

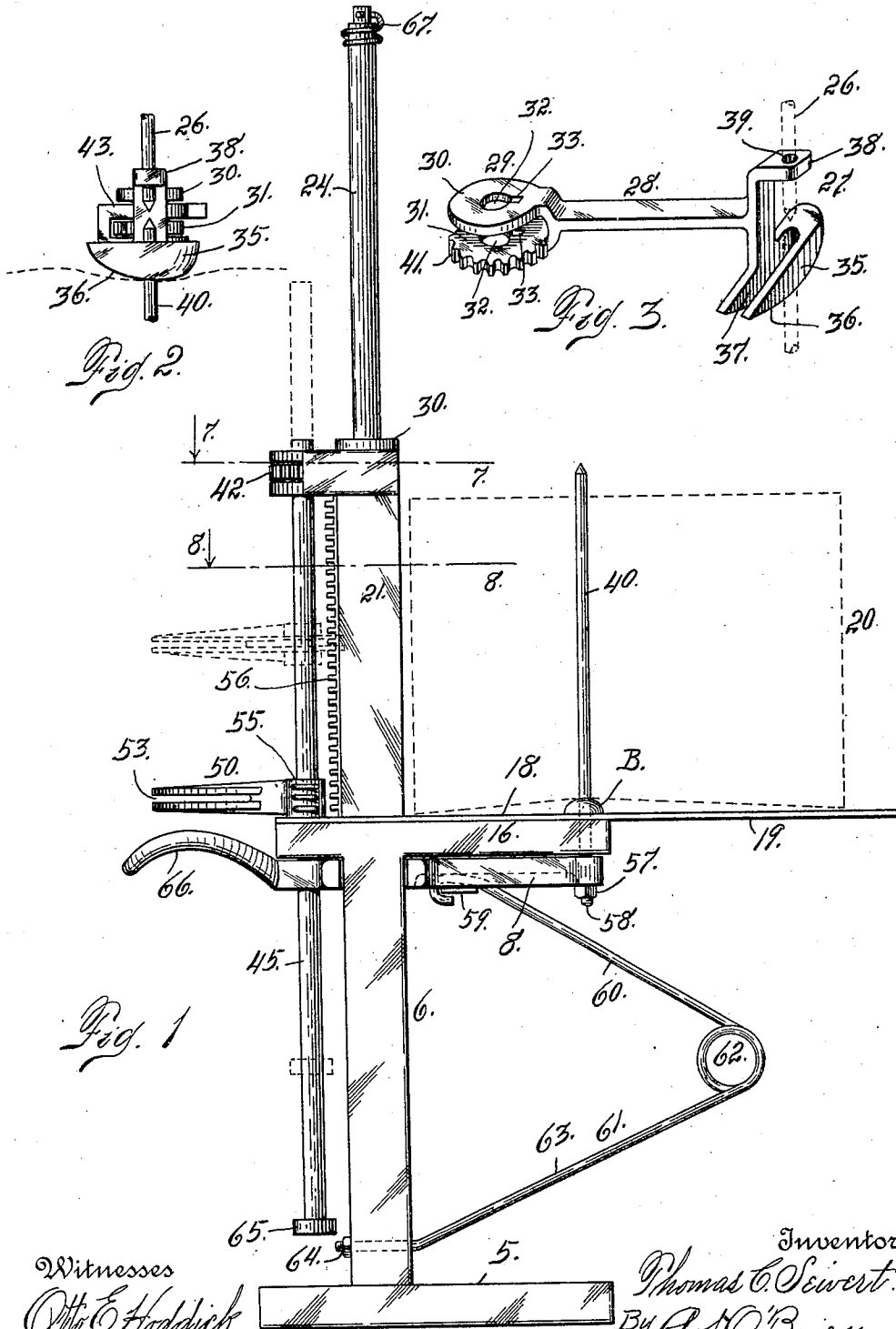
T. C. SEIVERT.
PAPER FILE.

APPLICATION FILED DEC. 28, 1909.

Patented Dec. 6, 1910.

4 SHEETS—SHEET 1.

977,682.



