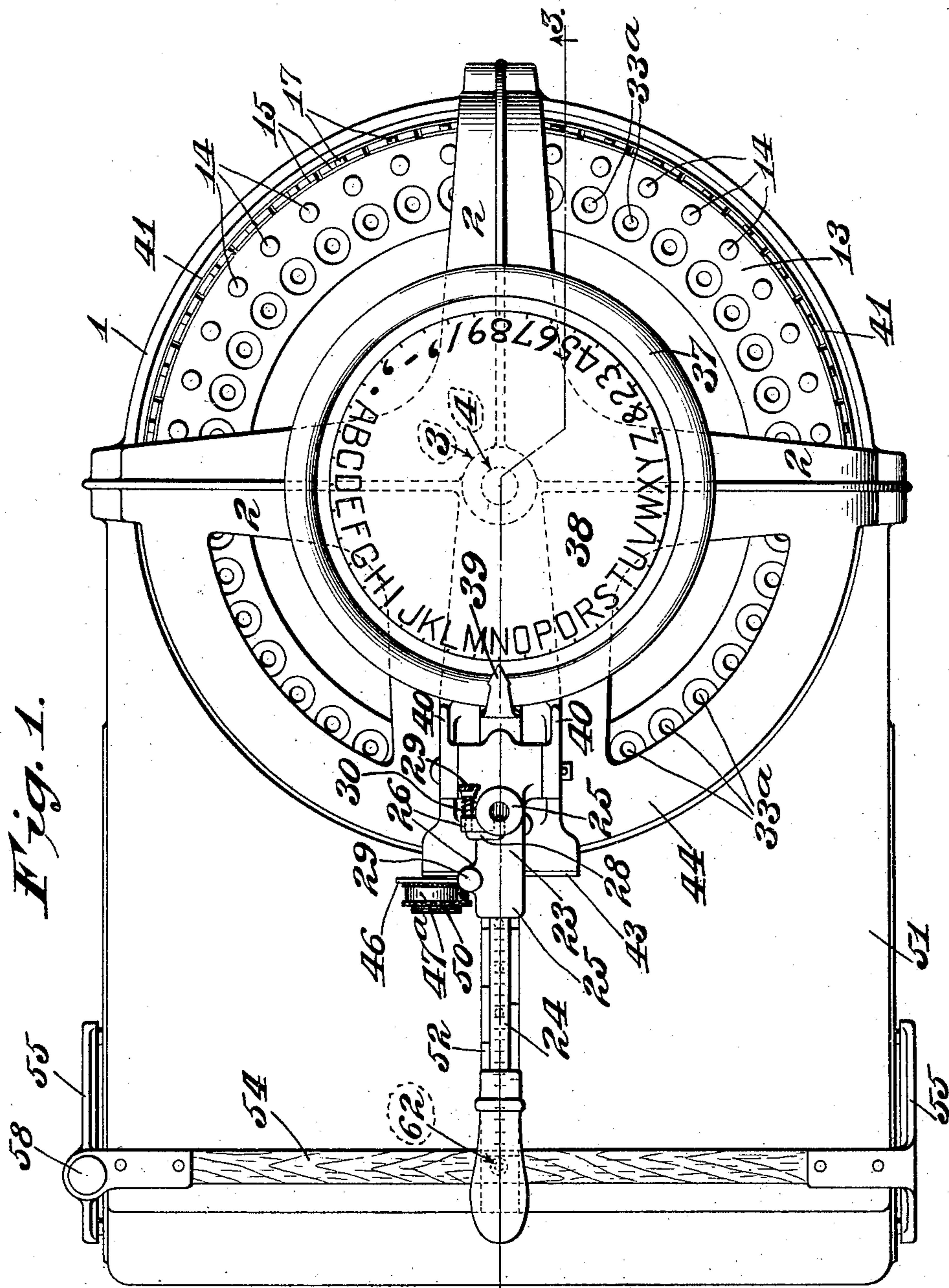


A. J. BRADLEY.  
STENCIL MACHINE.  
APPLICATION FILED FEB. 8, 1908.

920,530.

Patented May 4, 1909.

