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E. D. TRAUTMAN & G. JACOBS.

FILING CABINET.

APPLICATION FILED AUG. 21, 1907.

4 SHEETS—SHEET 1.

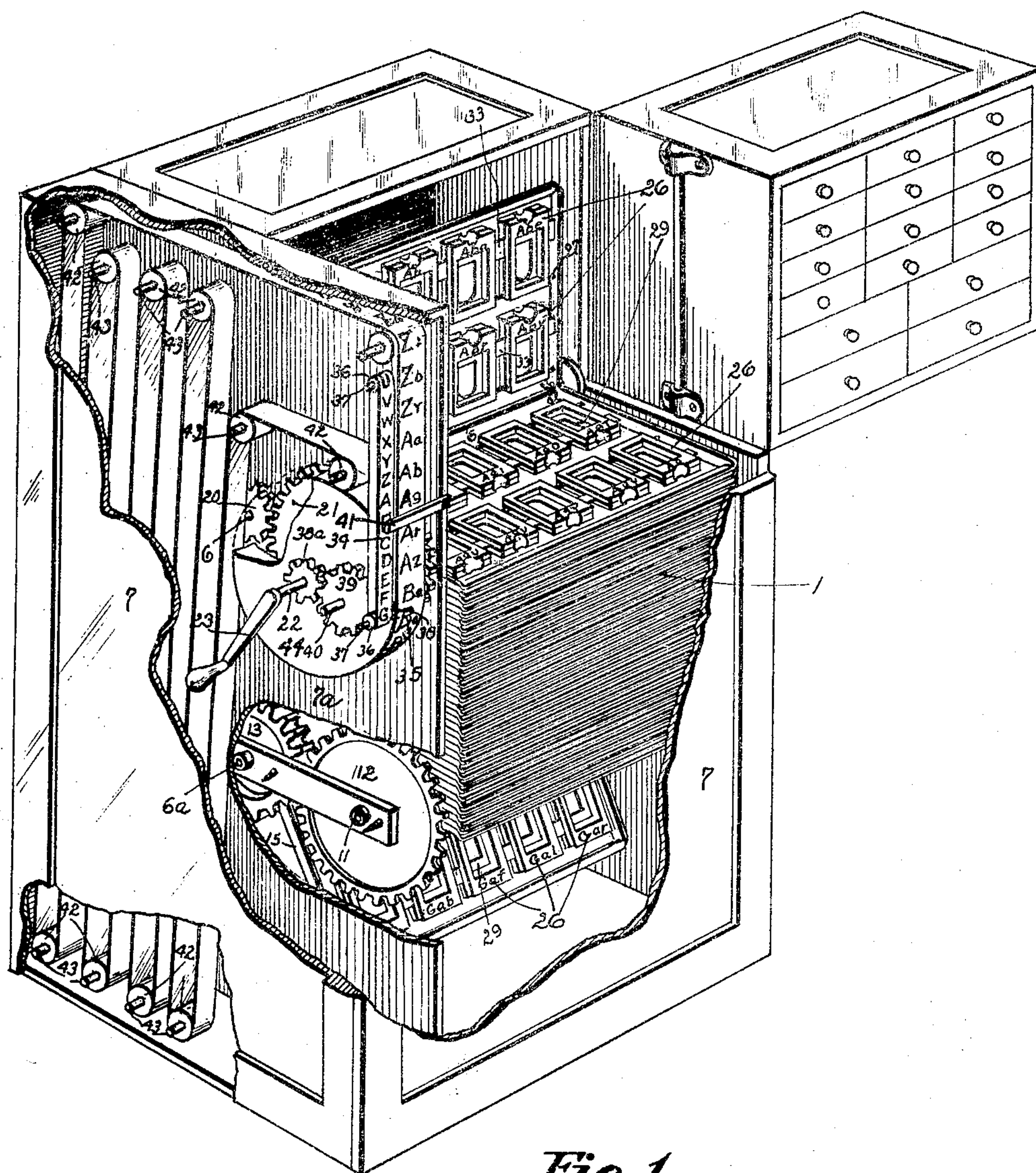


Fig. 1.

Witnesses

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4 SHEETS—SHEET 3.

