

No. 734,696.

PATENTED JULY 28, 1903.

J. T. FULLER.
GINNING APPARATUS.

APPLICATION FILED APR. 18, 1902.

NO MODEL.

Fig. 1.

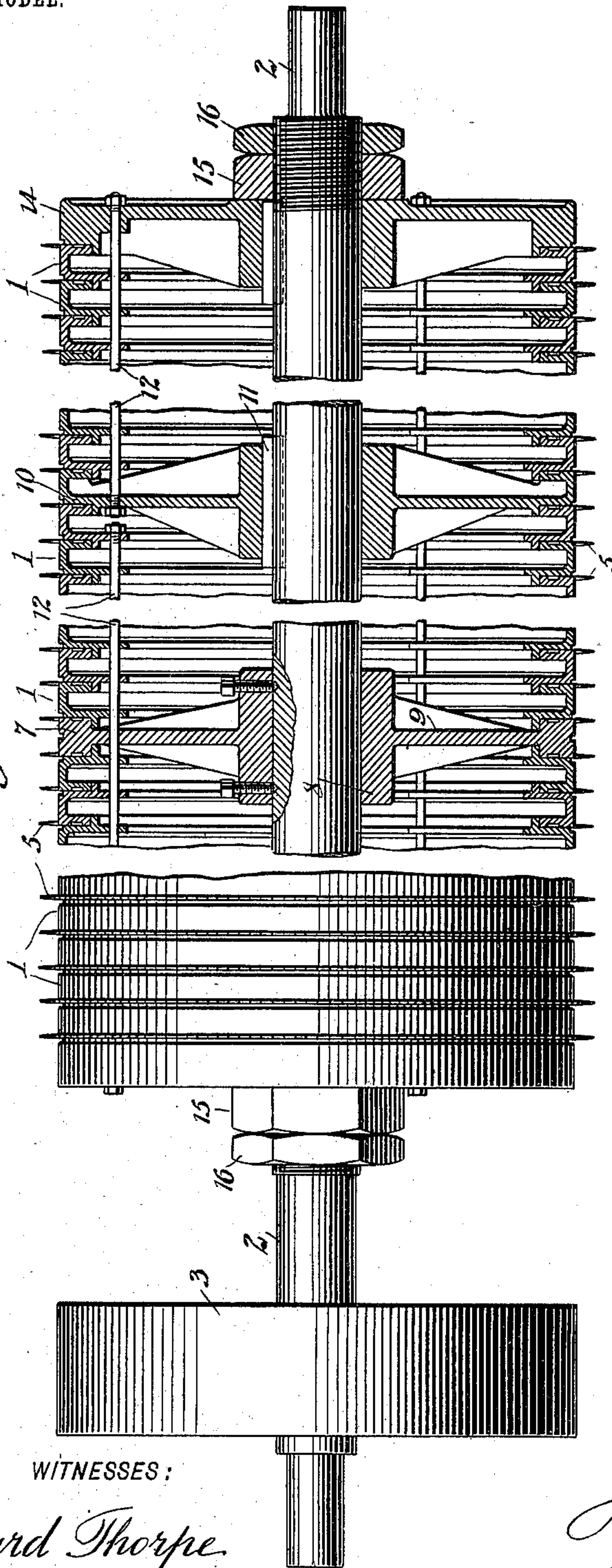


Fig. 3.

