

No. 801,297.

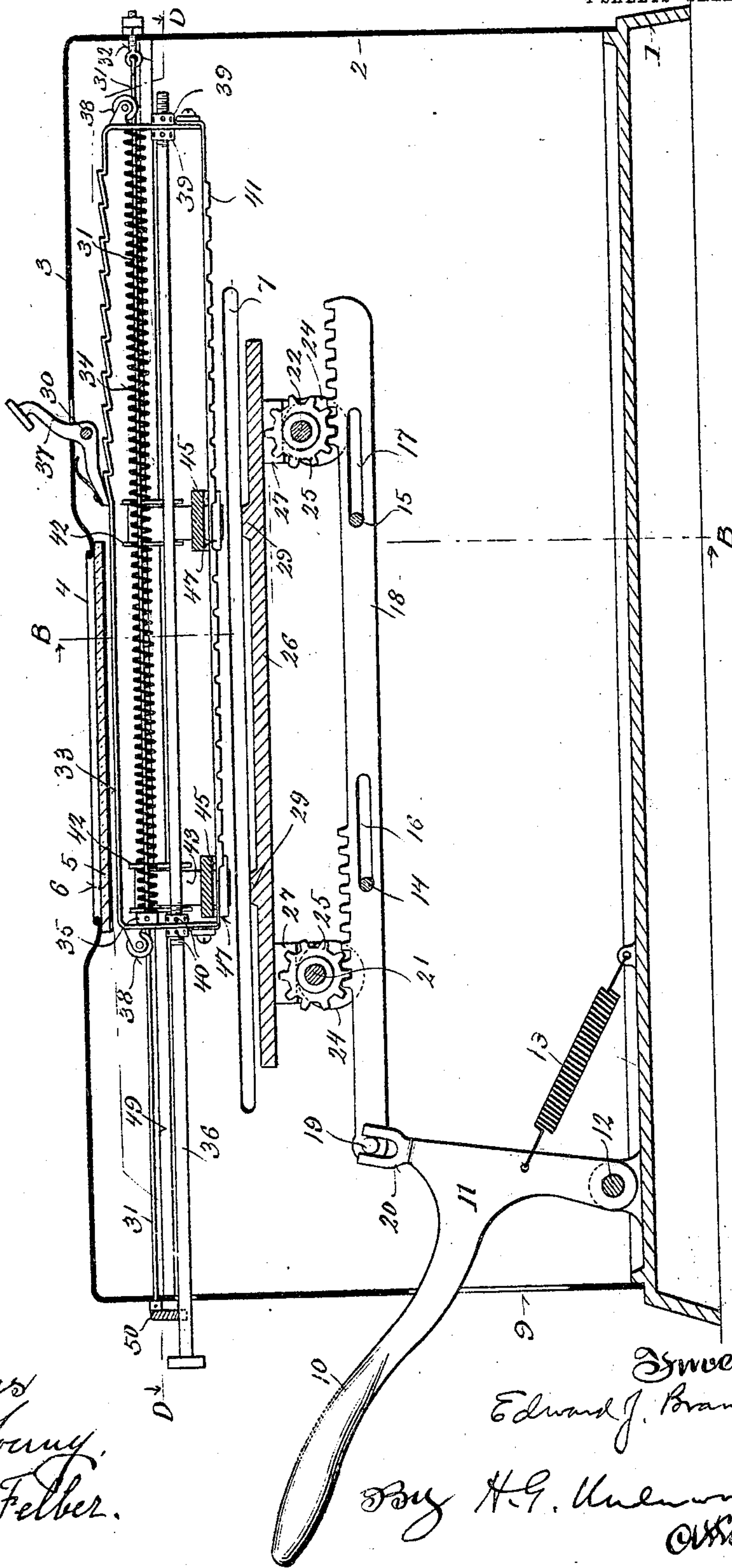
PATENTED OCT. 10, 1905.

E. J. BRANDT.
PRINTING AND AUDITING DEVICE.

APPLICATION FILED JULY 11, 1904.

4 SHEETS—SHEET 1.

Fig. 1.



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4 SHEETS—SHEET 2.

Fig. 2.

