

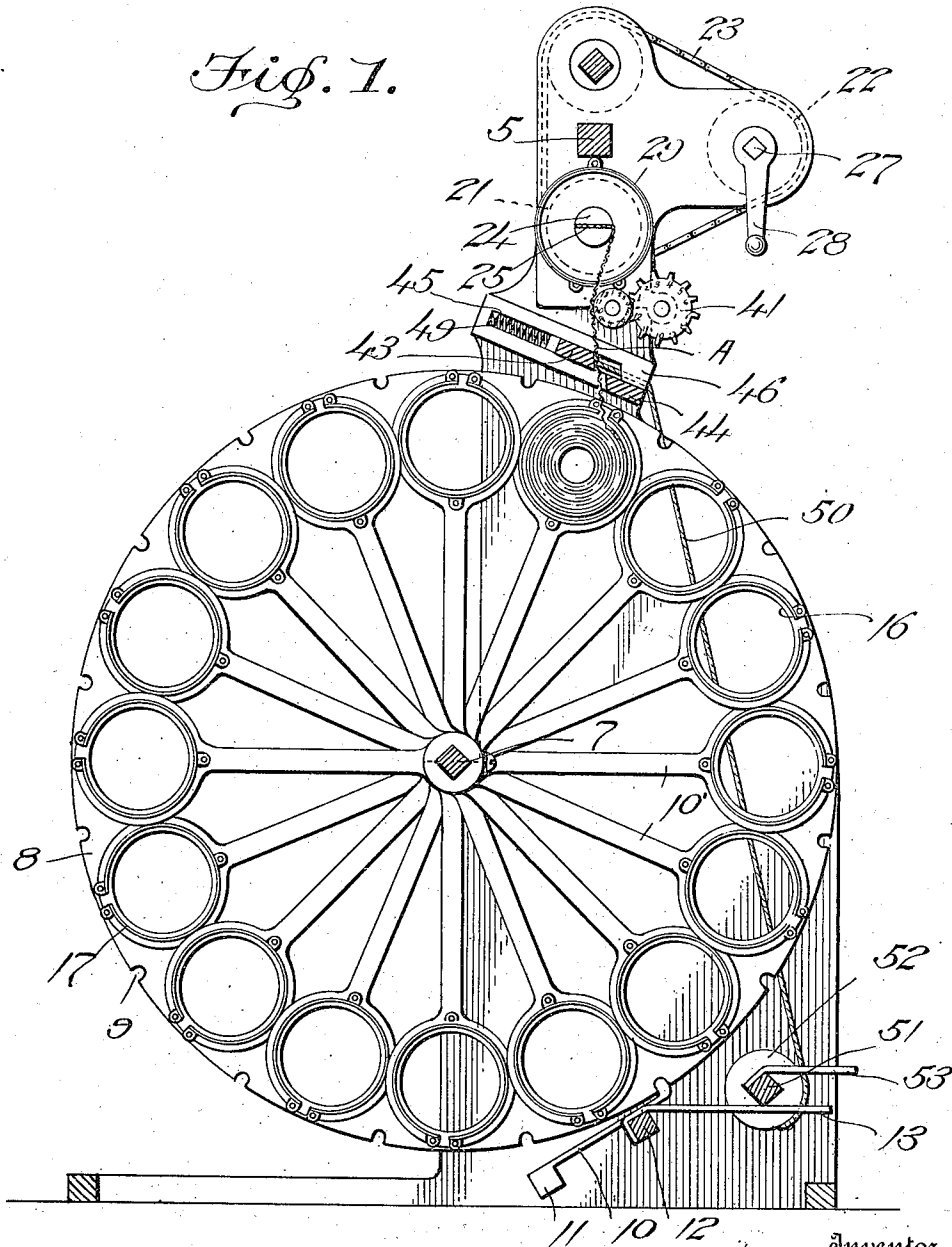
S. W. CRANE.
 COMBINED EXHIBITING AND DISPENSING APPARATUS.
 APPLICATION FILED FEB. 3, 1915.

1,242,149.

