(No Model.)

3 Sheets—Sheet 1.

J. W. HAYDEN.

SPOOL THREAD CABINET.

No. 427,509. Patented May 6, 1890.

Fig. 1.

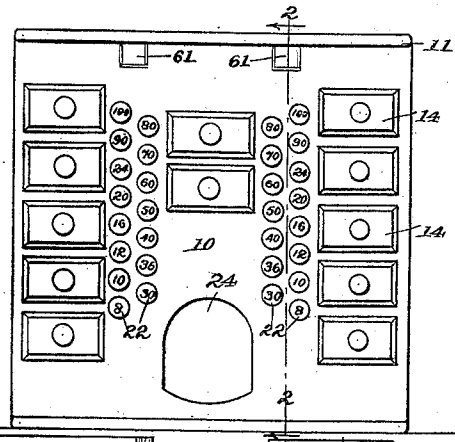


Fig. 4.

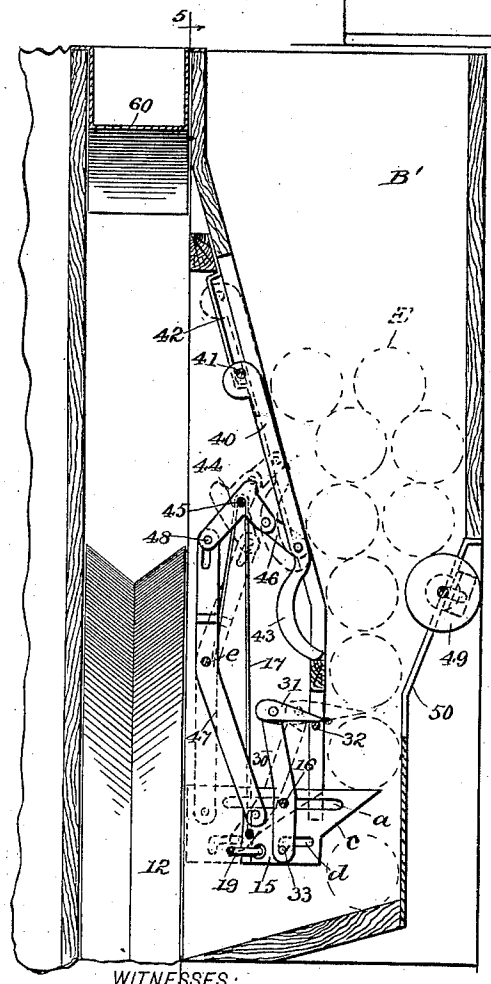


Fig. 5.

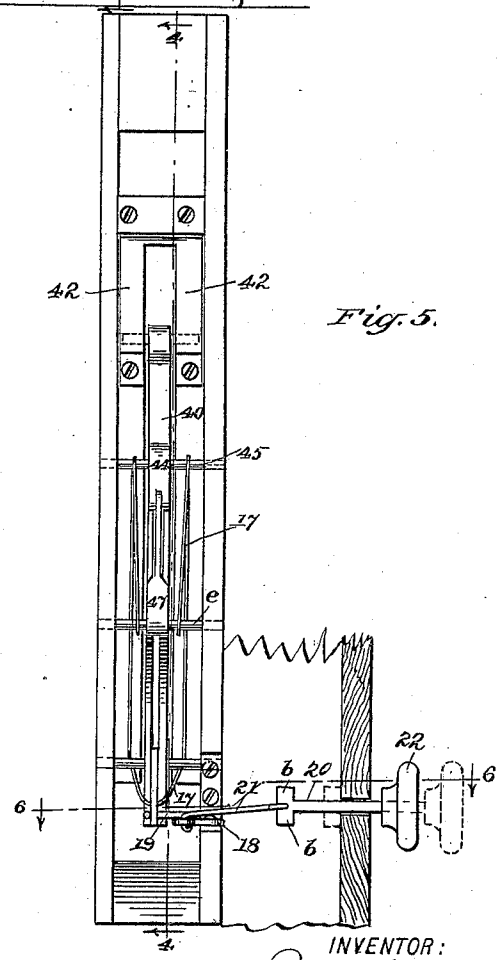
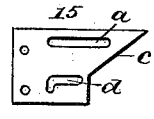


Fig. 7.



WITNESSES:

J. E. Criswell

C. Bedgwick

INVENTOR:

J. W. Hayden

BY

Munn & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

3 Sheets—Sheet 2.

J. W. HAYDEN.

SPOOL THREAD CABINET.

No. 427,509. Patented May 6, 1890.

Fig. 2.