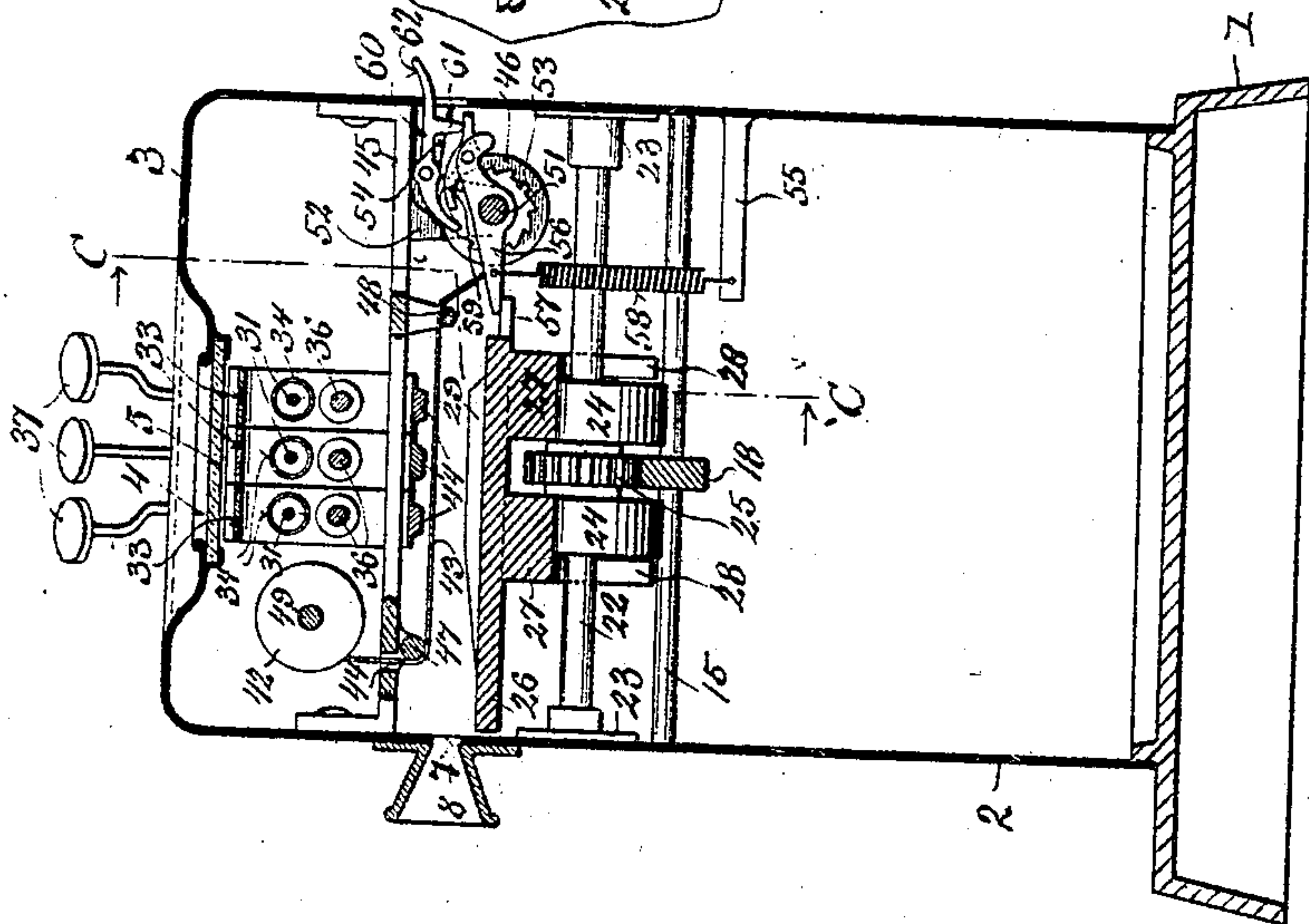