Patented Oct. 9, 1917.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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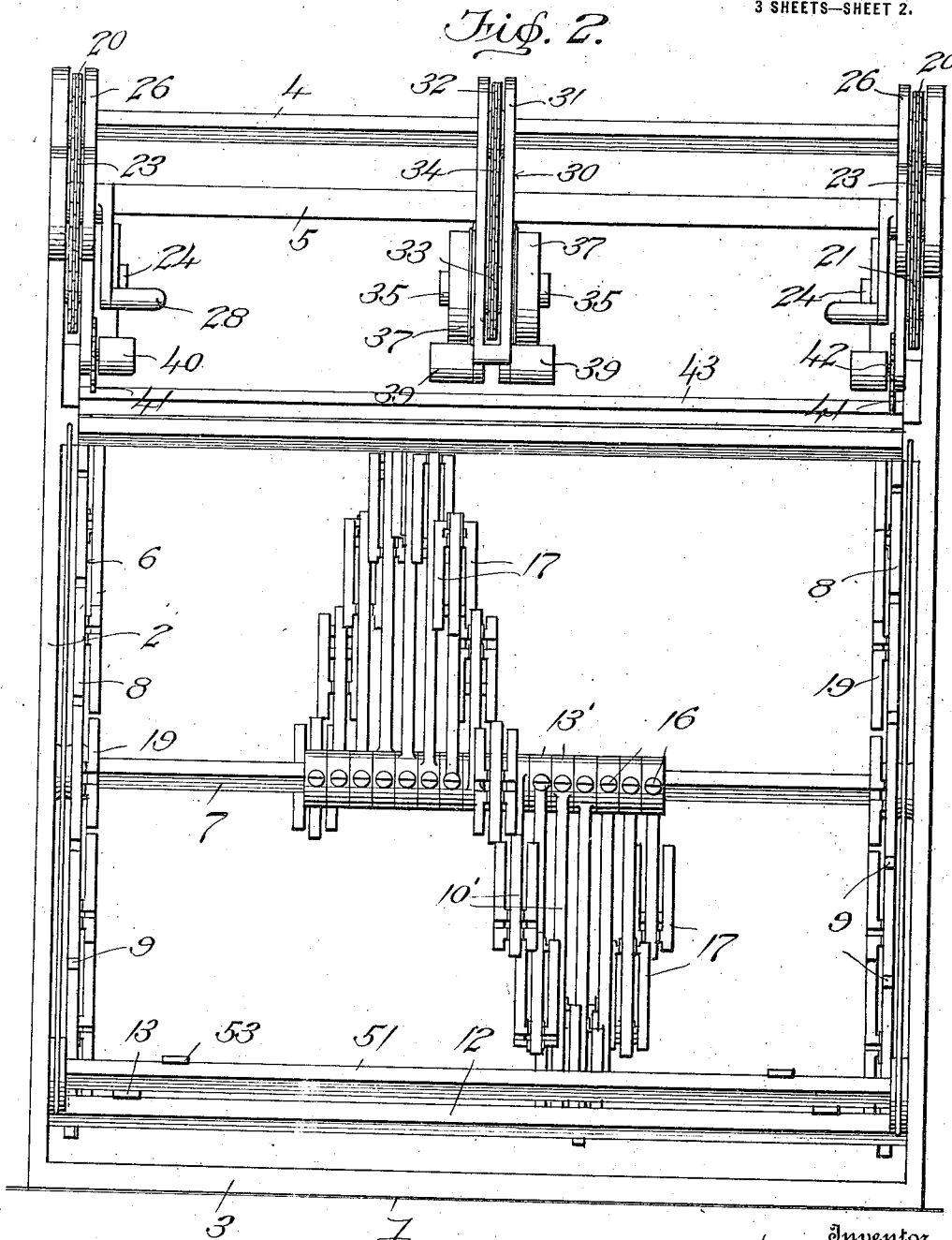
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Witnesses

