

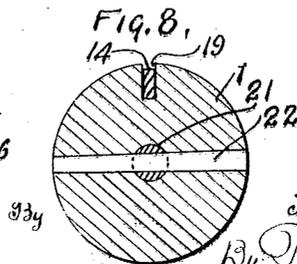
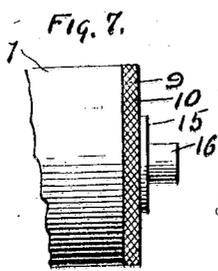
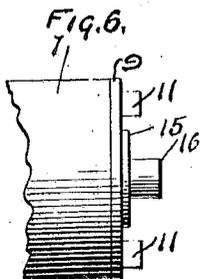
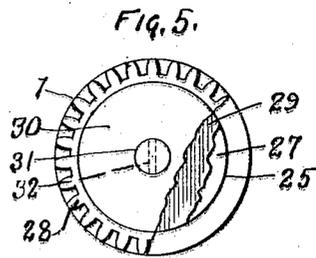
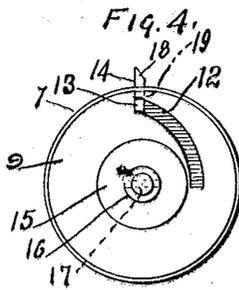
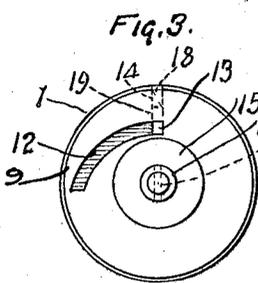
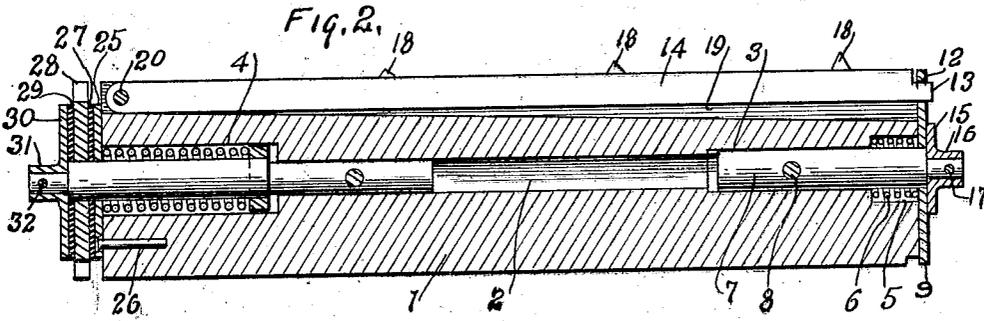
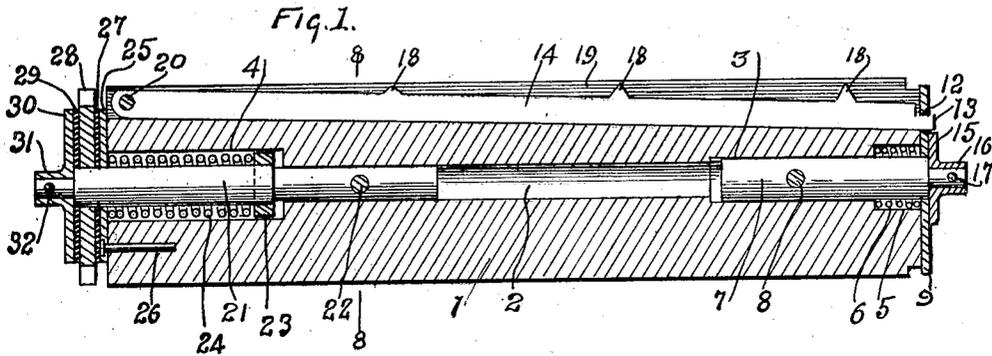
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1,515,629

M. C. STERN ET AL

AUTOGRAPHIC REGISTER

Filed Sept. 14, 1923



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UNITED STATES PATENT OFFICE.

MILTON C. STERN AND HERBERT E. NETH, OF DAYTON, OHIO, ASSIGNORS TO THE EGRY REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO.

AUTOGRAPHIC REGISTER.

Application filed September 14, 1923. Serial No. 662,722.

To all whom it may concern:

Be it known that we, MILTON C. STERN and HERBERT E. NETH, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Autographic Registers, of which the following is a specification, reference being had therein to the accompanying drawing.

Our invention relates to autographic registers and in particular to a rewind core therefor.