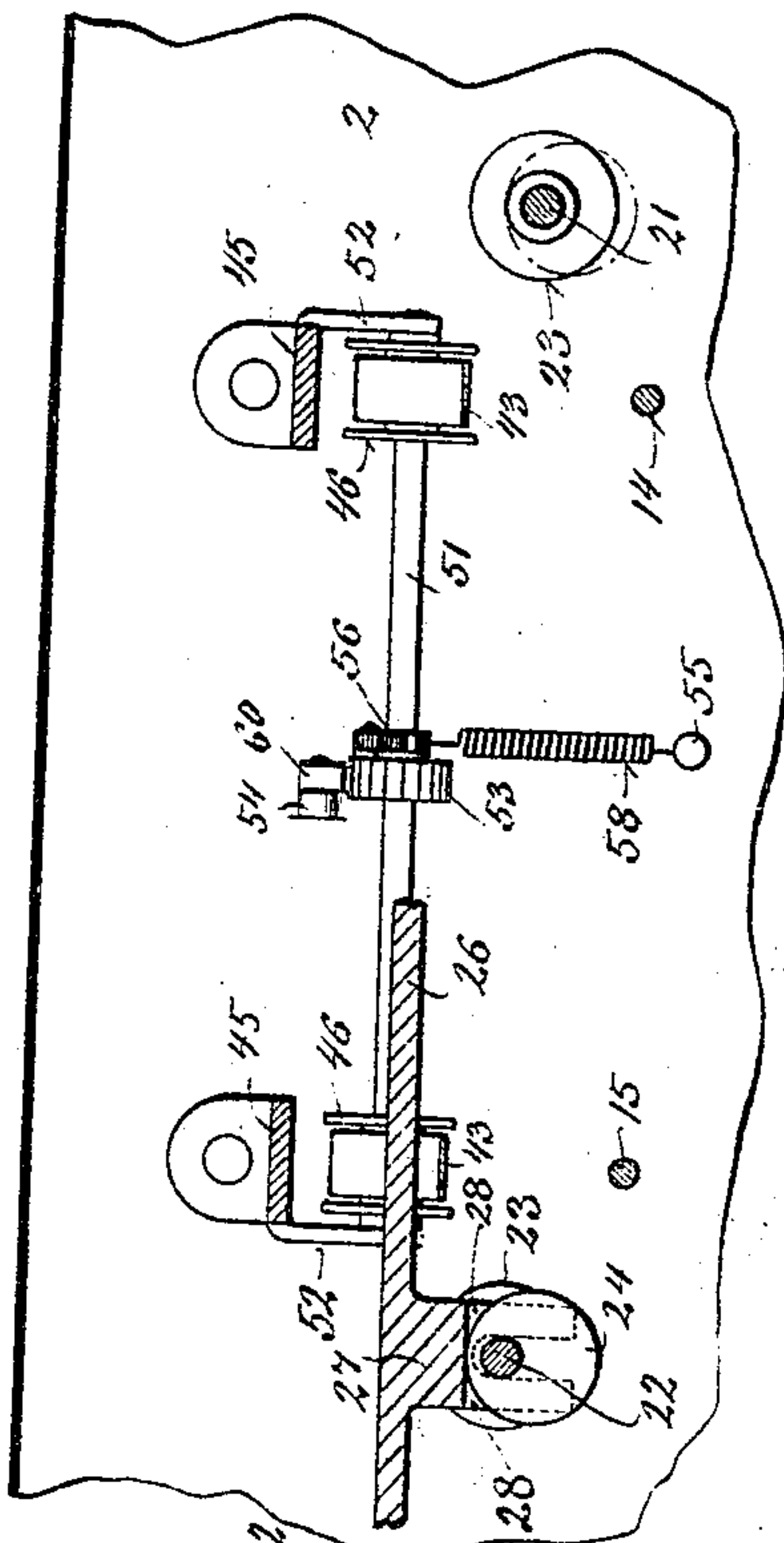


