March 28, 1933. H. S. BOBO 1,902,826

STORAGE AND DISPENSING DEVICE FOR SCREEN, WIRE, AND THE LIKE

Filed Feb. 26, 1930 2 Sheets-Sheet 1

Fig. 1.

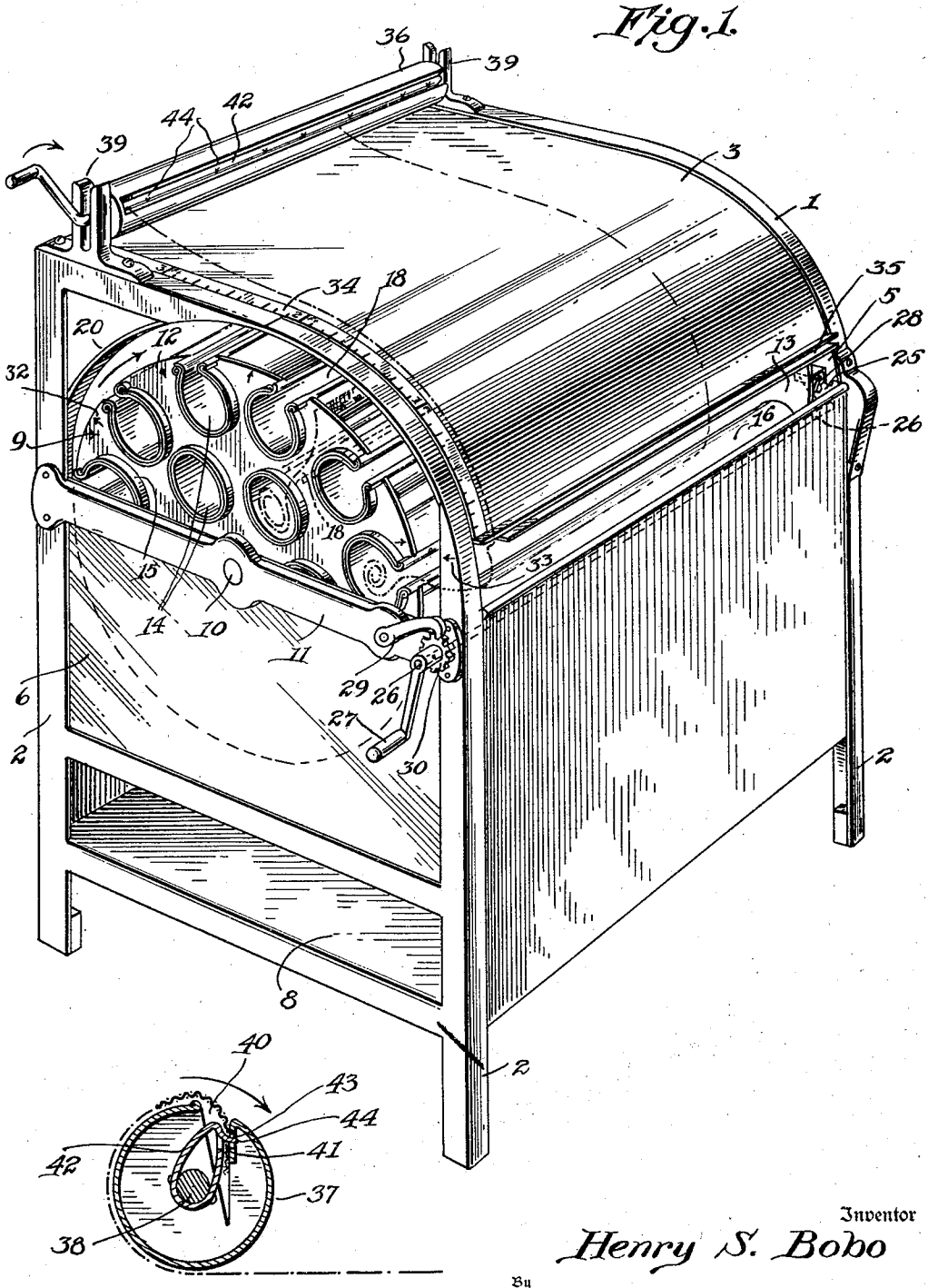


Fig. 2.