4 SHEETS—SHEET 1.



**Witnesses:**  
G. A. Pennington  
R. D. White

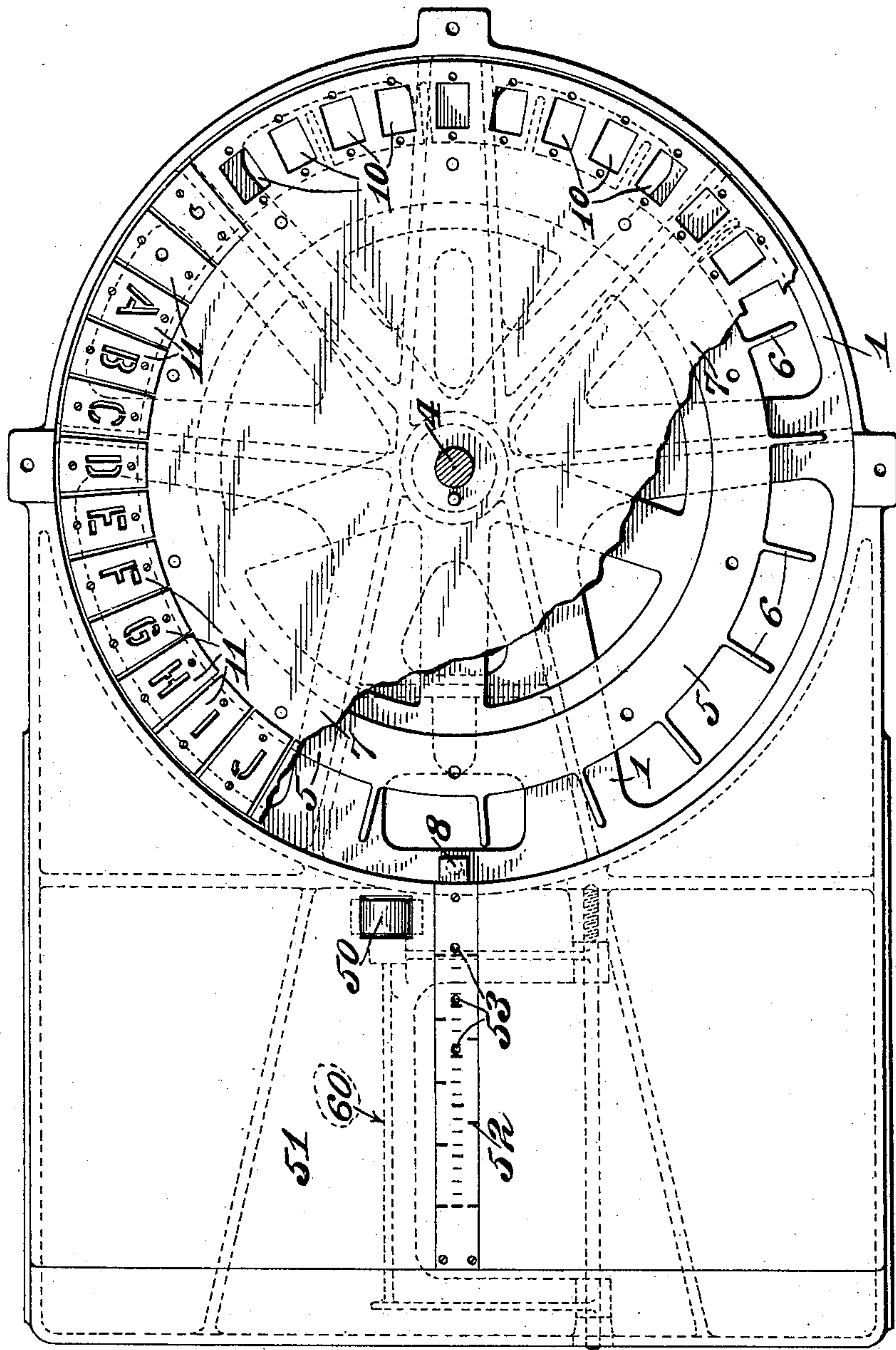
**Inventor:**  
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4 SHEETS—SHEET 2.

*Fig. 2.*



*Witnesses:*  
*G. A. Pennington*  
*R. D. White.*

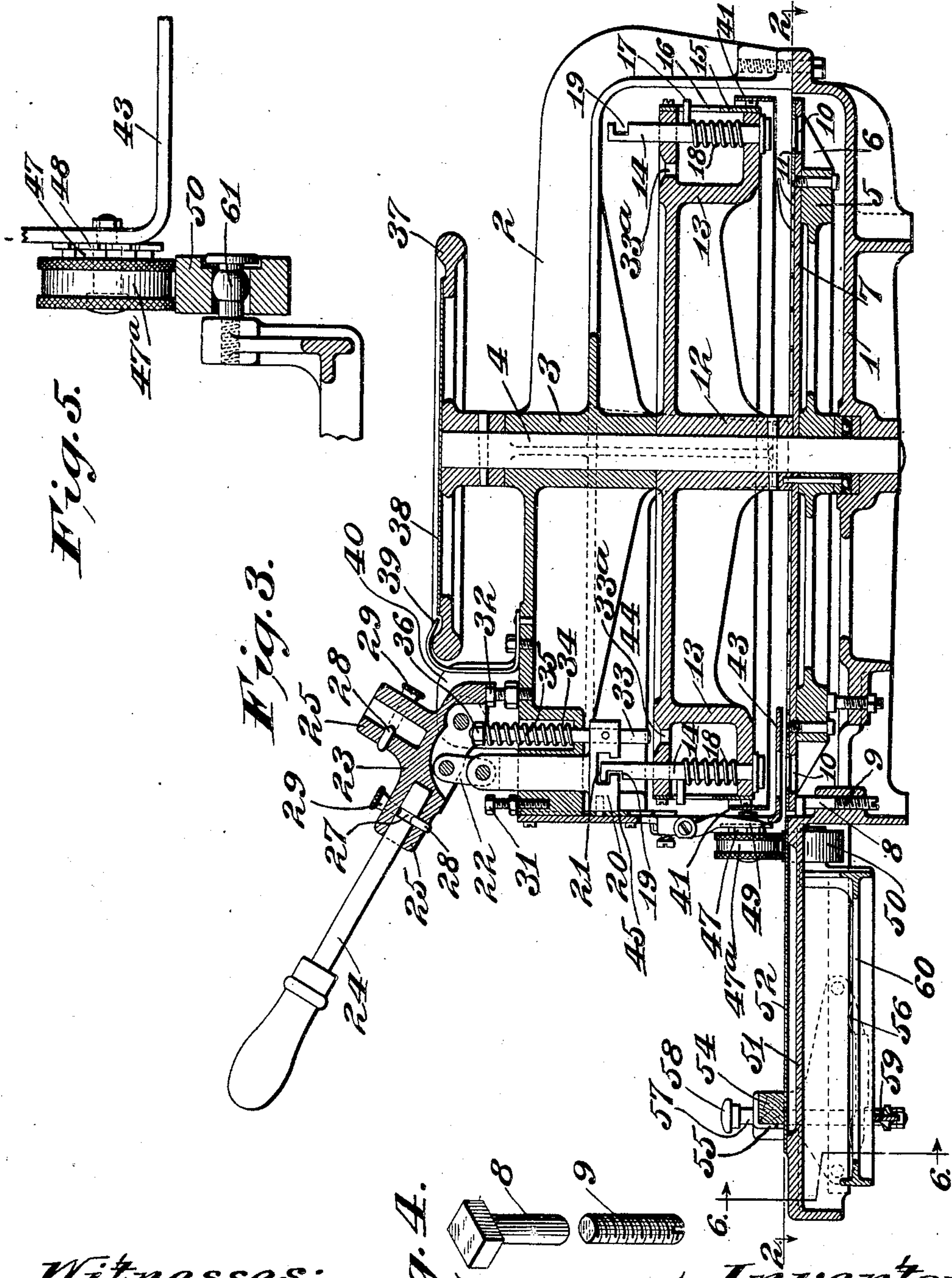
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4 SHEETS—SHEET 3.