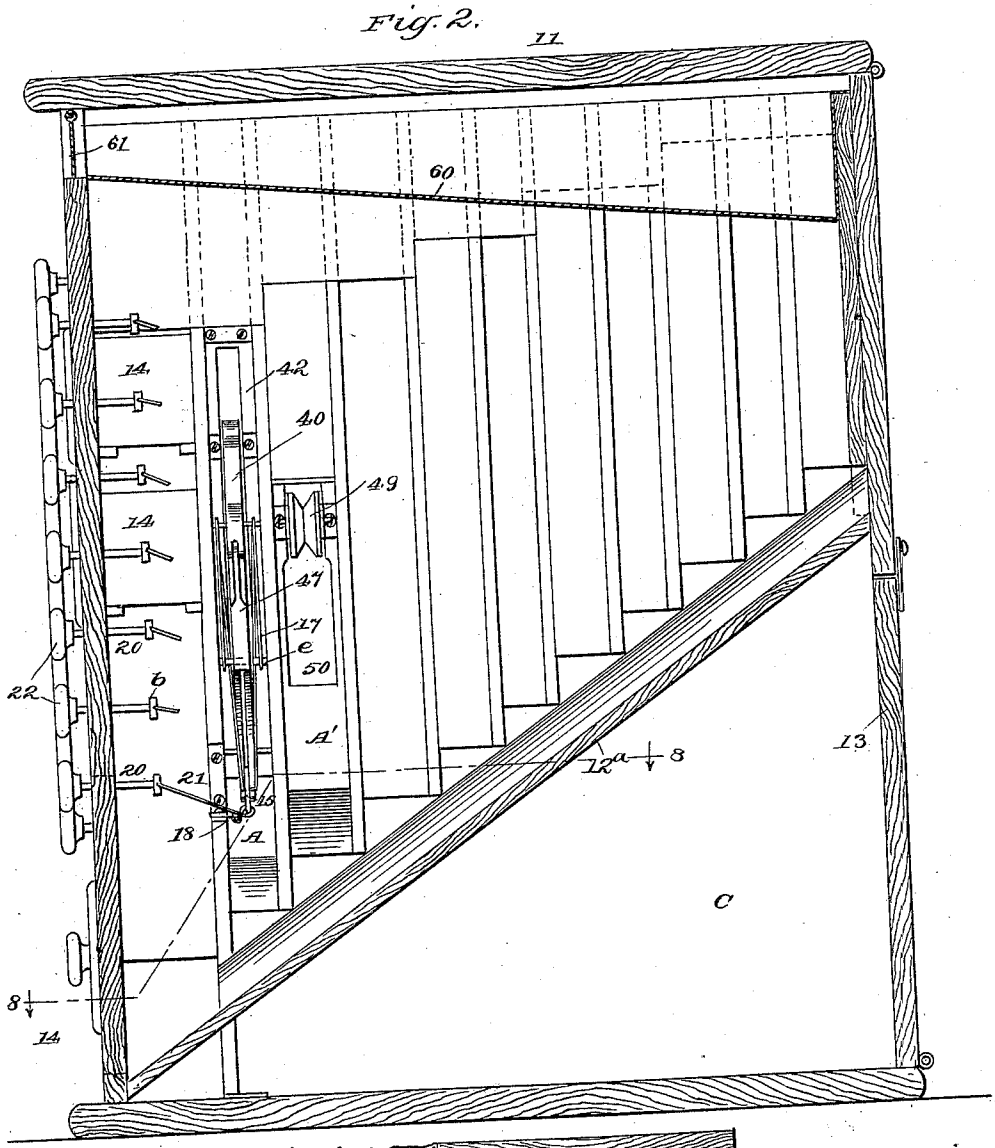
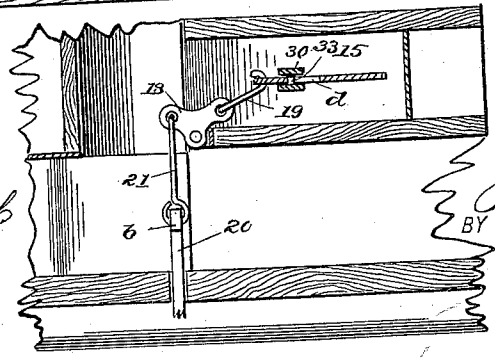


Fig. 6.



WITNESSES:

J. A. Griswold

C. Sedgwick

INVENTOR:

J. W. Hayden

BY

Munn & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 3.

J. W. HAYDEN.

SPOOL THREAD CABINET.

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Fig. 3.

