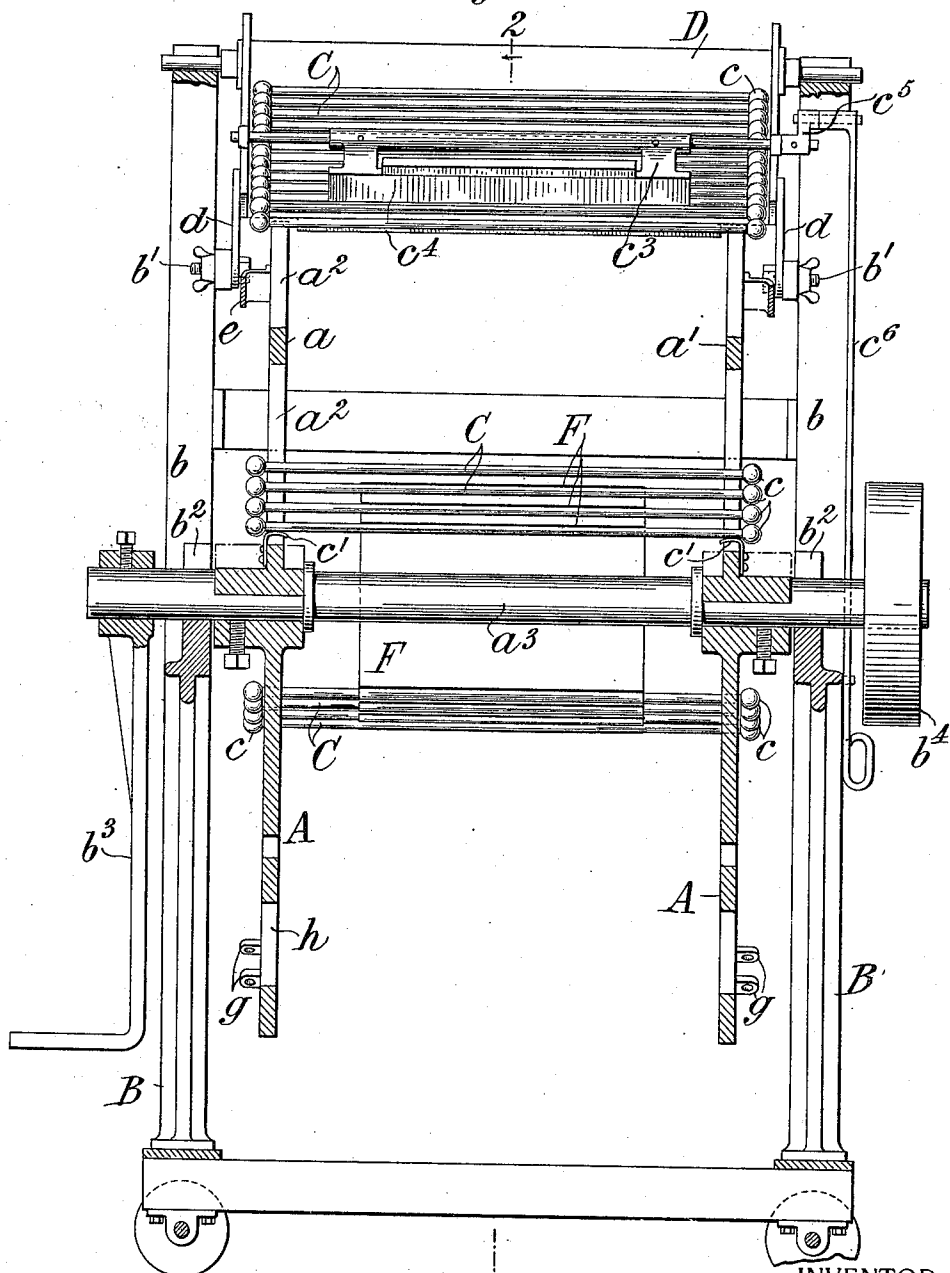


1,006,784.

Patented Oct. 24, 1911.