Witnesses:

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Fig. 4.

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Attys.

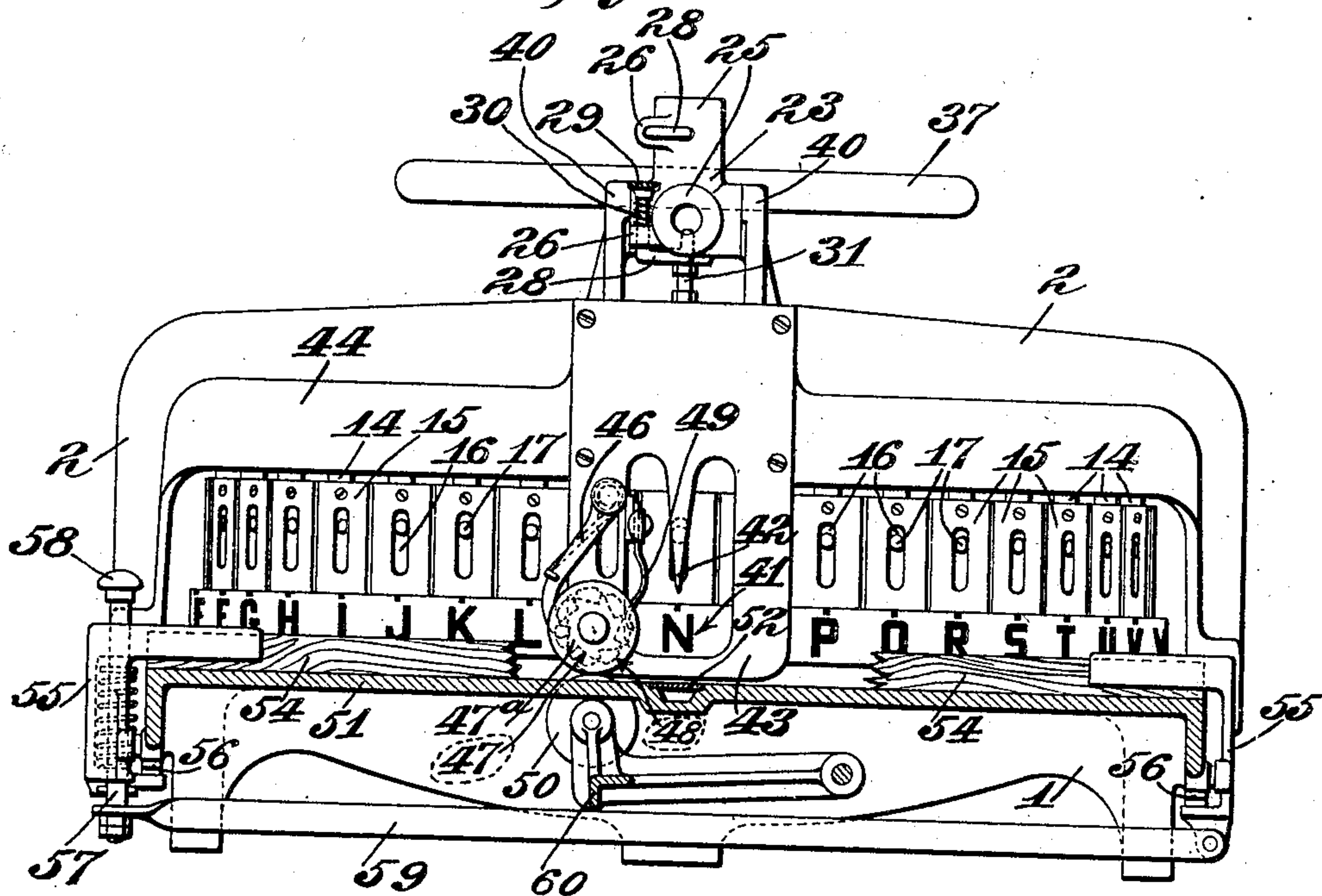
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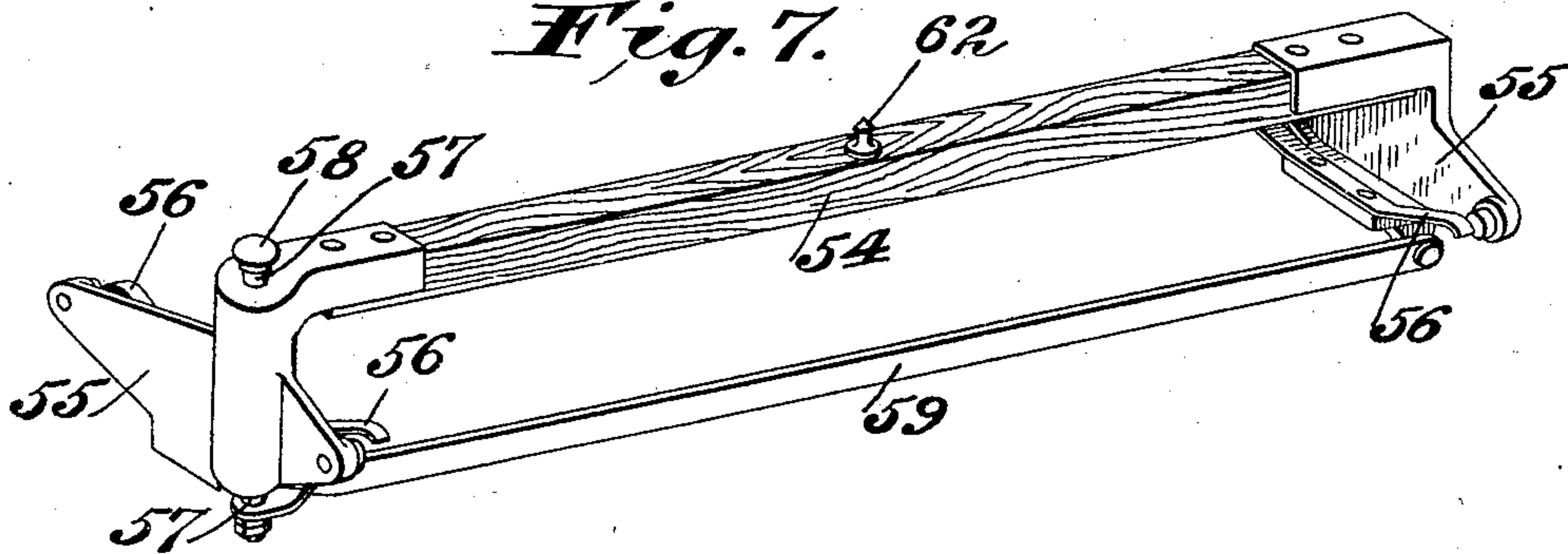
Patented May 4, 1909.

4 SHEETS—SHEET 4.

*Fig. 6.*



*Fig. 7.*



*Witnesses: Fig. 8.*

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Andrew J. Bradley,  
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*Attys.*



# UNITED STATES PATENT OFFICE.

ANDREW J. BRADLEY, OF NEW YORK, N. Y.

## STENCIL-MACHINE.

No. 920,530.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed February 8, 1908. Serial No. 414,857.

*To all whom it may concern:*

Be it known that I, ANDREW J. BRADLEY, a citizen of the United States, and a resident of the city, county, and State of New York, have invented a certain new and useful Improvement in Stencil-Machines, of which the following is a specification.

My invention relates to stencil machines.

One of the principal objects of my invention is to simplify the construction and cheapen the manufacture of a stencil machine.

Another object is to secure speed and ease in the operation of stencil machines.

Another object is to protect the operator from injury.

Another object is to facilitate the adjustment of the means for positioning the stencil blank with respect to the stencil cutting devices.

Another object is to secure an accurate centering of the stencil cutting devices with respect to the stencil blank.

Another object is to facilitate the removal of the outer portion of the hand lever.

Another object is to provide for the operation of the machine by an operator who is in either a standing or a sitting position.

It consists in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawing, which forms part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a plan view of a stencil machine embodying my improvements; Fig. 2 is a horizontal section thereof on the line 2—2 of Fig. 3 with parts broken away; Fig. 3 is a vertical longitudinal section thereof on the line 3—3 of Fig. 1; Fig. 4 is a detail view of the adjustable supporting stud and its adjusting screw; Fig. 5 is an enlarged detail view illustrating the feed wheel and its companion idler wheel; Fig. 6 is partly a front elevation of the machine and partly a vertical section on the line 6—6 of Fig. 3; Fig. 7 is a detail perspective view of the adjustable guide for the stencil blank; Fig. 8 is a detail view of the pivot pin for circular stencils.