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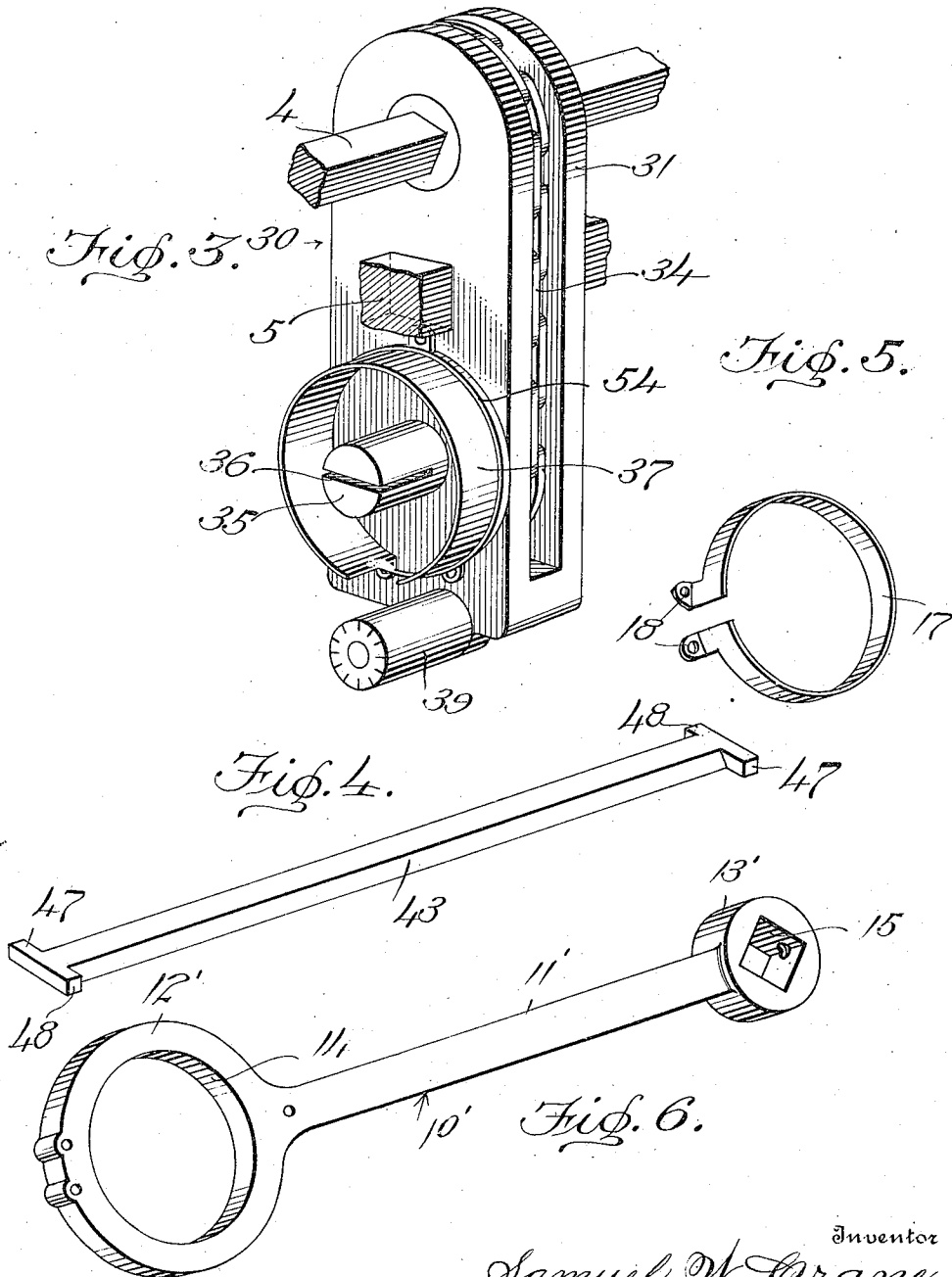
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COMBINED EXHIBITING AND DISPENSING APPARATUS.

1,242,149.

Specification of Letters Patent.

Patented Oct. 9, 1917.

Application filed February 3, 1915. Serial No. 5,844.

To all whom it may concern:

Be it known that I, SAMUEL W. CRANE, citizen of the United States, residing at McAlester, in the county of Pittsburg and State of Oklahoma, have invented certain new and useful Improvements in Combined Exhibiting and Dispensing Apparatus, of which the following is a specification.

My invention relates to an improved combined exhibiting and dispensing apparatus.

The object of the invention is to associate in a single organization, means to exhibit, unwind and wind, and cut, in the order named, wire mesh screening or analogous material.

A further object of the invention is to generally improve and simplify the mechanism utilized incident to the accomplishment of the various results noted above.

