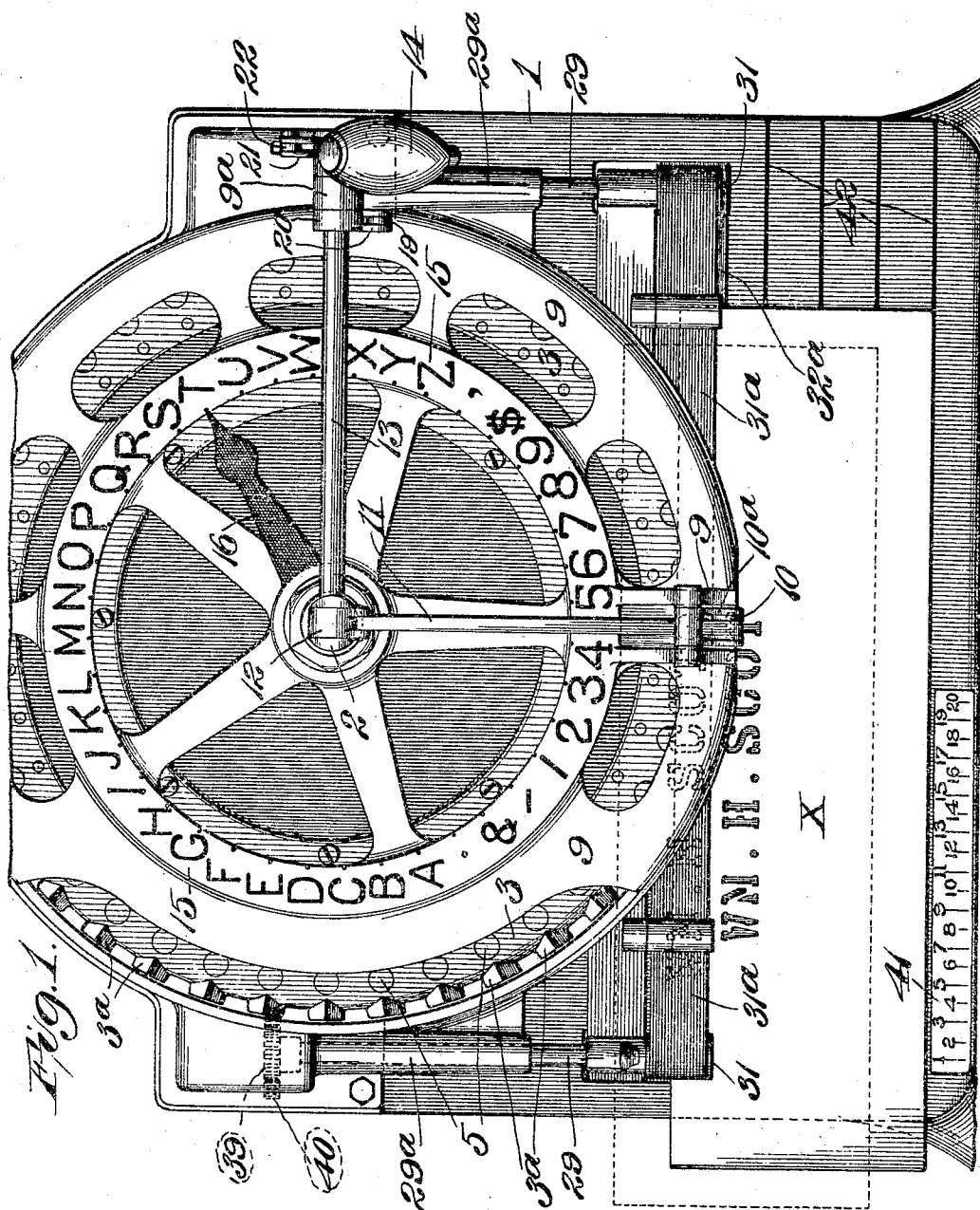


955,216.

Patented Apr. 19, 1910.