3 SHEETS—SHEET 1.

Fig. 1



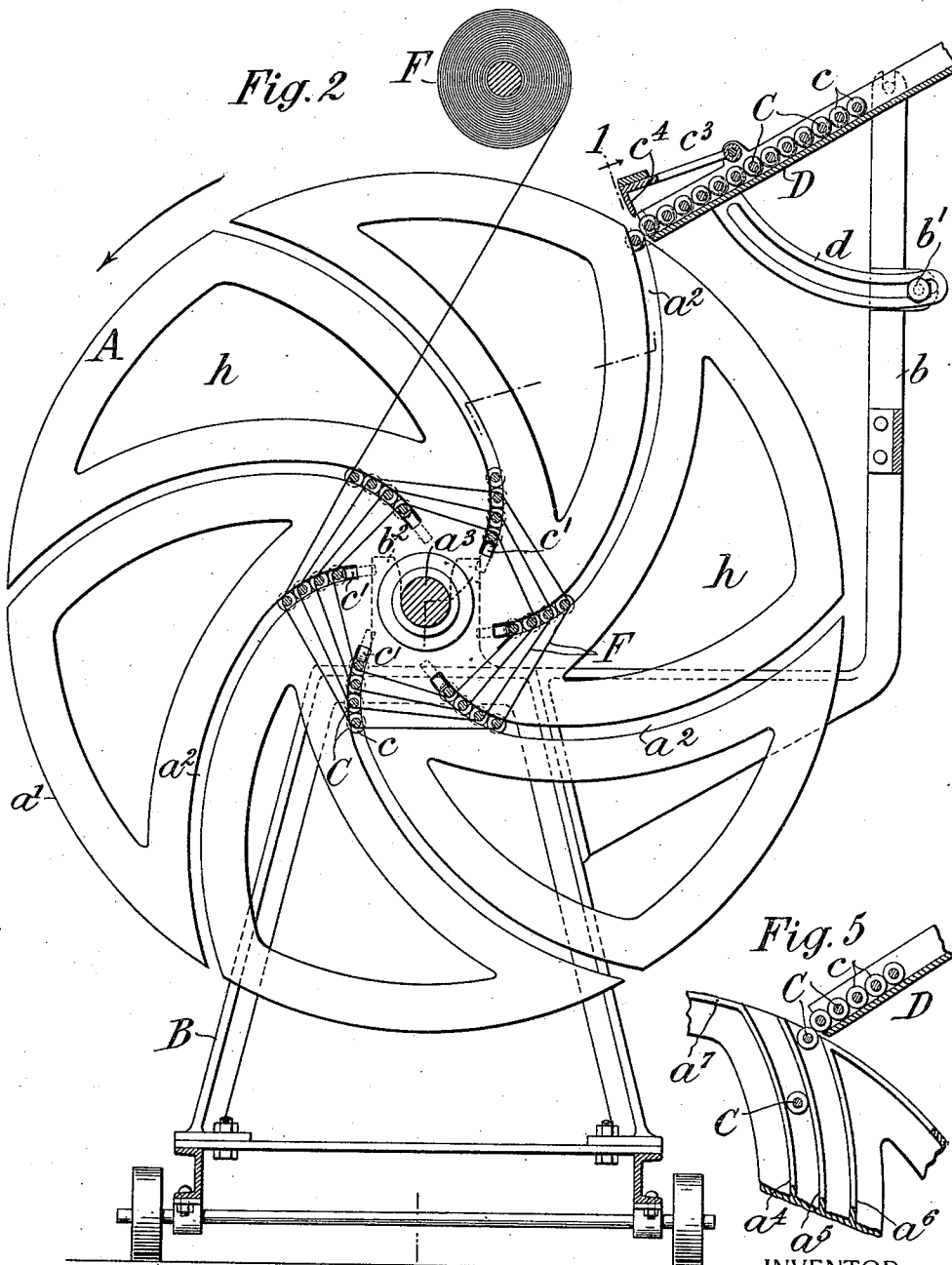
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1,006,784.

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3 SHEETS—SHEET 2.



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WINDING REEL.
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3 SHEETS—SHEET 3.

