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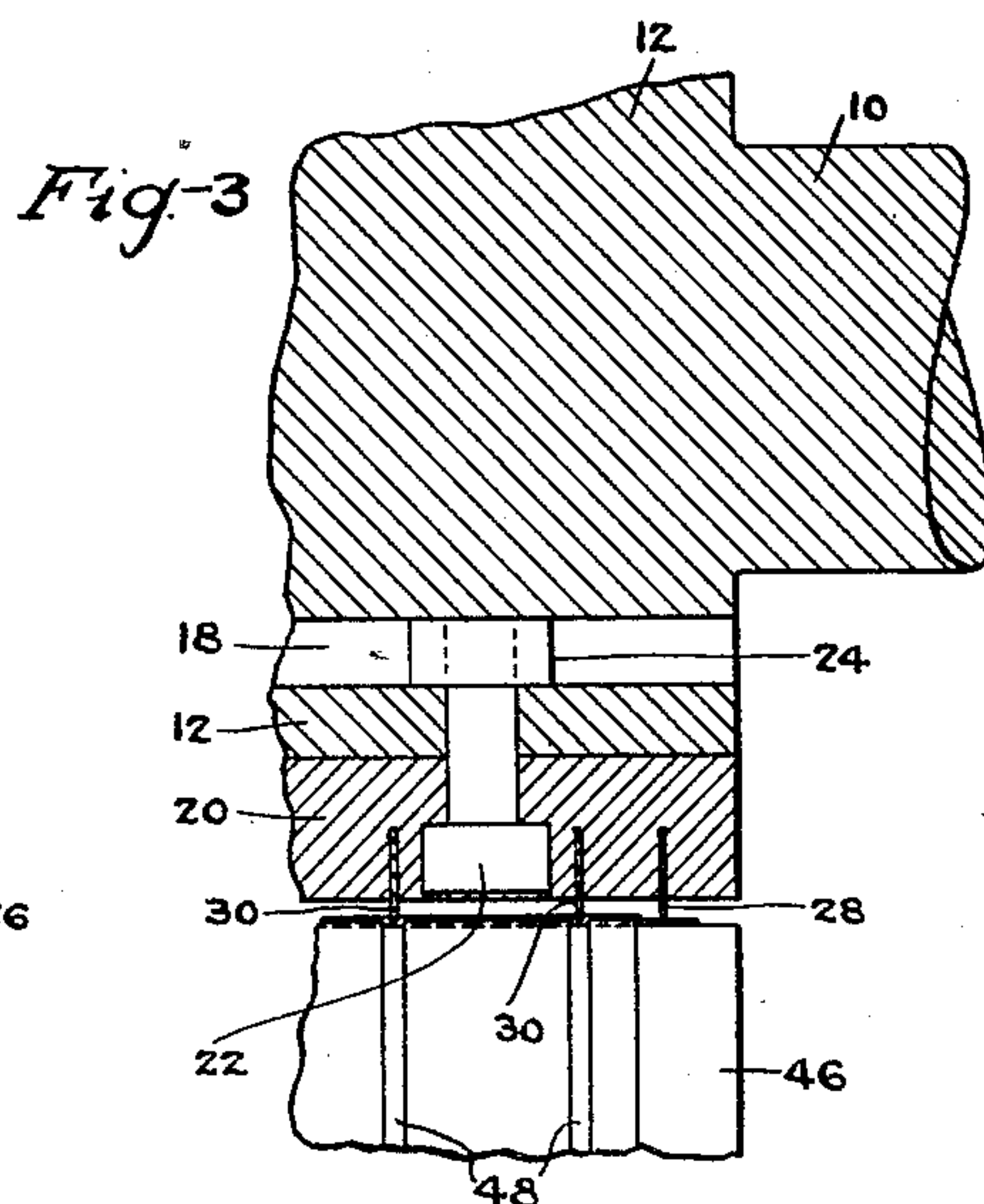