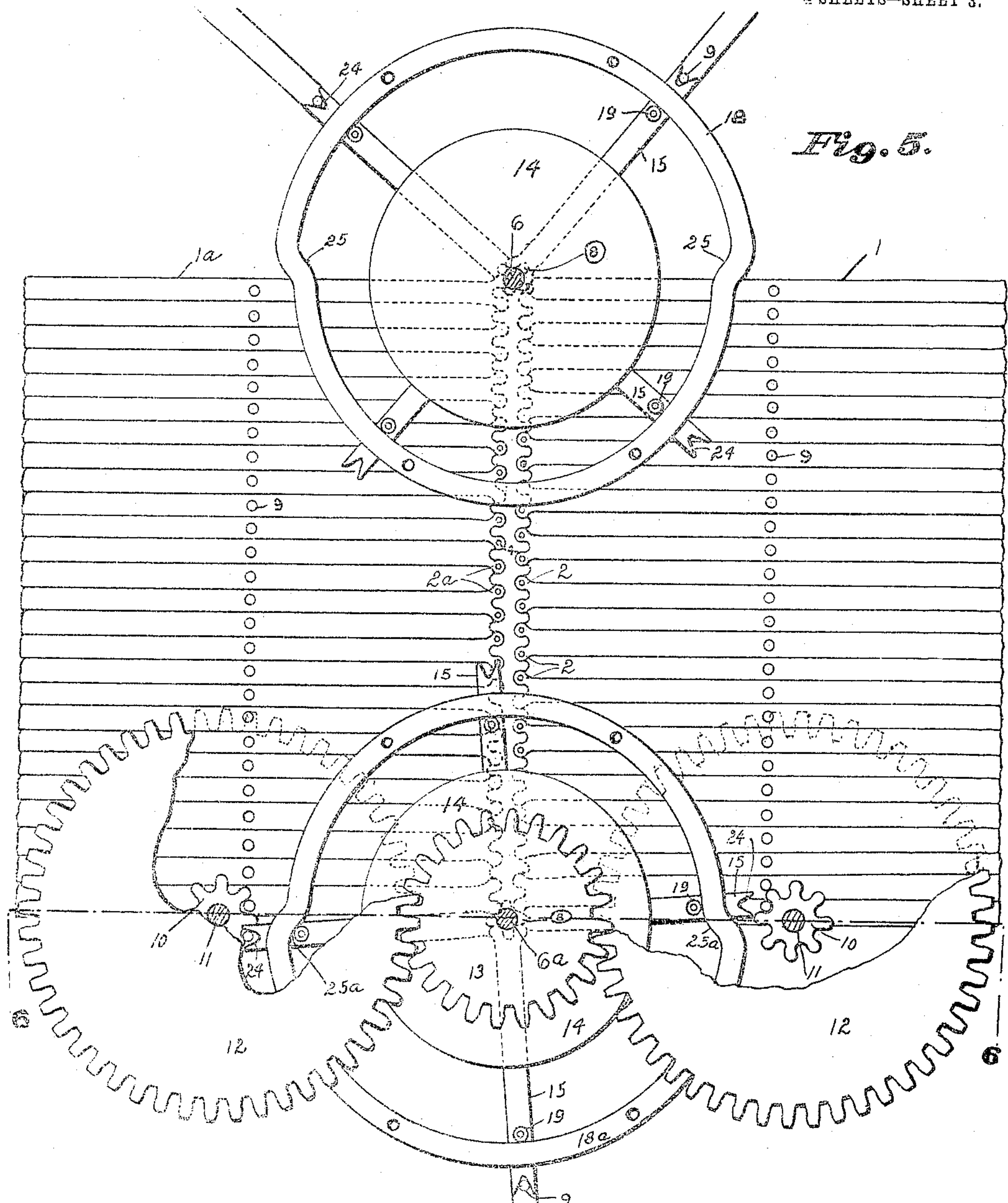


Fig. 5.

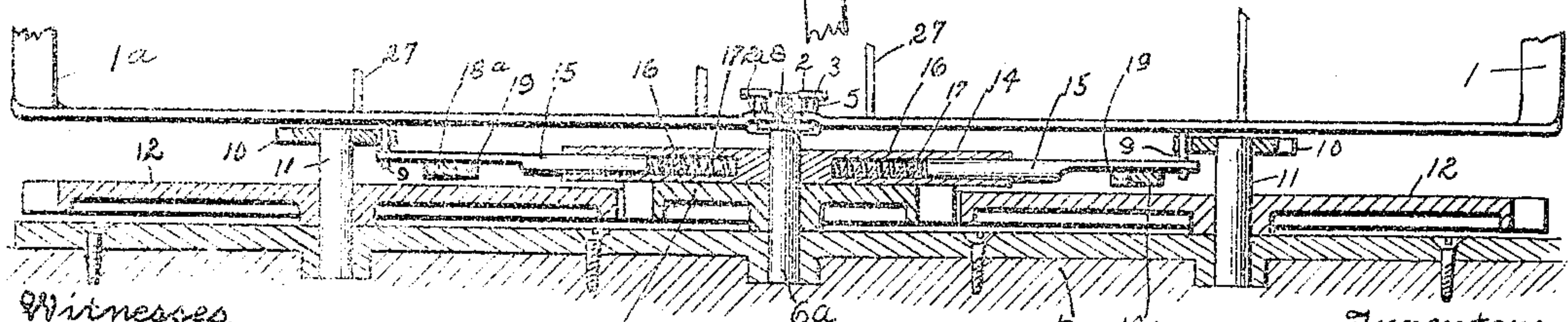


Fig. 6.