The object of our invention is to provide a rewind core or cylinder for rewinding a strip of paper constituting the permanent record retained in an autographic register.

It will be understood that this rewinding cylinder must have the paper attached to it permanently so that it will not slip and so that during the winding operation the paper will be positively wound tightly and uniformly, and without tearing. This necessitates a firm, even grip upon the paper.

It is also an object of our invention to permit of the attachment of the paper to the rewind core easily and effectively as heretofore it has been difficult to do.

It is a further object of our invention to provide an easy means of forming the roll so wound from the rewind core. Heretofore it has been a very difficult matter to detach the paper so rewound after it had once been wound into a tight roll in the register.

It is a further object of our invention to provide an association with the rewind roll and adjustable tension device so that as the tension increases due to the increasing size of the roll, means for adjusting the pulley of the roll will be provided to maintain this tension at a uniform point.

Referring to the drawings:

Figure 1 is a section through the rewind roll showing the gripping fingers in inoperative position.

Fig. 2 is a section of the rewind roll showing the gripping fingers in gripping position.

Fig. 3 is an end elevation of Figure 1 looking at the end carrying the gripper bar actuator.

Fig. 4 is an end elevation of Fig. 2 from the same end.

Fig. 5 is an end elevation of Figs. 1 and 2 partially broken away to show the successive clutch members of the clutch end of the rewind roll.

Fig. 6 is an enlarged detail showing one form of gripper bar actuator.

Fig. 7 is a similar view of another form of gripper bar actuator.

Fig. 8 is a section showing the retaining pin engaging with the stub axle.

Referring to the drawings in detail, 1 is a rewind roll, the core usually made of wood. This core has a passageway extending therethrough consisting of a center passageway 2 and end passageways 3 and 4 of larger diameter. The passageway 3 has an enlarged portion near the end as at 5 for the reception of the actuator spring 6.

Located in the passageway 3 is a stub axle 7 known as the actuator axle. This axle is pinned into the roll 1 by the pin 8 which is located transversely thereof.

This axle 7 is surrounded near its outer end by the spring 6 one end of which abuts against the end of the passageway 5 in the roll 1 and the other end against the actuator disc 9. This disc is either provided with a knurled margin 10 or studs 11 to facilitate the fingers of the operator engaging with the disc and rotating it on the axle. This disc is provided with a slot 12 in which there travels the end 13 of the gripper finger bar 14. The disc 9 is prevented from moving outwardly on the axle 7 due to the action on the spring 6 by a washer 15 which is also mounted on the axle and held in position by a collar 16 pinned to the axle by the pin 17.

The gripper bar 14 carries a plurality of spaced fingers designated 18. The bar itself is located in a groove 19 in the roll 1 of sufficient depth to permit of the complete disappearance of the pointed fingers 18 when the gripper fingers and gripper bar are brought into operative position by the rotation of the gripper bar actuator disc. This gripper bar is pivoted in this groove in the roll at 20.

It will be observed that when the paper is wound upon the roll the fingers 18 may be projected by the rotation of the disc and the paper firmly engaged with the roll so that it cannot slip or tear.

As the roll increases in size due to the fact that it is being rotated for the winding of

the paper in the usual manner of auto-graphic registers, it becomes necessary to compensate for the additional strain being put upon the paper and it becomes necessary to relieve this strain. For this purpose there is provided the following mechanism. Another stub axle 21 has one end mounted in the passageway 2 and its outer end in the passageway 4 within the roll 1. A transverse pin 22 pins the axle to the roll. The portion of the axle mounted in the enlarged passageway 4 carried a collar 23 as the abutment for a helical spring 24 which surrounds this portion in the stub axle 21. The other end of this spring abuts against a steel disc 25 which is carried on the axle 21 adjacent the end of the roll 1. A pin 26 prevents this disc from rotating as the pin is mounted both in the disc and in the roll 1. Also mounted on the axle adjacent to the disc 25 in succession is a fiber disc 27, a steel driving gear 28, a fiber disc 29, and a steel disc 30. The steel disc 30 is provided with a collar 31 which is pinned to the axle 21 by the pin 32.

It will thus be seen that the gear 28 which is loosely mounted on the axle or shaft 21 will provide the entire clutch assembly and roll until the resistance becomes sufficient to cause it to slip with respect to the roll and the clutch members 25, 27, 29, and 30, providing a means of relief for successive strain upon the paper being wound.

