

Sept. 16, 1947.

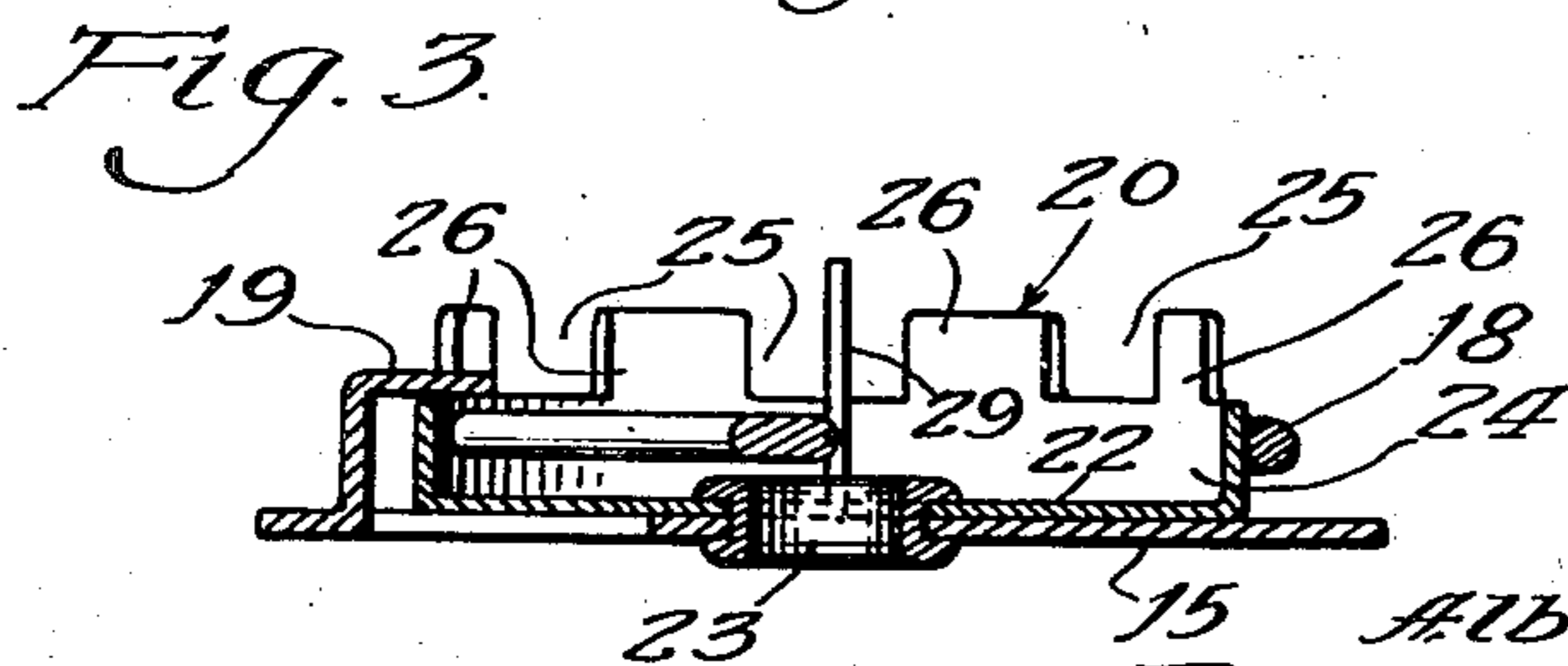