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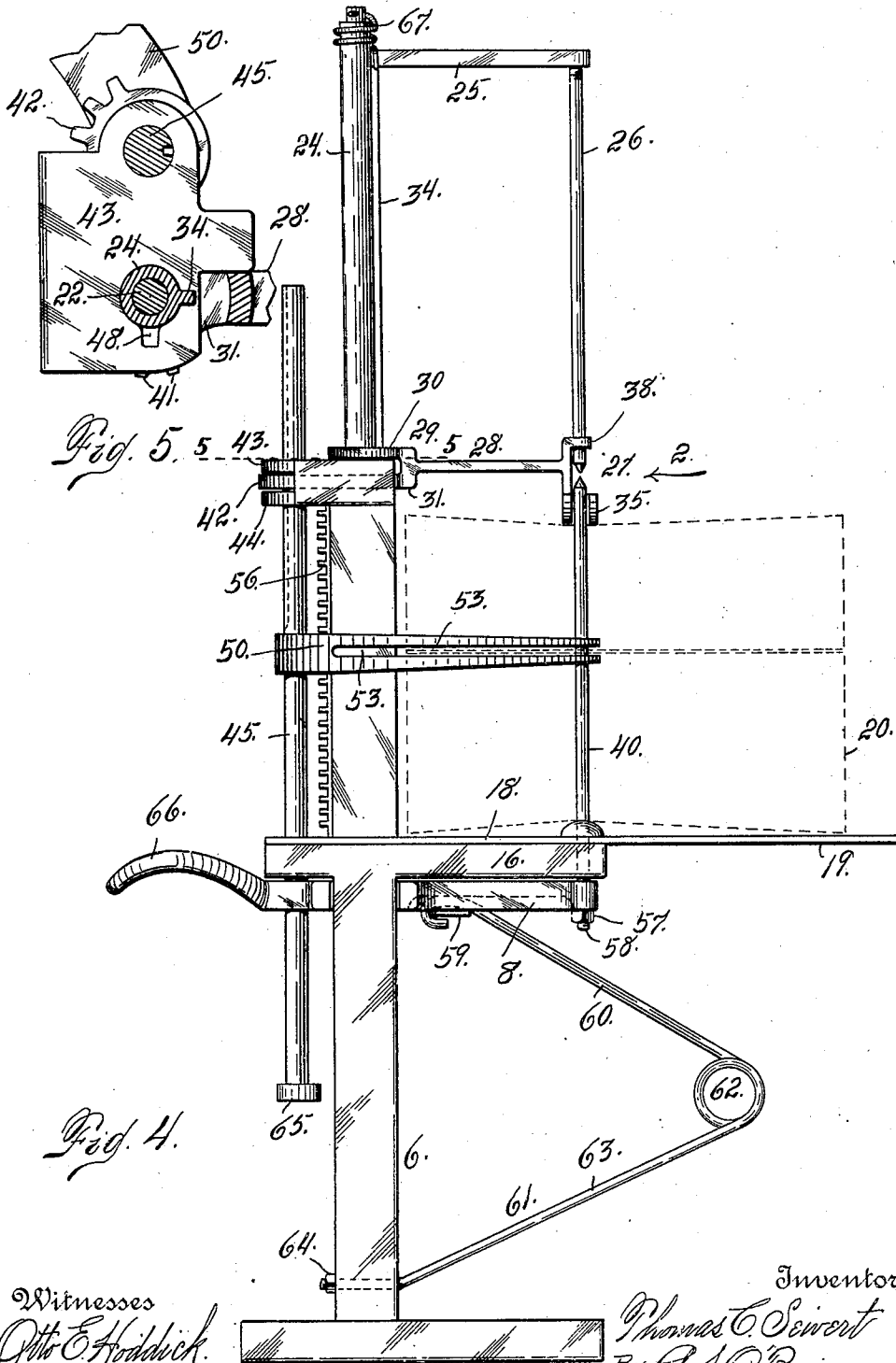
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4 SHEETS—SHEET 2.