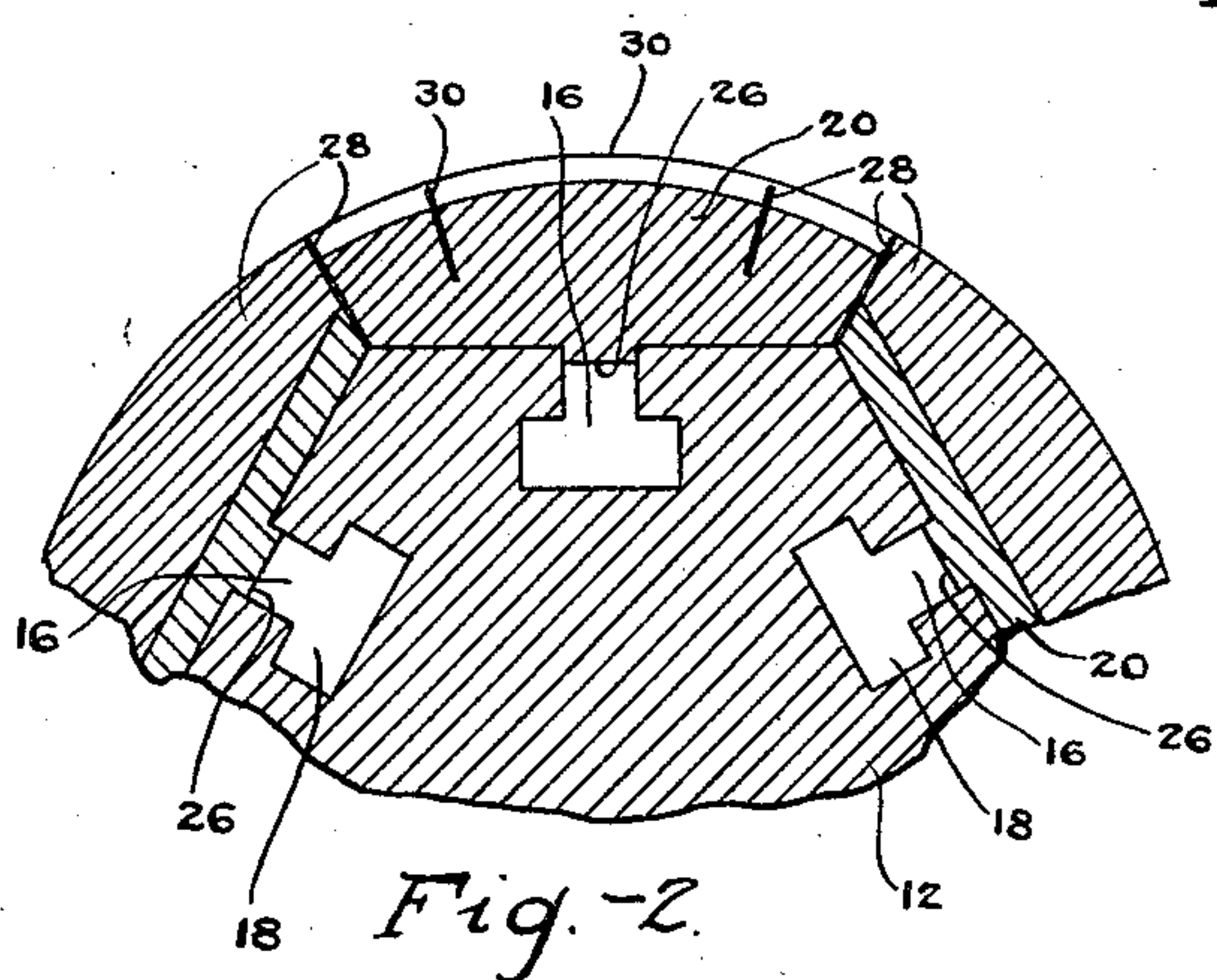
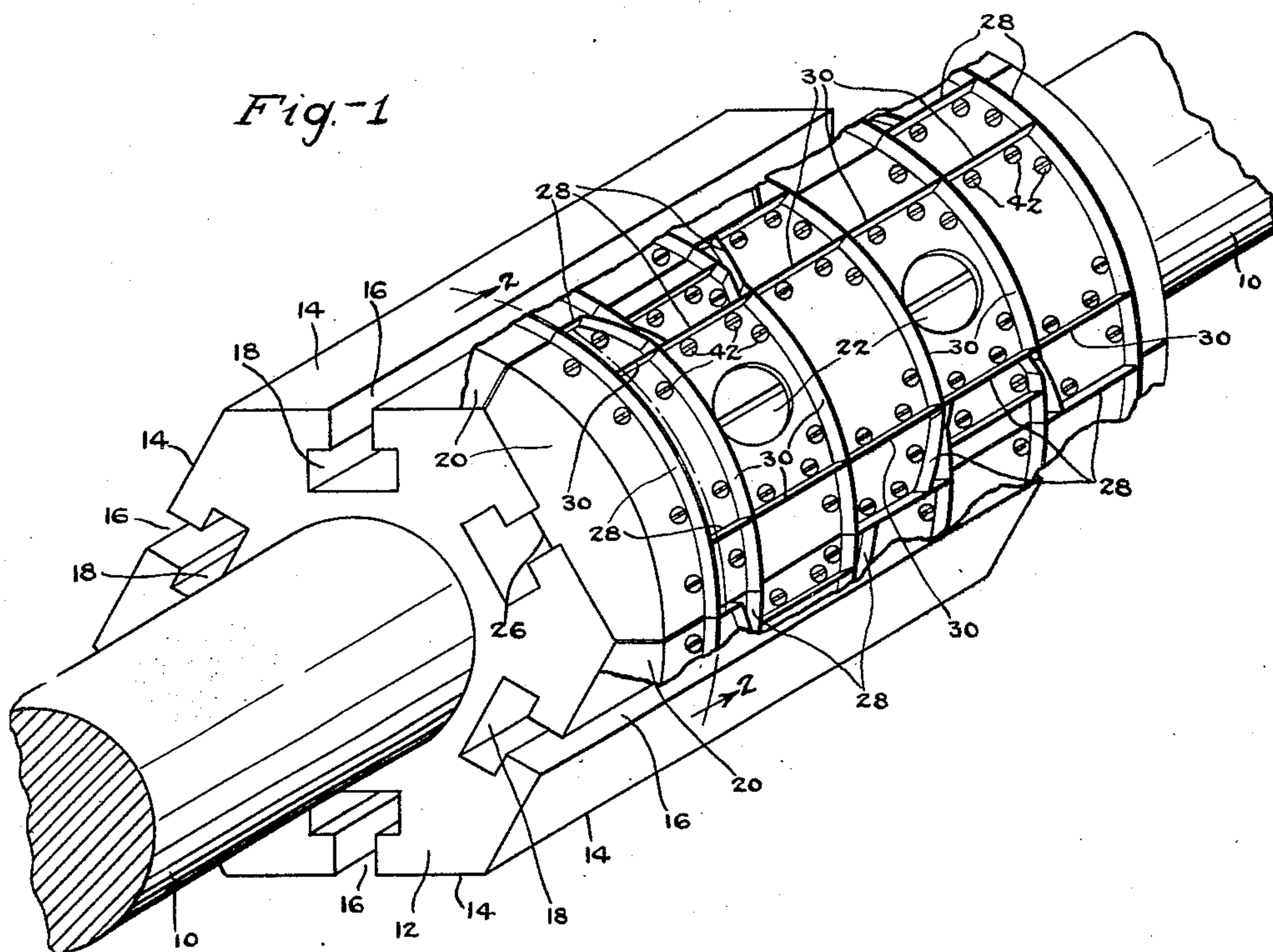
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1,777,285