Fig. 3.



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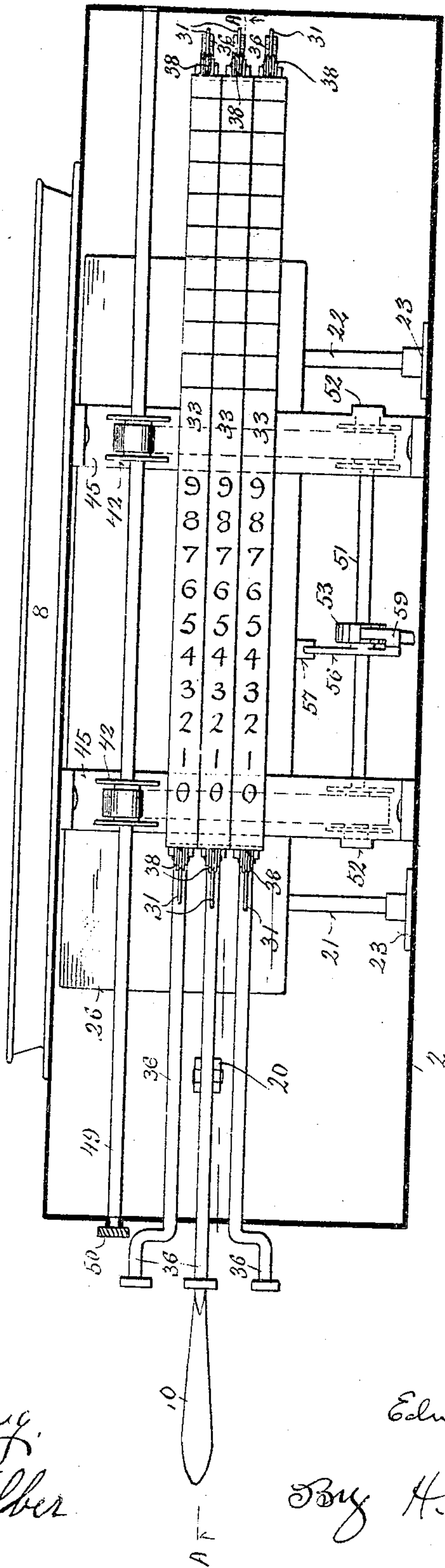
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4 SHEETS—SHEET 3.

Fig. 4.



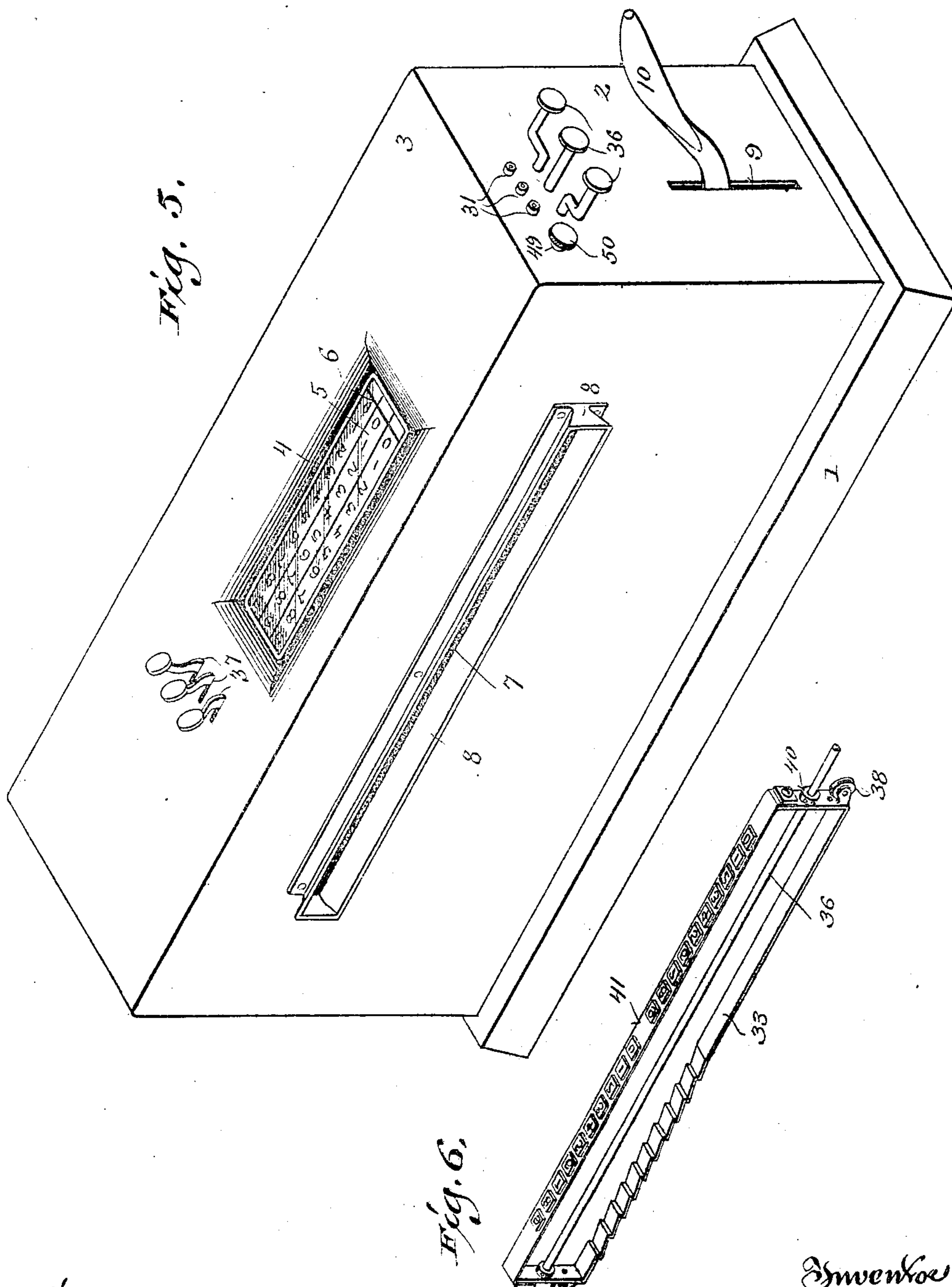
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4 SHEETS—SHEET 4.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD J. BRANDT, OF WATERTOWN, WISCONSIN, ASSIGNOR TO
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PRINTING AND AUDITING DEVICE.

