

P. J. MEAHL.
EXTENSION SPOOL.

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952,708.

Patented Mar. 22, 1910.

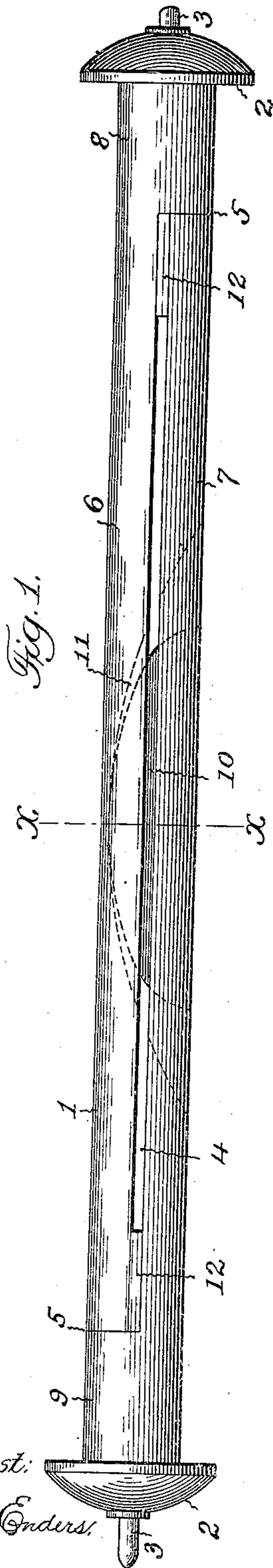


Fig. 1.