The frame of the machine comprises a base 1 and a yoke 2 supported thereby. The middle portion of this yoke constitutes a hub or bearing 3 for a vertical shaft 4 whose

lower end is journaled in the base of the frame. The upright members of the yoke are located at the rear and sides, leaving an open space at the front between the yoke and the base. The yoke extends forward and constitutes a support for the punch actuating devices hereinafter described. Fastened to said shaft and concentric therewith is a die carrier, comprising a base member 5 having a series of brackets 6 extending outwardly from the periphery thereof. Fixed on said base member of the die carrier is a circular plate 7, preferably of sheet steel, whose outer portion overlaps the periphery of said base member and rests on the peripheral brackets 6 thereof. Preferably, the marginal portion of said plate projects beyond the peripheral brackets and overlaps a supporting piece 8 which is provided therefor on the front portion of the base of the frame. Preferably, this supporting piece comprises a headed stud which is loosely mounted on a threaded stud 9 so as to be vertically adjustable. This plate 7 of the die carrier has a series of holes 10 arranged concentric with the shaft and above the respective spaces between the peripheral brackets. The cutting dies 11 are mounted on said plate directly over said holes.

Above the die carrier is a circular punch holder, which comprises a hub 12 fixed to the shaft and a marginal portion 13 which is bifurcated. On the underside of the web or body of said punch holder are a series of radial braces or ribs which extend from the hub to the vertical member of the angular flange which forms the bifurcated marginal portion of the punch holder. In each member of said bifurcation is a circular series of holes, the holes of the upper series being in vertical alinement with those of the lower series and with the respective dies, and constituting bearings for the shanks 14 of the punches. Mounted on the punch holder adjacent to each punch and bridging the bifurcation is a plate 15 which has a vertical slot 16 therein. In each slot fits a pin 17 mounted on the shank of a punch, whereby the punch is guided or prevented from turning during the reciprocations. Surrounding the shank of each punch is a spring 18 which bears at its upper end against the guide pin and at its lower end against the punch holder whereby the punch is normally held in its



uppermost position. The outer side of the shank of each punch has a transverse groove or slot 19 therein arranged to cooperate with the plunger or ram 20 hereinafter described.

5 This plunger or ram 20 is slidably mounted in a vertical guide provided therefor in the forward part of the yoke in position to cooperate with the punch shanks. The lower end of the plunger has a transverse T-shaped slot 21 forming an undercut portion or flange which is adapted to engage the above described groove in the upper portion of the punch shanks. Said plunger is connected by a link 22 to a hand lever 23, which is fulcrumed on the yoke at the front of the machine. By this arrangement, the punch holder is free to rotate clear of the plunger so long as the plunger and the punches are in their normal positions; but the upward or downward movement of the plunger causes it to engage and operate the punch which is in operative relation to it at the time.

Preferably, the arm or handle bar 24 of the hand lever is removable from the base portion thereof, which is provided with two sockets 25 arranged at approximately right angles to each other and adapted to receive the end of said bar. On one side of each socket 25 is a perforated lug 26, and parallel with the perforations in said lug is a hole opening into said socket. An annular groove 27 is provided on the handle bar, and in this groove is received the short leg of a rebent pin 28 whose long leg extends through said perforated lug. The long leg of the rebent or U-shaped pin projects beyond the lever and is screw-threaded to receive a nut 29. A spring 30 surrounds said pin and bears at its ends against the nut and said lug. By pressing upon said nut the pin is moved from the groove 27, and the handle bar may be readily withdrawn from its socket. Suitable stops 31, 32 for the forward and backward movement of the hand lever are provided; as, for instance, adjustable screws mounted on the frame.

The device for centering the plunger and punch holder with respect to each other is as follows: Passing through a hole in the back flange of the plunger and rigidly secured to the said plunger is a vertical centering pin 33 which extends upwardly through a guide hole in the yoke into a vertical socket 34 provided therefor in the yoke. The plunger and the centering pin are held in normal position by a coiled spring 35 which surrounds the centering pin and bears against a nut or flange 36 at the upper end of said centering pin and at the lower end bears against the bottom of its socket. The centering pin is adapted to enter into cooperative holes 33<sup>a</sup> in the upper member of the bifurcation 13.

Mounted on the upper end of the shaft 4 is a hand wheel 37 on which is fastened a dial or circular indicator plate 38 containing letters and figures corresponding to the respective dies and punches. An indicator needle 39 is fastened to the front portion of the yoke and extends up and over the periphery of the said hand wheel so as to cooperate with said dial. On both sides of the upper portion of the said indicator needle are arms 40 which are preferably integral with the yoke and extend almost to the periphery of said handwheel. This construction constitutes an effective guide for protecting the operator's hand. A second indicator is provided in the form of a metal hoop or band 41 surrounding and clamped to the periphery of the punch holder. A pointer 42 for this indicator is mounted on the yoke and is preferably made integral with a stripper plate 43 hereinafter described. The arrangement of both indicators with respect to the punches and dies is such that when their respective pointers indicate a certain letter or figure, the plunger is in cooperative relation with the punch and die bearing the corresponding letter or figure.