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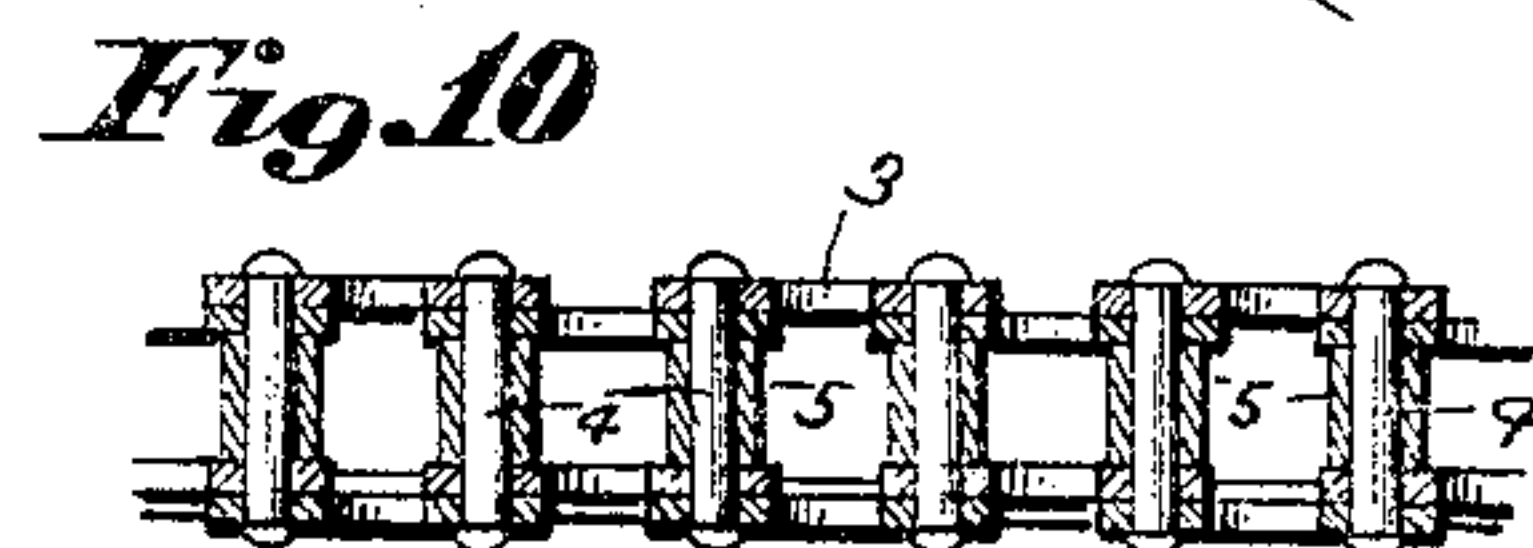
