(No Model.) 2 Sheets—Sheet 1.

J. W. HAYDEN.

SPOOL THREAD CABINET.

No. 493,087. Patented Mar. 7, 1893.

Fig 1

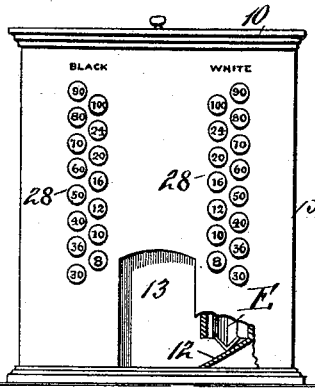


Fig 2

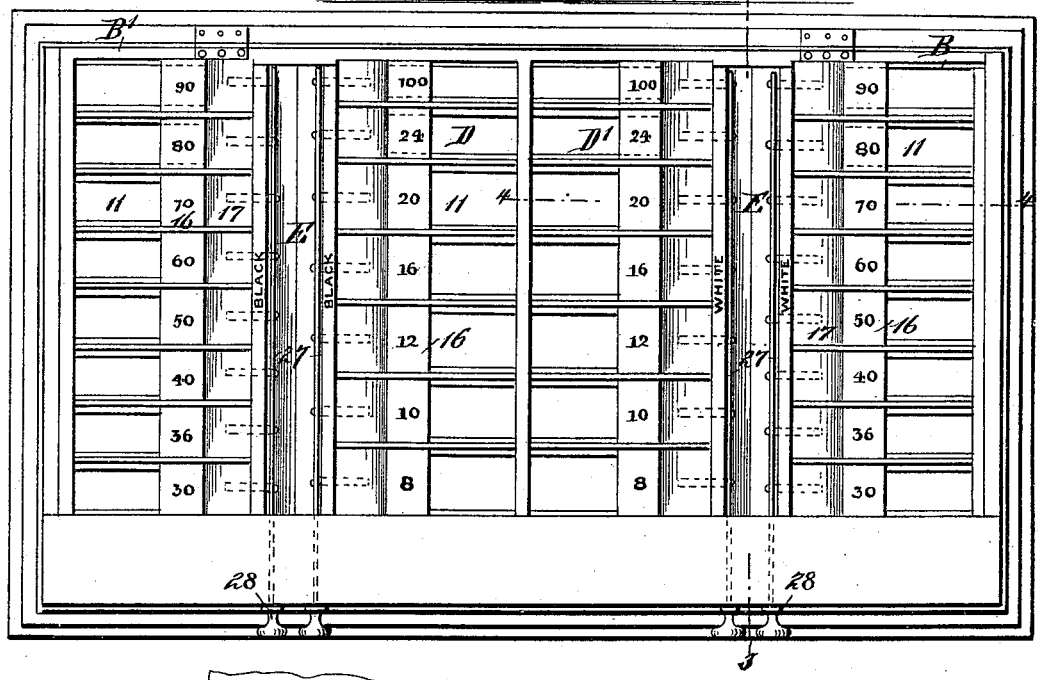
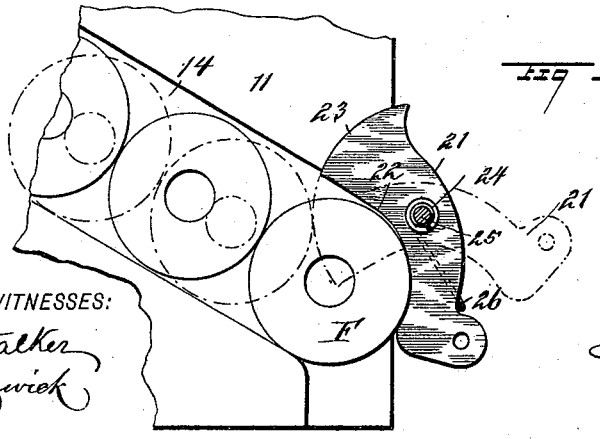


Fig 5



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(No Model.) 2 Sheets—Sheet 2.