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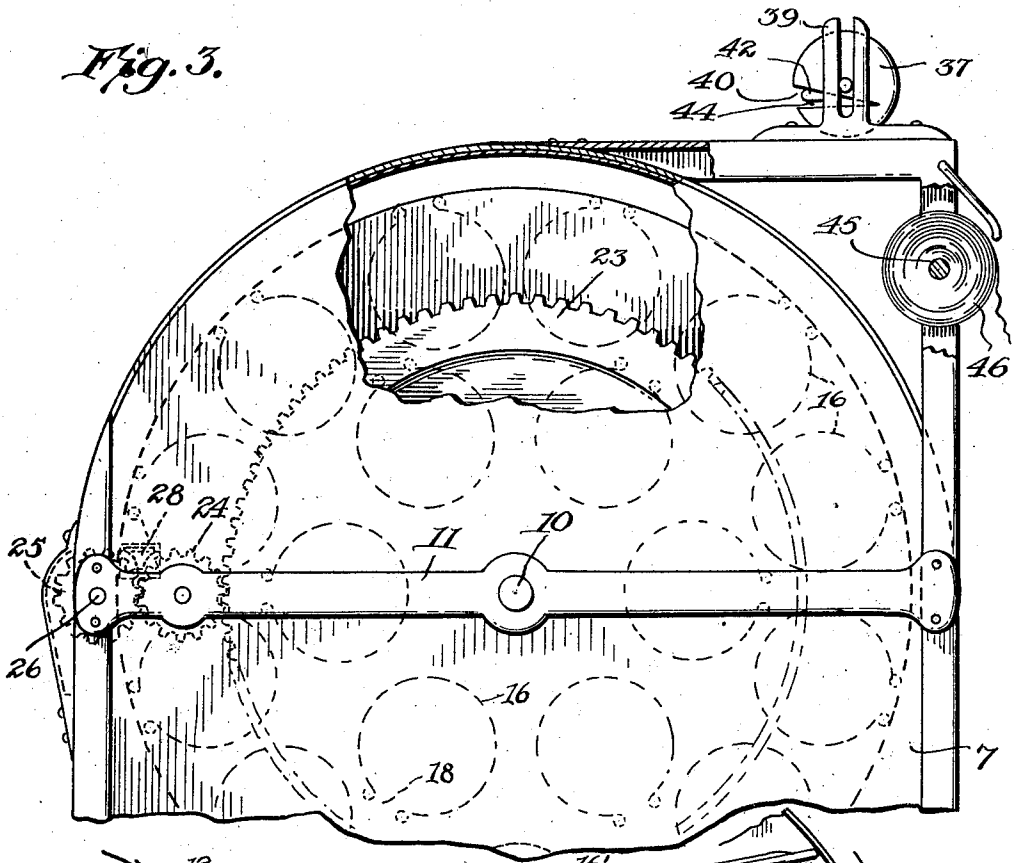
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Fig. 3.