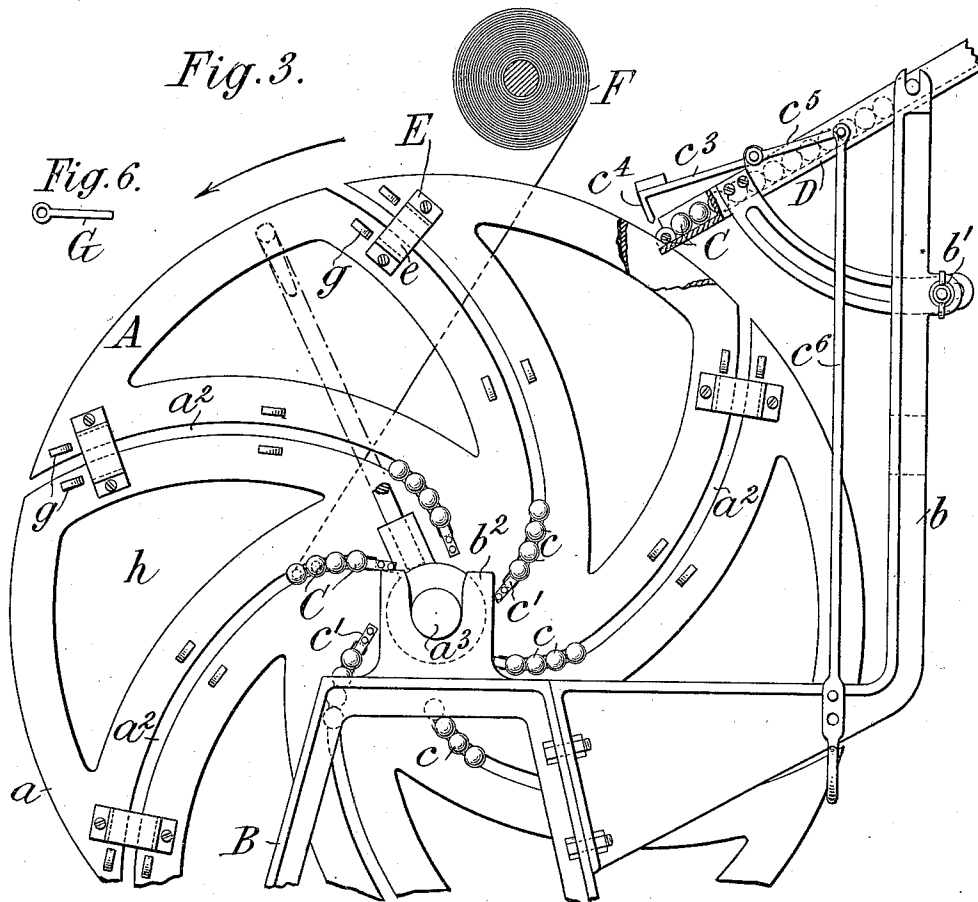
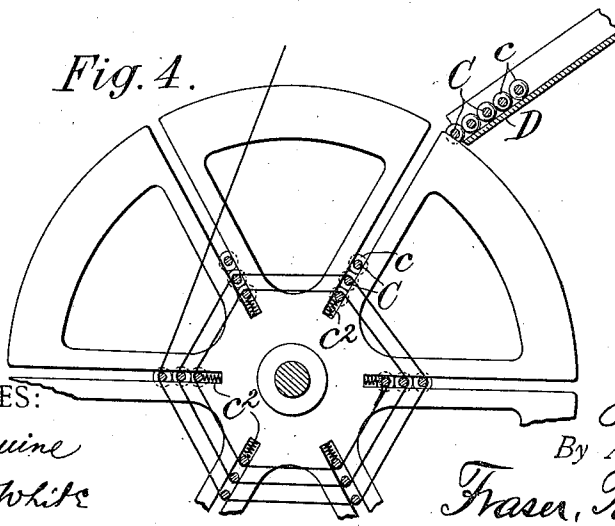


Fig. 4.



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UNITED STATES PATENT OFFICE.

JÉRÔME PAYET, OF PATERSON, NEW JERSEY.

WINDING-REEL.

1,006,784.

Specification of Letters Patent.

Patented Oct. 24, 1911.

Application filed April 8, 1911. Serial No. 619,748.

To all whom it may concern:

Be it known that I, JÉRÔME PAYET, a citizen of the Republic of France, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Winding-Reels, of which the following is a specification.

My invention relates to a reel designed to receive a number of layers of fabric and to support said fabric so that adjacent layers shall be separated by an appreciable space. The winding reel thereby produced will be found useful to receive fabric for the purpose of dyeing, boiling, washing, cooking or any of the many operations to which fabric is necessarily subjected and wherein it is desired that all portions of the fabric shall be accessible.