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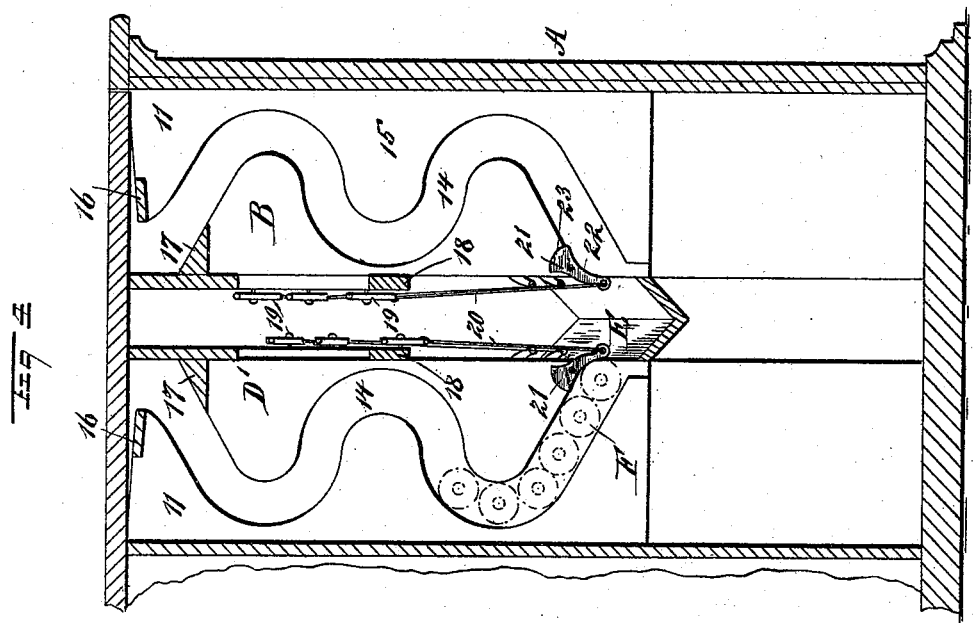

Fig. 2.

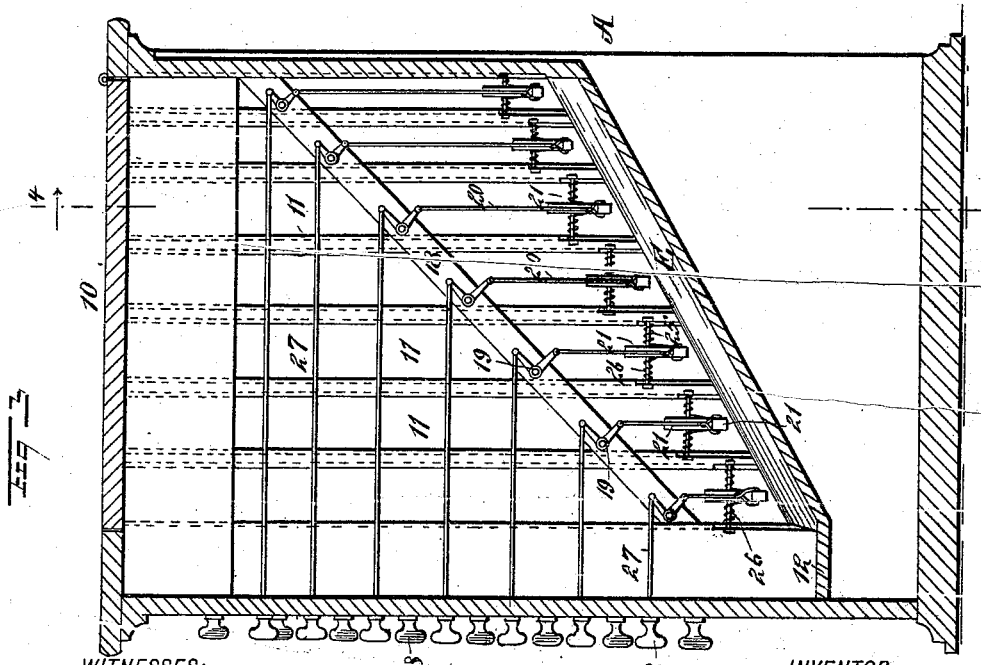

Fig. 3.

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UNITED STATES PATENT OFFICE.

JAMES W. HAYDEN, OF LEWISPORT, KENTUCKY.

SPOOL-THREAD CABINET.

SPECIFICATION forming part of Letters Patent No. 493,087, dated March 7, 1893.

Application filed October 15, 1892. Serial No. 448,950. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. HAYDEN, of Lewisport, in the county of Hancock and State of Kentucky, have invented a new and Improved Spool-Thread Cabinet, of which the following is a full, clear, and exact description.

My invention is an improvement in that class of spool cabinets in which spools are placed in single columns and are delivered therefrom by pulling a knob which in turn operates a releasing device.