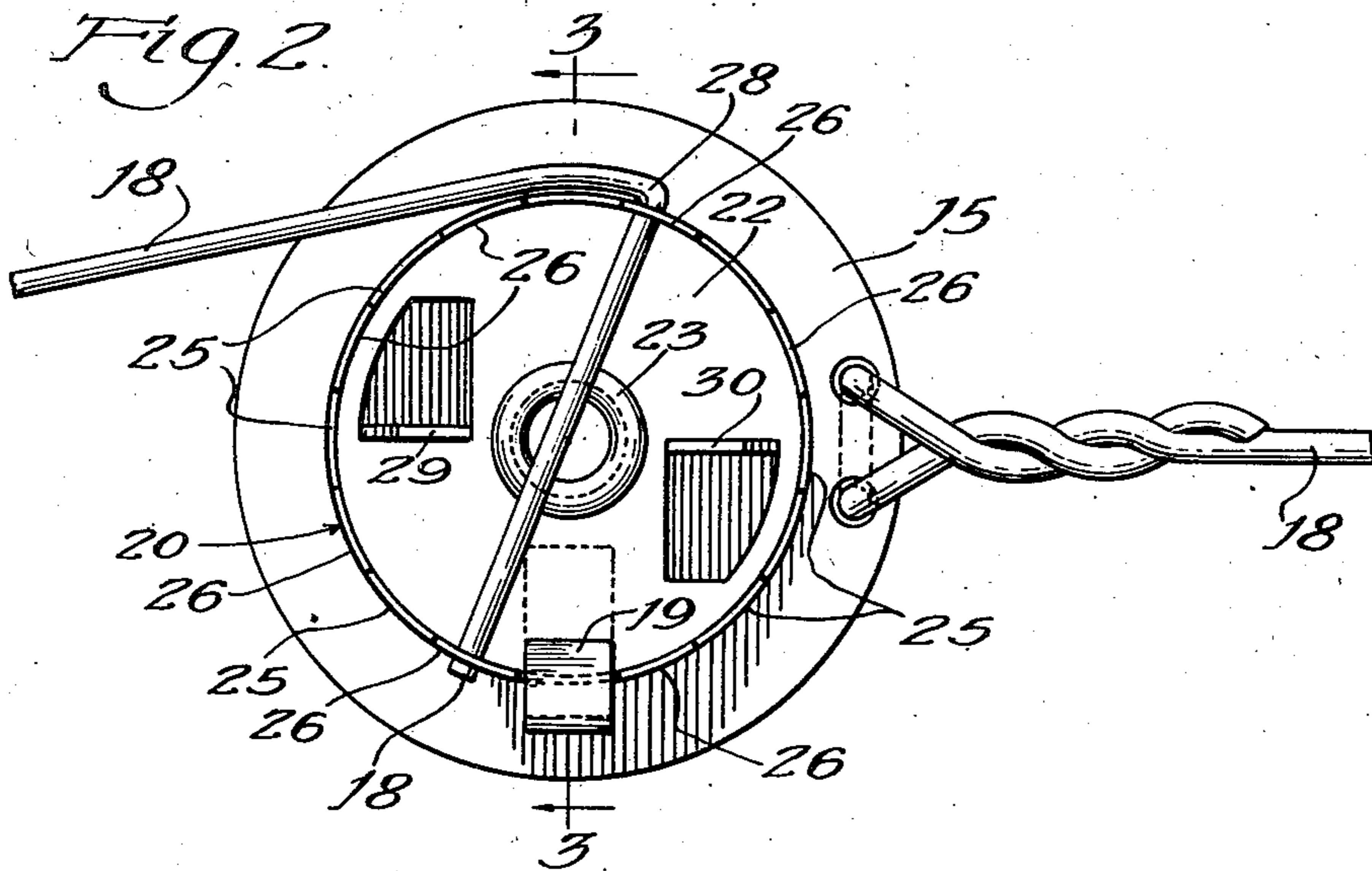
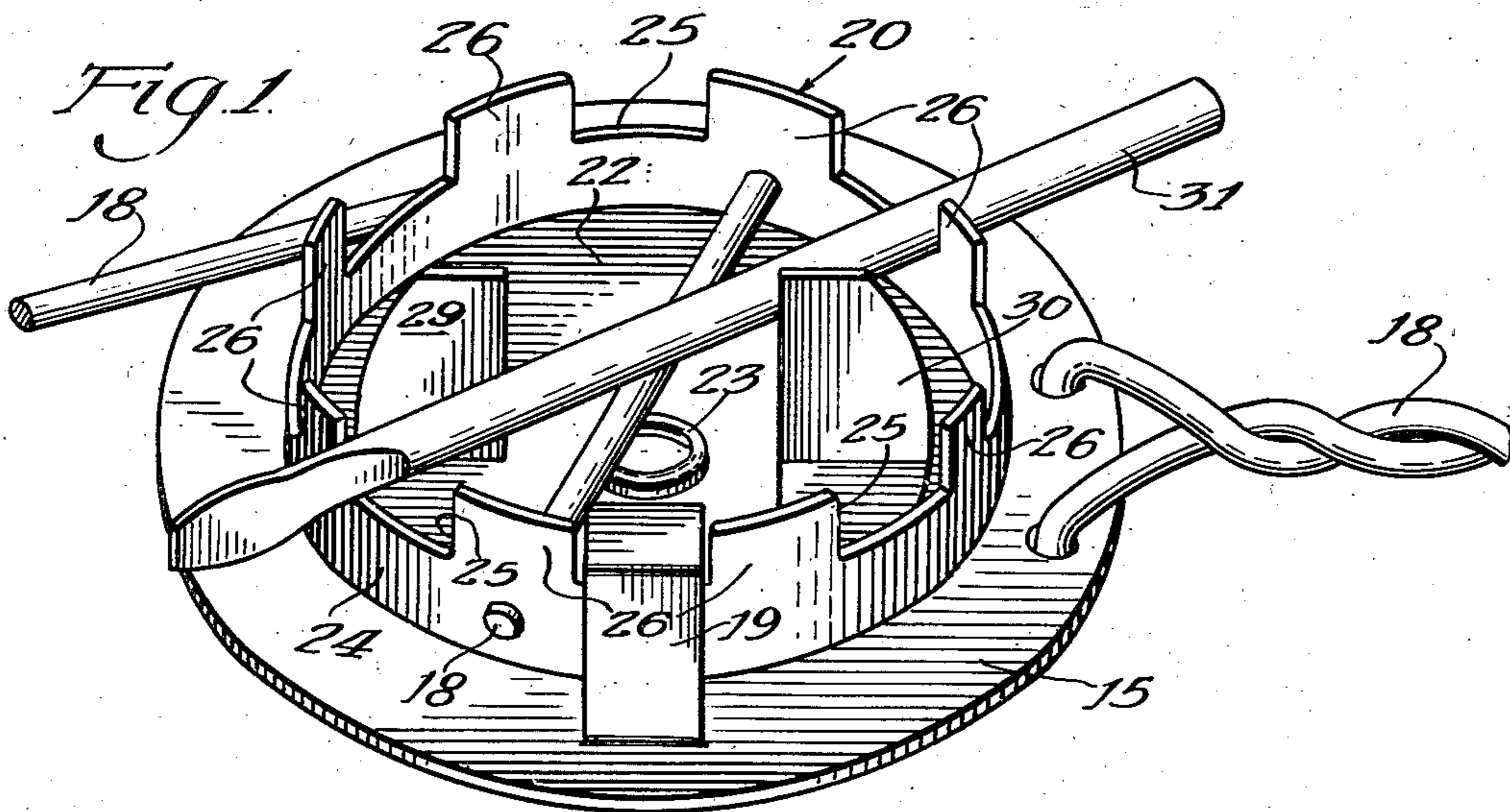
A. P. D. BELANGER