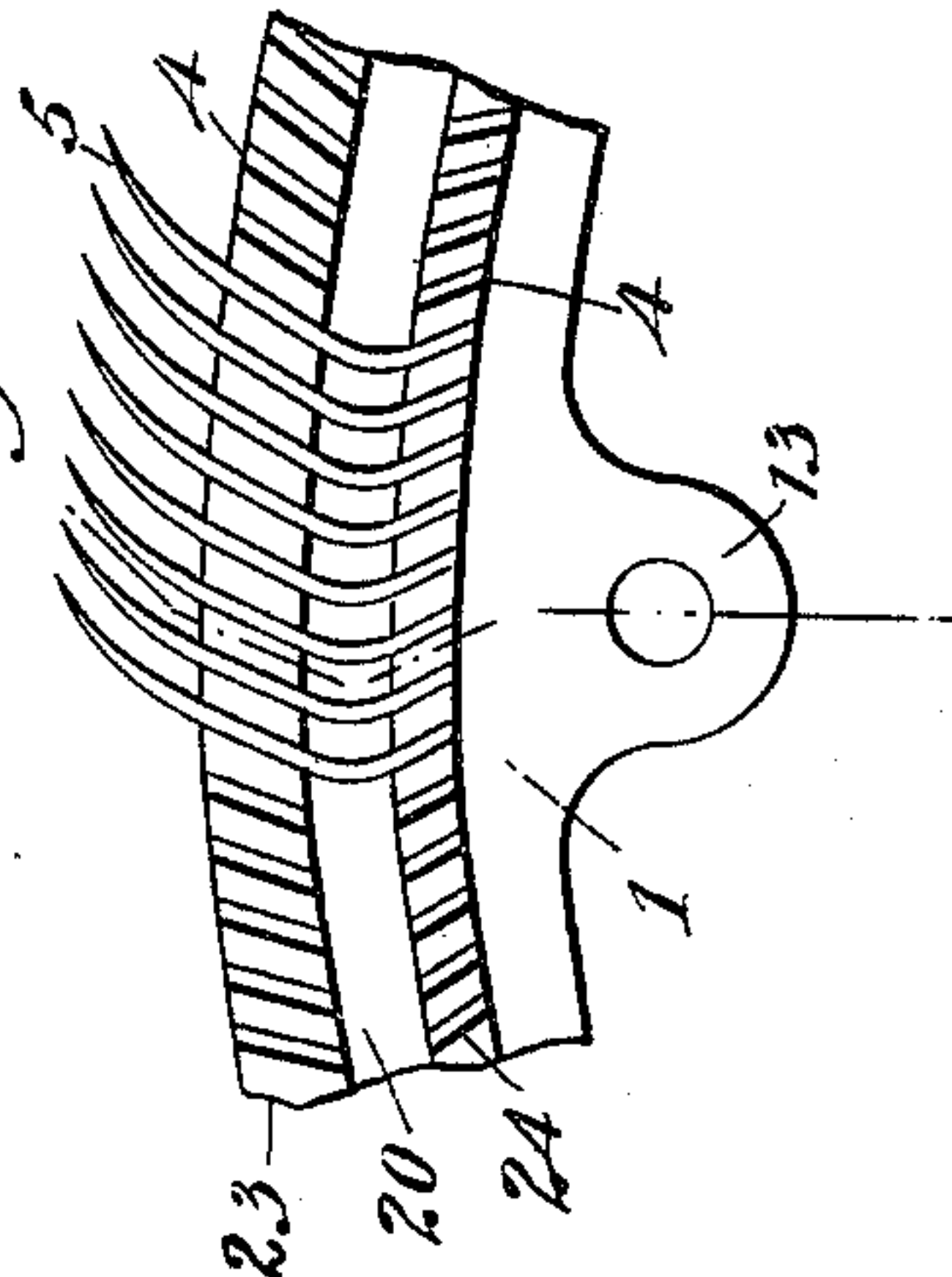
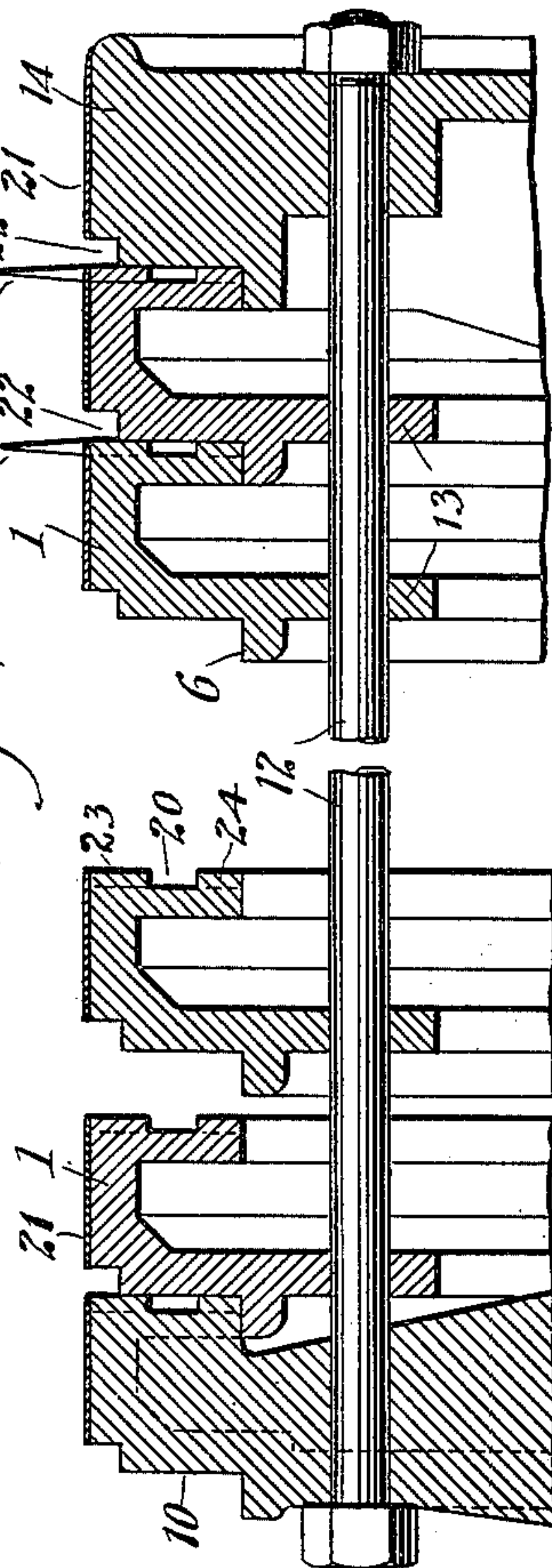