CYLINDERS FOR FORMING CARTONS, ETC

Filed April 11, 1929

2 Sheets-Sheet 1



Inventor:  
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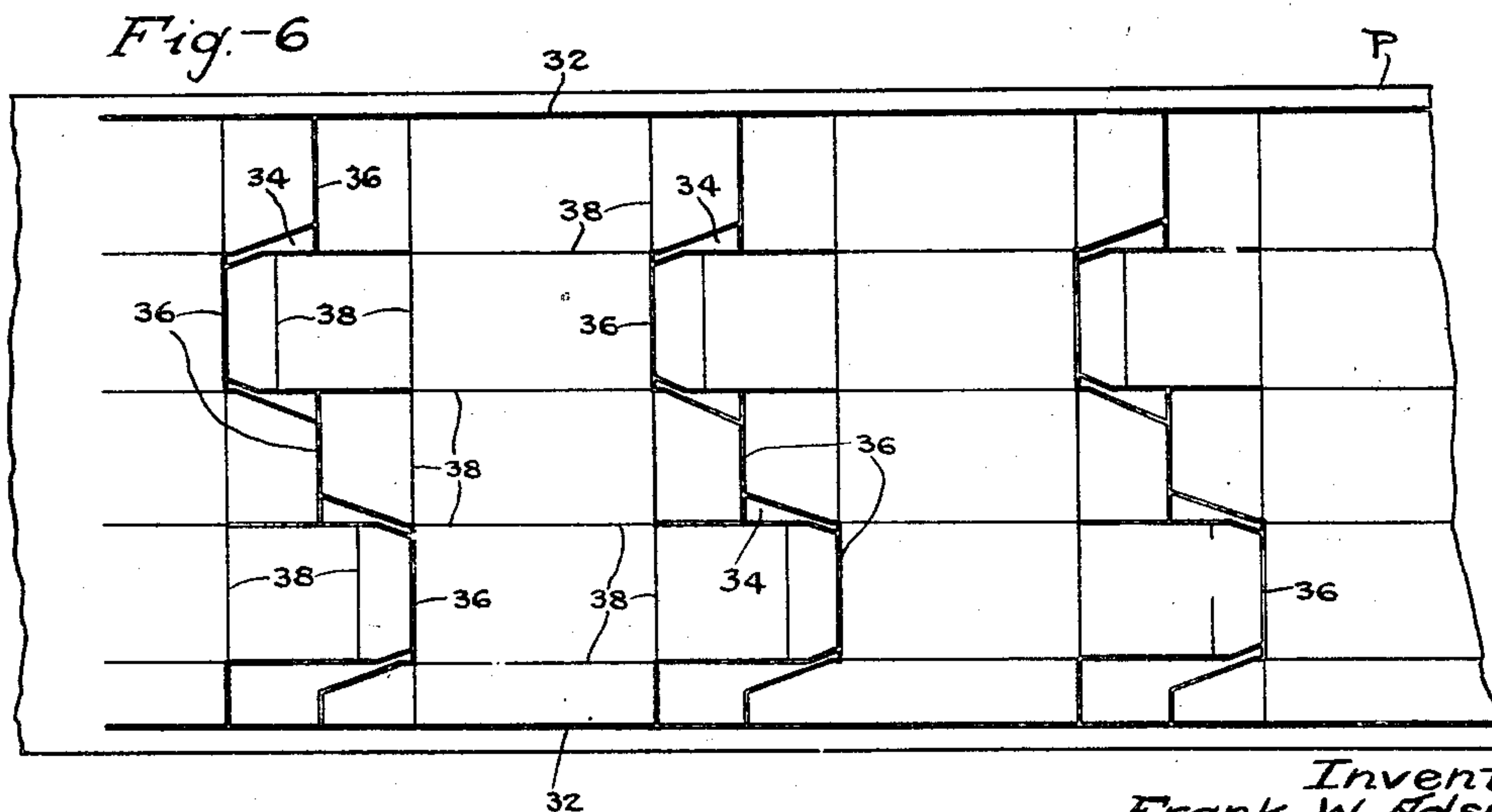
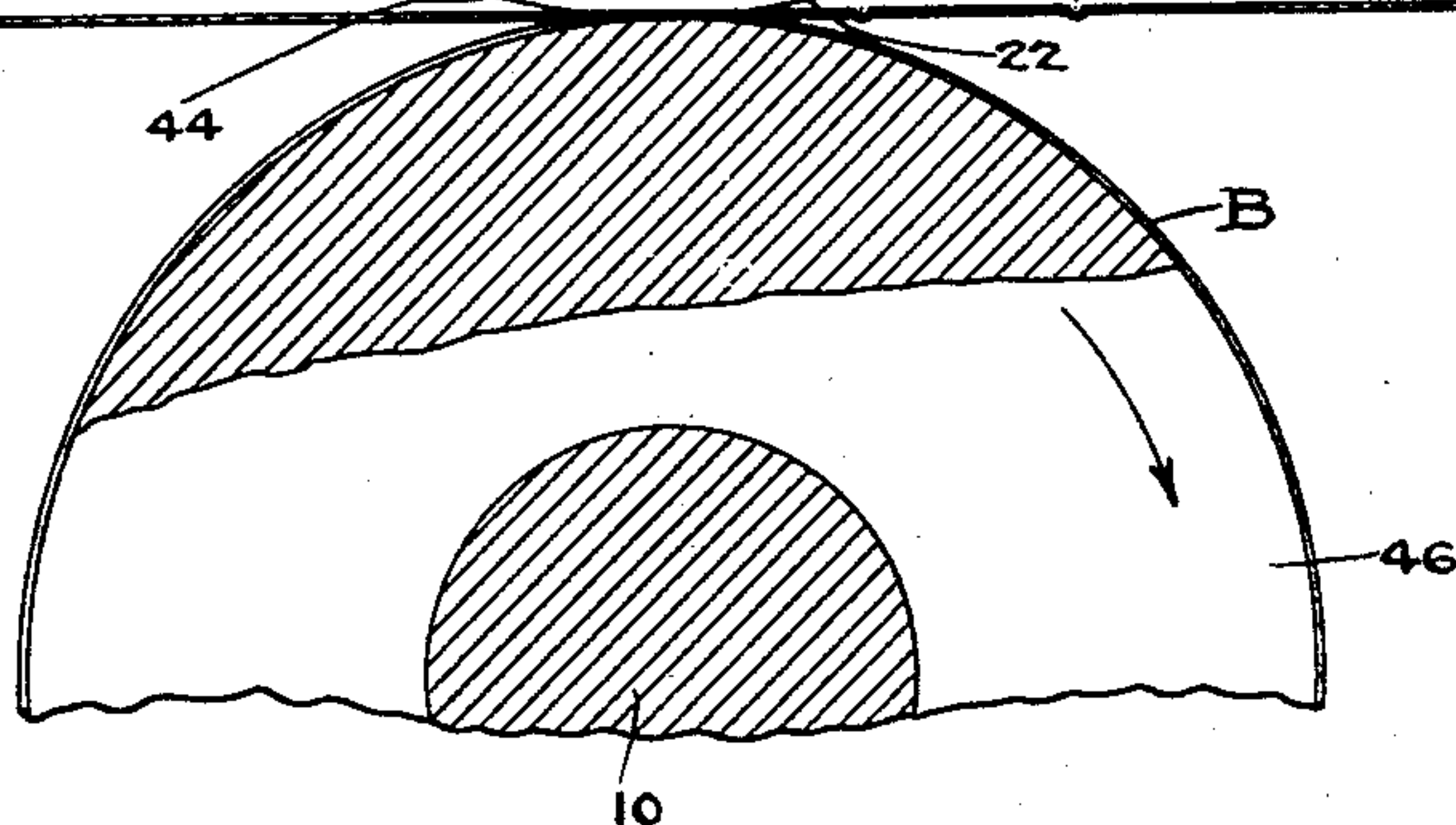
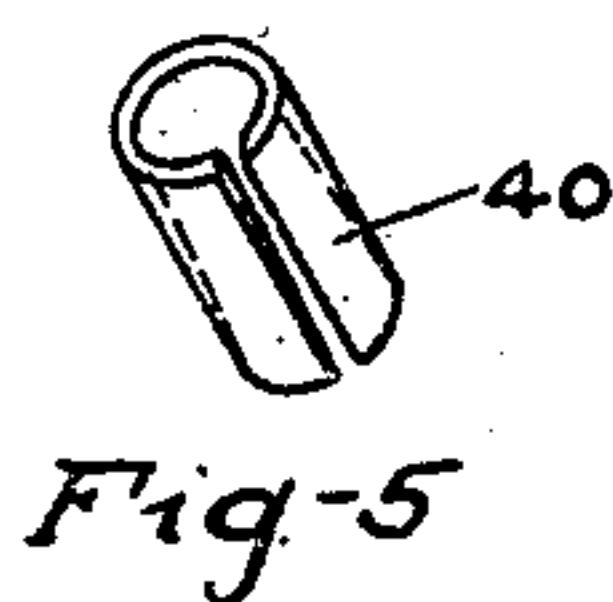