No. 801,297.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed July 11, 1904. Serial No. 216,027.

To all whom it may concern:

Be it known that I, EDWARD J. BRANDT, a citizen of the United States, and a resident of Watertown, in the county of Jefferson and State of Wisconsin, have invented certain new and useful Improvements in Printing and Auditing Devices; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to printing and auditing devices designed especially for use in connection with the sales-slips of mercantile establishments; and it consists in certain peculiarities of construction and combination of parts, as will be fully set forth hereinafter in connection with the accompanying drawings and subsequently claimed.

In the said drawings, Figure 1 is a longitudinal vertical sectional view of a machine embodying my present invention, taken on the plane indicated by the line A A in Fig. 4. Fig. 2 is a transverse vertical sectional view on the plane indicated by the line B B in Fig. 1. Fig. 3 is a detail sectional view of a portion of my machine, taken on the plane indicated by the line C C in Fig. 2. Fig. 4 is a horizontal sectional view taken on the line D D in Fig. 1. Fig. 5 is a perspective view of the complete machine, and Fig. 6 is a perspective view of the printing-slide inverted.

Referring by numerals to the drawings, 1 designates the base of the said machine, from which rises a suitable casing 2, (which may be made in separate and removable sections for greater convenience in assembling the parts,) the top of the casing being marked 3 and having an opening 4 therein, protected by a glass or other transparent plate 5, having a transverse boundary-line 6 near one end thereof, which line may be painted, enameled, or engraved, or otherwise marked across said plate 5. One of the side walls of the casing 2 is formed with an opening 7 therethrough for the admission of the before-named sales-slips to be printed, which are guided through a flaring outside mouthpiece 8. One of the end pieces of the casing 2 is formed with a vertical slot 9, through which protrudes the handle 10 of a lever 11 inside the casing and which is pivoted at 12 to the base 1 and movably held with the handle 10 at the top wall of the said slot by a spring 13, secured to said lever and to the said base, all as shown in Fig. 1.