2,427,489

TIGHTENING MEANS FOR BALING WIRES AND THE LIKE

Filed March 22, 1944

2 Sheets-Sheet 1



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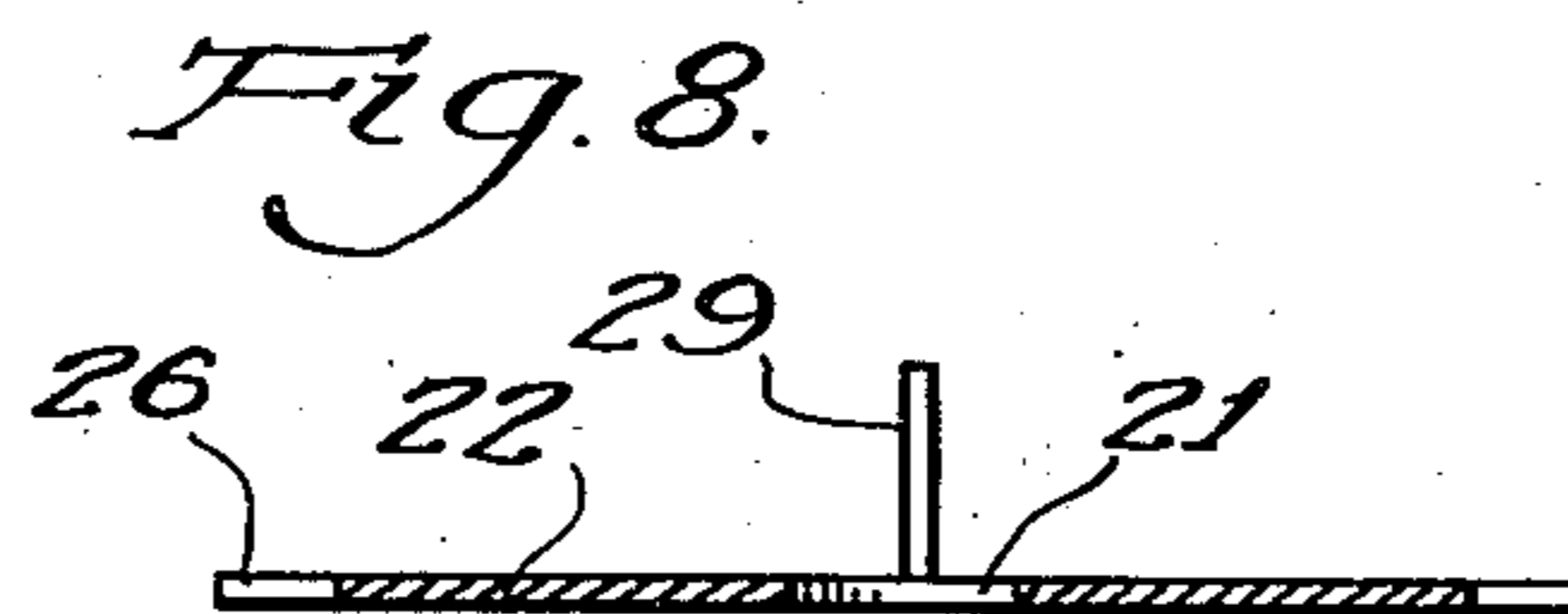
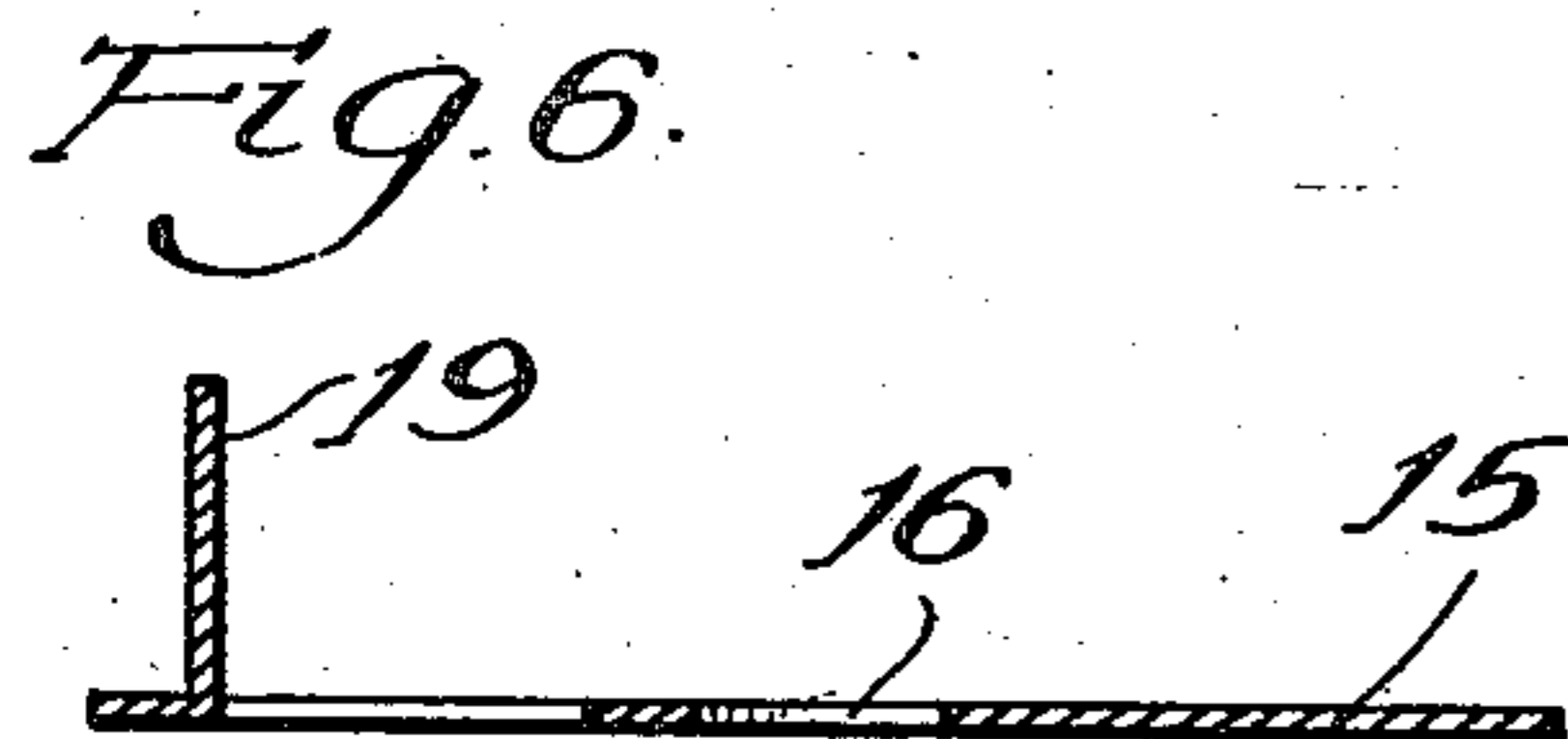
