C. S. JENKINS.

CHART SUSPENSION DEVICE.

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929,672.

Patented Aug. 3, 1909.

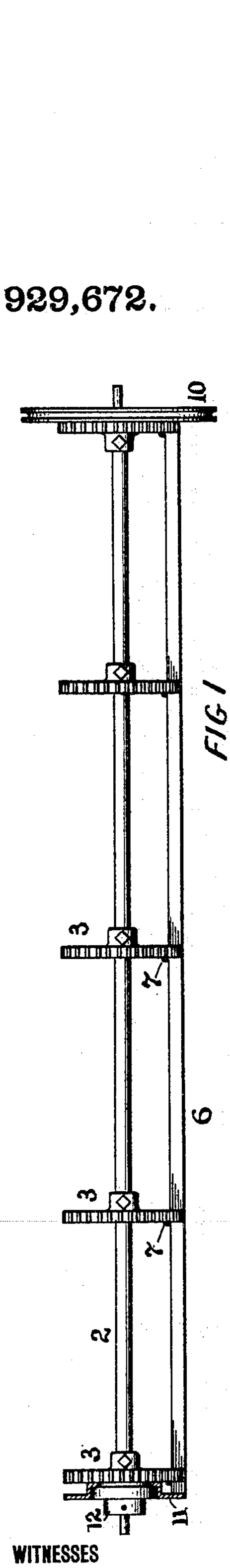

FIG. 1

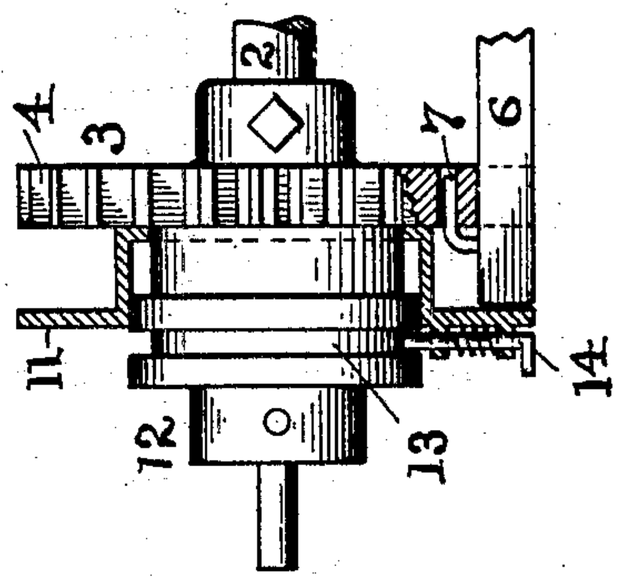

FIG. 5

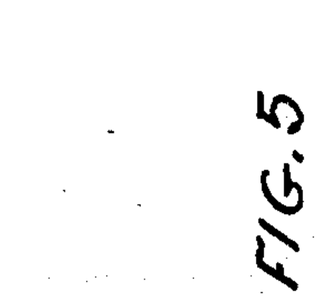

FIG. 4

FIG. 3

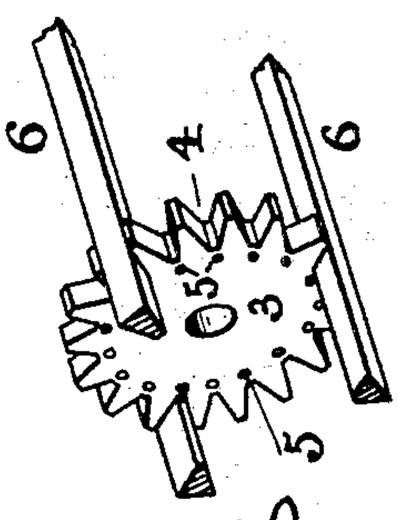

FIG. 2

WITNESSES

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CHART-SUSPENSION DEVICE.

No. 929,672. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed April 2, 1909. Serial No. 487,482.