The invention consists in the novel construction and combination of certain parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is an exterior view of the cabinet, a portion of its front face being broken away. Fig. 2 is a plan view of the cabinet with the cover removed. Fig. 3 is a vertical section taken practically on the line 3—3 of Fig. 2. Fig. 4 is a vertical section taken essentially on the lines 4—4 of Figs. 2 and 3; and Fig. 5 is an enlarged detail view of one of the slide-ways for the spools, and illustrates also the application of the retaining and releasing device to a column of spools.

In the drawings, A represents a case or cabinet provided with a closing lid or cover 10. The cabinet may be of any size or shape, and may be constructed of any approved material. Within the case or cabinet a number of cells 11, are preferably arranged in transverse rows or clusters. The preferred arrangement of cells is that shown in Fig. 2, in which one row or cluster B, is located at the right-hand side, a second row or cluster B′ being located at the left-hand side of the case, and both clusters contain the same number of cells, while two intermediate clusters D and D′, are placed between the end clusters.

The two groups of intermediate cells, and the end groups of cells are divided by run-ways or troughs E, so that one of these troughs is located at each side of the center of the case or cabinet. The troughs or run-ways, as shown in Fig. 4, are preferably made somewhat V-shaped in cross section, and they incline from the back downward in direction of the front of the cabinet. Each run-way or trough at its lower end communicates with an inclined platform 12, and these platforms extend downward to an opening 13 produced in the front central portion of the cabinet or case at the bottom portion thereof, as shown in Fig. 1; and all of the spools as they are released from the cells are delivered to these troughs or run-ways, and roll from them upon the inclined partitions or platforms 12 to the bottom of the opening 13, through which opening they may be removed.

In the arrangement of the cells as shown in the drawings thirty are provided, each end group or cluster containing eight cells, while the central groups or clusters number but seven each. This arrangement has been found very advantageous; but I desire it to be distinctly understood that the number of clusters of cells, and the number of cells in each cluster may be varied as occasion may demand. The cells in each cluster terminate at the upper edge of one of the troughs or run-ways E; therefore, as the troughs are inclined the lower edges of the cells have the same formation, and the rear cells are consequently not as deep as the forward cells. The cells in the group B and in the group D′, have an exit at their bottom into the right-hand trough or run-way, while the cells in the groups B′, D have an exit into the left-hand trough E; and the object in providing troughs is that spools of white cotton of various numbers may be delivered to one of the troughs, while spools of black cotton will be delivered to the other trough. Thus the white cotton will be delivered at one side of the opening 13, and the black cotton at the opposite side. Ordinarily the words "White" and "Black" are printed upon the respective troughs for the guidance of the person filling the cabinet with spools.

Each cell is provided with a slide-way 14 in two opposite sides, as shown in Fig. 4; and the slide-ways 14, are adapted to receive the heads of the spools located in the cell, the width of the slide-ways being therefore regulated to correspond to the diameter of the spool heads. The slide-ways may be of any desired contour; they may be straight or

they may be produced diagonally in the side walls of the cells; but preferably, as shown in Fig. 4, the slide-ways are given a serpentine formation, starting from the top of the cell, opposite the trough or run-way to which the spools are to be delivered and terminating at the bottom of the cell upon the same side. The slide-ways may be cut or otherwise produced directly in the side walls of the cells, or, as illustrated in the drawings, plates 15 of proper shape may be secured upon the inner side walls of the cells in a manner to form the slide-ways, and the plates when they are used may be made in sections, or but two plates may be employed in the formation of a slide-way.

It is desirable that when a cell is to be filled with spools of cotton they may be expeditiously and conveniently so placed, and that the spools shall be compelled to take a position transversely across the cell, with a head in each slide-way, and not enter the slide-ways of the cell head downward; therefore at the top of each slide-way or passage 14 a step 16, is produced, and another step 17, is placed diagonally opposite to the step 16, the step 17, forming a portion of the lower wall of the slide-way at its mouth, and the step extends from one slide-way to the other, and the upper step extends also from side to side of the cell. Thus when the spools of cotton are placed in the mouth of the slide-way they are compelled to enter it with their length transversely of the cell, as the space between the two steps 16 and 17 will not admit of a spool entering the cells with the head downward. The number contained upon the spools in a cell is produced also upon the upper step 16, or other point at the top of the cell where it will be readily visible to the person whose duty it is to fill the cabinet.