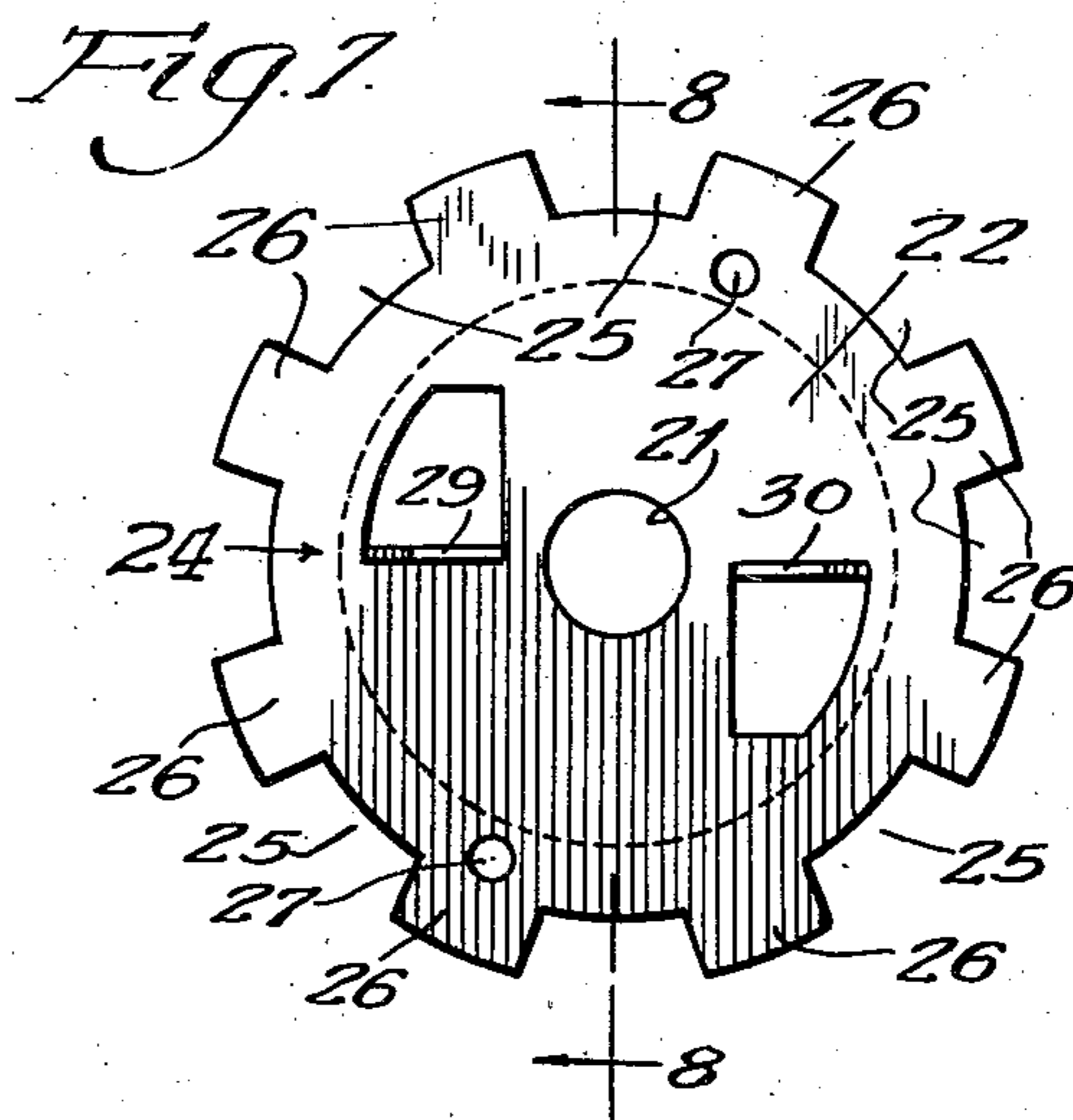
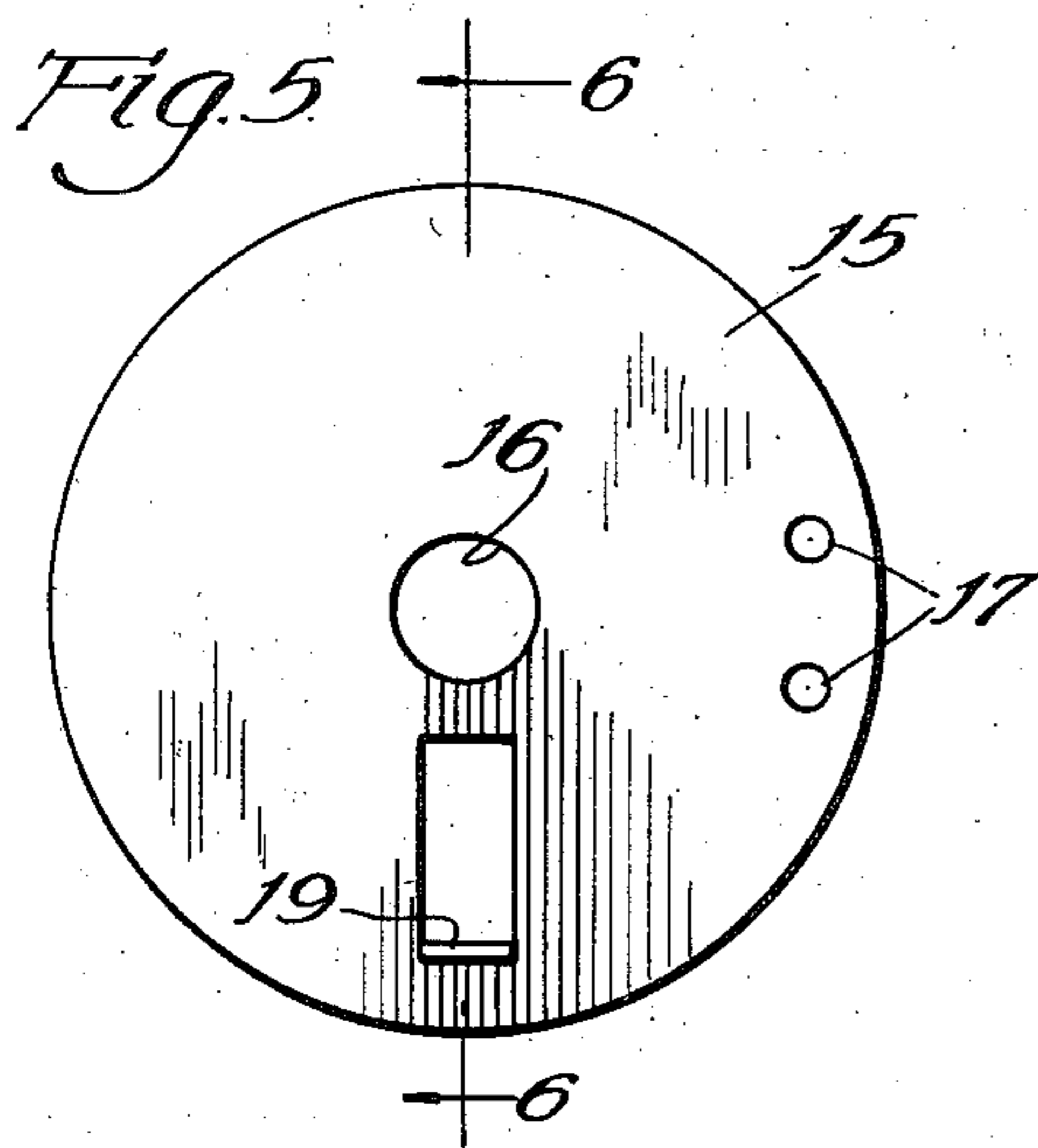
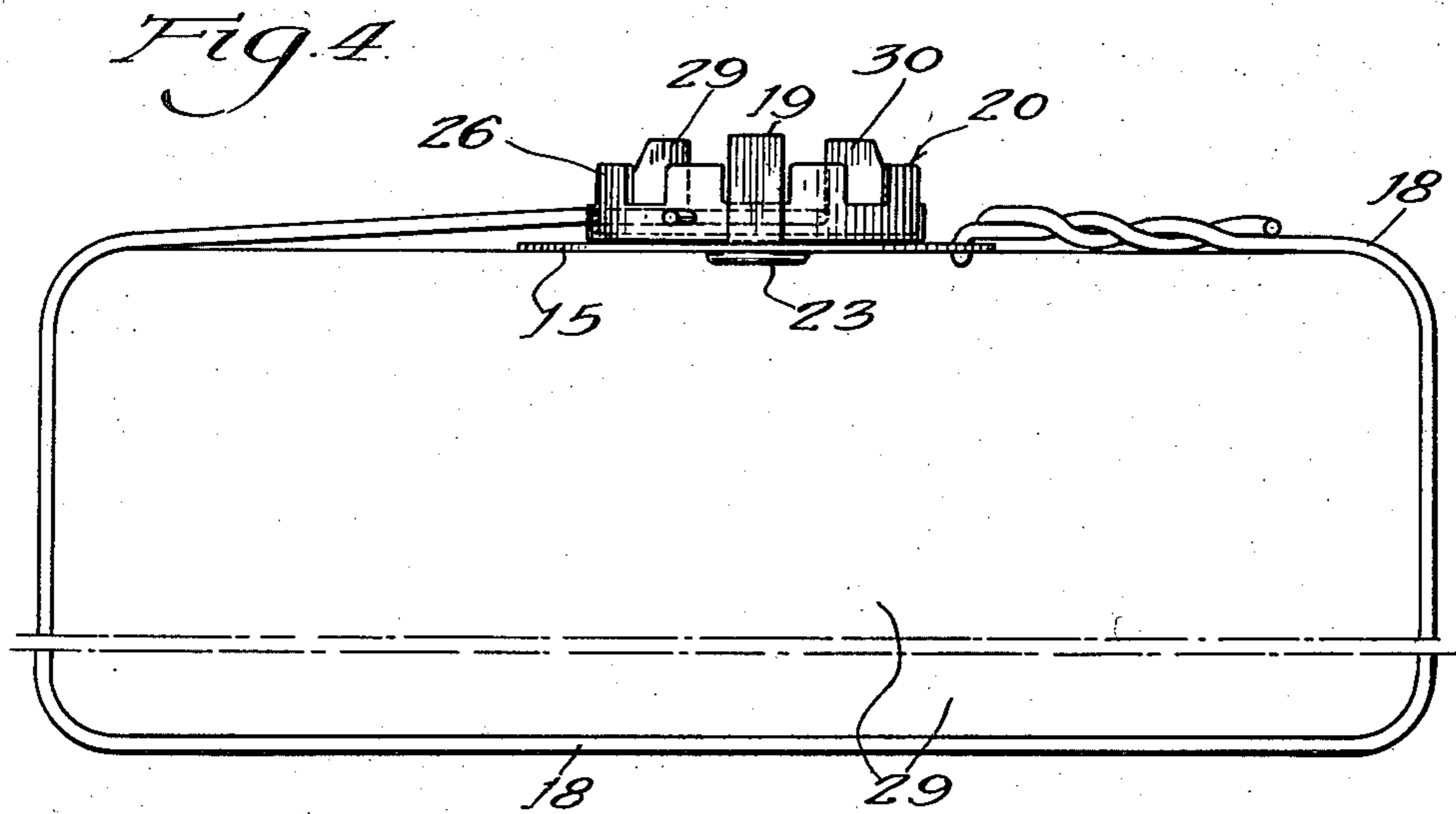
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TIGHTENING MEANS FOR BALING WIRES AND THE LIKE