To all whom it may concern:

Be it known that I, CHARLES S. JENKINS, a citizen of the United States, and a resident of the city of Lansdale, county of Montgomery and State of Pennsylvania, have invented an Improvement in Chart-Suspension Devices, of which the following is a specification.

My invention has reference to chart suspension devices and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

In machines for exhibiting charts whether of maps, wall paper, or for other suitable purposes, there is usually employed a cylinder having about its periphery a series of supports to which the ends of the charts are attached, and by the rotation of which cylinder any particular chart may be caused to be brought into view.

The object of my invention is to provide means for detachably securing the chart in position upon the cylinder or rotating frame whereby the substitution of a chart may be readily made without dismantling the machine or its case.

Furthermore, my object is to provide detachable means for the chart which will not require any more space longitudinally of the cylinder or rotating frame than its usual length so that the chart exhibitor or machine may be employed in places where there would be no room at the end for withdrawing rods or supports from which the charts are suspended.

My invention consists of a rotating frame having a plurality of disks shaped to receive a plurality of bars from which the charts are suspended, combined with such bars and their charts, and engaging parts between the bars and disks, whereby a very slight end motion of the bars after being placed in position upon the disks will cause them to be engaged.

My invention further consists in the above construction combined with locking means, whereby the bars may be held against longitudinal movement and hence against disengagement excepting as may be required.

My invention also comprehends details of construction which, together with the features specified, will be better understood by reference to the drawings, in which:

Figure 1 is a plan view of a rotating frame with one of the chart supporting bars in position; Fig. 2 is a perspective view showing three of the chart supporting bars in engagement with one of the supporting disks. Fig. 3 is a detached perspective view of a portion of one of the supporting bars and charts; Fig. 4 is a perspective view of the locking disk for holding the bars against end movement; and Fig. 5 is a sectional plan view showing a modification of the means for locking the bars against end movement.

2 is a shaft which carries the series of notched disks 3 and is provided with a grooved pulley 10 at one end for rotating it. This shaft is usually supported within a case which shields the charts from above against depositions of dust and dirt, but such case not being shown. The series of notched disks 3 are shaped substantially as indicated in Fig. 2, having V-shaped notches 4 and small holes or apertures 5 immediately in line with the bottoms of said notches. These various notched disks resemble gear wheels and they are so secured upon the shaft 2 that the notches 4 of the whole series are in alinement so as to receive longitudinal chart supporting bars 6. These bars 6 are preferably V-shaped in cross section so as to be received in the V-shaped notches 4, and the chart or material to be exhibited 8 is wrapped about the V-shaped bars, as indicated in Fig. 3. These bars 6 are also provided with a series of angular retaining pins 7 and the charts may be provided with slots 9 to permit the pins 7 to extend in exposed position. These pins 7 also act to hold the chart from being drawn off the bars 6. The bars with the charts attached are then inserted in the notches 4 of the disks 3 and moved slightly to the right (Fig. 1) so as to cause the angular pins 7 to engage the holes 5 in the disks, as more fully shown in Fig. 5. In this position the bars 6 with their charts attached are held firmly to the rotating shaft and its disks. To hold the bars 6 against accidental longitudinal shifting and resulting disengagement of the pins 7 with the holes in the disks, I provide a locking plate 11 which is rotatably supported upon a hub 12 secured to the shaft 2. This locking plate is held between the hub and the adjacent disk 3 so that it cannot move longitudinally of the shaft but may be adjusted

about the same if desired. This locking disk 11 is provided with a single notch 13 (Fig. 4) which has a shape such that any one of the bars 6 could be moved end-wise through it. It will now be seen that if it is desired to disengage one of the bars 6 with its attached plate, it is only necessary to bring the end of the bar in alinement with the notch 13 of the locking disk and then move it slightly to the left (Fig. 1). This will permit the bar to move sufficiently to disengage the pins 7 from the holes in the disk 3, and in which case the chart and the bar may be removed, the chart changed, and the bar with the new chart reinserted.