Fastened to and depending from the front part of the yoke of the machine is a stripper plate 43 of sheet metal. In the body portion of said plate, in alinement with the ram or plunger, is an opening of suitable size and shape to permit the passage therethrough of the respective punches. The body portion of the stripper lies far enough above the dies to permit the stencil blank to pass between them. In the vertical portion of the stripper plate 43 just described is an opening or suitable size to expose to view the letter or figure on the indicator 41 on the rim of the punch holder. The pointer 42 for said indicator is, as above stated, preferably integral with said stripper plate.

Mounted on the yoke and preferably integral therewith is a guard web 44, which incases the upper front portion of the punch holder and parts mounted thereon. This guard web extends laterally or horizontally and is curved concentric with the main shaft. Said guard web is of angular section, comprising a top member which overlaps the marginal portion of the punch holder and a vertical portion that serves to screen the front of the punch holder. Preferably, the web is extended to the lateral members of the yoke and thereby serves to give rigidity to the framework.

The mechanism for feeding the stencil blank is as follows: A base member 45 is slidably mounted in vertical guides provided therefor in the front portion of the frame and is fastened to the plunger so as to move therewith. Mounted on said base member is a spring pawl 46 which is arranged to en-



gage and coöperate with a ratchet wheel 47 which is loosely mounted on a horizontal shaft and fixed to the main feed wheel 47<sup>a</sup> which is also loose on said shaft. This feed wheel 47<sup>a</sup> preferably has a double flanged and knurled tire. A scalloped or notched wheel 48 is also loose on said shaft and fixed to said notched wheel 47. Mounted on said base member in position to coöperate with said notched wheel 48 is a steadying spring 49 whose lower end is preferably triangularly bent or otherwise arranged to enter the indentations of said scalloped wheel and thereby center said feed mechanism. Below and coöperating with said feed wheel is an idler wheel 50 which extends upward through a hole provided therefor in the feed table 51. Said feed table 51 is a flat shelf located at the front portion of the machine about flush with the top of the dies and with the point of contact between the feed and idler rollers. The upper surface of this shelf is marked with a spacing or positioning scale 52 and also with a series of centering holes 53. On said feed table is a straight rule or guide 54 whose ends are fixed to brackets 55 which extend around and under the depending side marginal flanges of said feed table. Said brackets are normally held in position by springs 56 which bear upwardly against the under surface of said marginal flanges. In the left hand bracket is a vertical socket, in which is slidably mounted a spring-actuated push bar 57 whose upper end is provided with a knob or hand piece 58. This push bar is pivotally attached to the end of a lever 59 which is pivoted on the other, or right-hand bracket. Said lever extends under and forms a support and actuating mechanism for a rocker frame or member 60 on which is journaled the idler wheel 50 above mentioned. The axle of the idler wheel has a spherical enlargement 61 of a diameter to fit the bore of the idler wheel, which is free to move endwise slightly on said axle and is permitted to rock on said spherical portion. By this arrangement, the idler wheel is free to adapt itself to variations of conditions and to maintain an even pressure on both rims of the feed wheel.

The operation of the machine is as follows: The handle bar is inserted in the socket of the upper or of the lower branch of the hand lever according to the convenience of the operator. The knob on the feed table is pressed downward and the straight ruler is moved until its inner edge coincides with the proper mark on the scale. The downward pressure on said knob lowers the cross lever and with it the rocker member on which is mounted the idler wheel, thereby removing the idler wheel from contact with the feed wheel. The stencil blank is then inserted in proper position between the punches and the

dies below the stripper plate. If the stencil to be cut is a straight line stencil, its outer edge is pressed against the straight ruler. If the stencil to be cut is circular, the blank is pinned pivotally to said straight ruler by a pin 62 which enters a hole in the middle of said ruler or the blank may be pinned to the shelf at one of the above mentioned holes 53 in said shelf. Then the knob or plunger on the feed table is released and the spring thereon forces the lever in an upward direction carrying with it the rocker member on which is mounted the idler wheel, thereby causing the idler wheel to clamp the stencil blank against the feed wheel. Then the hand wheel is turned until the indicators show the desired punch to be in coöperative relation with the plunger. Then the hand lever is actuated to depress the ram or plunger. The initial stage of the motion of the hand lever and of the ram causes the centering pin to enter one of the holes in the punch holder, and, by bearing on the beveled edge thereof accurately adjusts the position of the punch and die with respect to the stencil blank. Said centering pin, by bearing against the upper surface of the punch holder, locks and prevents the downward movement of the plunger 20 whenever the device is not properly centered. The continual movement of the ram, after effecting the centering action causes the ram to bear against the end of the shank of the punch and force it into its counterpart die, thereby cutting the desired character in the stencil blank. The same movement of the hand lever forces downward the base member of the feed mechanism and advances the pawl therein beyond the point of operative contact with the ratchet wheel without moving said ratchet wheel. On the back stroke of the hand lever, in case the punch is not lifted by its own spring, the plunger will raise the punch to its normal position. By the same back stroke of the hand lever the feed pawl is likewise retracted and in the course of its backward movement comes into operative contact with the ratchet wheel and turns the same, thereby also turning the feed wheel fixed on the same shaft, which movement of the feed wheel feeds the stencil blank one space. The toothed wheel and steadying spring insure the accurate spacing of the stencil feed. This feed movement occurs on the return stroke of the handlever after the punch has got clear of its die and the stencil blank, the first portion of the backward stroke of the pawl being lost or ineffective until it comes into operative engagement with its ratchet wheel. The stripper plate prevents the stencil blank from rising with the punch.