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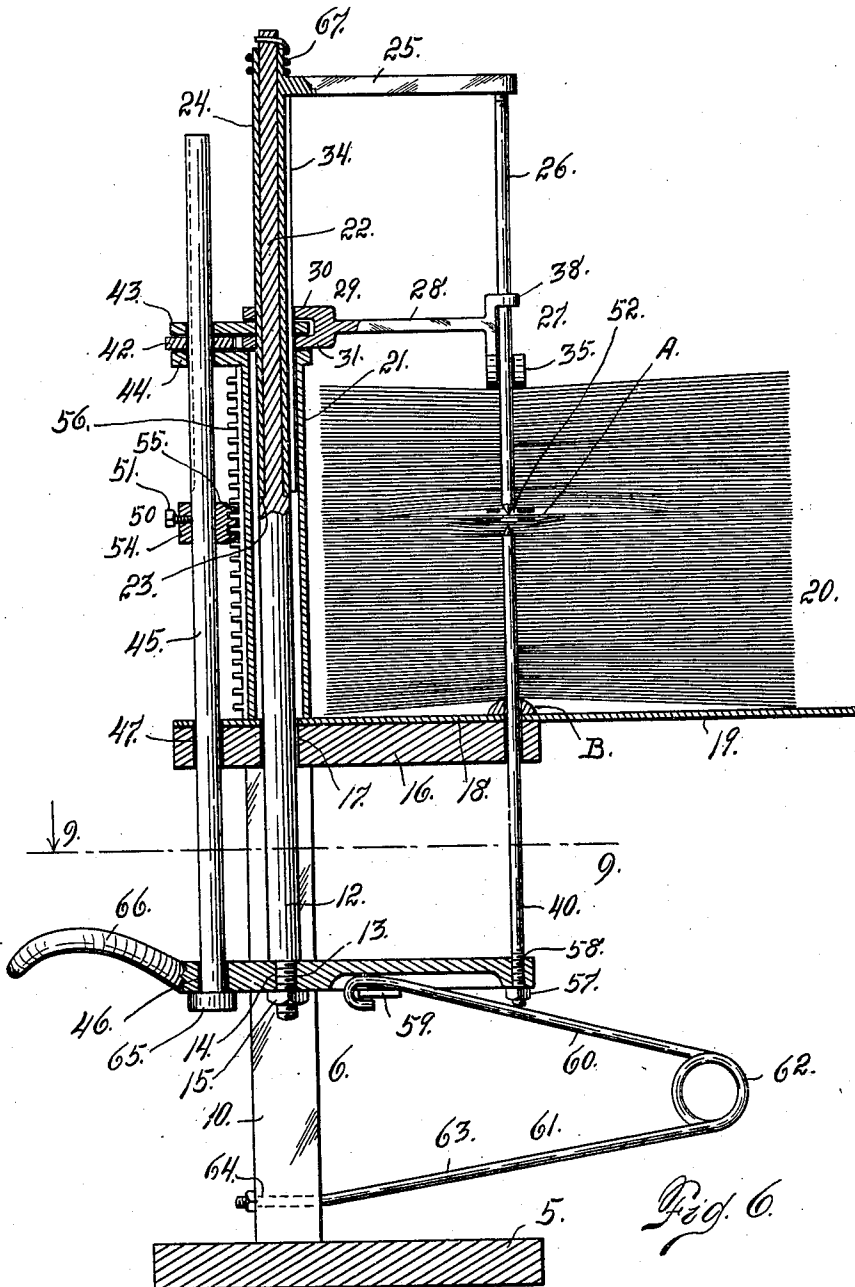


Fig. 6.

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4 SHEETS—SHEET 4.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS C. SEIVERT, OF LIMON, COLORADO.

PAPER-FILE.

977,682.

Specification of Letters Patent.

Patented Dec. 6, 1910.

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To all whom it may concern:

Be it known that I, THOMAS C. SEIVERT, a citizen of the United States, residing at Limon, county of Lincoln, and State of Colorado, have invented certain new and useful Improvements in Paper-Files; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in bill or paper files, my object being to provide a device of this class which shall be of such construction that any paper or bill of a pile may be quickly and easily removed from the package without disturbing or removing the bills or sheets above it in the pile or stack and to this end the invention consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing: Figure 1 is a side elevation of my improved bill file. Fig. 2 is a fragmentary detail view looking in the direction of arrow 2, Fig. 4. Fig. 3 is a perspective view in detail of a swinging arm forming a part of my improved device, shown on a larger scale. Fig. 4 is a view similar to Fig. 1 but showing the parts in different relative positions. Fig. 5 is a horizontal section taken on the line 5—5, Fig. 4, looking downwardly, the parts being shown on a larger scale. Fig. 6 is a central vertical section taken through the mechanism approximately upon the line 6—6, Fig. 7. Fig. 7 is a section taken on the line 7—7, Fig. 1, looking downwardly. Fig. 8 is a horizontal section taken on the line 8—8, Fig. 1, looking downwardly. Fig. 9 is a horizontal section taken on the line 9—9, Fig. 6. Fig. 10 is a vertical section taken on the line 10—10, Fig. 7.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a base upon which is mounted a vertical column 6 slotted as shown at 7 to receive a vertically movable plate 8 which is grooved on opposite sides as shown at 9 to receive the members 10 of the column. This plate is fixed to a vertically movable shaft 12 whose lower