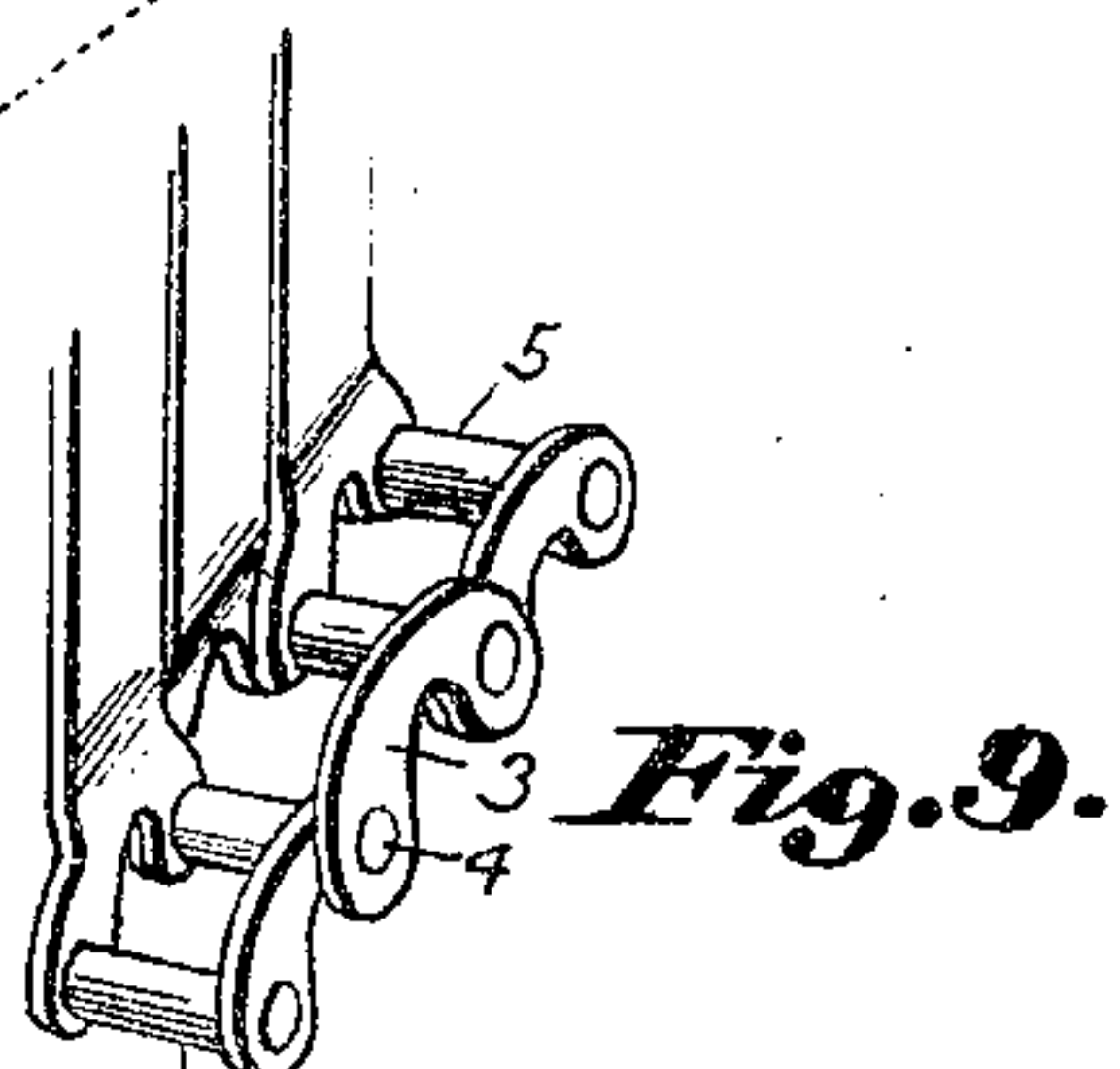
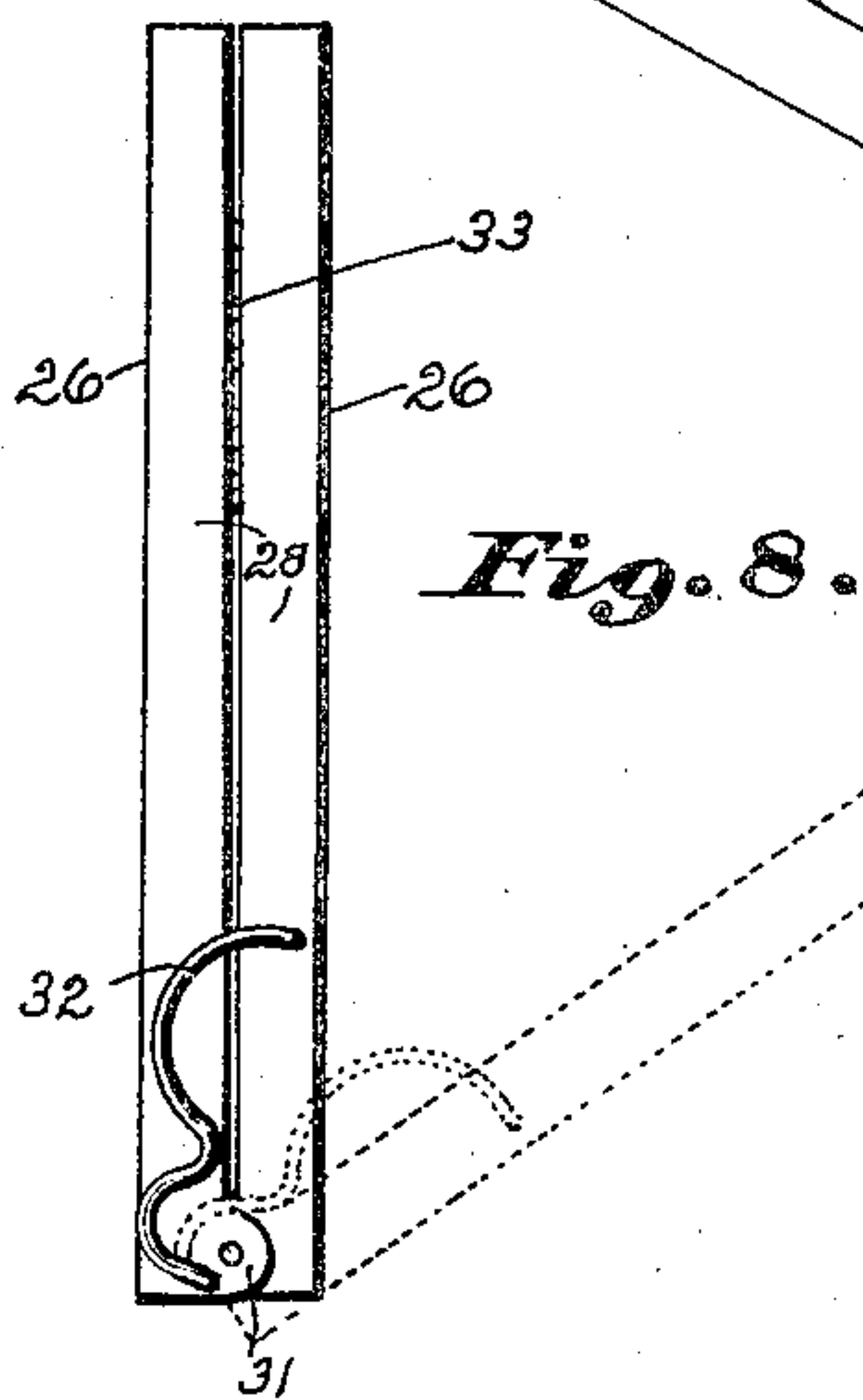
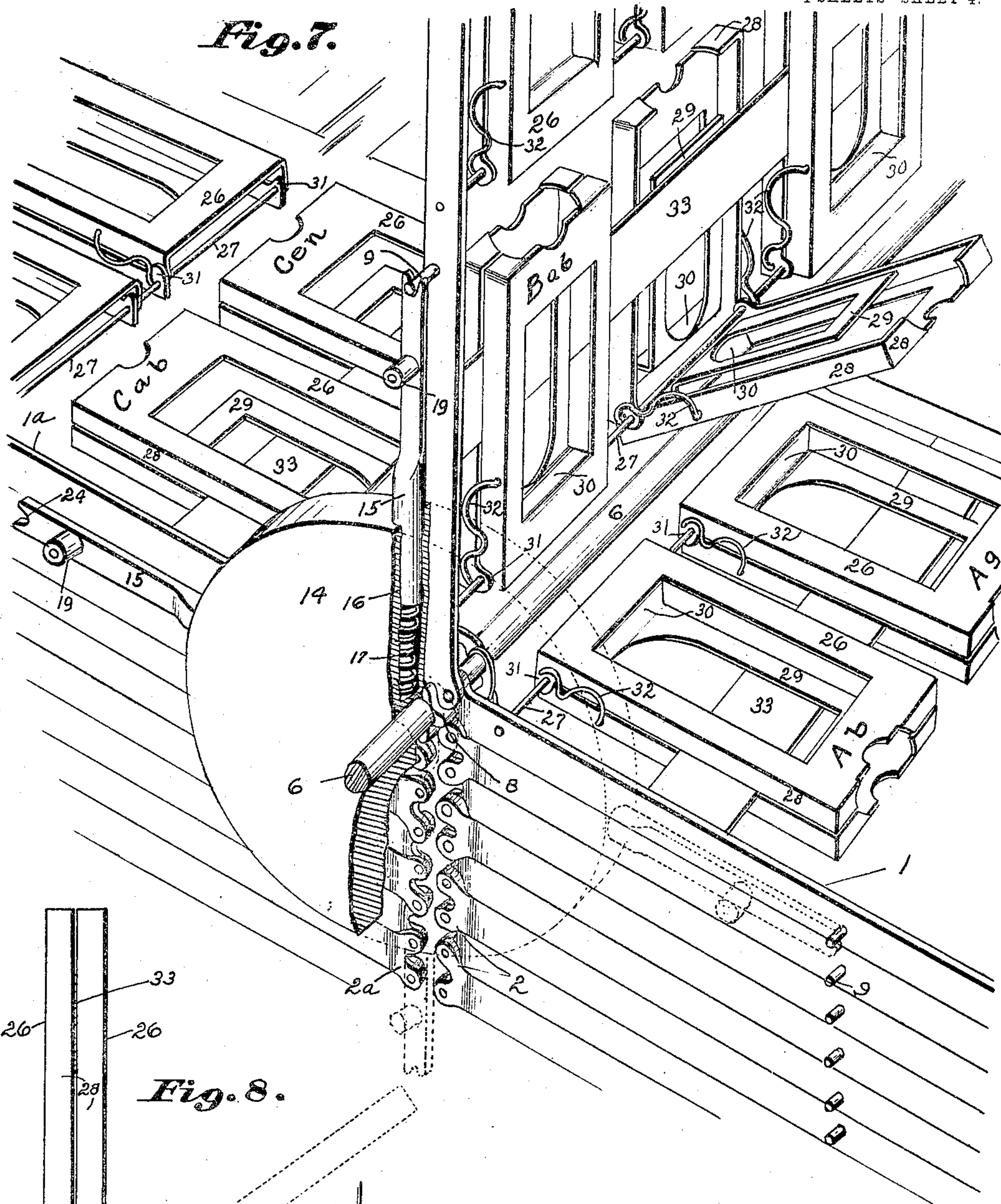
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UNITED STATES PATENT OFFICE.