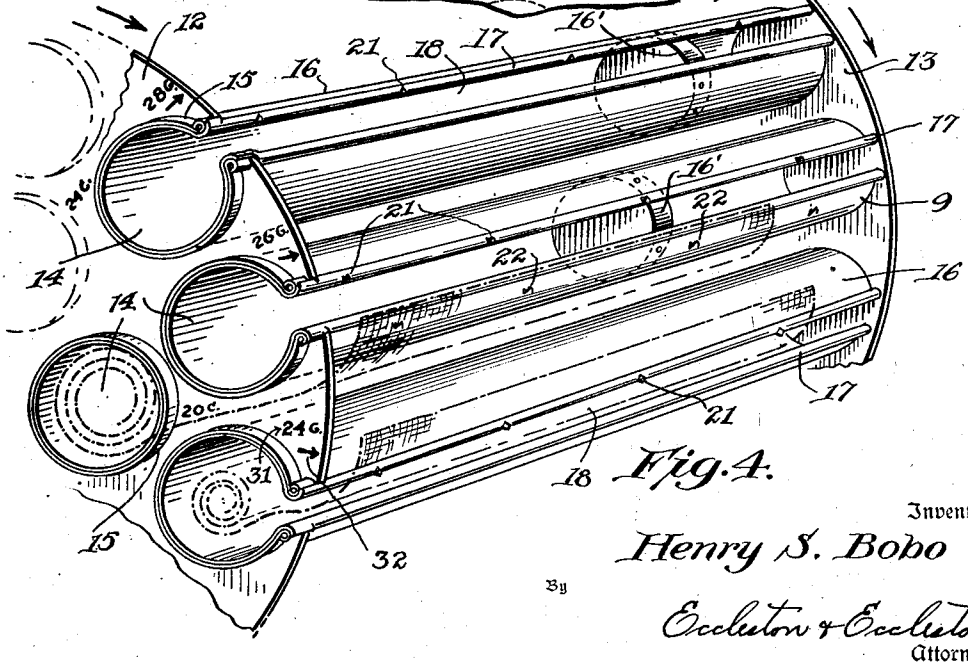


Fig. 4.

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UNITED STATES PATENT OFFICE

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STORAGE AND DISPENSING DEVICE FOR SCREEN WIRE AND THE LIKE

Application filed February 26, 1930. Serial No. 431,477.

This invention relates to a storing and dispensing device and while primarily intended for use in connection with the storage and dispensing of screen wire and chicken wire in a hardware store, is also useful for the storage and dispensing of sheet material in general.

Considerable difficulty has been encountered heretofore in the storage and dispensing of screen wire and the like, not only because it is ordinarily bulky and unwieldy, but also because its resiliency and tendency to straighten out renders its handling with any degree of expediency practically impossible.

An object of the present invention, therefore, resides in the provision of a compactly arranged cabinet designed to receive a plurality of rolls of screen wire or the like in a relatively small space.

Another object of the invention consists in the provision of such a cabinet in which any desired amount of material may be readily removed from any one of the rolls without removing the roll bodily from the cabinet.

Another object of the invention consists in providing such a device with means for measuring the material dispensed as it is drawn across the top or casing of the cabinet.

A further object of the invention resides in the provision of a dispensing cabinet in which means are provided for mechanically gripping the free end of the sheet of material being dispensed and winding it up into a neat roll prior to severance from the main body.

Another object of the invention consists in the provision of such a gripping and winding means capable of winding a plurality of sheets of dispensed material into a single roll combined with means for binding the roll in final form.

Other objects and advantages of the invention will be apparent from the following description when taken in connection with the accompanying drawings; in which

Figure 1 is a perspective view of the complete device for storing and dispensing screen wire and the like, showing in dotted lines a portion of a sheet partly unrolled from a primary roll and about to be severed.

Figure 2 is a transverse sectional view through the combined gripper and reel for winding the dispensed material into a roll.

Figure 3 is a fragmentary end elevational view of the device with a part of the end wall broken away to more clearly show the interior construction; and

Figure 4 is a fragmentary perspective view of the rotatably mounted drum in which the sheet material is stored.

Referring to the drawings in greater detail the numeral 1 designates the cabinet formed of sheet metal or the like and provided with legs 2, preferably extensions of the angle irons forming the framework of the cabinet. The top plate 3 is preferably curved downwardly at its front end and is spaced from the upper edge of the front plate 4 so as to provide a dispensing slot 5.

The sides of the cabinet are provided with plates 6 and 7, the latter entirely closing one side of the cabinet, and the former extending upwardly only as far as the axis of the dispensing drum so as to permit access to the drum for loading the various compartments as will be described. The lower edge of the side wall 6 stops short of a bottom wall 8 so as to provide a storage shelf for excess rolls of material.