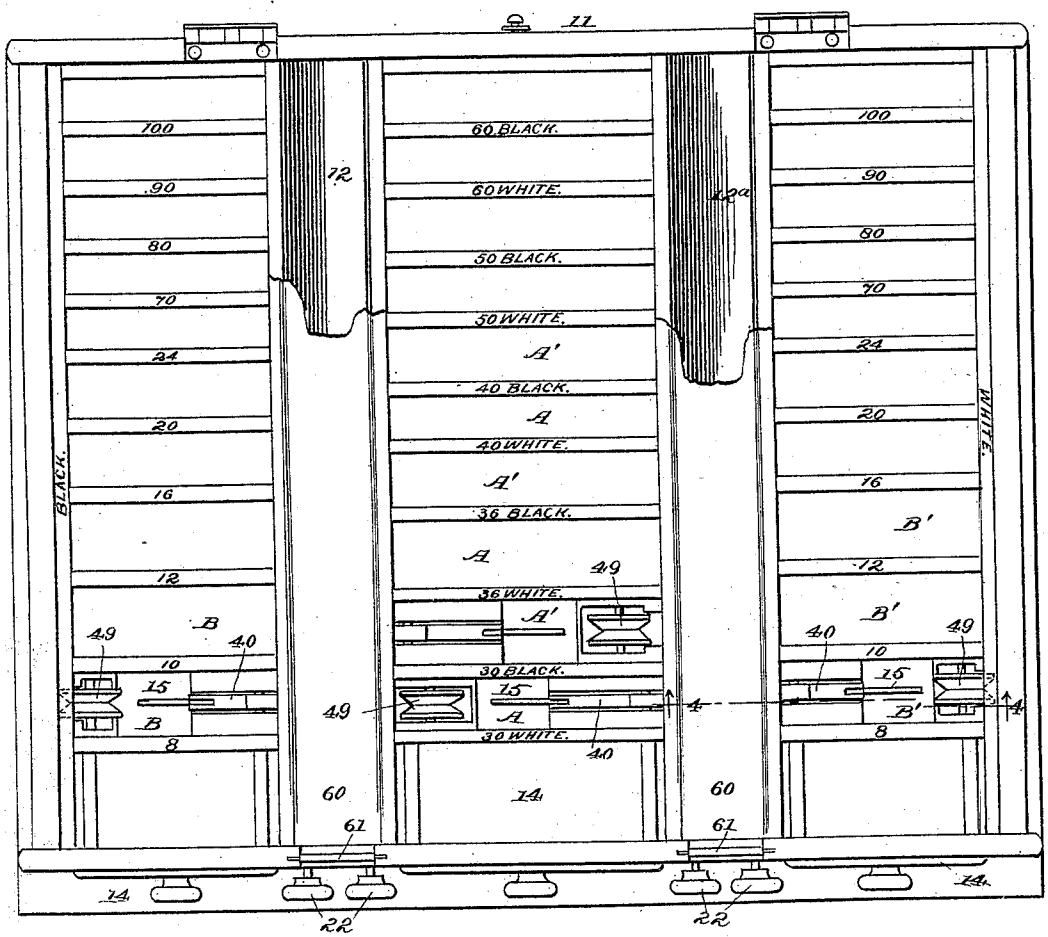
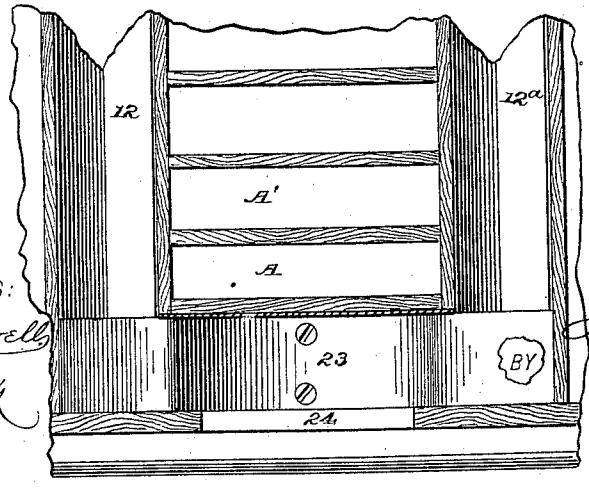


Fig. 8.



WITNESSES:

J. A. C. Criswell

C. Sedgwick

INVENTOR:

J. W. Hayden

Munn & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES W. HAYDEN, OF LEWISPORT, KENTUCKY.

SPOOL-THREAD CABINET.

SPECIFICATION forming part of Letters Patent No. 427,509, dated May 6, 1890.

Application filed December 10, 1889. Serial No. 333,213. (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.