Fig. 2.



WITNESSES:

Edward Thorpe
Abel D. Smith Jr.

James T. Fuller ^{INVENTOR}
BY Samuel G. Metcalf
ATTORNEY

UNITED STATES PATENT OFFICE.

JAMES T. FULLER, OF CALVERT, TEXAS, ASSIGNOR TO FULLER COTTON GIN COMPANY, A CORPORATION OF DELAWARE.

GINNING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 734,696, dated July 28, 1903.

Application filed April 18, 1902. Serial No. 103,564. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. FULLER, a citizen of the United States, and a resident of Calvert, Robertson county, Texas, have invented certain new and useful Improvements in Ginning Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to apparatus for ginning fibrous materials—such, for instance, as cotton, to which it is particularly adapted; and the objects thereof are the provision of an improved ginning-point, of means for supporting and holding the points in position, and of a novel construction of the cylinder or drum by which the points are carried.

The invention consists of the improved devices and features of construction and arrangement herein described and claimed.

In the drawings, Figure 1 is an elevation, partly in section, showing a ginning-cylinder embodying my invention with parts broken away. Fig. 2 shows two partial sections of the cylinder on a larger scale, and Fig. 3 is a detail illustrating my improved ginning-point and the preferred manner of securing it in position.

This invention, while not restricted thereto, is particularly adapted for use in my improved ginning apparatus, for which I have filed an application for United States Letters Patent, Serial No. 73,117, filed August 24, 1901.

The preferred form of apparatus embodying my invention which I have selected for illustration and description comprises a plurality of ring-like sections 1, which are duplicates of each other and which are carried by, but are not directly secured to, the shaft 2, upon which is mounted in the usual manner the driving-pulley 3. Each ring-section 1 is on one side provided with slots or grooves 4, Fig. 3, which receive the pin-like ginning-points 5, which extend in circumferential alignment around the ginning-cylinder. Each ring-section is also provided with a step or projection 6, upon which the adjacent section rests and by which it is supported in concentric relation with the shaft 2. To the

shaft intermediate its ends is secured a section 7, which also preferably carries ginning-points at its periphery and is rigidly secured to the shaft by set-screws, which pass through the hub 8, the latter being connected with the peripheral portion of the section by the web 9. The section 7 is preferably placed at the center of the cylinder, and I also preferably employ one or more shaft-engaging sections 10 between the section 7 and each end of the cylinder; but these sections 10 are secured to the shaft only by a spline 11, which enters a groove formed in the hub of each section, so as to permit the section to move longitudinally on the shaft while securing it rotatively thereto. The ring-sections 1 are held in rotative relation to the shaft by means of bolts 12, which pass through lugs 13 on the rings 1 and through the webs of the sections which are fixed to the shaft. At the ends of the cylinder the bolts 12 pass through the heads 14, which are splined to the shaft and are clamped against the end ring-sections by the clamping-nut 15, which is held in position by the lock-nut 16.