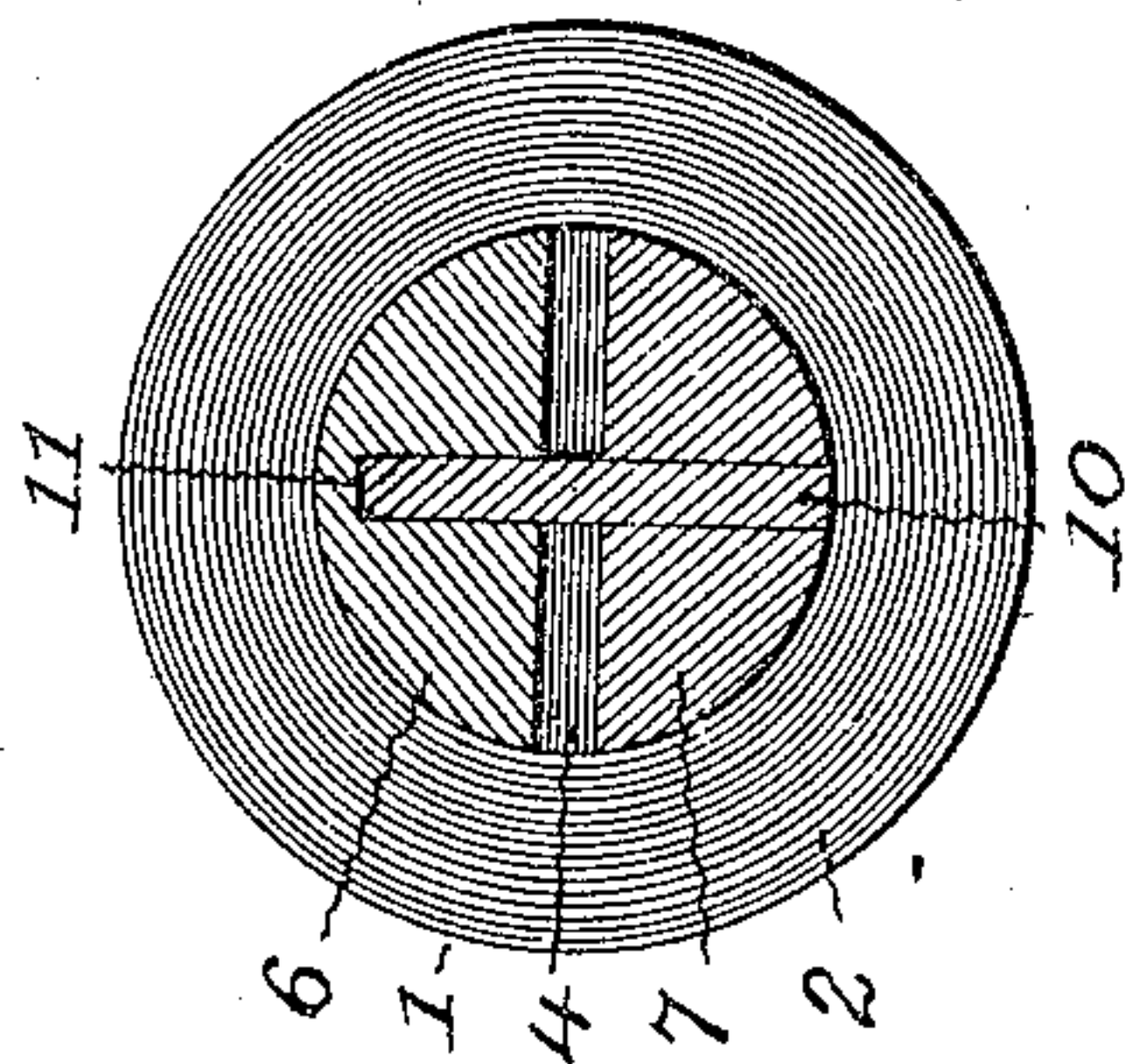


Fig. 2.

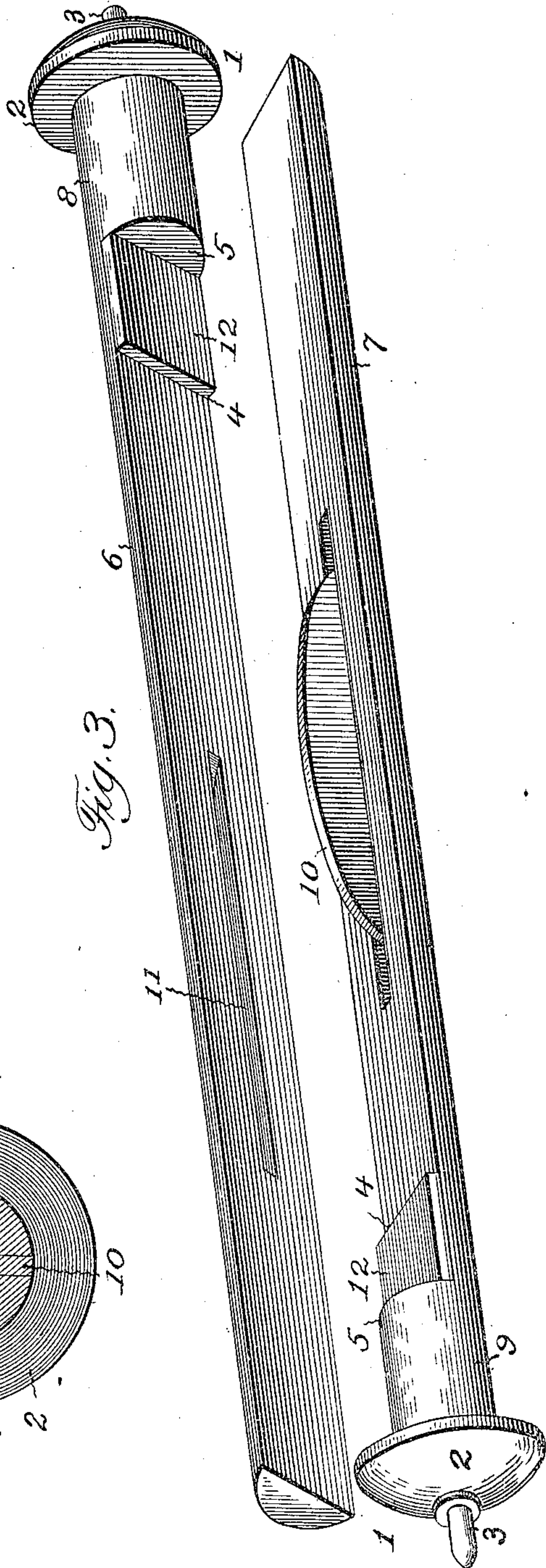


Fig. 3.

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EXTENSION-SPOOL.

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To all whom it may concern:

Be it known that I, PHILIP JACOB MEAHL, a citizen of the United States of America, and a resident of Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Extension-Spools, of which the following is a specification.

This invention relates to that type of spools upon which are wound rolls of perforated paper sheets employed to govern the operation of mechanical or automatic musical instruments; and the present improvement has for its object to provide a simple and efficient structural formation and combination of parts, in which the spool is adapted for ready longitudinal extension and construction to compensate for the natural expansion and contraction of the paper sheet rolled thereon under varying weather conditions, and which at the same time is adapted to effectually withstand the usual torsional stress imposed upon the parts in the usual operations of tightening or loosening the music roll by a turning of the spool therein in one or the other direction, all as will hereinafter more fully appear.