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FILING-CABINET.

No. 896,486.

Specification of Letters Patent.

Patented Aug. 18, 1908.

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To all whom it may concern:

Be it known that we, EDWARD D. TRAUTMAN, a citizen of the United States, and GEORGE JACOBS, a subject of the Emperor of Germany, both residing at Alliance, in the county of Stark and State of Ohio, have invented a new and useful Filing-Cabinet, of which the following is a specification.

The invention relates to a cabinet containing a series of leaves each containing a series of pockets for filing bills, as of the current or running accounts of the customers of a retail grocer; and the general object of the invention is to provide means for mechanically mounting and moving the pocket-leaves so that the leaves will be normally assembled in compact form, but can be readily operated to expose for access the pockets on either side of any leaf for the purpose of readily inserting or removing the bills. This is accomplished in a general way, by nesting the leaves in two stacks or tiers with the side edges of the leaves in one tier adjacent to the side edges of the leaves in the other tier, and to form or connect the contiguous corners of the leaves in the respective tiers into gearing-chains and to provide suitable sprocket wheels above and below on which these chains are adapted to operate, so that when the gearing is operated the leaves in one tier are carried upwards and the leaves in the other tier are carried downward by the chains, thus alternately exposing the individual leaves as the same are rotated with the chains over or under the respective pinions.

The invention also relates to special mechanism and appliances for properly supporting and controlling the respective leaves in their necessary movements on the sprocket chains; and also to the peculiar construction of the individual pockets, whereby they are pivoted, face to face, in a series of pairs in the respective leaves.

The invention furthermore relates to a series or system of index bands mounted on rollers and connected by a suitable mechanism with the series of pocket-leaves so that the operation of the two series is—properly coördinated.

These various objects are attained by the construction, mechanism and arrangement illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the cabinet with parts of the case broken away to

show the general arrangement of the interior; Fig. 2, a top or plan view of the cabinet with the top removed and showing the walls of the case in section. Fig. 3, a perspective view of the series of leaves without the case and detached from the controlling mechanism; Fig. 4, a detached perspective view showing details of the leaf supporting and controlling mechanism; Fig. 5, a side elevation of the series of leaves and the supporting and controlling mechanism; Fig. 6, a horizontal section on line 6—6, Fig. 5; Fig. 7, an enlarged view showing details of the construction of the leaves, the separate pockets and the chain-gearing; Fig. 8, an edge view of one pair of pockets; Fig. 9, a detached perspective view of the gearing-chain formed at the corners of the leaves; and Fig. 10, a longitudinal section of the same.

Similar numerals refer to similar parts throughout the drawing.

The respective leaves 1 and 1^a of the cabinet are preferably made in the form of a skeleton frame having one side 2 or 2^a of the links of the gearing-chains formed at each corner thereof. The other side 3 of each link, and the rivet pins 4 and the thimble-rollers 5 thereon, are made in any well known manner for a suitable gearing-chain. The upper and lower main shafts 6 and 6^a are transversely mounted in the case 7 of the cabinet and on these shafts are fixed the sprocket wheels 8, on which wheels the gearing-chains formed on the corners of the leaves are adapted to operate. By locating the main shafts one directly above the other, the leaves of the cabinet are thus all arranged or nested in two tiers located side by side, excepting only when the leaves are being rotated over or under the respective wheels, as shown in Fig. 3, when the leaves are opened and closed somewhat like the leaves of a book.

The ends of the leaves are preferably provided with the projecting pins 9 which may be located near the median line as shown. The pins of the lower leaves in each tier are adapted to be engaged by the teeth of the cog-wheels 10, one of which is located horizontally opposite each side of the lower main shaft, on the counter shafts 11 which are journaled in the case of the cabinet. These counter shafts are operatively connected with the lower main shaft as by the gear wheels 12 on the counter shafts, and the gear wheels 13 on the lower main shaft. The engagement of the pins of the lower

leaves with the gear wheels 10 constitutes a support by which the leaves in each tier are sustained in a horizontal position, and it is evident that the pins of the leaves of each tier comprise a sort of continuous pin-racks which are successively operated on by the respective cog-wheels 10.

The disks 14 are securely mounted on the main shafts, and the radial controlling arms 15 are located in the radial guide channels or bores 16 formed in the disks. The spiral springs, as 17, are provided in the radial guide channels, which springs act to force the controlling arms outward, and the cam guide rings 18 and 18^a are attached on the side of the case and are adapted to control the movements of the arms by means of the rollers 19 which are pivoted on the sides of the arms and travel against the inner edges of the cam rings. The partition 7^a is preferably provided in the case to separate the index-mechanism from the leaf-mechanism, and the cog-pinion 20 is mounted on the end of the upper main shaft, and the cog-wheel 21 on the counter-shaft 22, on the outer side of this partition. The crank 23 by which the index- and leaf-mechanisms are operated, is preferably mounted on this counter shaft outside the case, as shown in Fig. 2.

It is evident that by rotating the crank the upper and lower main shafts will be rotated and by so doing the sprocket chains will be operated on the sprocket wheels, thus moving the leaves in one tier upward and the leaves of the other tier downward. It is also evident that, through the gearing-wheels, the same operation will rotate the cog-wheels on the counter-shafts opposite the lower main shaft, and that these wheels will successively engage the pins of the lowest leaf in each tier, and by this engagement will support not only this leaf but the superimposed leaves in each tier. The several leaves are supported and controlled in a substantially radial position during the time they are rotating over and under the sprocket wheels by means of the controlling arms 15, which arms, being provided with notches or grooves 24 in their outer ends are adapted to engage the pins on the ends of the successive leaves during the time such leaves are separated from their companion leaves, in the following manner—The lower half of the upper cam ring 18 is formed with such a radius that the controlling arms are held inward so as to be out of engagement with the pins on the ends of the leaves; but the upper half of this ring is formed with a larger radius so that the controlling arms are adapted to be forced outward to engage the successive pins of the leaves, and to support and control the same during the time they are being rotated over the upper cog-wheels. The inclined shoulders 25 between the smaller and larger sections of