By making the die carrier of a sheet metal plate and a body member supporting the



same, the die openings and screw holes here-  
inbefore mentioned may be punched accu-  
rately at their required positions, thereby  
securing uniformity and interchangeability  
5 of parts, and effecting great economies in  
manufacture. In such construction, the top  
plate is thin in comparison with the thick-  
ness of the body member whose function is to  
furnish elements of strength and rigidity for  
10 the die carrier.

Obviously, my device admits of consider-  
able modification without departing from  
my invention, and therefore I do not wish to  
be limited to the specific construction shown  
15 and described.

What I claim is:

1. In a rotary stencil cutting machine, a  
die carrier, comprising a circular base and a  
comparatively thin circular top plate con-  
centrically mounted thereon, said top plate  
20 being of greater diameter than the base and  
having a concentric series of openings in the  
projecting margin thereof.

2. In a rotary stencil machine, a die car-  
rier comprising a circular base and a com-  
paratively thin circular top plate concentric-  
ally mounted thereon, said top plate being  
of greater diameter than the base and having  
a concentric series of openings in the project-  
30 ing margin thereof, and dies mounted over  
said openings.

3. A stencil machine comprising a frame,  
a vertically mounted shaft and a die carrier  
mounted on said shaft, said die carrier com-  
prising a circular body piece and a compara-  
tively thin circular top piece extending be-  
yond the periphery of the said body piece  
and having a series of holes in its marginal  
portion concentric with the shaft, dies  
40 mounted over said holes, and means for  
supporting the said marginal portion of the  
top piece of the die carrier.

4. A stencil machine comprising a frame,  
a vertically mounted shaft thereon, a die  
carrier mounted on said shaft, said die car-  
rier comprising a circular body piece and a  
comparatively thin circular top piece ex-  
tending beyond the periphery of the said  
body piece and having a series of holes in  
50 its marginal portion concentric with the  
shaft, and dies mounted over said holes,  
and a member mounted on the base of the  
frame in position to support the outermost  
portion of the margin of said top piece of  
55 the die carrier.

5. A stencil machine comprising a frame,  
a vertically mounted shaft therein, and a die  
carrier mounted on said shaft, said die car-  
rier comprising a circular body piece having  
60 a series of brackets on the periphery thereof,  
and a comparatively thin circular top plate  
extending beyond the periphery of the said  
body piece and having a series of holes in  
its marginal portion, said holes registering

with spaces between said brackets and being 65  
concentric with the shaft, and dies mounted  
over said holes.

6. A stencil machine comprising a frame,  
a vertically mounted shaft thereon, a die  
carrier mounted on said shaft, said die car- 70  
rier comprising a circular body piece having  
a series of brackets on the periphery thereof,  
and a comparatively thin circular top plate  
extending beyond the periphery of the said  
body piece and having a series of holes in its 75  
marginal portion, said holes registering with  
spaces between said brackets and being con-  
centric with the shaft, and dies mounted  
over said holes, and a member mounted on  
the base of the frame in position to support 80  
the outermost portion of the margin of said  
top piece.

7. A stencil machine comprising a frame,  
a vertically mounted shaft thereon, and a  
die carrier mounted on said shaft, said die 85  
carrier comprising a circular body piece and  
a comparatively thin circular top plate ex-  
tending beyond the periphery of the said  
body piece and having a series of holes in  
its marginal portion concentric with the 90  
shaft and dies mounted over said holes, and  
a vertically adjustable member mounted on  
the base of the frame in position to support  
the outermost portion of the margin of said  
top plate. 95

8. A stencil machine comprising a frame, a  
vertically mounted shaft thereon, and a  
punch holder mounted on said shaft, said  
punch holder comprising a hub on said shaft,  
a circular web at the upper portion of said 100  
hub, an angular outturned flange on the un-  
derside of said web near the periphery there-  
of to constitute a bifurcated marginal por-  
tion, and radial braces for reinforcing said  
marginal portion, said braces being integral 105  
with the underside of said web and extending  
from said hub to the lower portion of the ver-  
tical member of said angular flange, and a  
series of punches concentrically mounted in  
bearings provided therefor in said bifurcated 110  
marginal portion.