In the particular form of apparatus shown in the drawings, Fig. 3, the ginning-points 5 are in the form of pins, curved at their upper or working end toward the direction in which the shaft 2 rotates, while the lower end, which I have for the sake of brevity called the "holding" end, which lies below the surface of the ginning-cylinder, is bent forward in the same direction, so as to form a bend or elbow which lies in the groove 20 between the two rows of point-receiving slots or grooves 4. It will thus be noted that when the points are in position and the face of the adjacent ring covers the point-receiving grooves 4 the points are held securely in place by the bend in the points, which prevents them from turning and from being drawn lengthwise from the slots, and one of the important features of my invention is the shaping of these ginning-points, as by bending them into the form shown or into some equivalent form, so that they will thus be held securely in operative position without necessitating, so far as operative conditions are concerned, the employment of any permanent rigid fastening means;

but for convenience in assembling or dis-assembling the parts of the cylinder I prefer to provide some means for preventing the points from falling out of the open-sided grooves when the ring is not in position, but which will not interfere with the ready removal of the points when the sections are separated. For this purpose the space between the points and the sides of the grooves may be filled with some substance like rubber-cement as soon as the points are placed in position, or any other suitable temporary and easily-disengaged retaining means may be employed.

To secure the desired frictional effect between the surface of the cylinder and the material being operated on, I prefer to cover the operative surface of the rings with some suitable substance 21, such as leather or rubber cement, and I also in the form of the apparatus illustrated reduce the diameter of each ring, as at 22, so that when the rings are assembled a series of circumferential grooves will be formed in the face of the cylinder, one adjacent to each row of points.

As will be observed, each point-carrying ring or sections supports an adjacent point-carrying ring, thus securing compactness of construction, and each ring also holds the points of an adjacent ring in the grooves of that ring. A uniform elevation of the ginning-points is secured by permitting the lower ends of the points or pins to rest on the step 6, which supports the next ring.

In Fig. 3 I have illustrated the arrangement of point-receiving grooves which I prefer to employ. In this construction the side of the ring on which the points are carried is provided with a circumferential channel 20, which in effect forms two projecting flanges 23 and 24, and in these flanges are formed the point-receiving grooves 4, the grooves in one flange extending obliquely to the grooves in the other flange. Besides the saving in weight thus effected this construction enables me to form the points without an abrupt bend and still to use straight grooves, which can be economically and accurately formed at comparatively slight expense. For these reasons, among others, I consider this arrangement preferable; but it is to be understood that my invention is not restricted to the specific formation of the ginning-points or to the particular direction and form of grooves illustrated, since it is only necessary that the holding or lower portion of the points should be provided with a bend or curve great enough to prevent rotation and that the curve or the approximately straight sections of that portion of the points which are united by the curve should extend in different directions or be irregular in conformation to prevent withdrawal endwise, and these requirements secured the grooves may be of any shape or may extend in any suitable direction which will receive and support the correspondingly-

shaped points in the manner described. Thus some portion of each groove if it be a continuous one extending from the inside to the periphery of the ring or the grooves of either the inside or outside row if the grooves be divided into two concentric rows, as shown in Fig. 3, should extend in a direction which would be intersected by a radial line drawn through the groove from the axis of the ring.

By the term "line of varying direction," which I have used herein, I intend to cover all these and other equivalent variations in the arrangement and disposition of the point-holding grooves.

In the apparatus illustrated in the drawings the shaft-engaging section 7 is shown as carrying ginning-points on both of its sides, and the ring-sections are shown as facing each other. This is for the purpose of securing a symmetrical arrangement of the parts and when employed in connection with my improved gin shown and described in my said pending application causes the longitudinal thrust on the two ends of the cylinder to be perfectly balanced.

The beneficial advantages of my invention are numerous and will be apparent to any one skilled in the use or manufacture of this class of apparatus. Among other advantages not heretofore mentioned are the ease with which broken or worn points may be replaced, the great saving in weight, the fact that all parts are duplicates and interchangeable and can be cheaply made with minimum amount of machine-work, the slight cost of separate parts, and the ease with which repairs and replacements can be perfectly and expeditiously made by unskilled labor.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A pin-like ginning-point for gins provided with a curved working or point section, and two approximately straight holding-sections which form an obtuse angle, substantially as set forth.

2. A cylinder-section for gins provided with alined point-receiving grooves which extend inwardly toward the axis of the section on a line of varying direction.