In the accompanying drawings:—Figure 1 is a side elevation of a spool embodying the present improvement. Fig. 2 is a transverse section of the same at line $x-x$, Fig. 1. Fig. 3 is a perspective view showing the members of the spool in a separated or detached relation.

Similar numerals of reference indicate like parts in the different views.

Referring to the drawings:—1 is the elongated body of the spool, usually of a cylindrical form in cross section, and provided with end heads or flanges 2, and with axial gudgeon pins or arbors 3, as usual. In the present invention the body 1 aforesaid is divided by a longitudinal slit 4, and oppositely extending transverse slits 5, into two substantially counterpart members 6 and 7, adapted for longitudinal movement one upon the other, and each member carrying an individual flange 2 and individual gudgeon pin 3. The transverse slits 5, aforesaid, are preferably formed a distance away from the respective heads 2, so that each member will have a portion 8 or 9, adjacent to the end heads 2 of a full cylindrical or other usual form for the proper support of the marginal parts of the sheet of paper or the like which is rolled upon and carried by the roller.

10 is a longitudinal key strip or spline on one member having guiding engagement in a longitudinal groove 11 in the companion member, and adapted to prevent independent lateral movement or displacement of the members when assembled together, and offer an effectual resistance to the torsional stress to which the spool is exposed in the ordinary operations of tightening and loosening of the music roll with a view to bring the same into proper condition for use in the automatic playing mechanism.

In the ordinary manufacture of the present roller, the longitudinal slit 4 and transverse slits 5 will be usually made in a cylindrical roller by means of a circular or other saw, and in order to compensate for the kerf removed by such saw in forming the longitudinal slit 4, aforesaid, filler pieces 12, will be secured preferably at the respective ends of said slit, as shown, to insure the proper cylindrical relation of the two members when assembled. In like manner the longitudinal groove 11 and corresponding slit in which the butt of the longitudinal key strip 10 is fitted, will be formed at one operation by a circular saw, and affords a ready and efficient manner of attaining an accurate relation of the parts by which the two members of the roller are guided in a longitudinal extension movement.

The key strip 10 will be usually formed of wood, with the grain running at right angles to the grain of the spool members, so as to afford ample strength to the key strip to withstand the torsional strain, above referred to. In the preferred construction the key strip 10, will have a segmental form, the radius of which is less than that of the segmental groove 11, and with the central part of said strip and the central part of the groove in contact as shown in dotted lines in Fig. 1. As so arranged a slight spreading apart of the members 6 and 7 will take place in effecting the limited extension of the parts required in actual practice, while under all conditions such arrangement stays the said members centrally against the normal tendency to move together when surrounded by the perforated music sheet.

In the employment of the present invention as a carrying spool for rolls of perforated music paper, one end of the paper will be glued to a single one of the spool members aforesaid; it being common to leave a foot or more of blank paper at such end. With

the paper thus glued to one member, and with the companion spool member in place and the paper rolled thereupon, it follows that there will be a half-dozen or more
 5 turns of blank paper around the spool, which if wound tight will clasp and hold the spool members together in a firm and substantial manner. With a requirement to increase the length of the spool, on account of the
 10 paper having swollen, the operator grasping the music or paper roll, by its exterior, with one hand, imparts with the other hand a couple of backward turns to the spool, by means of one of its end heads or flanges;
 15 such operation will loosen the grip of the paper on the spool members and the same can be adjusted longitudinally to accommodate the paper, after which by giving the spool a couple of forward turns, the conditions heretofore described are restored, and the music roll will have a tight and fast arrangement upon the spool. With a shrinkage of the paper a similar operation is effected.

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

1. An extension spool, comprising a pair of semi-circular halves arranged in parallel
 30 relation to each other and provided with full portions at their ends, and means for guiding the halves longitudinally, substantially as set forth.

2. An extension spool, comprising a pair
 35 of semi-circular halves arranged in parallel relation to each other and provided with full portions at their ends, one half having a longitudinal key strip and the other half a longitudinal groove for guiding engagement
 40 with said key strip, substantially as set forth.

3. An extension spool formed with a longitudinal slit and transverse slits extending
 45 oppositely from the end of the longitudinal slit to divide the spool into two members, and guiding means for connecting the members together in a longitudinally adjustable manner, substantially as set forth.

4. An extension spool formed with a longitudinal slit and transverse slits extending
 50 oppositely from the end of the longitudinal slit to divide the spool into two members, one member having a longitudinal key strip and the other member a longitudinal groove for
 55 guiding engagement with the key strip, substantially as set forth.