14 15 represent two transverse rods extending across the interior of the casing 2 at about midway of the height of the same, which serve to support the toothed rack-bar 18, the said rods passing through longitudinal slots 16 17 in said rack-bar, one end of which has a lateral pin 19 received between the prongs of a fork 20 at the upper end of the hereinbefore-named lever 11. Above the rods 14 15, but outside of the vertical lines thereof, are transverse shafts 21 22, supported in suitable bearings 23 23. These shafts 21 22 each carry a pair of eccentrics 24 24, and between each pair they also carry a pinion 25, which pinions mesh with the teeth on the rack-bar 18 for the purpose of operating the printing-table 26, next to be described.

The table 26 has adjacent to each end thereof a pair of downward lugs 27 27, which lugs rest on the described eccentrics 24, and from each lug there depend a pair of fingers 28 28, which straddle the said transverse shafts 21 and 22. The printing-table is further provided with impact-surfaces 29 29, which normally come up to the bottom line of the described opening 7 for the sales-slips to be printed.

31 designates one of the trolley-wires for the travel of the printing-slides. These wires extend longitudinally through the upper part of the casing from end to end and are preferably provided each with a tightening device, as shown at 32, to keep the wire taut.

The printing-slides 33 and accompanying trolley-wires 31 are shown as three in number in the present illustration; but the number varies as desired, one of the slides being shown in operative position in Fig. 1 and in inverted position in Fig. 6. Each slide is of generally rectangular form and preferably made of metallic strips properly bent and secured together. The top section of each slide at the left is marked with the numerals or ten arithmetical characters "0" to "9" and at the right is corrugated with an equal number of detents, as shown in Fig. 4 and Fig. 1, respectively, while the lower section 41 of each slide is provided with sets of printing characters (two sets in the present illustration) corresponding to the just-named numerals, the lower or printing section of the slide being here shown as having upwardly-bent ends secured by screws to the downwardly-bent end.

pieces. These end pieces are perforated for the reception and passing therethrough of the trolley-wire 31, which wire in practice is preferably surrounded by a continuous spiral spring 34, which extends between the right-hand end piece of the slide, and a collar 35, made fast to said wire just within the left-hand end piece of the slide.

36 designates the pull-rod of each slide, which is secured thereto and extends through the same and out through an opening in the left-hand end piece of the casing 2 and there receives a head for convenience in manipulation.

37 37 designate spring-catches for engagement with the detents of the printing-slides, these catches being pivoted in the upper part of the casing, as shown at 30, their shanks projecting through holes in the casing-top 3 and being provided with inclined heads and their springs bearing against the under side of the said casing-top, all as best shown in Fig. 1.

The slides 33 are provided with grooved trolleys 38 38, one at each end, to ride upon the described trolley-wires 31. As the said printing-slides are formed of thin strips or metallic tapes, it is very desirable that the same should always be kept taut, with the lower printing-sections under sufficient tension to make the same stiff, and hence the described pull-rods are provided with tightening-nuts 39 39 and 40 40, one each side of the respective end pieces of the slides, and the pull-rods screw-threaded at these points where the said rods pass through the end pieces for this purpose.

42 42 designate the upper ribbon-spools, from which the ribbons 43 pass through slots 44 in the brace-pieces 45 to the lower ribbon-spools 46, said ribbons passing first under guide-rods 47 and then over guide-rods 48 on their way to said lower spools 46, the said guide-rods being supported on arms depending from the said brace-pieces 45, which latter have upturned ends by which they are secured between and to the opposite side pieces of the casing 2. The upper ribbon-spools 42 42 are mounted on a longitudinally-extending rod 49, extending the length of the casing and through one end and there having a milled head 50 for convenience in turning said rod in rewinding the ribbons, as hereinafter explained.

The lower ribbon-spools 46 46 are fast on a shaft 51, whose ends are journaled in arms 52 52, which depend from the brace-pieces 45 45, there being a ratchet-wheel 53 also fast on said shaft 51. There are upper and lower lugs 54 and 55, projecting laterally from the adjacent side of the casing 2. Loose on the shaft 51 is an arm 56, close to the ratchet-wheel 53, the inner end of this arm being over a projection 57 on the adjacent end of the printing-table 26 and held normally against the same

by a spring 58, connecting said arm 56 with the said lower lug 55. The opposite end of this arm has pivoted thereto a pawl 59, whose forward end engages with the teeth of the ratchet-wheel 53 to turn the latter, while pivoted on the upper lug 54 is a dog 60, whose forward end also engages with the teeth of said ratchet-wheel 53 just beyond the end of the pawl 59 to hold the tooth moved forward by the latter, and back of its pivot-point the said dog 60 has a downward lug 61, resting on the rear end of said pawl 59, and back of this lug the dog 60 is continued into a handle 62, projecting through an opening in the wall of the casing 2 to free the dog and pawl from the ratchet-wheel when the ribbons on the spools 46 46 are to be rewound back on the upper spools 42 42.