The object of my invention is to produce a machine which shall be continuous in operation and thereby reduce the time required to receive its load of fabric.

A further object is to produce a machine which shall be automatic and dispense with much hand labor heretofore required for such machines and thereby economize in labor as well as in time.

A desirable form in which my invention may be embodied is illustrated in the accompanying drawing, wherein—

Figure 1 is a vertical section on the line 1—1, Fig. 2, of my improved apparatus. Fig. 2 is a similar section on the line 2—2, Fig. 1. Fig. 3 is a side view of the said apparatus partly broken away. Fig. 4 is a detail fragmentary side view illustrating a modified form; Fig. 5 is a further fragmentary view illustrating another modification; and Fig. 6 is a detail of holding pin which may be employed.

I have illustrated my invention as applied to a winding reel wherein the reel portion, which I shall designate A, is removable from its frame or support B for any desired purpose, for instance, for the purpose of dipping the same in a dye-bath.

According to my invention I provide means for automatically interposing in holding position on the winding reel supporting elements which are so arranged and located that the fabric, being placed upon the outside of each series of supports, is arranged in a series of superposed layers which are separated from each other by the

said supports and have adjacent portions of adjoining layers substantially parallel. Means are provided for successively and automatically bringing the supporting rods to holding position where they are held by the superposed layer of fabric.

In the accompanying drawings the winding reel A has side members a , a^1 and each of these is provided with suitable means for holding the supporting rods, so that the same shall lie in successive eccentric rings. As illustrated in Figs. 1, 2 and 3, the particular rod supports illustrated are guides a^2 , which as illustrated, are in the form of channels or slots of tortuous or curved shape for a purpose hereinafter referred to. The side members a , a^1 are each keyed upon a shaft a^3 and are so adjusted thereupon that the channels or slots a^2 in each side member shall register with each other.

The supporting devices illustrated are in the form of rods C, and these are supported upon a feed chute D. The said chute is mounted upon arms b projecting upwardly from the frame B and is adjustable thereon by a slotted arm d receiving set screws b^1 on the arm b . The chute D will be so adjusted that the supports C will roll to the front or lower end thereof, which is in proximity to the peripheries of the rotary side members a , a^1 , and as the winding reel is revolved in the direction of the arrow, Fig. 2, the supporting rods C, which here have a length exceeding the width of the reel, will rest upon the peripheries of the members a , a^1 until a channel a^2 comes into position to receive one of the said rods, whereupon the rod will drop into the channel and the next succeeding rod will take its place upon the outside of the winding reel. The supports are provided at some suitable part with means for spacing them apart and as illustrated such means may take the desirable form of enlarged heads c , one of which is at each end of each of the said rods and which I prefer to make of copper or brass so that thereby the rods C may be weighted and their travel both in the chute and in the channels a^2 accelerated. To prevent, however, the said rods from hitting the already loaded rods in the reel with a decided blow and thereby causing the whip of the body of the rod to hit the fabric then in place, I prefer to make said channels or slots a^2 of some tortuous or curved shape, as shown in

Fig. 2, whereby the descent of the rod is retarded, particularly at the last part of its movement. Springs c^1 may be employed to give a certain amount of elasticity to the rods, and such springs may be in the form of flat springs, as shown in Figs. 1 and 2. or coiled springs c^2 as shown in Fig. 4. The heads c upon the rods C thereby not only fulfil the function of spacing the rods apart so that adjacent layers of fabric do not come in contact, but also of providing a desirable weight for facilitating the travel of the rods as well as of providing retaining means for insuring the correct positioning of the rods in the reel. A stop lever c^3 is illustrated in front view in Fig. 1 and at its forward end carries a stop c^4 , Fig. 2. It is actuated by arm c^5 and rod c^6 , and its function is to stop the feeding of supporting rods at any desired time. It is hand-operated and when lowered prevents the lowermost supporting rod from leaving the chute. The winding reel is conveniently mounted so as to be removable from the frame B by having its shaft a^3 received in open bearings b^2 in the said frame B. The winding reel A is rotated either by hand through handle b^3 , Fig. 1, or by power through pulley b^4 .