We do not desire to limit ourselves to the particular details as hereinbefore described, but comprehend within our invention a suitable modification thereof for its practice.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. In a rewind roll, a cylinder for supporting the paper, a groove therein communicating with the exterior thereof, a gripper finger bar pivoted thereon below the surface of the roll in said groove, a plurality of gripper fingers mounted on said bar, an axle supporting said roll, an actuator disc mounted on said axle engaging with one end of the gripper bar and adapted upon being rotated to vary the fingers on the gripper bar with respect to the roll.

2. In a rewind roll, a cylinder for supporting the paper, a groove therein communicating with the exterior thereof, a gripper finger bar pivoted thereon below the surface of the roll in said groove, a plurality of gripper fingers mounted on said bar, an axle supporting said roll, an actuator disc mounted on said axle engaging with one end of the gripper bar and adapted upon being rotated to vary the fingers on the gripper bar with respect to the roll, and yielding means to yieldingly resist the rotation of the disc on the axle relative to the roll.

3. In a rewind roll, a cylinder for sup-

porting the paper, a groove therein communicating with the exterior thereof, a gripper finger bar pivoted thereon below the surface of the roll in said groove, a plurality of gripper fingers mounted on said bar, an axle supporting said roll, an actuator disc mounted on said axle engaging with one end of the gripper bar and adapted upon being rotated to vary the fingers on the gripper bar with respect to the roll, yielding means to yieldingly resist the rotation of the disc on the axle relative to the roll, and means on said disc for engaging the fingers of the operator.

4. In a rewind roll, a cylinder for supporting the paper, a groove therein communicating with the exterior thereof, a gripper finger bar pivoted thereon below the surface of the roll in said groove, a plurality of gripper fingers mounted on said bar, an axle supporting said roll, an actuator disc mounted on said axle engaging with one end of the gripper bar and adapted upon being rotated to vary the fingers on the gripper bar with respect to the roll, yielding means to yieldingly resist the rotation of the disc on the axle relative to the roll, means on said disc for engaging the fingers of the operator, driving mechanism for said roll, and a clutch associated therewith for maintaining uniformly the tension of the paper being wound on the roll.

5. In a rewind roll, a paper supporting body, a passageway therethrough, a stub axle mounted in either end of said passageway, and means for preventing the rotation of said axle in the roll, a groove in the surface of said roll, a gripper bar pivoted therein carrying a plurality of gripping fingers adapted to be retreated below the surface of the roll in its inoperative position and projecting above the position of the roll with paper wound thereon in its operative position.

6. In a rewind roll, a paper supporting body, a passageway therethrough, a stub axle mounted in either end of said passageway, and means for preventing the rotation of said axle in the roll, a groove in the surface of said roll, a gripper bar pivoted therein carrying a plurality of gripping fingers adapted to be retreated below the surface of the roll in its inoperative position and projecting above the position of the roll with paper wound thereon in its operative position, and an actuating disc having a cutaway portion therein mounted on one of said axles, the free ends of said gripper bar being located in said cutaway portion in the disc.

7. In a rewind roll, a paper supporting body, a passageway therethrough, a stub axle mounted in either end of said passageway, and means for preventing the rotation of said axle in the roll, a groove in the sur-

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face of said roll, a gripper bar pivoted therein carrying a plurality of gripping fingers adapted to be retreated below the surface of the roll in its inoperative position and projecting above the position of the roll with paper wound thereon in its operative position, and an actuating disc having a cutaway portion therein mounted on one of said axles, the free ends of said gripper bar being located in said cutaway portion in the disc, yielding means associated with said disc to resist its rotation, a second yielding means mounted on the other stub axle, both of said yielding means being located within the roll clutch members mounted on said axle yieldingly engaged by said second yielding means, means to maintain one of said clutch members stationary relative to the roll, teeth on another of said clutch members for engagement with said driving mechanism for rotating the roll, whereby as the tension increases on the roll the tension will be reduced and maintained at a uniform

amount by the slipping of the clutch relative to the driving mechanism.

25 8. In a rewind roll, a cylinder for supporting the paper, a groove thereon communicating with the exterior thereof, a gripper finger bar pivoted thereon below the surface of the roll in said groove, a plurality of gripper fingers mounted on said bar, an axle supporting said roll, an actuator disc mounted on said axle engaging with one end of the gripper bar and adapted upon being rotated to vary the gripper bar and the fingers with respect to the roll, driving means for rotating said roll, and a clutch adapted to permit the connection between the driving means and the roll to be adjusted to maintain a uniform tension upon the paper being wound on the rewind roll.

In testimony whereof, we affix our signatures.

MILTON C. STERN.
HERBERT E. NETH.