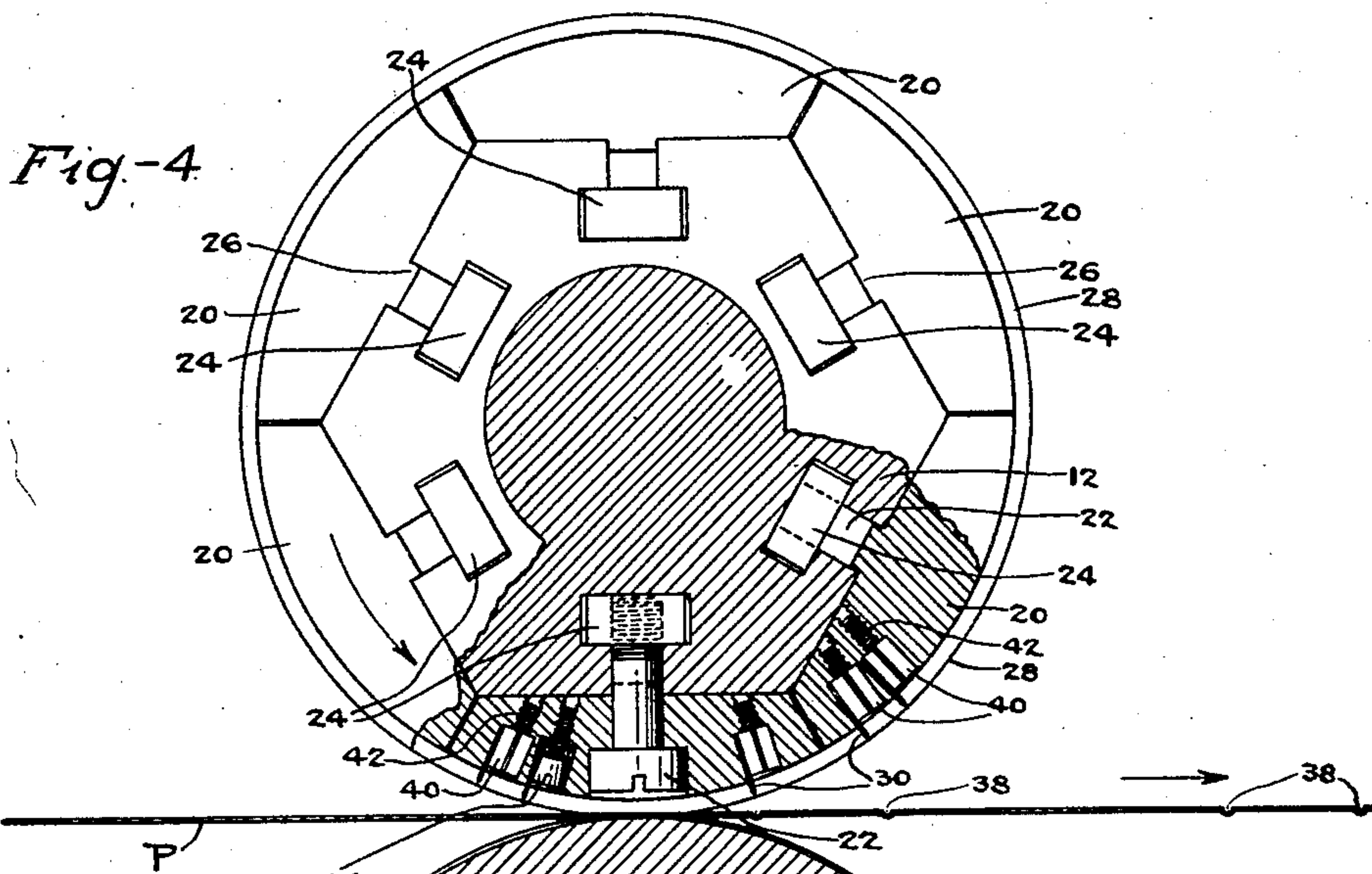
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CYLINDERS FOR FORMING CARTONS, ETC