the upper cam ring are so located that the controlling arms will be operated outward on one side into engagement with the pins of the uppermost leaf of the tier on the same side at the time this leaf is separated from the next leaf below, and this leaf is then rotated at an accelerated speed by the controlling arm over the sprocket wheels; and the controlling arms on the other side will be forced out of engagement with the pins on the ends of the respective leaves at the time they complete their rotation over the sprocket wheels and nest on the top of the tier of leaves on the same side. The lower cam ring 18^a is reversely formed with its upper half having a smaller radius than its lower half, and the shoulders 25^a are so located that the controlling arms will be engaged with the pins on the ends of the leaf on one side at the instant the pins are released from engagement with the cog-wheel 10 on that side; and so that the controlling arms will be released from engagement with the pins on the ends of the leaf on the other side at the same instant these pins are engaged by the cog wheels on that side. It will be understood that the controlling arms are geared to such a speed that they serve to positively support and control the movement of the leaves in a substantially radial position over and under the respective sprocket wheels, during which movement the outer portions of the respective leaves are required to travel at a much greater speed than during the time they are moving upward or downward in their nested positions as parts of the respective tiers.

The series of companion pockets 26 are provided in the respective leaves, the pockets of each pair being pivoted on a rod, as 27, which is extended from one end of the leaf to the other. The pockets are preferably stamped out of sheet metal with the flanges 28 forming the sides and outer end of the pocket, and the clip 29, cut from the body of the pocket and bent inward to form the shoulder 30 and then outward parallel with the body of the pocket; and the ears 31 are also provided, by means of which the pockets are pivoted on the rod. The bow springs 32 are provided on the sides of the pockets, one end of each bow spring being connected to the side of one pocket inside of the pivot rod, and the other end to the side of the other pocket at a point outside of said rod. The spring on the other side of the pockets is connected to the respective members of the pair in a reverse relation. By this arrangement these springs hold the two members of the companion pockets closely together when they are closed, but when either one pocket or the other has been rotated outward so that the line through the ends of the spring where they are connected with the sides of the pockets has passed through and beyond the axis of the pivot rod, the spring will then act to

hold the pocket open until it is forcefully rotated in the reverse direction to bring the spring into play again. The partition strips 33 are preferably provided longitudinally in the leaves to form an abutment for the companion pockets of each pair when the same are closed; so that the pockets do not, in fact, close against each other, but are closed against this thin intervening strip, which serves to hold each pocket in proper position during the time its companion pocket is open.

The index system comprises the general-index band 34 and the particular-index band 35, which bands are preferably located and adapted to operate in the compartment formed between the partition 7^a and the adjacent side of the case. The general-index band 34 is adapted to operate on the rollers 36 which are journaled on the pins 37 which in turn are fastened to the side of the case. This band is operatively connected with counter shaft 32 as by means of the cog-pinions 38 and 38^a and the intervening cog wheel 39 mounted on the shaft pin 40 which in turn is fastened to the wall of the case. The letters of the alphabet are imprinted, affixed or otherwise indicated on the band at the proper intervals, and the operation of the band is so coördinated with the movements of the pocket leaves that when the leaves containing the pockets carrying the bills with names having the same initial letter are exposed on the top of the forward tier, the same letter on the general-index band will be opposite an indicator, as for instance the bar 41 which is fastened to the case.

The particular-index band is of much greater length than the general-index band, and is adapted to operate over a series of idle rollers 42 which are journaled on pins 43, which pins are in turn fastened to the case; and motion is preferably given to this band by passing it around the greater part of the periphery of the comparatively large friction-drum 44, which is preferably fixed on the counter shaft 22. The various letters of the alphabet singly, and in combination with the other letters of the alphabet in regular series are imprinted, affixed or otherwise indicated on this band in such order and at such intervals that the proper letter or combination of letters will be opposite the indicator 41 when the leaves containing names beginning with the same letter or combination of letters is exposed at the top of the forward tier; it being understood that the band containing the particular index is operated at a much greater speed than the band containing the general index, and that the bands are located parallel with each other and travel in the same direction as they pass the indicator.

It will be understood that the bills are filed in the several pockets of the respective leaves of the cabinet in the alphabetical order of the

first and succeeding letters of the names thereon, which index letters can be indicated on an exposed part of the respective pockets, if desired; and it is evident that when it is desired to have access to the pocket containing the bills of any particular name, the mechanism of the cabinet can be operated at first quite rapidly by the crank, during which rapid operation attention is paid to the general-index band which has a comparatively slow movement and which can be readily followed until the first letter of the name arrives at or near the indicator; after which the mechanism can be operated more slowly, during which operation attention is given to the particular-index band until the first two letters of the name appear at or near the indicator, whereupon the operation of the mechanism can be again reduced to such a speed as will permit attention to be given to the individual pockets on the successive leaves as they become exposed at the top of the forward tier, as shown in Fig. 1. The pocket containing the leaves of the particular account desired can then be opened, as shown in Fig. 7, it being understood that the pockets exposed on the upper side of the forward tier can be opened upward in the same manner as shown for the forward opening of the pocket on the leaf which is illustrated as being in a vertical position.