This invention relates to spool-thread cabinets, the object of the invention being to provide a cabinet wherein a full stock of thread may be stored; wherein it will be impossible for the spools to jam; wherein, by pulling a numbered button, a correspondingly-numbered spool of thread will be delivered, so that it may be withdrawn from the cabinet; wherein all of the spools of corresponding number, except the one to be delivered, will be supported at the time of the delivery of the single spool, and, finally, wherein provision is made for the stowage of surplus spools and for the return to a place of safety of spools that have been withdrawn and which for any cause are not sold.

To the ends named the invention consists of certain novel constructions, arrangements, and combinations of elements, which will be hereinafter fully described, and specifically 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 a front view of my improved spool-thread cabinet. Fig. 2 is an enlarged cross-sectional view of the same, the view being taken on line 2 2 of Fig. 1, only a single operating mechanism being shown in this view. Fig. 3 is a plan view with the cover removed, four operating mechanisms only being disclosed in this view, and parts being broken away. Fig. 4 is a sectional view through one of the spool-receptacles, the view being taken on line 4 4 of Fig. 5. Fig. 5 is a sectional view on line 5 5 of Fig. 4. Fig. 6 is a sectional view on line 6 6 of Fig. 5. Fig. 7 is a detail view of one of the spool-supporting slides, and Fig. 8 is a sectional view on the line 8 8 of Fig. 2.

In the drawings, 10 represents a case or cabinet that is provided with a closing lid or cover 11. Within this case or cabinet there are arranged a number of compartments A, A′, B, and B′, the compartments A and B opening to the right, while the compartments A′ and B′ open to the left.

Between the compartments A, A′, and B there is an inclined trough or way 12, while between the compartments A, A′, and B′ there is a trough or way 12^a. The compartments that are arranged to hold the larger spools—that is, the spools of the lowest number—are arranged toward the front of the cabinet, while the compartments intended for the smallest spools are arranged toward the rear of the cabinet, each compartment being so proportioned as to receive about the same number of spools, and consequently the troughs 12 and 12^a are inclined, thus leaving a space C, that may be used for the stowage of spools, this space being reached through a trap or door 13, that is hinged to the base of the cabinet. Stowage-drawers 14 are also provided, such drawers extending inward through the front wall of the cabinet and occupying the space between the forward compartments A, B, and B′ and the said front wall of the cabinet.

Referring now to Figs. 4 and 5, it will be seen that the spool-receiving compartments are of a width such that a number of spools may be placed side by side therein, as indicated by dotted lines at E.

In order that the spools may be upheld within their respective compartments, I arrange a slide 15 in connection with each compartment, these slides being supported by transverse wires or rods 16, which pass through slots *a*, formed in the slides, being normally held in the position in which the slide is shown in full lines in Fig. 4 by a spring 17.

In order that the slides 15 may be withdrawn at will, I arrange in connection therewith bell-crank levers 18, such levers being connected to the slides by links 19 and to pull-rods 20 by links 21. The pull-rods 20 extend through apertures formed in the front wall of the cabinet and carry pull-buttons 22, the range of motion of the rods being prevented by shoulders or projections *b*, formed at their inner ends.

From the construction above described it will be seen that if the button 22 be grasped and moved to the position indicated by dot-

ted lines in Fig. 5 the slide 15 will be moved to the position indicated by dotted lines in Fig. 4, and a spool will be free to drop into its receiving trough or way 12 or 12ª, to pass downward through said trough, and finally to be delivered to a receiving-tray 23, that is reached through an opening 24, formed in the front wall of the cabinet 10, the slide 15 being cut away, as shown at *c*, to permit of this downward passage of the spool. At the time the slide is withdrawn, as above described, it is necessary that the spools above the lower spool, that is delivered as just set forth, should be supported, and to this end I mount a lever 30 upon the rod or wire 16, such lever carrying at its upper end a pivotally-mounted arm 31, the point of which arm is supported by a stud or pin 32. The lower end of the lever 30 carries a stud or pin 33, which rides in an L-shaped slot *d*, formed in the slide 15, the arrangement being such that when the slide is moved outward the lever 30 will be rocked, and as the upper arm of the lever is longer than the lower arm it will move much faster, and consequently the supporting-arm 31 will pass in between the two lower spools prior to the time when the slide 15 is withdrawn from beneath the lowest spool. Unless provision be made to guard against such an occurrence the spools would be apt to arch and jam within their receiving-compartments; but this difficulty I overcome by mounting a slide 40 in connection with each spool-receiving compartment, the upper ends of said slides being guided by laterally-extending pins 41, which ride in ways 42, while the lower ends of the slides are curved, as shown at 43.