extremity is threaded as shown at 13 to pass through an opening 14 formed in the plate, a nut 15 being applied to the protruding threaded end of the shaft below the plate. The shaft 12 is located between the two members 10 of the column 6 below a platform 16 through which the shaft 12 passes, the said platform having an opening 17 for the purpose. To the top of this platform is secured a plate 18 forming a part of the platform and extending beyond the same as shown at 19, forming a support for a stack or pile of bills or papers 20 (see full lines in Fig. 6 and dotted lines in Figs. 1, 4 and 7). Above the platform 16 extends a hollow column member 21 which is in vertical alinement with the column 6 below the platform, the latter as shown in the drawing, being formed integral with the column 6.

The upper portion 22 of the shaft 12 is reduced in diameter forming a shoulder 23 upon which rests the lower extremity of a sleeve 24, arranged to rotate upon the shaft member 22. The sleeve 24 is fixedly connected with a horizontal arm 25 whose outer extremity or that remote from the sleeve, is equipped with a depending rod 26 adapted to pass through a bracket 27 formed on the outer extremity of an arm 28 whose extremity opposite the bracket is bifurcated as shown at 29, whereby it is composed of two members 30 and 31. These members are provided with vertically alined openings 32, each of which has a groove 33 adapted to receive a feather or spline 34 formed integral with the sleeve 24. The lower part of the bracket 27 consists of a shoe 35 having its bottom or lower surface curved as shown at 36. This shoe is slotted as shown at 37 to straddle the rod 26 or the bill rod 40, as the case may be, depending upon the relative position of the two rods. The upper part 38 of the bracket is provided with an opening 39 which the rod 26 engages at all times so that when the arm 28 is moved with its sleeve 24, the rod 26 is carried therewith.

The member 31 of the arm 28 is cogged or toothed as shown at 41 to mesh with a segmental gear 42 interposed between two plates 43 and 44 formed integral with the upper extremity of the hollow column member 41. This gear is splined upon a vertically movable shaft 45 which passes through an opening 46 formed in the plate 8, an opening 47 formed in the platform 16 and

openings formed in the plate members 43 and 44, the said shaft being slidable in all of the said parts or elements.

It will be understood that the gear 42 always maintains the same vertical position, while the shaft 45 slides freely therethrough but when it rotates the gear 42 turns therewith and since the said gear is in mesh with the toothed member 31 of the arm 28, the turning of the gear 42 imparts a corresponding movement to the member 31 and consequently to the arm 28.

By virtue of the spline 34 and its engagement with the groove 33 of the upper member 30 of the arm 28, the turning of the gear 42 rotates the sleeve 24 as well as the arm 28. The plate members 43 and 44 carried by the upper extremity of the hollow column member 21 are slotted as shown at 48 (see Fig. 5), so that when the sleeve 24 is turned to the position shown in Figs. 4 and 6 and by dotted lines in Fig. 7, the shaft 12, together with the arm 25 and the rod 26, may drop downwardly since the sleeve is turned to such a position that the spline 34 rotates with the slots 48 of the two plate members, the gear member 31 of the arm 28 being also slotted as heretofore explained to receive the said spline.

A crescent-shaped arm 50 is secured to the shaft 45 by means of a set bolt 51, whereby the arm is vertically adjustable upon its shaft. This arm is vertically slotted as shown at 52 and horizontally slotted as shown at 53. This horizontal slot is adapted to receive the bill or paper of the stack or pile, to be removed, while the vertical slot 52 is adapted to straddle the rod 42 when the crescent-shaped arm is adjusted preparatory to performing the bill or paper removing act. The hub 54 of the crescent-shaped arm is toothed as shown at 55, to interlock with teeth 56 formed upon one side of the hollow column member 21, so that when the crescent-shaped arm is turned to engage the bill or paper to be removed from the pile, its teeth will engage the teeth of the stationary column, and lock the shaft 45 against vertical movement.

