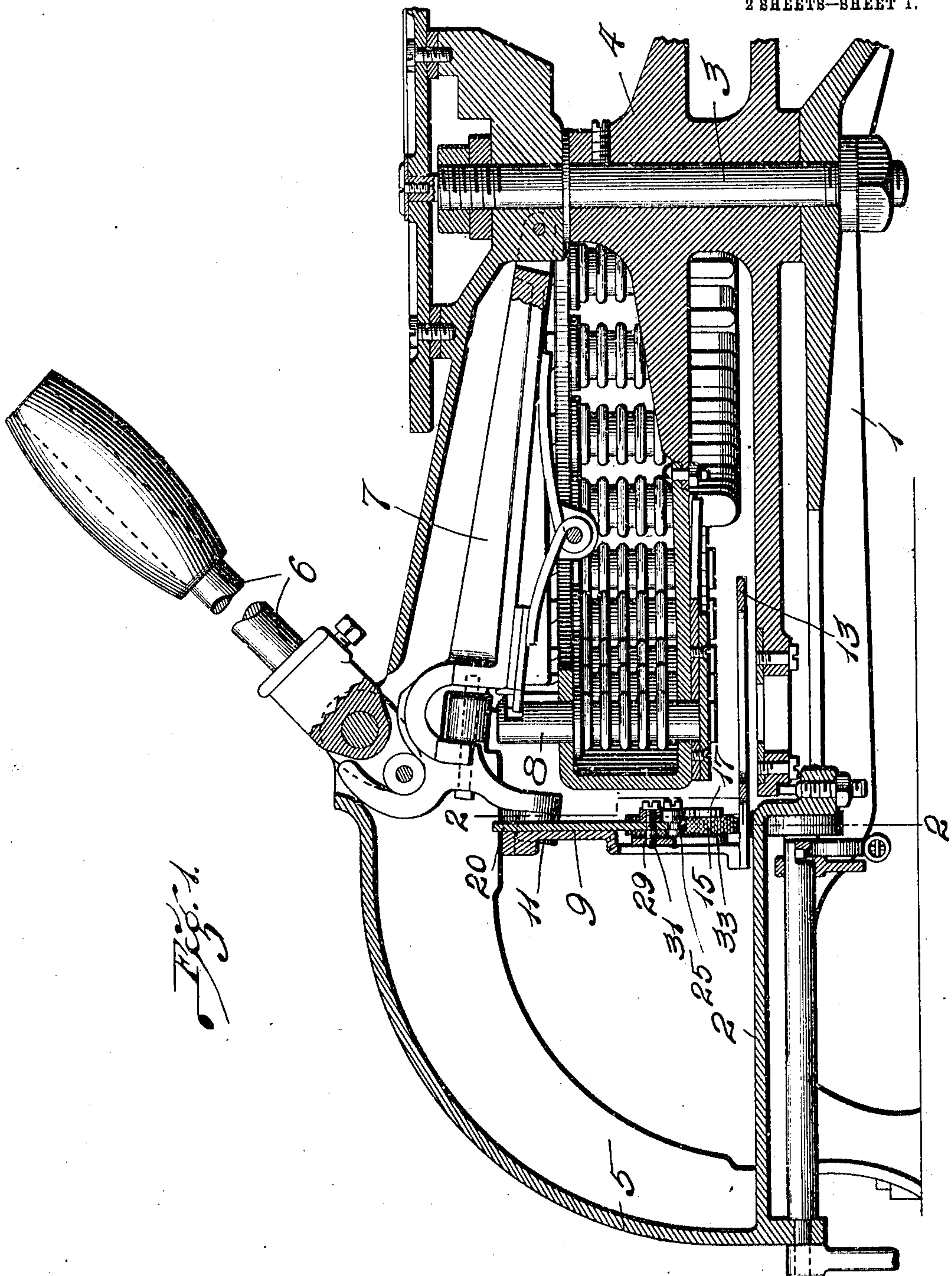


AL VERNAS LANGSDON.
STENCIL CUTTING MACHINE.
APPLICATION FILED SEPT. 4, 1909.

955,972.

Patented Apr. 26, 1910

2 SHEETS—SHEET 1.



WITNESSES:
E. M. Springton.
Lenore Clark.