The operation of my device will be readily understood from the foregoing description of its construction, taken in connection with the accompanying drawings. In the illustration given the printing-slides have only two corresponding sets of numerals on their lower printing-sections; but it will be understood that there may be three or more of such printing sets arranged longitudinally one after the other on each slide, if desired, and also that there may be more than three of the trolley-wires and their printing-slides, if preferred, or needed, in any particular case, there being of course an impact-surface on the printing-table and a ribbon or inking means for each set of numerals. In order to bring the desired printing characters on each slide to the desired points over the impact-surfaces of the printing-table 26, the pull-rods 36 are drawn out, bringing the slides 33 with them, till the desired numeral shows in the space between the transverse line 6 and the adjacent end of the opening 4, and then by simply releasing hold upon the pull-rod the spring-catch 37 will engage the corresponding corrugation or detent on the slide, and the type corresponding to said numeral will be exactly above the impact-surface 29 in both sets, or, in other words, on the printing-line. The sales-slips or other papers are then inserted through the opening 7 and the lever-handle 10 depressed, which draws on the rack-bar 18, and its racks engage with the pinions 25, revolving the shafts 21 22 and their eccentrics 24 24, thus raising up the printing-table 26 and causing the slips or other papers to be carried up by the impact-surfaces 29 against the ribbons 43 and said ribbons against the type on the slide-sections 41, and thus the impression is given on the slips or other paper. After the paper has been thus imprinted it is only necessary to press on the inclined heads of the spring-catches 37 to release same from the corrugations or detents with which they have been in engagement, and the springs 34, which have been compressed by the drawing forward of the pull-rods 36, will instantly and

automatically expand and draw the printing-slides back to their original and normal position, ready to be set for the next impression.

The ribbon-feed is automatic, as with each reciprocation of the printing-table 26 the arm 56 is carried up by the projection 57 on said table and brought down by the action of the spring 58 as the table descends, and the fingers 28 28, which straddle the rods 21 22, insure that the upward movement of said table carried by the eccentrics shall be in a vertical line. When the ribbons have been practically all transferred to the lower spools 46 46, the handle 62 of the dog 60 is depressed, which in turn depresses the adjacent end of the pawl 59 and frees the forward ends of both dog and pawl from the teeth of the ratchet-wheel 53, and then by taking hold of the milled head 50 the rod 49 can be turned to rewind the ribbons 43 43 on the upper spools 42 42.

By the use of sales-slips having a transverse line of perforations or indentations the type of one set of the numerals in the several slides will print on one end of the slip and be simultaneously duplicated at the other end, and the slip can then be separated, one piece being used for auditing the account, or separate slips, one partly covering the other, can be used, as preferred in any given instance.

While I prefer to use the springs 34, so as to automatically return the printing-slides 33 to their normal positions, it is obvious that I may dispense with the same, in which case the longitudinal rods 36 would be operated as push-rods as well as pull-rods, and the said slides could be restored to normal position thereby, and the trolleys 38 may also be dispensed with, although the action of the slides is smoother and accompanied by less friction when they are employed.

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

1. In a printing and auditing device, the combination with a suitable casing, of a support for paper to be imprinted; a series of wires extending longitudinally of the said casing; tightening devices for keeping said wires taut; a series of printing-slides adjustably movable on and carried by said wires; a series of devices for inking the printing-surfaces of said slides; and means for impacting the paper against the said inked surfaces.

2. In a printing and auditing device, the combination with a suitable casing, of a supporting-table for paper to be imprinted; a series of impacting-surfaces formed on said table; a series of wires extending longitudinally of said casing; a series of printing-slides adjustably movable on and carried by said wires; spiral springs surrounding said wires for retracting said slides; a series of devices for inking the printing-surfaces of said slides;

and means for carrying the paper on said table into forcible contact with said inked surfaces.