The bill-holding rod 40 is connected with one extremity of the plate 8 by means of a nut 57 which is applied to the threaded extremity 58 of the rod 40 after the same has passed through the said plate. This plate is connected as shown at 59 with a member 60 of a spring 61 having a coil 62 and a member 63, the latter being connected as shown at 64 with the column 6. This spring has a tendency to pull the plate 8 downwardly, until the said plate engages the head or enlarged extremity 65 of the shaft 45. One extremity of the plate 8 is provided with a handle 66 for convenience of manipulation.

The sleeve 24 is connected with the shaft

12 by a spring 67. This spring is connected at one extremity with the upper end of the shaft member 22 and at its other extremity with the sleeve 24 whereby it has a tendency to retain the rod 26, the arm 25, the sleeve 24, and their connections, in the position shown in full lines in Figs. 4 and 7, and this may be said to be the normal position of the said parts, whereby the rod 26 is thrown out of alinement with the rod 40. In this event the entire mechanism is in the position shown in full lines in Fig. 1. Now if it is desired to remove a bill or paper member from the bills 20, the desired member is first selected and may be designated by the letter A in Figs. 4 and 6. The crescent-shaped arm, together with the shaft 45, is then raised to the dotted line position in Fig. 1 or so that its slot 53 occupies the same plane as the bill A to be removed. During this movement of the crescent-shaped arm, the shaft 45 has been raised to the dotted line position in Fig. 1 and to the full line position in Fig. 4. The crescent-shaped arm is then turned to cause the bill A to enter its slot 53, its vertical slot 52 engaging the bill-holding rod 40 which at this time passes entirely through the bill or stack of bills, as indicated in Figs. 1 and 4.

During the movement of the crescent-shaped arm from the dotted line position in Fig. 1 to the full line position in Fig. 4 and the dotted line position in Fig. 7, the shaft 45 has been given a partial rotation, a corresponding movement being imparted to the segmental gear 42, and by virtue of the fact that the latter meshes with the toothed member 31 of the arm 28, the latter, together with the sleeve 24, the arms 25 and 28 and the rod 26, are turned or moved to the position shown in Fig. 4. During this movement the lower extremity of the spline 34 of the shaft 24 has occupied a position above the plate member 43, the spline engaging only the upper member 30 of the bifurcated extremity of the arm 28. However, as soon as the aforesaid parts reach the position shown in Fig. 4, the spline 34 is brought into alinement with the slots 48 of the plate members 43 and 44, and as the member 31 of the arm 28 is also slotted to receive the spline 34, the shaft 12, together with the arm 25 and its rod 26, are allowed to fall, being drawn downwardly by the tension of the spring 61 which is connected with the plate 8 as heretofore explained. This downward movement of the plate 8 and the aforesaid parts, causes the bill-holding rod 40 to descend also, and the auxiliary rod 26 follows it downwardly through the pile or stack of bills 20 until the downward movement of the descending parts is stopped by the head 65 of the shaft 45. As soon as this occurs the points of the two rods 26 and 40 occupy positions on opposite sides, one above

and the other below the bill or paper A to be removed from the stack or pile of bills, and this bill or paper may then be pulled out of the pile without resistance. Then in order to restore the mechanism to its normal position, it is only necessary to lift the plate 8 upwardly against the tension of the spring 61, until the rod 26 is disengaged from the pile of bills 20, and as soon as this occurs the sleeve 24, by virtue of the tension of the spring 67, will be rotated upon the upper reduced member 22 of the shaft 12 to throw the rod 26 and its connections to their normal position, and during the movement of the arm 28 with the rod 26 and the arm 25, the shaft 45 will be given a partial rotation by virtue of the connection between the gears 31 and 42, whereby the crescent-shaped arm is disengaged from the pile of bills and returned to the dotted line position in Fig. 1, after which the shaft 45 will be free to drop downwardly to the position shown in Fig. 1, since the teeth 55 of the crescent-shaped arm are disengaged from the teeth 56 of the stationary column member 21. The mechanism is then restored to its normal position and the removal of another paper or bill will simply be a repetition of the operation heretofore described.