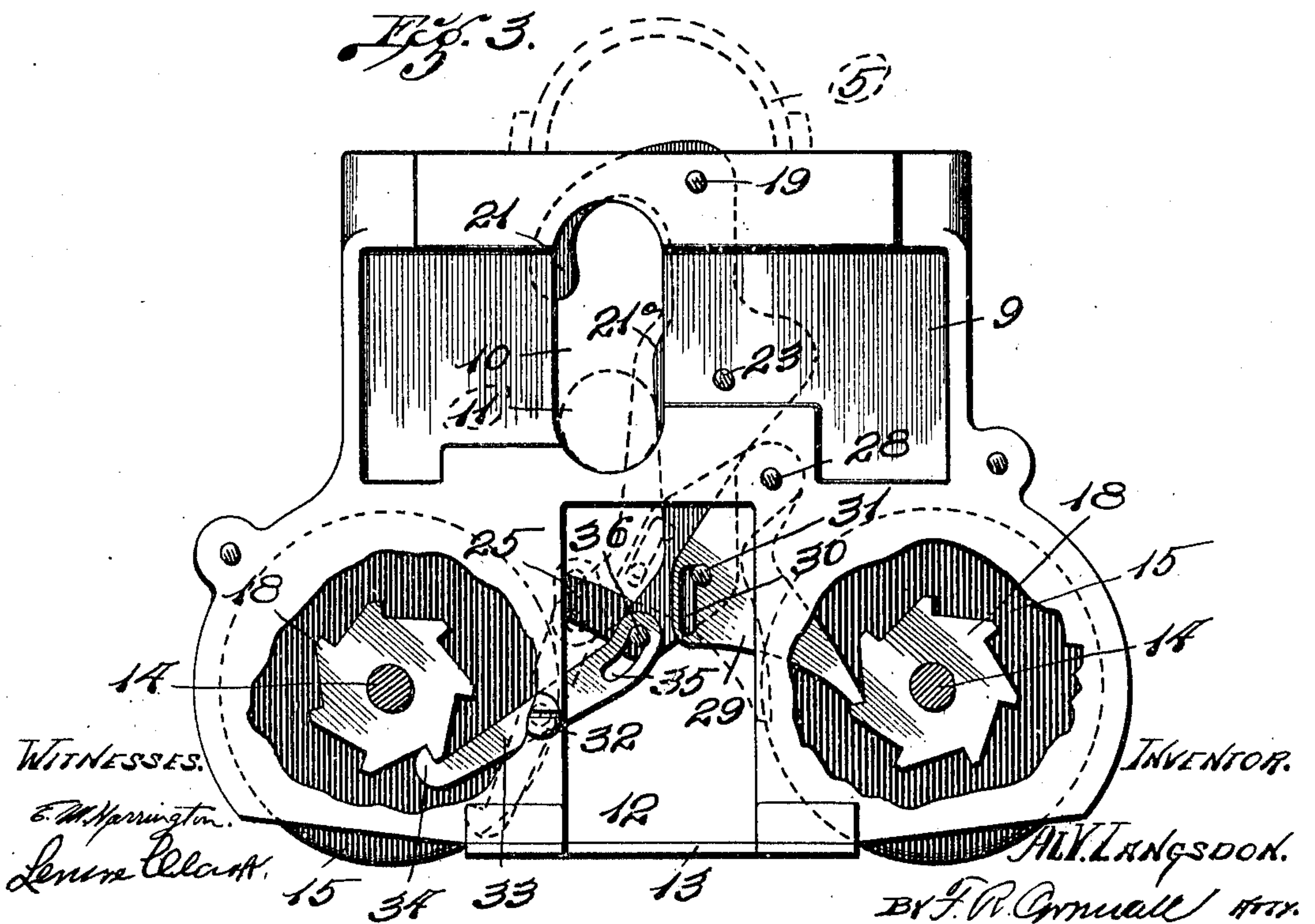
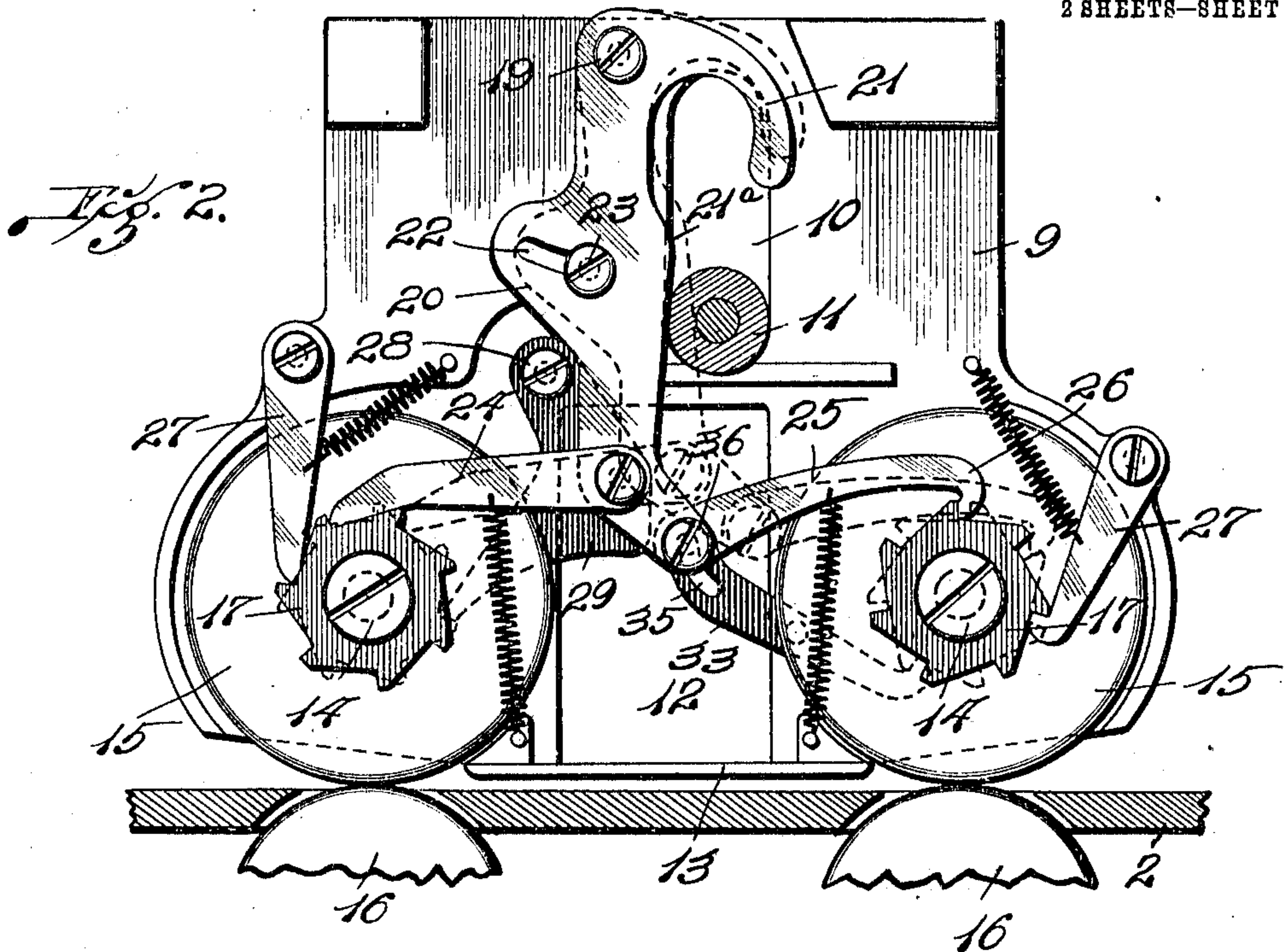
INVENTOR:
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UNITED STATES PATENT OFFICE.