The storage drum is designated generally by the numeral 9 and is mounted on a horizontal shaft 10 extending transversely of the cabinet 1 and supported in side bars 11. The bars 11 are of identical construction and have their ends secured to the front and rear angle irons 2 of opposite sides of the cabinet. The drum 9 comprises end plates or discs 12 and 13 mounted on the shaft 10 and spaced apart a distance substantially equal to the width of the cabinet. The disc 12 is provided with a plurality of circular openings 14, eighteen being shown in the present embodiment of the invention. Each of these openings is provided with an integral, outturned flange 15 forming a bearing surface and support for the tubular, slotted members 16, each of which has one end mounted in one of the openings 14 and the other end

secured to the inner face of the opposed disc 13. These tubular members 16 are preferably provided with beaded portions 17 extending longitudinally thereof and forming the side walls of the slot 18 through which the stored material projects.

Twelve of the openings 14 for receiving the compartment forming members 16 are arranged about the periphery of the drum while the remaining six openings are shown as arranged about an inner circle. Portions of the supporting flanges 15 of the outer series of compartments are shown as curled back upon themselves to provide a continuation of the beads 17 and also providing a continuous open slot from the free edge of the flange 15 to the opposite disc 13. It will be understood that a roll of screen wire or the like is placed in each of these compartments, and by providing the continuous slots 18 as described each roll may be slid longitudinally into place with a part thereof unrolled and extending outwardly through its particular slot.

The tubular compartment members 16 forming the inner circular series of compartments are also slotted as indicated in dotted lines in Figure 1, but the slots do not extend through the ends thereof as just described in regard to the outer series of compartments. In order, therefore, to properly position the rolls of material in the inner series of compartments it is necessary that they be inserted in completely rolled-up condition and then unrolled slightly so as to extend the free end through the slot of the particular compartment.

A substantially circular casing member 20 encircles the periphery of the drum 9 except for the provision of a slot therein registering with the dispensing slot 5 of the cabinet. This casing member serves to bend over the compartment walls all of the outwardly extending edges of the sheet material. In this connection it is to be noted that the edges of the inner rolls are extended outwardly to the periphery of the drum (see dotted lines, Figures 1 and 4) in the same manner as are the outer rolls, except that the edges extend a greater distance and pass between the walls of adjacent compartments. Means are provided on one of the beads 17 of each of the outer series of compartments to retain the free edges of the rolls in their outwardly projected positions and similar means are provided on the walls of alternate ones of the outer compartments to serve a similar function for the free ends of the rolls of the inner compartments. Such means are indicated by the numerals 21 and 22 representing tangs or the like for entering the mesh of the bent-over screen material, although it will be understood that pins or other types of retaining means may be employed. The elements 20 and 21 are essential to the proper functioning of the apparatus since otherwise there is a distinct tendency for the rolls of material to roll about their compartments as the drum is rotated, thereby drawing the free edges of the material into the compartments and rendering it extremely difficult to present the edges to the dispensing slot 5 for withdrawal.

It will be understood that screen wire and chicken wire are manufactured in different widths and in order to accommodate the compartments 16 to the different length of rolls, wooden discs 16′ are provided. These discs are mounted in one or more of the compartments as may be necessary and are secured in place in any desired manner.

The drum 9 has secured thereto a gear wheel 23 which meshes with a pinion 24 rotatably mounted on the adjacent supporting bar 11. Pinion 24 in turn meshes with a pinion 25 mounted on the end of a drive shaft 26 provided with a hand crank 27. By this train of gearing it will be apparent that the drum 9 will be caused to rotate in the same direction as the crank 27. The arrow in Figure 1 indicates the direction of rotation of the drum 9 and a pawl 28 shown in dotted lines in Figure 3 serves to prevent operation of the drum in the opposite direction. In the event that the drum 9 is partly empty it is possible that the weight of the remaining material might be so distributed as to cause the drum to rotate forwardly from a given position, and to prevent such an occurrence a detent 29 is provided for cooperation with a toothed wheel 30 secured to shaft 26 adjacent the crank 27. This pawl is adapted to be raised manually when the drum is to be rotated, but serves to lock the drum against rotation in either direction when in engagement with the wheel.