The side members a , a^1 are, as illustrated, formed with openings h , the purpose of which is to facilitate the entrance of the dyeing or bleaching or cleansing fluid, or such other liquid or fluid as may be employed, and to permit the same to readily penetrate to all parts of the fabric being treated.

It occasionally happens that an extra heavy fabric is to be treated which would not be adequately supported upon one supporting rod, and in such cases I may introduce two supporting rods in adjacent holding members, as shown in Fig. 5. Here a modified form of holding means is employed wherein a channel is formed between ribs a^4 , a^5 , and another channel between ribs a^5 , and a^6 . The rods C, which are of the same construction as illustrated in Fig. 1, are not of sufficient length to extend the full width of the reel and therefore they rest upon inwardly projecting flanges a^7 upon the periphery of each of the side members between each of the separated sets of channels. The said flanges, however, do not extend across the space between the ribs a^4 , a^5 and a^6 , and therefore the rods, being without support when this portion of the reel arrives beneath the chute, will pass into the channels between the said ribs.

The construction of channels and rod-supporting means illustrated in Fig. 5, is not confined to the modification there illustrated, wherein two supporting-rods are placed adjacent to each other, but may also be employed in the construction illustrated

in Figs. 1 and 2. The parts of each of the side members a , a^1 on both sides of the slots may be united, if desired, by couplings E bowed outwardly at e to permit the passage of the heads c . The loaded supporting rods C will be retained with sufficient rigidity probably by the successive layers of fabric F, whereof one layer is upon each rod. Should by any accident, however, the fabric become loose at its outer end so that the rods are free from restraint, or should it be desired for any other cause to provide additional holding means, a pin G, Fig. 6, may be employed for this purpose which can be inserted in perforations in lugs g , Figs. 1 and 3.

It is thought that the operation of the device is perfectly apparent from the foregoing. Briefly, however, it consists in mounting the winding reel A upon its bearings in frame B, and providing the chute D with a supply of supports C. The fabric F may then be attached to the first support or if desired to the axle a^3 or in any other suitable manner, motion being then imparted to the winding reel. These supports C will be successively and automatically introduced one at a time in the guides and will periodically be presented beneath the fabric F as the reel is rotated, until finally the entire piece of fabric is contained upon the said supporting rods, whereupon, being fastened thereon in any suitable way and the rod being secured, if desired, by pins G, the winding reel with its load of superposed layers of fabric may be lifted bodily from the frame B and immersed in any suitable fluid or liquid, which will then easily enter to the fabric through the openings h and through the guides, and will penetrate to all parts of the fabric. The reel then being withdrawn and replaced upon its frame the fabric may be unwound therefrom in any suitable manner, details of which are not illustrated.

I have illustrated a few modifications which may be made in the said apparatus. The said modifications, however, are not the only ones which may be made, but numerous modifications in form, shape, relative arrangement, and location of parts may be made within the limits of the appended claims.

What I claim is:—

1. In a winding reel, rotary rod supports, supporting rods, rod guides in said supports each adapted to hold a plurality of rods, and means located above the axis of said rotary rod supports for automatically feeding said rods to supporting position by gravity.

2. In a winding reel, rotary rod supports, rod guides in said supports each adapted to hold a plurality of superposed rods, supporting rods movable relatively to said supports and a chute located above said rotary rod supports and adapted to support said

rods in position so that the lowermost rod will enter a rod guide when it comes beneath said chute.

3. In a winding reel, rotary side members, 5 rod holding means in said side members, each adapted to hold a plurality of superposed supporting rods, supporting rods movable relatively to said rotary members, and means for automatically moving said rods to 10 supporting position.

4. In a winding reel, the combination of a pair of reel side members having guides, each adapted to receive a plurality of fabric supports fabric supports and means for auto- 15 matically feeding said fabric supports periodically to said guides.

5. In a winding reel, the combination of a pair of reel side members having guides, each adapted to receive a plurality of sup- 20 porting rods supporting rods, and means for automatically feeding said supporting rods periodically to said guides.

6. In a winding reel, the combination of a pair of slotted reel side members, each of 25 said slots adapted to receive a plurality of supporting rods supporting rods of a length exceeding the distance between said side members, and means for automatically feeding said supporting rods periodically into 30 said slots.

7. In a winding reel, the combination of a pair of slotted reel side members, support- 35 ing rods of a length exceeding the distance between said side members, a feed chute adapted to support said rods and to automatically feed them periodically into said slots.

