaping one end portion of one of the elements to form the sinker nose, throat and neb; and securing to the opposite end portion of each severed element a butt piece having a portion extending transversely beyond one edge of said element.

25 2. The method of making jack sinkers for knitting machines, which comprises providing a roll of blade-forming strip material; grinding the opposite flat faces of said roll to bring the edges of said strip material into parallelism and reduce its width to substantially that of the finished blade; cutting successive predetermined lengths from said strip to constitute blade elements, by severing the strip transversely from edge to edge, thereby forming a butt edge on one element, and simultaneously therewith shaping an end portion of the adjacent element to form the sinker nose, throat and neb; and securing an offset butt piece to the butt portion of each element.

40 3. The method of making jack sinkers for knitting machines, which comprises providing a strip of blade-making material of uniform width throughout its length, which width is substantially equal to that of the finished blade; severing said strip from edge to edge at longitudinally spaced points to form imperforate blade elements of uniform width throughout their length, said severances each producing a transverse butt edge on one blade element which is perpendicular to the longitudinal edges thereof, and simultaneously therewith shaping an end portion of an adjacent blade element to form the sinker nose, throat and neb; and securing an offset butt-piece to the butt end portion of the severed elements.

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