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

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CYLINDER FOR FORMING CARTONS, ETC.

Application filed April 11, 1929. Serial No. 354,328.

My invention relates to cylinders for forming cartons, etc., and more particularly to cylinders which carry rules such as cutting rules and creasing rules for operating upon paper stock. Among the objects of the invention are to provide a cylinder having a core member around which are a number of blocks which are detachably and interchangeably secured and to provide the blocks with rules which are detachably and interchangeably secured and project out from the outer surfaces of the blocks.

The full objects and advantages of my invention will appear in connection with the detailed description thereof, and the novel features of my inventive idea will be particularly pointed out in the claims.

In the accompanying drawings which illustrate a practical embodiment of my invention, Fig. 1 is an isometric view of my improved cylinder. Fig. 2 is a fragmentary cross sectional view of the cylinder taken on the line 2-2 of Fig. 1. Fig. 3 is a fragmentary longitudinal section of the cylinder. Fig. 4 is a sectional elevational view showing the cylinder and a cooperating compressing cylinder. Fig. 5 is a detail view on an enlarged scale showing a ferrule which I employ. Fig. 6 is a plan view showing the shape of the carton blanks after the paper stock has passed the improved cylinder.

Referring to the construction shown in the drawings, the numeral 10 designates a shaft which carries the improved cylinder. Mounted on the shaft 10 and preferably formed integrally therewith, there is an enlarged portion or core member 12 formed with a plurality of peripheral flat faces 14, there being six of these faces in the construction shown so that the core member 12 is hexagonal. Longitudinal slots 16 are formed in the faces 14, these slots connecting with recesses 18 formed in the body portion of the member 12. A plurality of blocks 20 equal in number to the flat faces 14 are secured respectively to these faces. For the purpose of securing the blocks 20 detachably and interchangeably, they are provided with openings through which bolts 22 pass. The heads of the bolts 22 are countersunk into the outer