In describing my invention in detail reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a view in vertical cross section of the complete apparatus or machine;

Fig. 2 is a side elevation;

Fig. 3 is a detail perspective view of the carriage or movable support;

Fig. 4 is a similar view of the movable blade;

Fig. 5 is a similar view of one of the retaining bands; and

Fig. 6 is a similar view of one of the radial arms.

Before proceeding with the description of the drawings, I desire to call particular attention to the fact that while I have evolved my invention with special reference to its use as a device for exhibiting and dispensing wire mesh screening, the same may be readily utilized, in a like capacity, for exhibiting and dispensing various other materials which are capable of being wound and unwound as will hereinafter appear.

Referring now to the drawings by numerals, 1 designates as an entirety an upright frame, the same comprising in its preferred embodiment standards 2, base 3 and connecting bars designated respectively 4 and 5.

A reel device designated as an entirety by the numeral 6 is mounted in a manner that its name implies between the standards 2 of the frame, a shaft 7, forming a part of the reel device, acting as its support. Shaft

7 is square or polygonal in cross section as shown. Terminal disks or circular plates 8 also form a part of the reel structure, each disk being provided with a plurality of peripheral notches designated 9. Notches 9 (when it is desired that the reel be locked against rotation) receive a coacting pawl or stop device 10, said pawl or device being equipped with a weight member 11 which, by gravity, will maintain the engaging end of the pawl normally in yielding contact with the periphery of the disk or plate. A single pawl 10 is provided for each disk or plate, the respective pawls being mounted for movement on and with a bar 12 pivoted at its respective terminals to the standards 2, said bar being provided with treadle members 13 actutable to disengage the pawls.

Arms 10' are mounted on the shaft 7, and with the disks 8 and said shaft constitute the reel. The said arms are arranged in helical radial relation, each arm comprising a shank portion 11', each respective terminal of the shank portion being enlarged as indicated at 12' and 13', the enlargement 12' being provided with an opening 14 for a purpose to be hereinafter fully described, and the enlargement 13' being provided with an opening 15 of a size and shape to receive the shaft 7 whereby to provide for rotation of the several reel parts in unison when it is desired that the reel be turned. Each arm may be adjusted longitudinally of the shaft, a set screw 16 being associated with each arm to lock it subsequent to adjustment.

Disks 8 are each provided with a plurality of uniformly spaced openings 16, the corresponding disk openings being in alignment with each other and with the openings 14 formed in the radial arms.

As shown to advantage in Fig. 2 of the drawings, the several arms 10' (or specifically the enlargements 13' thereof) are arranged upon the shaft 7 in abutting relation, the outermost arms being spaced equidistant from the shaft terminals, the openings formed in the several arms being in aligned relation, as suggested, with the openings formed in the end plates or disks. It will be noted that the distance between the several arms and the disks 8 increase as the arms progress circumferentially of the shaft 7 on one side of said arms and decrease as the arms progress circumferentially of the

shaft upon the opposite side of said arms, thereby providing a novel means for supporting rolls of screening material varying in width.

Each arm carries a pair of retaining bands 17, one of the said bands being arranged upon each of the respective lateral faces of the arm and in registry with the opening 14 formed therein. The bands 17 are divided to form a delivery space through which the screening material passes when being dispensed. The opposite terminals of the several bands, are provided with ears 18, offset from the band proper, the ears providing an attaching means as well as a means whereby the band proper is supported spaced from that face of the arm to which it is attached. Retaining bands 19, (see Fig. 2) similar to the bands above referred to, are mounted on each disk 8, only however upon the adjacent lateral faces thereof, one retaining band of each disk forming with one retaining band of each arm a novel support whereby the screening material when rolled may be held and displayed or exhibited in a manner permitting ready dispensation if desired. The band mounted on each of the respective lateral faces of the radial arms coacts with the alined adjacent band mounted on the disk to effect a screen roll support, the several alined bands, by reason of the spacing aforesaid, providing for the support of rolls of screening material varying in length.