Each row or cluster of cells has preferably secured to its side surfaces a connecting beam 18, and this beam is given a diagonal direction, as shown best in Fig. 3. Upon the beams 18 a series of levers 19, is pivoted, which levers are preferably of the bell-crank order, and one of the levers is placed opposite each cell. Each of these levers is connected by means of a link 20 with a dog 21, and one of these dogs is pivoted above the upper edge of the trough at the lower or exit point of each cell. The dogs 21, are adapted to force out the lower spool from a cell and deliver it to the run-way or trough nearest to that cell; at the same time the dogs also act to support the column of spools remaining in the cell while the lowermost spool is being forced out from said cell. To that end the dog is shown in Fig. 5, as provided with an inner concaved face 22 and its upper end is convexed or cylindrical, as shown at 23 in Fig. 5. In fact, the edge 23, is formed upon the segment of a circle, the center of which is the center of the opening 24 through which the pivot pin 25 of the dog is passed. The pivot pin of the dog extends from wall to wall or from side to side of the cell to which the dog belongs, and the dog is preferably placed about centrally between the walls of the cell. Each dog is controlled by a spring designated in the drawings as 26, and these springs act to force the lower end of the dogs inward in direction of the cell and thus hold the inner concaved face 22 of the dog normally in engagement with the lower spool F, contained in the slide-way or passage 14 of the cell. This position is shown in positive lines in Fig. 5, and the other position of the dog is illustrated in dotted lines, the second position being that which the dog assumes when it has thrown out the lowermost spool of the cell and is in the act of supporting the remaining spools in that cell.

It will be observed that but little strain is brought to bear upon a dog 21 when it supports the column of spools, since owing to the fact that the upper edge of the dog is cylindrical, as the upper edge is carried downward it engages with the spool next to the last one in the cell, and simply supports that spool and the spools above it but does not crowd the entire column of spools upward, or in fact change their position in the slightest degree; and while the upper end of the dog is being carried downward the lower end is raised, freeing the lowermost spool and permitting that spool to roll from the cell into the trough or run-way to which the outlet of that cell leads.

Each lever 19, has connected with it a rod 27, and these rods are passed out through the front of the case, and each rod is provided in its outer end with a knob 28, the knob bearing the number corresponding to the designating number of the cotton contained in the cell to which the knob belongs. These knobs are arranged in two rows at each side of the casing at the front; and over one row the word "White" is printed, while over the other row the word "Black" appears. The outer row of knobs belongs to the end row or cluster of cells, while the inner rows of knobs belong to the intermediate clusters.

In operating the cabinet, if a spool of No. 30 cotton is required, the knob bearing the number "30" is drawn outward, and the dog located at the outlet of the cell containing the spools of cotton numbered 30 will be operated upon in such a manner as to force out the lowermost spool, support the column of spools and deliver the lowermost spool to one of the troughs E, the right-hand one for example, and from this trough the spool of cotton will pass down the right-hand platform 12 within the opening 13 at the front of the casing, from whence it may be readily removed by hand. As soon as the knob 30 is released the spring 26 connected with the dog in communication with that knob, will act to restore the dog to its normal position, in which position it partially closes the outlet of the cell, and the entire column of spools will drop

downward until the last spool engages with the concaved surface 22 of the dog.

I desire it to be distinctly understood that the levers 19 may be different from those illustrated, and that the levers may be differently located than shown in the drawings; also that the rods connected with the levers may either be drawn outward or pushed inward to manipulate the dogs.

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

1. In a cabinet adapted to receive spool thread or like articles, a cell provided with a passage or slide-way produced in opposite sides, the said passages or slide-ways being in transverse registry, a dog pivoted on the upper side and at the exit end of the cell opposite the slide-ways or passages, whereby its longer arm hangs normally in the path of the spools, the said dog being provided with a curved inner surface and a convexed upper one, a connection between the lever and dog, and a means, substantially as shown and described, for manipulating the lever, all combined as and for the purpose set forth.

2. In a cabinet for the reception of spool thread, and like articles, the combination, with a case, rows or clusters of cells contained in the case, each cell being provided in opposite faces with a slide or passage way extending from top to bottom, and troughs located between the rows of cells and passing the outlet end of the passage or slide-ways of each cell, of dogs spring-controlled and pivoted at the outlet end of each cell opposite the slide or passage ways thereof, the said dogs being provided with cylindrical upper ends and concaved inner surfaces, levers fulcrumed upon supports within the case, a connection between each lever and the lower end of the dog, and means, substantially as shown and described, for operating the levers from the exterior of the cabinet, as and for the purpose set forth.

JAMES W. HAYDEN.

Witnesses:
WM. W. STARK,
HARVEY L. IGLEHEART.