In order that the upper extremity of the rod 40 may always assume a position just below the bill or paper A to be removed from the pile 20, it is necessary that there shall be a predetermined relation between the length of the said rod and the distance between the slot of the crescent-shaped bill-selecting arm and the head 65 of the shaft 45. In other words, the bill-selecting arm must be so adjusted on the shaft 45 that when the mechanism is adjusted to remove a bill, the point of the bill-holding rod 40 will be just below the slot in the said arm. Hence the bill-selecting arm must have its horizontal center approximately a distance above the head 65 of the shaft 45 equal to the length of the bill-holding arm 40. Then when the bill-selecting arm and the shaft 45 are raised to the plane of the bill to be removed, the head 65 will be raised above its lowermost position a distance equal to the distance of the bill to be removed above the bottom of the pile. It will be understood that the normal position of the bill-selecting arm 50 is in engagement with the upper surface of the platform 16 and when in this position the device can be adjusted to remove the lowermost bill of the pile, since the central portion of the pile of bills is raised by a button B sufficiently to bring the lowermost bill at this point into the same plane as the slot 53 of the said arm. Now if the arm is raised to remove a bill located at any distance above the bottom of the pile the head 65 of the shaft 45 will be raised a distance equal to the dis-

tance of the slot of the arm above the bottom of the pile and when the plate 8 and the rod 40 are allowed to drop to permit the removal of the bill, they can only fall a vertical distance equal to the length of the rod 40 minus the distance which the shaft 45 has been raised by the lifting of the arm 50 to the plane of the bill to be removed, since the head 65 of the said shaft will limit such downward movement.

That the distance from the slot of the arm 50 to the head of the shaft 65 must be equal to the length of the bill-holding rod 40 is perhaps best illustrated in Fig. 6, where the bill-holding rod is shown at its downward limit of movement while the shaft 45 is shown in the position it must occupy in order to remove the bill A from the pile. Hence it will be understood that the greater the distance above the bottom of the pile 20 to the bill to be removed, the greater will be the upward movement of the shaft 45 in order to bring the slot of the bill-selecting arm into the plane of said bill, and the greater the upward movement of the said shaft the less the downward movement of the bill-holding rod 40, since such movement is always limited by the head 65 of the shaft 45.

Having thus described my invention, what I claim is:

1. The combination with a stationary frame, including a support for a pile of bills or papers, of a plate vertically movable on said frame and carrying a bill-holding rod, a shaft also vertically movable on the frame and having a stop at its lower extremity located in the path of travel of the said plate to limit the downward movement of the latter, and a bill-selecting arm mounted on the said shaft at a distance above the stop on the shaft equal to the length of the bill-holding rod, the said shaft being normally free to move downwardly until the bill-selecting arm reaches the plane of the top of the platform upon which the pile of bills rests.

2. A bill file, comprising a stationary frame, a plate vertically movable thereon and carrying a bill-holding rod arranged to pass through the pile of bills when the plate is at its upward limit of movement, a shaft vertically movable on the frame independently of the said plate, the latter having an opening through which the shaft passes and the shaft having a stop at its lower extremity to limit the downward movement of the plate, and a bill selecting arm mounted on the shaft a distance above the stop on the latter approximately equal to the length of the bill-holding rod, the bill-selecting arm being normally capable of vertical adjustment with the said shaft, the latter being free to turn with the bill-selecting arm to allow the latter to enter

the pile of bills where the one to be removed is located, and an interlocking connection between the bill-selecting arm and the frame when the said arm is in the last named position to prevent the downward movement of the shaft when the bill holding rod moves downwardly, for the purpose set forth.

3. A bill file, comprising a frame including a bill-supporting platform, a plate vertically movable on the frame and carrying a bill-holding rod adapted to pass through a pile of bills on the platform, a shaft vertically movable on the frame independently of the said plate and having a bill-selecting arm mounted thereon, the lower extremity of the arm having a stop to limit the downward movement of the plate, the said stop being located a distance below the bill-selecting arm approximately equal to the length of the bill-holding rod, the said shaft being journaled in the frame and the bill selecting arm being normally in a position disengaged from the pile of bills, the bill selecting arm, however, being free to be moved into the pile of bills for selecting purposes, the shaft being journaled to turn to harmonize with the movement of the said arm, means for locking the bill-holding arm at its limit of upward movement, and means for releasing the locking means when the bill-selecting arm is moved into the pile of bills for selecting purposes.