9. A stencil machine comprising a frame, a  
vertically mounted shaft thereon and a  
punch holder mounted on said shaft, said  
punch holder comprising a hub on said shaft, 115  
a circular web at the upper portion of said  
hub, a bifurcated marginal portion, and ra-  
dial braces for reinforcing said marginal por-  
tion, said braces being integral with the un-  
derside of said web and extending from said 120  
hub to said bifurcated portion, and a series  
of punches concentrically mounted in bear-  
ings provided therefor in said bifurcated mar-  
ginal portion, and means for guiding said  
punches. 125

10. A stencil machine comprising a frame,  
a vertically mounted shaft thereon, a punch  
holder mounted on said shaft, said punch



holder comprising a body portion, a bifurcated marginal portion and radial braces on the underside of said body portion extending to said bifurcated marginal portion, punches 5 concentrically mounted in said bifurcated portion and means mounted on the frame for actuating said punches, and means for centering said punches, said centering means comprising a series of holes countersunk at 10 their upper ends and concentrically arranged in the punch holder, and a vertically reciprocable pin adapted to fit said holes and operatively connected to the punch actuating means in position to cooperate with said 15 holes.

11. A stencil machine comprising a frame, a vertically mounted shaft thereon, a punch holder and a die carrier mounted on said shaft, punches and dies operatively mounted 20 with respect to each other, means mounted on said frame for actuating said punches and means for centering said punches and said actuating means with respect to each other and a spring for retracting said punch actuating means, said centering means compris- 25 ing a series of holes concentrically arranged in the top of the punch holder and countersunk at their upper ends, and a vertically reciprocable pin mounted in a socket in the 30 frame and adapted to fit said holes, and a spring mounted in said socket in position to surround said pin.

12. In a rotary stencil machine, a frame comprising a base portion and a yoke, stencil 35 cutting devices at the front of the machine, and means mounted on said yoke for actuating said devices, said yoke comprising a guard member adjacent to and incasing the stencil cutting devices at the front of the machine and extending laterally for a considerable 40 distance on each side of said actuating means.

13. In a rotary stencil machine, a frame comprising a base portion and a yoke supported thereby, a shaft in said frame, a rotary punch carrier mounted on said shaft, 45 and punches mounted on the marginal portion of said carrier, and means mounted on said yoke for actuating said punches, said yoke comprising upright members and a 50 curved web which is close to and incases the upper front portion of said punch carrier and extends laterally for a considerable distance on each side of said actuating means.

14. A stencil machine comprising a frame, a vertical shaft mounted thereon, a die carrier and a punch holder mounted on said shaft, dies and punches cooperatively mounted 60 on said die carrier and punch holder, respectively, means for actuating said punches, and a feed mechanism comprising a feed table, spaced parallel tracks mounted on said table, a straight ruler slidably mounted on

said tracks, means for holding said ruler in adjusted position, and means for manipulating 65 said ruler.

15. A stencil machine comprising a frame, a vertical shaft mounted thereon, a die carrier and a punch holder mounted on said shaft, dies and punches cooperatively mounted 70 on said die carrier and punch holder, respectively, means for actuating said punches, a feed mechanism comprising a feed table, tracks mounted on said table, a straight ruler slidably mounted on said tracks, means 75 for holding said ruler in position, said holding means comprising spring-actuated clamps, and means for manipulating said ruler.

16. In a stencil machine, a feed mechanism comprising a feed table, spaced parallel 80 tracks mounted on said table, a straight ruler slidably mounted on said tracks, means for holding said ruler in correct alinement, and means for manipulating said ruler, said holding means comprising slidable side 85 brackets having double bearings on said tracks.

17. In a stencil machine, a feed mechanism comprising a feed table, tracks mounted on said table, a ruler slidably mounted on 90 said tracks, a feed wheel and an idle wheel, said idle wheel being mounted on a rocker member, and means for actuating said rocker member and for clamping and releasing said straight ruler, said means comprising a 95 spring actuated plunger and means for manipulating said plunger.

18. A stencil machine comprising a frame, a vertically mounted shaft thereon, stencil cutting devices operatively mounted on said 100 shaft, and means for actuating said stencil cutting devices, said actuating means comprising a plunger and a hand lever, said hand lever comprising a body member having a socket therein and a handle bar having one 105 of its ends adapted to fit into said socket, and means for locking said handle bar when so fitted, said locking means comprising an annular groove on said handle bar and a spring actuated pin adapted to engage the 110 said handle bar in the said groove.

19. A stencil machine comprising a frame, a vertically mounted shaft thereon, stencil cutting devices operatively mounted on said shaft, and means for actuating said stencil 115 cutting devices, said actuating means comprising a plunger and a hand lever, said hand lever comprising a body member having two branches arranged at approximately right angles to each other, and a handle bar adapted 120 to cooperate with either of said branches.

20. A stencil machine comprising a frame, a vertical shaft mounted thereon, a hand wheel mounted on said shaft, to actuate the same, a punch holder and a die carrier 125 mounted on said shaft, punches and dies op-



eratively mounted with respect to each other, means mounted on said frame for actuating said punches, and means for indicating the coöperative relation of said punches to said  
5 actuating means, said indicating means comprising a member movable with said hand wheel and a pointer mounted on said frame in operative relation to said member, and a  
laterally extending guard mounted on the  
11 frame and arranged to incase the marginal

portions of the die carrier and punch holder adjacent to the actuating means.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses, this 7 day of February, 1908, at New York, N. Y.

ANDREW J. BRADLEY.

Witnesses:

F. J. GUNDERMAN,  
GEO. C. DECKER.