Connecting bar 4 is in the nature of a shaft in that it is mounted to rotate. Said shaft 4 (the bar being hereinafter referred to as a shaft) is preferably square in cross section and mounted at the upper extremity of the frame, each end of said shaft carrying a sprocket wheel 20 having connection with like sprocket wheels 21 and 22 through the medium of a chain 23 operating over the three, said sprocket wheels being arranged relatively as shown to advantage in Fig. 1. Sprocket wheel 21 is mounted on a stub shaft 24, the said shaft being longitudinally split or divided throughout a portion of its length as indicated at 25 for the purpose of receiving the screening material designated A in the drawings. The chain and sprocket wheel structure above referred to is provided upon the upper end of each standard 2. Each standard at its upper end is also provided with a plate member 26, said plate being disposed in parallel spaced relation to the standard 2 whereby to form with said standard a housing for the several sprocket wheels as well as to effect a bearing for the stub shaft 24. Sprocket wheel 22 is also mounted on a stub shaft 27, the shaft 27 carrying a crank handle 28 for manually rotating sprocket wheel 22 and imparting motion to shaft 24 and shaft 4 through traveling movement of chain 23.

A retaining band 29 is secured to the plate member 26 and arranged to embrace the inwardly projecting end of stub shaft 24, the said band acting as a support for the screening material as it is wound on shaft 24 as will hereinafter appear.

A movable support member or carriage designated as an entirety by the numeral 30 is mounted for longitudinal adjustment on the bar 5, said carriage being movable toward and from the respective stub shafts 24 carried by each of the standards 2. The carriage in its preferred embodiment consists of a carriage frame 31 comprising spaced frame portions between which sprocket wheels 32 and 33 operate, sprocket wheel 32 being driven through rotation of shaft 4 and sprocket wheel 33 being driven through the agency of a chain 34 arranged thereover. Bar 5 precludes lateral displacement of the carriage 30 and at all times maintains the said carriage in a position whereby the axis of rotation of sprocket wheel 33 is alined with the axis of rotation of the respective stub shafts 24. Sprocket wheel 33 is also mounted on a stub shaft 35 journaled in the frame 31, the said shaft 35 being of a length to project beyond the respective lateral faces of the frame, each end of said shaft being longitudinally split or divided as indicated at 36 whereby to accord and register with the stub shaft 24 and slit 25 noted above. Carriage 30 is further equipped with retaining bands 37 arranged one on each of the respective lateral faces of the frame 31 and to embrace the respective shaft terminals as shown, each retaining band 37 as well as the retaining band 29 referred to above being divided to form a receiving space through which the screening material passes in a winding operation as will hereinafter appear. Carriage 30 is further equipped with rollers 39 which direct movement of the screening material as it is being wound.

Before contacting rollers 40, one being mounted at each end of the machine adjacent the guards 29 the screening material dispensed is adapted to pass between the blades 43 and 44 of a cutting device, the former, blade 43 being movable relatively to the blade 44. Said blade 43 operates at an angle to blade 44 whereby to provide for a shearing cut when in use. The opposite terminals of blade 43 are enlarged and operate within grooves 45 therefor, the respective grooves being formed within angle blocks 46 affixed, one to each of the standards 2, in a plane immediately above the periphery of the reel. The enlargements of the movable blade above referred to serve as a means whereby said blade is maintained at an angle to blade 44 and moved in a manner providing for the shearing cut above

noted. The enlargement at one end of the blade is formed by extending said blade laterally as indicated at 47 a greater distance than it is extended as at 48, the respective extensions forming the enlargement, said enlargements being parallel to about the blocks 46 and fit the grooves 45 noted above. The elongated extensions 47 are formed at diagonally opposite corners of the blade, consequently the shorter extensions 48 must be likewise formed. A return spring 49 normally maintains said movable blade in spaced relation from the stationary blade 44 so as to permit of passage of the screening material A therebetween.

The actuating mechanism for the cutting device includes a rope or cable 50 having connection with the movable blade 43 at one end and with a rotatable shaft 51 at the other, the said shaft being journaled at its respective terminals within the standards 2 and provided, adjacent each end, with a drum device 52 over the periphery of which the rope or cable 50 operates. Said shaft 51 is further provided with a treadle 53 movable to rotate the drum and draw the knife blade 43 into engaging proximity with stationary blade 44, the two coacting in a manner insuring a perfect straight line cut of the screening material A.

A tie band 54 is arranged to loosely encircle the retaining band 37 for a purpose subsequently to appear.