4. A bill file, comprising a relatively stationary frame, including a support for the pile of bills, a shaft vertically movable on the frame, a bill-selecting arm mounted on the shaft, a plate vertically movable on the frame and having an opening through which the said shaft passes, the latter having a stop at its lower extremity to limit the downward movement of the plate, a bill-holding rod carried by the said plate and of a length equal to the distance from the stop on the shaft to the horizontal center of the bill-selecting arm, which is slotted to receive the bill to be removed, the shaft being free to turn in the frame and the bill-selecting arm being fast thereon and normally disengaged from the pile of bills but movable into said pile for bill-selecting purposes, means for locking the said plate and the bill-holding rod at their upward limit of movement, and a connection between said means and the said shaft, whereby as the latter is turned as the bill selecting arm is moved into the pile of bills, the locking means is released and the bill-holding rod allowed to fall until the said plate engages the stop on the shaft.

5. A bill file, comprising a relatively stationary frame, including a support for a pile of bills, a shaft vertically movable on the frame, a bill-selecting arm mounted on the shaft, a support vertically movable on the frame and having an opening through

which the said shaft passes, the latter having a stop at its lower extremity to limit the downward movement of the support, a bill-holding rod carried by the said support and of a length equal to the distance from the stop on the shaft to the horizontal center of the bill-selecting arm, the shaft being free to turn on the frame and the bill-selecting arm being fast thereon and normally disengaged from the pile of bills but movable into said pile for bill-selecting purposes, an auxiliary bill-holding rod normally out of alinement with the main bill-holding rod, and a gearing connection between the said shaft and the auxiliary bill-holding rod whereby, as the bill-selecting arm is moved into the pile of bills in the performance of its bill-selecting function, the auxiliary bill-holding rod will be brought into alinement with the main bill-holding rod, so that when the main bill-holding rod moves downwardly with the said support the auxiliary bill-holding rod will move downwardly into the pile of bills a distance equal to the downward movement of the main bill-holding rod, whereby the bills of the upper portion of the pile are retained in place above the bill to be removed.

6. A bill file, comprising a relatively stationary frame forming a support for the pile of bills, a bill-holding rod adapted to pass through the pile of bills, a support for said rod, vertically movable on the frame, a shaft vertically movable on the frame and having a stop at its lower end in the path of the support for the bill-holding rod, a bill-selecting arm vertically adjustable on the shaft to maintain a predetermined relation between its length above the stop and the length of the bill-holding rod, the shaft being free to rotate and the bill-selecting arm to move into the pile of bills whereby a partial rotary movement is imparted to the shaft, a second shaft connected with the bill-holding-rod-support and vertically movable therewith, a sleeve journaled on the second shaft, an arm bifurcated, its bifurcated portion being open to receive the said sleeve, a plate forming a portion of the frame being interposed between the two members of the bifurcated extremity of the said arm and also open to receive the sleeve, the latter having a spline and the second shaft being normally raised to lift the spline above the said plate which has a spline-receiving recess normally out of alinement with the spline, the two members of the bifurcated arm being recessed to receive the spline which normally engages the recess of the upper bifurcated member, a second arm rigidly connected with the said sleeve and having a depending auxiliary bill-holding rod at its outer extremity and also connected but vertically movable in the outer extremity of the bifurcated arm, and a gearing connection be-

tween the first shaft and the gear of the bifurcated arm, whereby as the bill-selecting arm is moved into the pile of bills for bill-selecting purposes, the bifurcated arm will be rotated to swing the auxiliary bill-holding rod into alinement with the main bill-holding rod and whereby the sleeve on the second shaft will be turned to bring its spline into alinement with the recess of the said plate whereby the second plate, together with its support and both bill-holding rods will be allowed to fall so that the two rods shall occupy the proper position for bill-removing purposes, the said downward movement being limited by the stop on the first shaft.