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UNITED STATES PATENT OFFICE

2,427,489

TIGHTENING MEANS FOR BALING WIRES
AND THE LIKE

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2 Claims. (Cl. 24—19)

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This invention relates to tightening means for the wire or other type of binder member for a bundle, and it has for its object the provision of a new and improved form and arrangement of parts by which a flexible binder can be tightened about a bundle quickly and easily and secured firmly in tightened condition, being arranged so as to be readily releasable when required and so as to be capable of use a number of times for successive binding operations.

The preferred means by which I have accomplished my objects comprises a drum rotatably mounted upon a base plate, the plate being connected with one end of a flexible binder member and the drum being connected with the opposite end, means being provided for giving the drum the required rotary motion with respect to the base plate for winding the binder member thereon and securing the drum in any of a considerable number of adjusted positions so as to maintain the binder member taut. The base plate and the drum of my device are preferably formed of sheet metal and are arranged so as to enable each of them to be stamped complete from a single piece of metal so that the only assembly work necessary will be that of effecting the pivotal connection between the drum and the base plate.

It is another object of my invention to improve devices of this type in sundry details hereinafter pointed out. The preferred means by which I have accomplished my several objects are illustrated in the accompanying drawings, in which

Fig. 1 is a perspective view of my improved device;

Fig. 2 is a top plan view of the device of Fig. 1 but shown upon a reduced scale;

Fig. 3 is a central vertical sectional view taken substantially at the line 3—3 of Fig. 2;

Fig. 4 is a view showing the improved device in connection with a flexible binder member ready to be tightened about a bundle;

Fig. 5 is a top face view of the base plate of my improved device;

Fig. 6 is a sectional view taken substantially at the line 6—6 of Fig. 5;

Fig. 7 is a face view of the drum member of my improved device with the side wall portions and the lugs thereon flattened downwardly into the plane of the bottom wall of the drum; and

Fig. 8 is a sectional view taken substantially at the line 8—8 of Fig. 7.

Referring now to the several figures of the drawings, in which corresponding parts are indicated by the same reference characters, 15 indicates a base plate in the form of a disc stamped

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from sheet metal, with a central opening 16 therethrough for the rotatable connection of a drum to the plate and with openings 17 at one side for the connection of a flexible binder member 18 to the plate, as shown in Fig. 1. In the drawings, the device is shown on a comparatively large scale, the plate 15 in practice being preferably not more than about 1½ inch in diameter. As is best shown in Figs. 5 and 6, a lug 19 struck from the sheet metal of the plate extends upwardly at one side portion.