In connection with the slides 40, I arrange bell-crank rocking levers 44, that are mounted upon pins or studs 45, and connected to the slides by links 46 and to the slides 15 by other rocking levers 47, that are pivoted at *e*, the upper ends of the levers 47 being slotted to receive pins 48, that are carried by the levers 44. In this way I provide for the raising of the slides 40 at every throw of the slides 15, and consequently for the breaking of any arch or jam that might be formed by the spools, the action of the slide 40 being aided by a wheel or roller 49, that is mounted, as shown best in Fig. 4.

In filling the spool-receiving compartments it might happen that a spool would be placed in endwise, and thus cause a jam unless provision were made to dispose of a spool so placed. To this end I would form an opening 50 just beneath the wheels or rollers 49, through which openings the misplaced spool would pass into the bottom of the case.

In order that spools may be returned to a place of safety in case they are withdrawn from the cabinet and not sold, I mount two receiving-trays 60 in the upper portion of the cabinet, and just above the troughs or ways 12 and 12ª and in advance of the trays I mount swinging flaps 61, through which the spools may be passed inward. It will of course be understood that the position of the levers 18 might be changed, and that the buttons or knobs 22 might be shoved in instead of pulled out in order to operate the slides 15.

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

1. A spool-thread cabinet provided with vertical parallel series of spool-receiving compartments B, A, A′, and B′, an inclined chute 12 between compartments B A A′, and into which the lower ends of compartments B and A′ discharge laterally, a second chute 12 between compartments B′ and A A′, and into which compartments A and B′ discharge laterally at their lower ends, substantially as set forth.

2. The combination, with the vertically-extending compartment contracted at its lower outlet end, of an agitator 40, having a sliding connection 41 42 at its upper end with one inclined wall, and having a curve or hook 43 at its lower end, a rocking lever pivotally connected with the rear side of said agitator below the upper end thereof, and mechanism for operating said lever, substantially as set forth.

3. The combination, with the spool-compartment having an outlet at its lower end, of a slide working transversely across said outlet, a vertically-extending lever connected at its lower end to the slide and having an arm pivoted to its upper end and projecting into the passage under the spools when the slide is moved outwardly, and a button connected with the said slide, substantially as set forth.

4. The combination, with the spool-receiving compartment wider at its upper portion and provided at its contracted outlet with mechanism for releasing the lower spool, of a movable arm or slide above said releasing mechanism and operated thereby to prevent the spool from arching or jamming, substantially as set forth.

5. The combination, with a vertical spool-receiving compartment having a contracted lower portion and a spool releasing and retaining mechanism, of a slide mounted in the said contracted portion above said mechanism to agitate the mass of spools and prevent jamming, a bell-crank lever pivotally connected to said slide, a second rocking lever pivoted at its upper end to said bell-crank lever and at its lower end pivotally connected with the spool-releasing mechanism, and a button or finger-piece connected with said spool-releasing mechanism for actuating it, substantially as set forth.

6. The combination, with the thread-compartment having its lower end contracted at and above its outlet, a spool-agitating slide in one wall of said contracted portion, a pulley 49, journaled in the opposite wall, and the spool releasing or discharging mechanism below the said slide and pulley and connected

with the slide, and provided with an operating finger-piece or button, substantially as set forth.

7. A spool-thread cabinet embodying a series of spool-receiving compartments, slides 15, arranged in connection with said compartments and formed with L-shaped slots *d*, springs arranged in connection with the slides, levers 30, provided with studs or pins 33, that ride within the slots *d*, arms 31, carried by the levers, a means for throwing the slides 15, slides 40, rocking levers 44, that are connected to the slides 40, and rocking levers 47, connected to the levers 44 and to the slides 15, substantially as described.

8. A spool-thread cabinet having vertical parallel series of spool-receiving compartments B, A, A′, and B′, the inclined chutes 12 12ª, into which said compartments discharge, the rearwardly-inclined trays 60 above said chutes, and the inwardly-swinging flaps 61, pivoted at the inlet ends of the trays 60 and adapted to be swung inwardly by pressing a spool of thread against them, substantially as set forth.

9. A spool-thread cabinet having a compartment C, having a door 13 at the rear of the cabinet, series of compartments B A A′ B′ above compartment 13, delivery-chutes 12 12ª, separating said series and receiving the spool therefrom, the storage-drawers 14, extending inwardly through the front wall of the cabinet into the space in front of the series of compartments B, A, A′, and B′, and the rearwardly-inclined trays 60 above said chutes, and having inwardly-swinging flaps 61 at their front ends, substantially as set forth.

JAMES W. HAYDEN.

Witnesses:
WILLIAM C. PELL,
WILLIAM W. STARK.