7. A bill file, comprising a stationary frame forming a support for a pile of bills, a plate vertically movable thereon, a spring connected with said plate and having a tendency to move the latter downwardly, a bill-holding rod connected with the said plate and capable of downward movement under the influence of the said spring so that the upper extremity of the rod is below the lowermost bill, means for locking the said plate at its upward limit of movement whereby the bill-holding rod passes through the pile of bills, a shaft vertically movable on the frame and carrying a bill-selecting arm, the shaft being free to rotate in the frame to permit the bill-selecting arm to be moved into the pile of bills for bill-selecting purposes, and a connection between the said shaft and the means for locking the bill-holding rod and its plate at their upward limit of movement, whereby as the bill-selecting arm is moved into the pile of bills, the locking means is released and the bill-holding rod allowed to move downwardly under the influence of the said spring, and means for limiting the downward movement of the rod when the upper extremity of the latter has reached a position just below the bill to be removed.

8. A bill file, comprising a stationary frame forming a support for the pile of bills, a rod vertically movable on the frame and constituting a holder for the pile of bills, means for locking the rod at its upward limit of movement, a bill-selecting arm vertically movable on the frame, an auxiliary bill-holding rod normally out of alinement with the first named rod, and a gearing connection between the auxiliary bill-holding rod and the bill-selecting arm whereby, as the latter is moved into the pile of bills, the auxiliary rod is brought into alinement with the main bill-holding rod and the locking means for the latter released to allow the bill-holding rod to fall, and a connection between the two bill-holding rods whereby the auxiliary rod moves downwardly to correspond with the movement of the main rod, substantially as described.

9. A bill file, comprising two bill-holding rods normally out of alinement, the first bill-holding rod normally passing through the pile of bills, means for locking the bill-holding rods at their upward limit of movement, a bill-selecting arm vertically movable and horizontally rotatable, and a connection between the bill-selecting arm and the second bill-holding rod whereby, as the bill-selecting arm is moved to the selecting position, the second bill-holding rod is brought into alinement with the first named rod and the locking means released whereby both rods are allowed to move downwardly to permit the removal of the selected bill, substantially as described.

10. A bill file, comprising two bill-holding rods, the first of which normally passes through the pile of bills, the two rods being vertically movable on the frame but normally locked against such movement, the upper rod being normally disengaged from the pile of bills and out of alinement with the first named rod, the first named rod being normally under tension to move downwardly and the second rod being spring-retained out of alinement with the first rod, a bill-selecting arm normally vertically movable on the frame and adapted to turn horizontally to enter the pile of bills for bill-selecting purposes, and a connection between the bill-selecting arm and the means for locking the rods at their upward limit of movement whereby, as the bill-selecting arm is moved into the pile of bills, the second rod is moved into alinement with the first rod and the locking means released to allow both rods to move downwardly to the proper position for bill-removing purposes, substantially as described.

11. A bill file, comprising two bill-holding rods, the first normally holding the entire pile of bills, and the second normally out of alinement therewith, a bill-selecting arm vertically and horizontally movable, and a connection between the said arm and the second bill-holding rod whereby as the bill-selecting arm is moved horizontally into the pile of bills for selecting purposes the second rod is brought into alinement with the first rod, for the purpose set forth.

12. A bill file comprising two bill-holding rods, the first of which is adapted to normally pass through the pile of bills, means for locking the said rod in the said position, a second rod normally out of alinement with the first rod and means for swinging the second rod into alinement with the first rod, and a connection between said means and the locking means whereby when the second rod is moved into alinement with the first rod the locking means is released whereby both rods are allowed to move downwardly, substantially as described.

13. The combination with a stationary

frame, of a support for a pile of bills or papers, a bill-holding rod, means for raising the support to any predetermined position on the bill-holding rod, and means carried
5 by the frame for separating the pile from any one or more individual sheets above the bill-holding rod for removing the same, substantially as described.

14. The combination with a stationary
10 frame, of a support for a pile of bills or papers, and means mounted on the frame

for simultaneously separating the pile from any one individual sheet, and holding the pile in position on opposite sides of the separated sheet while removing the separate
15 sheet, substantially as described.

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

THOMAS C. SEIVERT.

Witnesses:

JESSIE F. HOBART,

I. D. THORNBURGH.