5. An extension spool formed with a longitudinal slit and transverse slits extending
 60 oppositely from the ends of the longitudinal slit to divide the spool into two members, filler pieces at the respective ends of the longitudinal slit, and guiding means for connecting the members together in a longitudinally adjustable manner, substantially
 65 as set forth.

6. An extension spool formed with a longitudinal slit and transverse slits extending
 oppositely from the ends of the longitudinal slit to divide the spool into two members, filler pieces at the respective ends of the
 70 longitudinal slit, one member having a longitudinal key strip and the other member a longitudinal groove for guiding engagement with said key slit, substantially as set forth.

7. An extension spool, comprising a pair
 75 of semi-circular halves arranged in parallel relation to each other and provided with individual end flanges, and means for guiding the halves longitudinally, substantially as set forth.

8. An extension spool, comprising a pair of semi-circular halves arranged in parallel
 relation to each other and provided with individual end flanges, one half having a longitudinal key strip and the other half a longitudinal
 85 groove for guiding engagement with the key strip, substantially as set forth.

9. An extension spool formed with a longitudinal slit and transverse slits extending
 90 oppositely from the ends of the longitudinal slit to divide the spool into two members; individual end flanges on the respective members, and guiding means for connecting the members together in a longitudinally adjustable manner, substantially as set forth.

10. An extension spool formed with a longitudinal slit and transverse slits extending
 100 oppositely from the ends of the longitudinal slit to divide the spool into two members; individual end flanges on the respective members, one member having a longitudinal key strip and the other member a longitudinal groove for guiding engagement with the key strip, substantially as set forth.

11. An extension spool formed with a longitudinal slit and transverse slits extending
 105 oppositely from the ends of the longitudinal slit to divide the spool into two members, individual end flanges on the respective members, filler pieces at the respective ends
 110 of the longitudinal slit, and guiding means for connecting the members together in a longitudinally adjustable manner, substantially as set forth.

12. An extension spool formed with a longitudinal slit and transverse slits extending
 115 oppositely from the ends of the longitudinal slit to divide the spool into two members; individual end flanges on the respective members, filler pieces at the respective ends
 120 of the longitudinal slit, one member having a longitudinal key strip and the other member a longitudinal groove for guiding engagement with the key strip, substantially as set forth.

13. An extension spool, comprising a pair of halves arranged in parallel relation to
 each other and provided with full portions at their ends, one half having a longitudinal
 130 key strip and the other half a longitudinal

groove for guiding engagement with said key strip, the groove and key strip being of a segmental form with the radius of the groove greater than that of the key strip, substantially as set forth.

14. An extension spool formed with a longitudinal slit and transverse slits extending oppositely from the end of the longitudinal slit to divide the spool into two members, one member having a longitudinal key strip and the other member a longitudinal groove for guiding engagement with the key strip, the groove and key strip being of a segmental form with the radius of the groove greater than that of the key strip substantially as set forth.

15. An extension spool formed with a longitudinal slit and transverse slits extending oppositely from the end of the longitudinal slit to divide the spool into two members, filler pieces at the respective ends of the longitudinal slit, one member having a longitudinal key strip and the other member with a longitudinal groove for guiding engagement with the key strip, the groove and the key strip being of a segmental form with a radius of the groove greater than that of the key strip, substantially as set forth.

16. An extension spool formed with a longitudinal slit and in longitudinal relation to each other and provided with individual end flanges, one half having a longitudinal key strip and the other half a longitudinal groove for guiding engagement with the key strip, the groove and key strip being of a

segmental form with the radius of the groove greater than that of the key strip substantially as set forth.

17. An extension spool formed with a longitudinal slit and transverse slits extending oppositely from the end of the longitudinal slit to divide the spool into two members, individual end flanges on the respective members, one member having a longitudinal key strip and the other member a longitudinal groove for guiding engagement with the key strip, the groove and key strip being of a segmental form with the radius of the groove greater than that of the key strip, substantially as set forth.

18. An extension spool formed with a longitudinal slit and transverse slits extending oppositely from the end of the longitudinal slit to divide the spool into two members, individual end flanges on the respective members, filler pieces at the respective ends of the longitudinal slit, one member having a longitudinal key strip and the other member a longitudinal groove for guiding engagement with the key strip, the groove and the key strip being of a segmental form with the radius of the groove greater than that of the key strip, substantially as set forth.

Signed at Bayonne, New Jersey, this 9th day of March 1906.

PHILIP JACOB MEAHL.

Witnesses:

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ROBERT BURNS.