Operation of the machine or apparatus is as follows:—Assuming that the reel 6 carries a number of rolls, it is but necessary that the reel be rotated to provide for the dispensation of a quantity of the screening material from the roll desired. Rolls varying in length are supported by the reel, a number of rolls on each side of the arms arranged in helical radial relation as above set forth. Each arm 10' acts as a support for one end of each of two rolls. The reel 6 is manually rotated to the desired degree, being locked in its adjusted position by the engagement of pawls 10 with the end disks. The screening material is then partially unwound, the free end of said material being passed between the blades 43 and 44, against the rollers 40, through the receiving space formed in the retaining bands 29 and 37 and finally releasably fastened to the stub shafts 24 and 35. Having thus been fastened, crank handle 28 is turned to rotate sprockets 22, 20 and 21, the latter being mounted on shaft 24. Rotation of sprocket 20 will direct movement to sprocket 32 and, through the agency of the chain 34 rotate the shaft 35. It will thus be seen that shafts 24 and 35 rotate in unison to wind the screening material thereon and at the same time unwind the material from its original roll. When the proper length of screening material has been unwound from the original roll and

wound upon the shafts 24 and 35, treadle 53 is depressed to exert a pull on the rope or cable 50 and consequently impart movement to movable blade 43 against tension of its associated spring 49. As the said blade 43 is moved toward the stationary blade, the material A is cut or severed and that portion wound on the shafts 24 and 35 subsequently removed in a rolled condition through lateral bodily movement of carriage 30 away from that shaft 24 with which it has been co-operating to provide for a winding operation as aforesaid.

Before removing the cut and rolled material from the machine or apparatus, said material may be bound or tied in its rolled condition by simply sliding a wire band 54, normally encircling one of the retaining bands, longitudinally of the roll, the said wire band, when intermediate the rolled ends, being tightened or twisted to act as a fastening means as pointed out.

From the foregoing, taken in connection with the accompanying drawings it will be noted that carriage 30 may be moved toward either side of the device or apparatus, to provide for its use in connection with either of the shafts 24; that the screening material is simultaneously unwound, wound, and measured through rotation of one of the crank handles 28; and that immediately subsequent to the action last mentioned, the material is cut at the proper point by simply depressing on either of the treadle devices 53.

In concluding, attention is called to the fact that the various rolls of screening material may be exhibited and carefully inspected through a turning movement of the reel and that the novel arrangement of the arms relatively to the disks 8 is such in its nature as to utilize a minimum of space with a maximum of efficiency when in use.

In reduction to practice, I have found that the form of my invention, illustrated in the drawings and referred to in the above description, as the preferred embodiment, is the most efficient and practical; yet realizing that the conditions concurrent with the adoption of my device will necessarily vary, I desire to emphasize the fact that various minor changes in details of construction, proportion and arrangement of parts may be resorted to, when required, without sacrificing any of the advantages of my invention, as defined in the appended claims.

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

1. In an exhibiting apparatus, a reel structure comprising a shaft, disks mounted at opposite ends of the shaft, radial arms mounted on the shaft intermediate the disks, said arms being adjustable longitudinally of the shaft to vary the space between the arms and the disks, retaining means

mounted on each of the respective lateral faces of the arms, retaining means mounted on the adjacent faces of the disks, the retaining means on one side of the several arms forming with the retaining means on the adjacent face of the disks a support for rolls of material varying in length.

2. In a display rack for rolled materials, spaced members adapted to support the remote ends of a plurality of pairs of axially alined rolls, of equal or unequal lengths, a support connecting the members permitting rotation thereof, and a plurality of means adjustable on the support for engaging between and supporting the adjacent ends of said pairs of rolls.

3. In a display rack for rolled materials, a frame, a shaft journaled for rotation therein, spaced members mounted on the shaft, circumferentially arranged means on the adjacent sides of said members for supporting the remote ends of a plurality of pairs of axially alined rolls, said supporting means on the members being in opposed relation, to dispose the pairs in parallelism and a plurality of arms on said shaft adjustable longitudinally thereon to engage the adjacent ends of each pair of rolls, and means on said arms similar to the first mentioned means for supporting said adjacent ends.