There are, of course, a number of varieties and grades of screen wire and these different materials may be suitably arranged in the various compartments and suitable indicia 31 may be placed on the disc 12 for designating the goods contained in a particular compartment. Likewise it is desirable that suitable markings such as arrows 32 be provided adjacent each compartment for cooperation with a mark 33 on the casing 1 to indicate when a particular compartment is in registration with the dispensing slot 5.

For the purpose of measuring the material drawn from any particular roll contained within the drum 9, a linear scale 34 is provided along one edge of the top 3 of the cabinet; and a knife guide 35 is provided for use when severing the measured material from the main body. This guide comprises a pair of parallel flanges and it is to be noted that one end of the upper one of these flanges projects slightly beyond the adjacent end of the lower flange. The purpose of this construction is to allow a portion of the material to

be manually crimped over the projecting end of the flange to provide a mark indicating the point to which the material has been measured in instances where a strip of greater length than the linear measurement 34 is to be cut.

Wire screening is usually sold in tubular rolls, both wholesale and retail, and in order to wind the measured material into this form as well as to draw it from the storage rolls and expeditiously handle the same, I provide a reel 36 at the rear of the top of the cabinet. This reel comprises a hollow body portion 37 loosely mounted on a shaft 38 having its ends removably mounted in U-shaped bearing members 39. The body 37 of the reel is provided with a longitudinal slot 40 into which the free end of the material being dispensed is projected, and in order to firmly grip the material cooperating members 41 and 42 are provided on the body and shaft respectively. The member 41 preferably consists of an inturned flange bent up from the metal forming the body of the reel and is provided with a plurality of apertures 43 adapted to receive teeth 44 formed on the member 42. The edge of the screen material is, of course, inserted in the slot 40 while the teeth 44 are withdrawn from the apertures 43. A slight movement of the shaft in the direction of the arrow (Fig. 2) will project the teeth through the openings in the screen fabric and into the apertures of the clamping member 41 thus securely locking the free edge of the material to the body of the reel. Continued movement of the shaft will cause the body 37 to rotate and wind up so much of the material as is to be dispensed to the particular customer; it being understood, of course, that the rear end of the measured portion will be severed at the guide 35 prior to winding up the last part of the sheet.

It is usual to package rolls of screen wire by passing a band of paper around the roll at the middle portion thereof, and to facilitate this operation a roller shaft 45 is provided at the rear of the cabinet on which is mounted a roll of such paper as indicated by numeral 46. It should also be noted that when a purchaser buys sections of several different grades of screening the first section is measured and rolled up as just described and the leading edge of the second section may then be engaged under the last winding of the first section and also measured and wound into place on the first roll to provide a unitary package. After the packaging operation is completed the reel 37 is lifted from its bearings 39 and the package may be slid off ready for delivery upon a backward movement of shaft 38 to release teeth 44 from the screen material.

The operation of the several features of the invention have been described in connection with the detailed description of the structure and a brief summary of the complete operation will now be given.

The rolls of the various grades and sizes of the screen wire or chicken wire are charged into the various compartments 16 in accordance with the indicia 31 on the disc 12; it being understood that the drum 9 is rotated from time to time to bring the various compartments into the space above the upper edge of the end plate 6. As the rolls of material are charged into the outer series of compartments the outer edges of the rolled material are slid longitudinally through the slots 18 so that an outer flap of material is provided in each compartment. As the drum is rotated to bring the unloaded compartments into position for loading as well as in rotating to bring the various compartments into registration with the dispensing slot 5 for dispensing the material, the casing 20 causes the outwardly protruding flaps to bend over the beads 17. By this means the open-mesh fabric of the flaps are caused to engage the tangs or pins 21 and thus any tendency of these flaps to be drawn into the compartments by reason of the rotation of the drum is prevented.