AL VERNAS LANGSDON, OF ST. LOUIS, MISSOURI.

STENCIL-CUTTING MACHINE.

955,972.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed September 4, 1909. Serial No. 516,297.

To all whom it may concern:

Be it known that I, AL VERNAS LANGSDON, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Stencil-Cutting Machines, of which the following is a full, clear, and exact description, 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, forming part of this specification, in which—

Figure 1 is a vertical section taken through the center of a stencil-cutting machine of my improved construction. Fig. 2 is an enlarged vertical section taken on the line 2—2, Fig. 1. Fig. 3 is a front elevation of the parts seen in Fig. 2, with parts broken away.

My invention relates to stencil-cutting machines such as are described in Letters Patent No. 808,308 issued December 26, 1905, the principal object of my invention being to provide improved sheet-feeding mechanism for machines of the type shown in the patent above referred to.

A further object of my invention is to provide a pair of sheet-feeding wheels and to impart positive motion to both of said wheels in order that the sheet will be positively fed without buckling or bending in its intermittent passage through the machine.

Further objects of my invention are to provide means whereby the feeding wheels are positively actuated by means of the hand lever utilized for depressing the dies of the machine, and further, to provide means whereby the feeding wheels are prevented from overtravel on their feeding movement, thereby insuring equal spaces between the letters or openings cut by the dies.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts hereinafter more fully described and claimed.