3. A cylinder-section for gins provided with alined point-receiving grooves each of which comprises two sections in angular relation to each other.

4. A cylinder-section for gins provided with alined point-receiving grooves which extend inwardly toward the axis of the section on a line of varying direction and which are adapted to be closed by the adjacent cylinder-section.

5. A cylinder-section for gins provided with open, parallel-sided point-receiving grooves extending inwardly toward the axis of the section on a line of varying direction and being adapted to be closed by the adjacent section.

6. A cylinder-section for gins one side of which is provided with open, parallel-sided point-receiving grooves extending inwardly toward the axis of the section on a line of varying direction, and the other side of which is adapted to close the grooves on the adjacent section.

7. In a gin-cylinder the combination of a plurality of sections each provided with a lined point-receiving grooves which extend inwardly toward the axis of the section on a line of varying direction, a bent or angled ginning-point in each groove, and a groove-closing surface on each section by which the pins are held in place and prevented from turning out of operative position.

8. A cylinder-section for gins, provided with a lined point-receiving grooves or slots which extend inwardly toward the axis of the section on a line which will intersect a radial line drawn from said axis through the slot or groove.

9. A cylinder-section for gins, consisting of a ring provided with a lined point-receiving grooves or slots which extend inwardly toward the axis of the section on a line which will intersect a radial line drawn from said axis through the slot or groove.

10. A cylinder-section for gins, consisting of a ring provided with concentric flanges, each having point-receiving grooves extending obliquely to the grooves in the other flange.

11. A cylinder-section for gins provided with point-receiving grooves and a bearing for the adjacent point-carrying section.

12. A cylinder-section for gins, consisting of a ring having on one side a series of a lined point-receiving grooves and carrying on the opposite side a step or bearing which is adapted to support an adjacent ring.

13. A cylinder-section for gins, having its diameter reduced at one edge to form a circumferential groove in the working surface of the cylinder.

14. A cylinder-section for gins, having parallel sides, one of which is provided with point-receiving grooves and the other of which is adapted to close the grooves on the adjacent section, said section being provided with a bearing to support an adjacent section.

15. In a cylinder for gins, the combination of a plurality of independent point-carrying rings, bearing one against another, a supporting-shaft with which the rings are free from direct engagement, and means for securing the rings to the shaft.

16. In a cylinder for gins the combination of a plurality of independent point-carrying rings, bearing one against another, a shaft with which the rings are free from engagement, a member mounted upon said shaft

and secured directly thereto and means for securing the rings to said member, substantially as shown and described.

17. In a gin-cylinder, the combination of a plurality of independent rings each of which is provided with a series of separated point-receiving grooves which in each ring are closed by the side of the adjacent ring, a ginning-point in each of said grooves, a shaft upon which the rings are carried and means for securing the rings to the shaft.

18. In a gin-cylinder, the combination of a plurality of independent rings, one side of which is provided with a series of separated point-receiving grooves and the other side of which bears against the grooved side of the adjacent ring and closes the grooves therein, a shaft, a ginning-point removably secured in each of said grooves, and means for securing said rings together and to the shaft.

19. In a gin-cylinder, the combination of a plurality of independent point-carrying rings bearing against each other, supports upon each ring for an adjacent ring, a shaft, and means for securing said rings together and to the shaft.

20. In a gin-cylinder, the combination of a shaft, a plurality of point-carrying rings bearing one against another, and free from direct engagement with the shaft, a point-carrying member intermediate the ends of the cylinder secured directly to the shaft and means for securing the rings to said member, substantially as shown and described.

21. In a gin-cylinder, the combination of a shaft, point-carrying rings bearing one against another and free from direct engagement with the shaft, a point-carrying member intermediate the ends of the cylinder secured directly to the shaft, other point-carrying members mounted directly upon the shaft, heads outside of said rings and members, means for securing said rings and members to the heads, and devices on the shaft for clamping the heads in position, substantially as shown and described.

22. In a gin-cylinder, the combination of a shaft, a point-carrying member intermediate the ends of the cylinder secured directly to the shaft, point-carrying rings which are supported one by another intermediate said member and the ends of the cylinder, heads mounted on the shaft at the ends of the cylinder, devices on the shaft for clamping the heads, and bolts which engage said heads and rings to hold the rings against turning, substantially as shown and described.

JAMES T. FULLER.

Witnesses:

S. G. METCALF,
LAUHLIN MCLEAN.