Rolls of material are also charged into the inner series of compartments 16 and the outer convolution thereof are drawn through the slots 18 of the inner compartments and passed between adjacent compartments 16 of the outer series so as to bring these flaps into a position such that they will engage the tangs or pins 22 formed on the outer walls of the contiguous compartment. These flaps of the inner rolls of material also engage the casing member 20 and are bent over and held in engagement with the elements 22.

The drum being fully charged and it being desired to dispense a particular grade and size of screen material, the detent 29 is raised and the crank 27 rotated to bring the compartment containing the particular material into registration with the dispensing slot 5, this being determined by a registration of the particular arrow 32 with the mark 33 on the side wall of the casing. As the compartment is brought into registration with the slot 5 the outwardly extending flap of the roll of material contained in this compartment will automatically project through the slot 5 as it disengages from the casing 20 and it may then be grasped by the operator and pulled upwardly over the top 3 of the cabinet. The free end of the sheet is extended into the slot 40 of the reel 37 and gripped by rotating the shaft 38 as heretofore described so as to project the teeth 44 into the perforations 43 of the flange 41. The length of material thus drawn over the top 3 of the cabinet may be determined by glancing at the linear scale 34 which is permanently placed on the cabinet, and if a greater length of material is to be dispensed

the operator will press the edge of the material over the projecting end of the upper flange of the guide 35 so as to form a crimp therein and indicate the extent of measurement. The reel is now operated to wind up the material which has been measured and to bring the crimped portion to the outer end of the measuring scale. These operations are repeated until the proper length of material is measured, at which time a knife is drawn through the slot 35 and the length of material severed from the main body thereof. Rotation of the reel 37 is now continued to completely wind up the material.

If additional screening material of a different grade or quality is to be sold to the same customer, the pawl 29 is again lifted and the drum rotated to bring the proper compartment into registration with the slot 5. The flap of the material of this particular compartment will automatically project through the slot 5 as heretofore described, and the operator will draw the free end of the material up over the top of the cabinet for the purpose of measurement and will project its edge under the last convolution of the previously wound sheet so as to cause the same to be gripped and wound upon the top of the previously wound strip. After all the material to be contained in the particular package is wound upon the reel, a strip of wrapping paper is withdrawn from the roll 46 and wrapped around the package of material in the usual manner and secured in position. The reel 37 may now be lifted from its bearings 39 and the package slid off of the end of the reel for delivery.

From the foregoing description taken in connection with the accompanying drawings it will be apparent to those skilled in the art that I have provided a comparatively simple and compact construction for storing screen wire, chicken wire and the like in a small space, but in which all of the various grades of material are readily accessible for dispensing; that means are provided for conveniently measuring the material upon the top of the cabinet itself, thus eliminating the necessity of an outwardly extending shelf or the like for such purpose; that the device provides for immediately rolling up the material as it is dispensed and measured, thereby avoiding the many inconveniences and disadvantages attendant to the usual method of drawing the material out in a flat sheet; that the device is rendered entirely foolproof by reason of the several attachments which control the operation of the drum; and that means are provided in the mechanism itself for completely packaging all of the material dispensed to a particular customer.

In accordance with the patent statutes I have described what I now believe to be the best embodiment of the invention, but I do not wish to be understood thereby as limiting myself or the scope of the invention as many changes and modifications may be made without departing from the spirit of the invention; and all such I aim to include in the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. A device for storing and dispensing sheet material, a reel for winding up the dispensed material, a shaft on which the reel is loosely mounted, said reel provided with a longitudinal slot in its periphery, a member secured to said reel and extending inwardly thereof, an arm on said shaft for cooperating with said member for gripping the free edge of the sheet material and for imparting a rotary movement to the reel.

2. A device for storing and dispensing sheet material, a reel for winding up the dispensed material, a shaft on which the reel is loosely mounted, said reel provided with a longitudinal slot in its periphery, a perforated member secured to said reel and extending inwardly thereof, an arm on said shaft for engaging said member, and teeth on said arm for insertion in said perforation.

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