Referring by numerals to the accompanying drawings, 1 designates the frame of the machine, 2 the table thereof, 3 the central post or standard, 4 the die carrier which operates on said post or standard, 5 the arch which extends from the table 2 to the upper end of the post or standard 3, 6 the hand lever which actuates a pivoted lever 7 which latter engages the die plungers 8 arranged in the usual manner in the die carrier 4.

All of the parts just described are of usual construction and form no part of my invention.

Positioned in front of the die carrier 4 between the table 2 and arch 5 is a vertically-disposed plate 9 in the upper portion of which is formed a vertically-disposed slot 10 which is traversed by a roller 11 carried by the forward end of the lever 7. Formed in the plate 9, immediately below this slot, is an opening 12, and projecting horizontally from the bottom of said plate 9 over the edge of the lower portion of the die carrier is a plate 13 which is for the purpose of preventing the sheet from following the die plungers upward after the same have been forced through said sheet in cutting the stencil.

Journaled on pins or studs 14 and arranged on the inner face of the plate 9 at the lower corners thereof, are sheet-feeding wheels 15, the peripheries of which are preferably milled or corrugated, and said wheels ride upon the peripheries of feeding rollers 16 journaled beneath the table 2 and projecting through suitable openings therein. Formed on, or fixed to the outer faces of the feeding wheels 15 are ratchet wheels 17, and formed on, or fixed to said wheels on the inner faces thereof are ratchet wheels 18, the teeth of which are positively disposed, relative to the teeth of the ratchet wheels 17. Arranged against the inner face of the plate 9 and fulcrumed on a pin 19 seated in said plate above and to one side of the slot 10, is a vertically-disposed lever 20, the upper end of which is provided with a hook 21 which occupies a position immediately over the upper portion of the slot 10. One edge of this lever occupies a position immediately adjacent one side of the opening 10, and formed on this edge of said lever is a shoulder 21^a which projects into the slot when said lever occupies its normal position (see dotted lines, Fig. 2). Formed in the central portion of the lever 20 is a segmental slot 22 concentric with the pin 19 and passing through said slot 22 and seated in the plate 9 is a pin 23, thus providing means for regulating and limiting the swing of said lever 20. Pivotally mounted on the lower portion of the lever 20 is a gravity pawl 24, the point of which engages the teeth of one of the ratchet wheels 17, and pivotally carried by the lower end of the lever 20 is a gravity pawl 25 provided with a hook 26 on its outer

end which engages with the teeth of the ratchet wheel 17 opposite the ratchet wheel with which the point of the pawl 24 engages. Pivotally arranged on the plate 9 above the feeding wheels 15 are spring-held detents 27, the points of which engage the teeth of the ratchet wheels 17. Pivotally mounted on a pin 28 seated in the plate 9 above the opening 12 is the upper end of a detent 29, and formed in said detent is a vertically-disposed slot 30 through which passes a pin 31 carried by the lower portion of the lever 20. The point of this detent 29 engages the teeth of one of the ratchet wheels 18. Fulcrumed on a pin 32, seated in the lower portion of the plate 9 and to one side of the opening 12, is a detent 33 provided with a hook 34 on its lower end, which engages the ratchet wheel 18 opposite the ratchet wheel 18 with which the detent 29 engages, and formed in the upper portion of the detent 33 is a short slot 35 through which passes a pin 36 carried by the lower end of the lever 20.

When the lever 6 is in its normal position as shown in Fig. 1, the roller 11 occupies the upper end of the slot 10, and when in this position said roller bears against the hook 21 on the upper end of the lever 20, and maintains said lever in the position shown by dotted lines in Fig. 2. When so positioned, the lower end of the lever 20 is shifted laterally so that the pins 31 and 36 occupy the lower ends of the slots 30 and 35 respectively, thus maintaining the point of the detent 29 and the hook on the end of the pawl 33 away from the ratchet wheels 18, as shown by dotted lines in Fig. 3. When the hand lever 6 is manually engaged and drawn forward to move one of the plunger dies downward, the lever 7 is actuated and the roller 11 carried by the forward end thereof is moved downward through the slot 10. Before the plunger die is engaged and moved downward by this movement, the roller 11 bears against the shoulder 21^a and by so doing swings the lever 20 upon its pivot and shifts said lever laterally into the position shown by solid lines in Fig. 2. As a result of this movement, the point of the pawl 24 and the hook on the detent 25 engage the teeth of the ratchet wheels 17 and partially rotate the same, together with the sheet-feeding wheels 15, which latter bear on the sheet of material in which the stencil is being formed, and said sheet is shifted a distance corresponding to the distance of rotation of the feeding wheels 15. During this partial rotation of the ratchet wheels 17 and feeding wheels 15, the free ends of the spring-held pawls 27 ride over the teeth of the ratchet wheels 17 and engage certain of the teeth thereof in order to prevent any reverse movement of the sheet-feeding wheels. As the lever 20 is swung