3. In a printing and auditing device, the combination with a suitable casing, of a table, formed with impacting-surfaces on which the paper to be printed is supported; a series of ink-ribbons arranged in line with and adjacent to the impacting-surfaces on said table; a series of wires extending longitudinally of said casing; a series of printing-slides adjustably movable on and carried by said wires on the other side of said ribbons; and means for bringing the impacting-surfaces, printing-slides, and ink-ribbons together against the interposed paper.

4. In a printing and auditing device, the combination with a suitable casing, of a series of wires extending longitudinally of said casing; a series of printing-slides carried by said wires; a series of longitudinal rods, secured to said slides and extending through said casing for moving said slides to the desired point; spiral springs surrounding said wires for retracting said slides, together with paper supporting and inking devices, and means for forcing the paper against the inked surfaces of the printing-slides.

5. In a printing and auditing device, the combination with a suitable casing, and movable paper supporting, impacting and inking devices therein contained, of a series of wires extending longitudinally thereof, and a series of printing-slides consisting of skeleton rectangular frames adjustably movable on and carried by said wires.

6. In a printing and auditing device, the combination with a suitable casing, of a series of wires extending longitudinally thereof, and a series of printing-slides, consisting of frames of metallic strips or tapes, of substantially rectangular form, the end pieces of said frames being perforated for the admission of said wires, on which said frames are movably supported, and the lower sections of said frames carrying sets of printing characters, arranged in longitudinal series, and repeated thereon.

7. In a printing and auditing device, the combination with a suitable casing, of a series of wires extending longitudinally thereof, and a series of printing-slides consisting of frames of metallic strips or tapes of substantially rectangular form, the end pieces of said frames being perforated for the admission of said wires, on which said frames are movably supported; longitudinal rods secured to said frames, and extending through the front end of the casing for pulling the said frames forward; detents for holding said frames in adjusted positions; collars secured to said wires within said frames; and spiral springs surrounding said wires between said collars and rear ends of said frames for auto-

atically retracting said frames after they have been pulled forward against the force of said springs.

8. In a printing and auditing device, the
5 combination with a suitable casing, and movable paper-supporting, impacting and inking devices therein contained, of series of movable printing-slides, having sets of printing
10 characters on the under side thereof, and corresponding index characters on their upper surfaces, longitudinal rods for moving said
slides, and a transparent plate set in an oblong
opening in the top of said casing, of a width
and length to display the index characters on
15 said slides, and said plate having a transverse guide-line formed thereon, adjacent to one end thereof.

9. In a printing and auditing device, the
20 combination with a suitable casing, of a series of wires extending longitudinally thereof; a series of printing-slides carried by said
wires; longitudinal rods secured to said slides and extending through the said casing for
adjustably moving the said slides; and grooved
25 trolleys journaled in arms secured to each end of the said slides, and traveling on said
wires.

10. In a printing and auditing device, the

combination with a suitable casing and series
of printing-slides adjustably movable in the 30
upper part thereof, of a pair of transverse shafts and a pair of transverse rods on a
plane below that of said shafts; two pairs of
eccentrics and an interposed pinion fast on
each of said shafts; a paper-supporting table 35
having downward lugs resting on said eccentrics; forks or fingers depending from said
lugs and straddling the said shafts; impact-
surfaces on said table; a slotted rack-bar
movable on said transverse rods, and in en- 40
gagement with said pinions; a lateral pin on
one end of said rack-bar; a lever pivoted
within the casing, and having a handle pro-
jecting therethrough; a retracting-spring con-
necting said lever to the casing-base; and a 45
fork at the upper end of said lever in engage-
ment with the lateral pin on the rack-bar.

In testimony that I claim the foregoing I
have hereunto set my hand, at Watertown, in
the county of Jefferson and State of Wisconsin, 50
sin, in the presence of two witnesses.

EDWARD J. BRANDT.

Witnesses:

MARY E. BURKE,
WILLIAM H. WOODARD.