faces of the blocks 20 and they thread into square nuts 24 located in the recesses 18. The inner faces of the blocks 20 are flat except that they are provided with middle ribs 26 which extend part way into the grooves 16 whereby the blocks are centered in place without preventing the bolts 22 from being turned securely into the nuts 24. The blocks 20 have curved outer faces so that when a complete set of blocks have been secured in place, a cylindrical surface will be produced. The outer surfaces of the blocks 20 are provided with a plurality of slits for receiving the base portions of cutting rules 28 and creasing rules 30 so that these rules extend out radially. The two outer cutting rules for each block are arranged peripherally near the ends of the block so that they serve for trimming the margins of the paper stock P on the lines 32 as indicated in Fig. 6. The cutters for the edges of the flaps of the carton are irregular in shape so that small pieces 34 of the paper are cut out in order to leave the edges of the flaps inclined. The lines 36 indicate transverse lines of cut while the lines 38 indicate lines of crease. The shape of the carton blanks will be readily apparent by observing in Fig. 6 that the double lines indicate lines of cut while the single lines indicate lines of crease. The manner in which the rules are held in place will be understood from Figs. 4 and 5. Adjacent the rules when in place, there are recesses in the blocks 20 which receive split ferrules 40. At the bottom of these recesses, there are screw-threaded holes in the blocks adapted to receive the screwthreaded ends of screws 42. As will be observed from Fig. 4, the heads 44 of these screws are tapered so that when the screws are turned down, a wedging action is exerted interiorly of the split ferrules 40 which expands the latter firmly into engagement with the sides of the rules. In making up the device, the creasing rules may be first secured in place and ground down the proper distance when the cylinder is rotatably mounted. The cutting rules may then be secured in place and ground so that they will project slightly more than the creasing rules. Figs. 3 and 4 show a compressing cylinder



46 for cooperation with the cutting and creasing cylinder. The compression cylinder 46 is preferably provided with grooves 48 as shown in Fig. 3 adapted to register with the creasing rules only, the surface of the cylinder 46 being covered with a layer of blanket material B such as paper.

The operation and advantages of my invention will be readily understood in connection with the foregoing description. Upon loosening the two screws 22 shown in Fig. 1, the block 20 can be slid out from engagement with the core member and replaced by another block. The same thing can be done with any one of the blocks 20. Upon loosening the proper screws 42, any one of the rules can be removed and replaced by another rule.

**I claim:**

1. A cylinder for forming cartons, etc., comprising a core member, a plurality of blocks having outer curved surfaces, means for detachably and interchangeably securing said blocks around said core member, said blocks containing slits, rules having their inner edges placed in said slits, and expansion devices for securing said rules in said slits.

2. A cylinder for forming cartons, etc., comprising a core member, a plurality of blocks having outer curved surfaces, means for detachably and interchangeably securing said blocks around said core member, said blocks containing slits and adjacent recesses, rules having their inner edges placed in said slits, split ferrules in said recesses, and screws having tapered heads extending into said ferrules whereby the latter are expanded into engagement with the sides of said rules when the screws are turned down.

3. A cylinder for forming cartons, etc., comprising a core member having a plurality of flat faces around its periphery containing recesses, a plurality of blocks having outer curved surfaces and inner flat surfaces for resting upon the flat faces of the core member, nuts in said recesses, screws passing through said blocks with their heads countersunk therein, said screws turning into said nuts for detachably and interchangeably securing said blocks in place, and rules secured to said blocks.

4. A cylinder for forming cartons, etc., comprising a core member having a plurality of flat faces around its periphery containing recesses and slots leading into said recesses, a plurality of blocks having outer curved surfaces and inner flat faces for resting upon the flat surfaces of the core member, nuts in said recesses, screws passing through said blocks and slots with their heads countersunk in the blocks, said screws turning into said nuts for detachably and interchangeably securing said blocks in place, said blocks containing slits, and rules secured in said slits.

5. A cylinder for forming cartons, etc., comprising a core member having a plurality of flat faces around its periphery containing recesses and slots leading into said recesses, a plurality of blocks having outer curved surfaces and inner flat faces for resting upon the flat faces of the core member, ribs along median lines of said blocks fitting into said slots, nuts in said recesses, screws passing through said blocks and slots with their heads countersunk in the blocks, said screws turning into said nuts for detachably and interchangeably securing said blocks in place, said blocks containing slits, rules having their inner edges placed in said slits, and expansion devices for securing said rules in said slits.

In testimony whereof I hereunto affix my signature.

FRANK W. ADSIT.