laterally by the movement of the roller 11 downward through the slot 10, the point of the pawl 29 is moved into engagement with one of the teeth of the corresponding wheel 18 by reason of the pin and slot connection between said pawl and the lower portion of the lever 20. At the same time, detent 33 is swung upon its pivot by reason of the pin and slot connection between said detent and the lever 20, and the hook 34 on the lower end of said detent is brought into engagement with one of the teeth of the corresponding ratchet wheel 18. Thus it will be seen that the engagement of the roller 11 against the shoulder 21^a results in a partial rotation of the sheet-feeding wheels and at the end of said partial rotation said feeding wheels are positively locked against reverse movement by the members 27 and said wheels are prevented from over-rotation by the pawl 29 and detent 33. After the roller 11 has engaged the shoulder 21^a and shifted the lever 20 to bring about the movement just described, the die plunger is engaged by a part carried by the lever 7 and said die plunger is moved downward through the sheet held beneath the stationary sheet-feeding wheels 15, and immediately after this action takes place, the hand lever 6 is released and permitted to swing into its normal position, whereupon the lever 6 will move forward to its normal position and the roller 11 will travel to the upper end of the slot 10 where it reengages with the hook 21, thus shifting the lever 20 to its normal position and moving the pawl 24 and detent 25 into position to engage the teeth of the ratchet wheels 17. As the lever 20 swings back to its normal position, the pawl 29 and the detent 33 are disengaged from the ratchet wheels 18, and thus the various parts are in proper positions for the next actuation of the hand lever and the second downward movement of the roller 11. Thus it will be seen how I have provided a stencil-cutting machine with simple means whereby partial rotary movement is imparted to both the sheet-feeding wheels, and also provided means for preventing over-movement or over-rotation of said wheels and at the same time locking said wheels against reverse movement.

I claim:

1. In a machine of the class described, a pair of sheet-feeding wheels, ratchet wheels carried thereby, pawls and detents engaging said ratchet wheels, and means actuated by the hand lever of the machine and connected to the pawls and detents whereby partial rotary motion is simultaneously imparted to said feeding wheels and for locking said wheels against over-rotation.

2. In a machine of the class described having a hand lever, a pair of independently mounted sheet-feeding wheels, ratchet wheels

carried thereby, a lever actuated by the hand lever, pawls and detents carried by said lever and engaging the ratchet wheels for simultaneously imparting motion thereto, said pawls and detents engaging the ratchet wheels for preventing over rotation of the sheet-feeding wheels.

3. In a machine of the class described provided with a hand lever, a pair of independently mounted sheet-feeding wheels, ratchet wheels carried thereby, a lever pivotally mounted on the frame of the machine in the path of travel of the hand lever of the machine, and pawls and detents carried by said lever and engaging the ratchet wheels carried by the sheet-feeding wheels.

4. In a machine of the class described provided with a hand lever, a pair of sheet-feeding wheels, a pair of ratchet wheels carried by each sheet-feeding wheel, pawls and detents engaging the ratchet wheels, and a lever pivotally mounted on the frame of the machine in the path of travel of the hand lever, and which lever is connected to the pawls and detents.

5. In a machine of the class described provided with a hand lever, a pair of independently mounted sheet-feeding wheels, a pair of ratchet wheels carried by each sheet-feeding wheel and arranged on the

opposite faces thereof, the teeth of one ratchet wheel of each pair being oppositely disposed relative to the teeth of the opposite wheel, pawls and detents engaging the ratchet wheels, and means connected to said pawls and detents and actuated by the hand lever of the machine for imparting simultaneous movement to the sheet-feeding wheels.

6. In a machine of the class described provided with a hand lever, a pair of independently mounted sheet-feeding wheels, a pair of ratchet wheels carried by each sheet-feeding wheel, a lever in the path of travel of the hand lever of the machine, pawls and detents pivotally connected to said lever and engaging the ratchet wheels for imparting simultaneous motion thereto, and preventing the over rotation thereof, and independent means engaging certain of the ratchet wheels for holding the sheet-feeding wheels against reverse movement.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 2nd day of September, 1909.

AL VERNAS LANGSDON.

Witnesses:

F. R. CORNWALL,
LENORE CLARK.