4. In a display rack for rolled materials, a frame, a shaft journaled for rotation therein, spaced members fixedly mounted on said shaft for rotation therewith, a plurality of circumferentially arranged supporting means on the adjacent faces of said members in opposed relation for supporting therebetween in parallelism a plurality of pairs of axially alined rolls of material, a plurality of radial arms, mounted on said shaft for longitudinal adjustment thereon, said arms being uniformly angularly spaced from each other in the same direction to define a helix to permit the ends of the arms to engage between the adjacent ends of the pairs of rolls thereby permitting the arrangement in the rack of rolls in circumferential order of uniform increasing and decreasing widths, and supporting means on said arms for supporting the rolls.

5. In a display rack for rolled materials, a frame, a squared shaft journaled for rotation therein, spaced disks fixedly mounted on said shaft, a plurality of circumferentially arranged supporting means on the adjacent faces of said disks, in opposed relation to support therebetween in parallelism the remote ends of a plurality of pairs of rolls of equal or unequal lengths, a plurality of arms having corresponding ends provided with squared apertures to receive the said shaft whereby the arms may be arranged radially on the shaft and maintained in angular spaced relation and adapted for adjustment longitudinally of the shaft, means

for securing the arms against movement subsequent to adjustment, the opposite ends of the arms being adapted to engage between the adjacent ends of said rolls, and supporting means on the opposite sides of said arms for supporting said ends of the rolls.

6. In a displaying and dispensing device for rolled materials, means for supporting a supply roll of material and an unwinding means including a pair of axially alined rotatable stub shafts provided with diametrical recesses in their adjacent ends, spaced to receive in said recesses the selvage edges of the unwinding end of the material, and means for rotating said shafts in unison to thereby wind up a roll to be dispensed.

7. In a displaying and dispensing device for rolled materials, rotatable means for supporting parallel rolls of various lengths, and an unwinding means including a rotatable element adjacent one end of the rolls, a frame member mounted for movement parallel to the rolls, a second rotatable element on said frame member in alinement with the first rotatable member whereby the frame member may be moved toward or away from the first mentioned rotatable member to correspond to the width of the roll to be unrolled, said elements being adapted to engage the unwinding end of the material at its selvage edges, and means for rotating said elements in unison whereby to form a roll of material to be dispensed.

8. In a displaying and dispensing device for rolled materials, rotatable means for supporting a plurality of pairs of axially alined rolls of material, the rolls of the pairs being of equal or unequal length, and an unwinding means including split stub shafts rotatably mounted adjacent the remote ends of said rolls and around an axis parallel to said rolls, a movable member mounted for movement parallel to the axis of rotation of the rotatable means, a pair of oppositely directed split stub shafts on said member in alinement with the first mentioned stub shafts whereby the unwinding end of one of the rolls may be engaged upon and between either one of the first mentioned stub shafts and its opposed shaft on the movable member as the case may be, and means for rotating said stub shafts in unison to roll up a quantity of material to be dispensed.

9. In a displaying and dispensing device for rolled materials, a rotatable reel structure for supporting a plurality of pairs of axially alined rolls of materials, the rolls of each pair being of equal or unequal length, an unwinding means including a pair of spaced frame members located adjacent the ends of the reel, a split stub shaft carried by each of said frame members in axial alinement for rotation about an axis parallel to the axis of the reel structure and adjacent

the rolls, a squared shaft supported for rotation at its ends upon the frame members, gearing connecting said shaft with the stub shafts, a supporting rod connecting the 5 frame members, a movable frame member mounted upon the rod, a pair of oppositely extending stub shafts mounted for rotation on said frame member in axial alinement with the first mentioned stub shafts, where- 10 by the movable member may be adjusted to receive between one of its split shafts and an opposed one of the first mentioned split shafts, the selvage edges of the unwinding end of the material of a roll selected for un- 15 winding, the material entering the split portions of the shafts, a gear carried by the movable member adapted for sliding engagement with the squared shaft, gearing

connecting said gear and the split shafts of said movable frame member, means for ro- 20 tating the squared shaft whereby all of said split shafts may be rotated in unison to form a roll of material to be dispensed, transversely split annular bands surround- 25 ing the split shaft whereby to assist in forming the roll and to support a band adapted to encircle the roll when formed, and means for severing the material between the supply roll and the roll to be dispensed.

In testimony whereof I affix my signature 30 in presence of two witnesses.

SAMUEL W. CRANE.

Witnesses:

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