8. In a winding reel the combination of a pair of movable reel side members having rod 40 guides extending to the outside thereof, supporting rods, and automatic means for feeding said rods to said guides.

9. In a winding reel the combination of a pair of rotary reel side members having rod 45 guides each extending to the periphery thereof and each guide adapted to receive a plurality of supporting rods, supporting rods, and automatic means for feeding said rods to said guides.

50 10. In a winding reel the combination of a pair of rotary reel side members having rod guides extending from points near the center thereof to the outside, supporting rods, a feed chute adapted to receive said 55 rods and to feed same to the peripheries of said side members in position to enter the approaching guide.

11. In a winding reel, the combination of a pair of slotted reel side members, each 60 slot adapted to receive a plurality of supporting rods supporting rods, enlarged heads on said rods, and means for automatically feeding said supporting rods periodically into said slots.

12. In a winding reel movable supporting 65 members, side members provided with means for holding said supporting members, each of said holding means adapted to receive a plurality of superposed supporting members a chute adapted to hold said supporting 70 members and to automatically feed same to said holding means.

13. In a winding reel, supporting rods, rotary side members provided with means 75 for holding said supporting rods, each of said holding means adapted to receive a plurality of superposed supporting rods a chute adapted to hold said supporting rods and to automatically feed same to said holding 80 means.

14. In a winding reel, supporting rods, side members provided with means for holding 85 said supporting rods, each of said holding means adapted to receive a plurality of superposed supporting rods a chute adapted to hold said supporting rods and to auto- 85 matically feed same to said holding means, and means for stopping said feed.

15. In a winding reel, supporting rods, side members provided with rod guides for 90 said rods, each of said rod guides adapted to hold a plurality of rods, a chute adapted to hold said rods, and to automatically feed same by gravity to said guides.

16. In a winding reel, supporting rods, 95 enlarged heads on said rods, side members provided with rod guides for said rods, each guide adapted to receive a plurality of rods a chute adapted to hold said rods and to automatically feed same by gravity to said 100 guides.

17. In a winding reel, supporting rods, side members provided with curved rod 105 guides for said rods, a chute adapted to hold said rods and to automatically feed same to said guides.

18. In a winding reel, supporting rods of a length exceeding the width of said reel, side members provided with slots for said rods, a chute adapted to hold said rods and 110 permitting the lowermost rod to rest upon the peripheries of said side members and enter the approaching slot.

19. In a winding reel, supporting rods of a length exceeding the width of said reel, side 115 members provided with slots for said rods, a chute adapted to hold said rods and permitting the lowermost rod to rest upon the peripheries of said side members and enter the approaching slot, said rods having en- 120 larged heads adapted to space said rods apart and hold them in said guiding slots.

20. In a winding reel, supporting rods 125 formed with enlarged, weighted heads, rotary side members provided with rod channels extending to the peripheries thereof, a chute adapted to hold said rods so as to feed them successively to said slots, said enlarged

heads serving as weights to assist the descent of said rods, to space them apart and to insure their proper location in the reel.

21. In a winding reel, supporting rods 5 formed with enlarged, weighted heads, rotary side members provided with curved rod channels extending to the peripheries thereof, a chute adapted to hold said rods so as to feed them successively to said slots, said 10 enlarged heads serving as weights to assist the descent of said rods, to space them apart and to insure their proper location in the reel, and said curved channels serving to retard the descent of said rods and to protect 15 the fabric.

22. In a winding reel, rotary side members, rod guides in said side members extending to the outer part thereof and each adapted to receive a plurality of superposed 20 rods, supporting rods of a length exceeding the distance between the closest portions of the side members at or near their periph-

eries, and a chute adapted to hold said rods and permitting the lowermost rod to rest upon said side members and enter the ap- 25 proaching rod guide.

23. In a winding reel, rotary side members each having rod guides, each guide extending to a point near the outside of said side member and adapted to receive a plu- 30 rality of superposed supporting rods, supporting rods adapted to enter said guides and provided with self-contained spacing means, and a chute located above the axis of said side members and adapted to hold said 35 rods and to feed them by gravity to said guides.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

JÉRÔME PAYET.

Witnesses:

HENRY M. TURK,

RENÉ BRUINE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."