It is evident that when the several leaves of the cabinet are comparatively light with reference to the size of the links of the gearing chain and the diameter of the sprocket wheels around which the chains are operated, the controlling arms and all the mechanism pertaining thereto can be dispensed with; for the reason that the relatively light leaves will be held in a practically true radial position by the gearing-chains during the time they are being rotated around the sprocket wheels. It is only when comparatively heavy leaves are used in connection with sprocket wheels of small diameter that it is necessary to use the controlling arms for the purpose of holding the leaves in a radial position when they are being rotated around the sprocket wheels; and furthermore, under the same conditions and for like reasons, the pins on the ends of the leaves, and the cog-wheels for engaging them can be dispensed with.

While the invention has been illustrated and described as embodied in an account cabinet, in which the leaves are provided with series of pockets for the filing of bills, it will be understood that such a use of the leaves is not essential.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. A case, a pair of shafts journaled one above the other in the case, sprocket-wheels on the shafts, gearing-chains adapted to operate around the sprocket-wheels, a series of leaves on respective links of the chains, pins

on the ends of the leaves, cog-wheels journaled in the case opposite the lower shaft and adapted to engage the pins of the lowest leaves, operative - gearing connecting the sprocket- and cog-wheels, radially-movable arms mounted on the shafts and adapted to engage the pins when the leaves are being operated around the sprocket-wheels; and means for operating the mechanism.

2. A series of leaves arranged in two adjacent tiers and having their inner edges connected to form gearing-chains, sprocket-wheels on which the chains are adapted to operate, pins on the ends of the leaves, cog-wheels adapted to engage the pins of the lowest leaves, operative connections between the chain-gear and the cog-wheels, arms on the same axis with the sprocket wheels and adapted to engage the pins when the leaves are rotated around the sprocket-wheels, and means for operating the mechanism.

3. A case, a pair of shafts journaled one above the other in the case, sprocket wheels on the shafts, gearing chains adapted to operate around the sprocket-wheels, a series of leaves on respective links of the chains, pins on the ends of the leaves, cog-wheels journaled in the case opposite the lower shaft and adapted to engage the pins of the lowest leaves, operative gearing connecting the sprocket- and cog-wheels, and means for operating the mechanism.

4. A series of pocket-leaves arranged in two adjacent tiers and having their inner edges connected to form gearing-chains, sprocket-wheels on which the chains are adapted to operate, pins on the ends of the leaves, cog-wheels adapted to engage the pins of the lowest leaves, operative connections between the chain-gearing and the cog-wheels, and means for operating the mechanism.

5. A series of leaves arranged in two adjacent tiers and having pins on their ends, the inner edges of the leaves being connected to form chains, and rotatable sprocket-wheels on which the chains are adapted to operate, with arms on the same axes with the wheels adapted to engage the pins.

6. A series of leaves arranged in two adjacent tiers and having their inner edges connected to form chains, and rotatable sprocket-wheels on which the chains are adapted to operate, with arms on the same axes with the wheels adapted to engage the ends of the

leaves to hold them in a substantially radial position.

7. A series of leaves arranged in two adjacent tiers and having their inner edges connected to form chains, and rotatable sprocket-wheels on which the chains are adapted to operate, with means for successively supporting the lowest leaf of each tier outside the connected edge thereof.

8. A movable series of leaves adapted to be successively exposed at a certain place, an adjacent movable index band with a relatively fixed indicator, and operative connections between the leaves and the band whereby the movement of the band past the indicator is coordinated with the exposure of the leaves.

9. A movable series of leaves adapted to be successively exposed at a certain place, a relatively fixed indicator, and adjacent general-index and particular-index bands arranged to move past the indicator at different speeds, with operative connections between the leaves and the bands whereby the movements of the bands are coordinated with the exposure of the leaves.

10. In a filing leaf, a rod in the leaf, a series of pairs of pockets located face to face and each pivoted at one end on the rod, an abutment between the pockets of the several pairs, a bow-spring on one side of each pocket-pair connected to one pocket inside the pivot-rod and to the other pocket outside the pivot-rod, and a reversely connected bow-spring on the other side of each pocket-pair.

11. In a filing leaf, a rod in the leaf, a pair of pockets located face to face and each pivoted at one end on the rod, an abutment between the pockets, a bow-spring on one side of the pocket-pair connected to one pocket inside the pivot-rod and to the other pocket outside the pivot rod, and a reversely connected bow-spring on the other side of the pocket-pair.

12. In a filing leaf, a rod in the leaf, a pair of pockets located face to face and each pivoted at one end on the rod, an abutment between the pockets, and a spring acting to close each pocket against the abutment.

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