In place of employing the notched disk 11 as the locking means, I may employ the construction shown in Fig. 5. In this construction the locking plate 11, instead of being held against longitudinal movement between the hub 12 and the disk 3, is free to have an end movement when not otherwise prevented, and said locking plate is provided with a spring catch 14 adapted to engage an annular or other groove 13 in the hub 12. When the plate is in the position shown in Fig. 5 the bars cannot be moved to the left to disengage the pin 7. By withdrawing the spring catch 14 the locking plate may be moved to the left until its inner flange abuts against the flange of the hub 12 and this will give sufficient space for an end-wise movement of the bar 6 to permit the disengagement of the pins 7 with the holes 5 in the disks 3.

The essential feature of my invention lies in the fact that the chart supporting bars are carried in a rotary direction by a suitable rotary frame and that they are held to the rotary frame by engaging parts which engage the frame and which cannot be disengaged without a relative or small end motion between the bars and the frame. In addition to this feature, locking devices of some character are desirable to prevent the relative end movement which is required to disengage the bars, but which shall have capacity for permitting such relative end movement when desired.

I have shown my improvement in the form which I have found in practice to be excellently adapted for the purposes of the invention, but it is to be understood that I do not limit myself to the details of construction as these may be modified within the scope of the appended claims without departing from the spirit of the invention.

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

1. In a chart supporting means, the combination of a shaft having a plurality of notched disks, with a plurality of chart supporting bars arranged to be received in the notches of the disks and provided with means of engagement with the disks when said bar is given a slight end movement.

2. In a chart supporting means, the combination of a shaft having a plurality of notched disks, with a plurality of chart supporting bars arranged to be received in the notches of the disks and provided with means of engagement with the disks when said bar is given a slight end movement, said engaging means consisting of angular pins secured to the bars and received in the holes in the disks.

3. In a chart supporting means, the combination of a shaft having a plurality of notched disks, with a plurality of chart supporting bars arranged to be received in the notches of the disks and provided with means of engagement with the disks when said bar is given a slight end movement, and means carried by the shaft for locking the bars against relative end movement to prevent the disengagement thereof with the disks.

4. In a chart supporting means, the combination of a shaft having a plurality of notched disks, with a plurality of chart supporting bars arranged to be received in the notches of the disks and provided with means of engagement with the disks when said bar is given a slight end movement, and means carried by the shaft for locking the bars against relative end movement to prevent the disengagement thereof with the disks said locking means consisting of a rotary locking plate having an opening through it in alinement with the chart supporting bars so that any bar may be brought into position in front of said opening when it is desired to move the bar end-wise for its disengagement.

5. In a chart exhibiting device, the combination of a rotatable frame having recesses about its periphery, with a plurality of chart supporting bars arranged in the recesses about the periphery of the frame, charts secured to the bars, and engaging means between the bars and the frame having lateral engaging portions which may be disengaged by a relative end-wise motion between the bar and the frame.

6. In a chart exhibiting device, the combination of a rotatable frame having recesses about its periphery, with a plurality of chart supporting bars arranged in the recesses about the periphery of the frame, charts secured to the bars, and engaging means between the bars and the frame having lateral engaging portions which may be disengaged by a relative end-wise motion between the bar and the frame, and locking devices for holding the bars and rotary frame normally against relative end movement.

7. In a chart exhibiting device the combination of a shaft having a series of

notched disks thereon, with a plurality of chart supporting bars adapted to the notches of the disks, angular engaging pins projecting from the inner edges of the bars and engaging the disks to hold the bars to the disks and charts having their ends wrapped over the bars and provided with slots through which the angular pins project.

8. In a chart exhibiting device the combination of a shaft having a series of notched disks thereon, with a plurality of chart supporting bars adapted to the notches of the disks, angular engaging pins projecting from the inner edges of the bars and engaging the disks to hold the bars to the disks, charts having their ends wrapped over the bars and provided with slots through which the angular pins project, and means to normally hold the chart supporting bars against longitudinal or end movement relative to the shaft and its disks.

In testimony of which invention, I hereunto set my hand.

CHARLES S. JENKINS.

Witnesses:
A. D. JOHNSON,
CARRIE E. GODSHALL.