The drum 20 of my improved device is stamped and pressed into shape from sheet metal into the form of a cup, having a central opening 21 in the bottom wall portion 22, as is best shown in Fig. 7. An eyelet 23 passing through the openings 16 and 21 serves to connect the drum rotatably in position on the base plate 15. The arrangement is such that the side wall portion 24 of the drum stands in slightly spaced relation to the lug 19, such side wall portion being provided with notches 25 therein at intervals thereabout between upwardly extending lugs 26. As is best shown in Fig. 7, the side wall portion 24 of the drum is provided with openings 27 therethrough at opposite sides of the drum for the reception of an end portion of the flexible binder 18, as is clearly shown in Fig. 2. The arrangement is such that when one end of the binder member 18 is attached to the base plate 15, as shown in Fig. 1, and the opposite end portion is passed through the openings 27 with a fairly sharp angle in the binder member adjacent to the side wall 24 of the drum, as shown at 28 in Fig. 2, with the intermediate portion of the binder member wrapped about a bundle or other part as shown in Fig. 4, a portion of the binder member is adapted to be wound about the drum upon rotation of the drum in clockwise direction in Fig. 2. When the binder member 18 is in the form of a soft wire, as is preferred, the kink at 28 is sufficient for holding the binder from slippage with respect to the drum.

For expediting the rotary movement of the drum with respect to the base plate, I have provided upwardly extending lugs 29 and 30 struck from the bottom wall 22 of the drum, arranged so that a screw-driver 31 or other suitable tool can be used to advantage for rotating the drum by engagement with said lugs 29 and 30 as shown in Fig. 1. When the drum 30 has been rotated so as to tighten the binder member 18 effectively, the lug 19 is to be bent downwardly and inwardly into engagement with the adjacent notch 25 be-

tween lugs 26 of the drum so as to hold the drum from rotation in the reverse direction.

In the use of my improved means, with the binder member 18 preferably in the form of a fairly soft wire such as is ordinarily used for baling purposes, the member 18 is preferably shaped to an approximation of its tightened form before the end portion of the wire is kinked at 28. Under these conditions, a fairly limited rotary movement of the drum is sufficient for tightening the binder member so as to be highly effective for holding the parts clamped securely as desired.

I have found in practice that my improved device can be employed a considerable number of times successively, the lug 19 being readily bendable into and out of holding relationship with the lug 26 a number of times before the device is rendered useless by the failure of the lug 19.

As will be readily appreciated from a study of my improved device, it can be produced very easily and cheaply, the parts being formed complete from sheet metal by stamping operations which can be carried out very rapidly and easily. Since the assembly of the device comprises only a single operation, it will be seen that the expense of producing the devices is very low, the only special parts required for the whole manufacturing process being the dies by which the base plate and the drum are produced.

While I prefer to employ the form and arrangement of parts as shown in my drawings and as above described, the invention is not to be limited to such form and arrangement except so far as the claims may be so limited, it being understood that changes might well be made in the form and arrangement of the parts without departing from the spirit of my invention.

I claim:

1. In an adjustable tightening and holding device for flexible binders, the combination of a sheet metal disc arranged for ready connection of one end portion of a flexible binder thereto, a sheet metal cup-shaped member rotatably con-

nected with said disc having short upwardly-extending teeth in spaced relationship to each other about the upper edge of said member and arranged for ready connection of the opposite end portion of said flexible binder thereto, lugs extending upwardly on said cup-shaped member for engagement by a tool for rotating the member in the direction for winding the flexible binder thereabout, and a lug rising on said disc adjacent to said cup-shaped member in position to be bent into holding engagement with a selected one of said teeth for holding the cup-shaped member.

2. In an adjustable tightening and holding device for flexible binders, the combination of a sheet metal disc having means at one side portion for connection of one end of a flexible binder thereto, a sheet metal cup-shaped member rotatably connected with said disc and having a plurality of short upwardly-extending teeth separated by notches on the upper edge of said member, said cup-shaped member having oppositely-disposed openings through its side walls for adjustable connection of the opposite end portion of said flexible binder thereto, lugs struck upwardly from the bottom wall of said cup-shaped member for engagement by a tool for rotating the member in the direction for winding the flexible binder thereabout, and a lug struck upwardly from said disc adjacent to said cup-shaped member in position to be bent into holding engagement in a selected one of said notches for holding the cup-shaped member from rotation in the direction for loosening said binder.

ALBERT P. D. BELANGER.

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The following references are of record in the file of this patent:

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