4 SHEETS—SHEET 1.



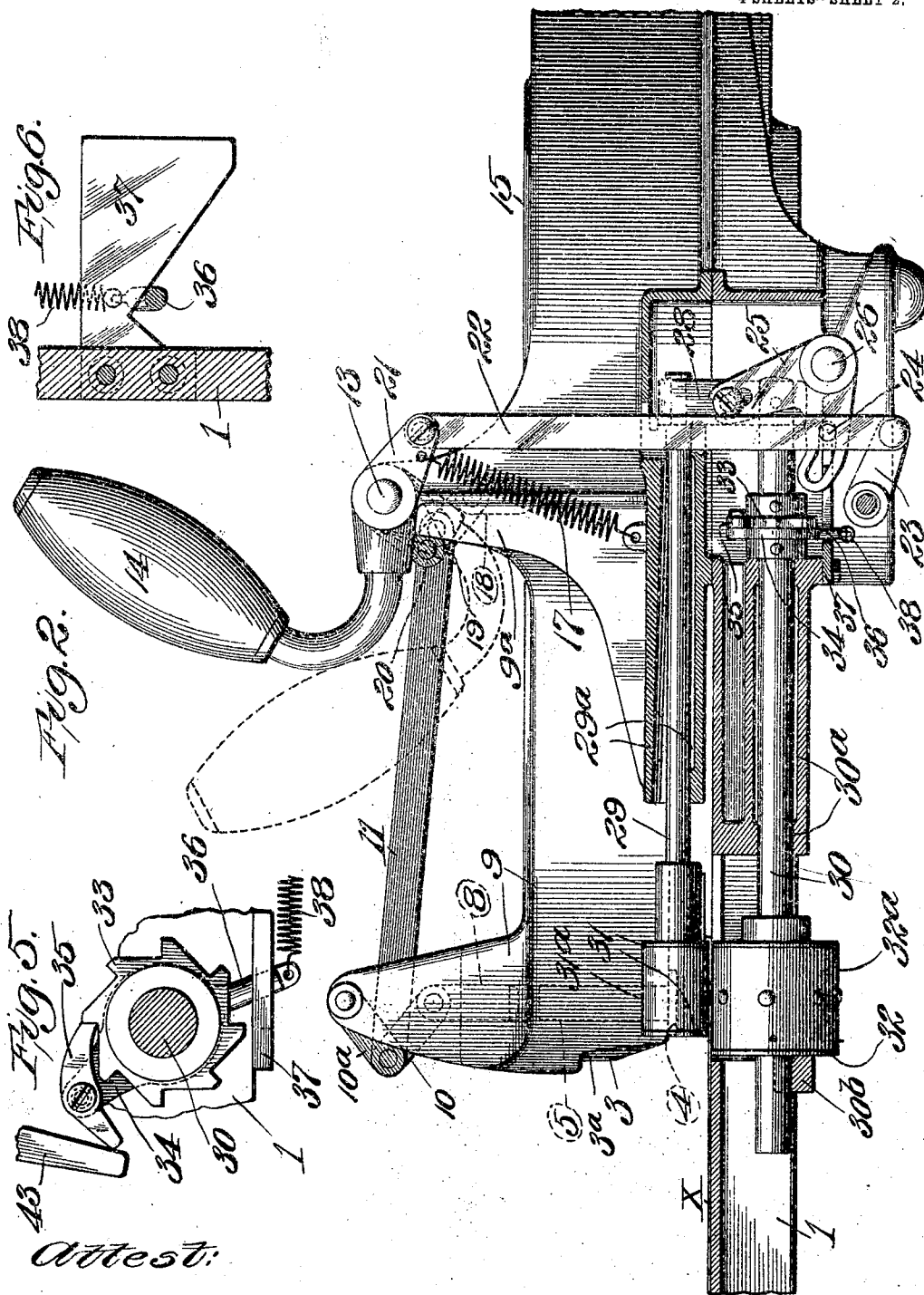
Attest:
E. M. Harrington.
J. M. James.

Inventor:
Wm. H. Scott:
by J. R. Grunwell
Atty.

955,216.

Patented Apr. 19, 1910.

4 SHEETS—SHEET 2.



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955,216.

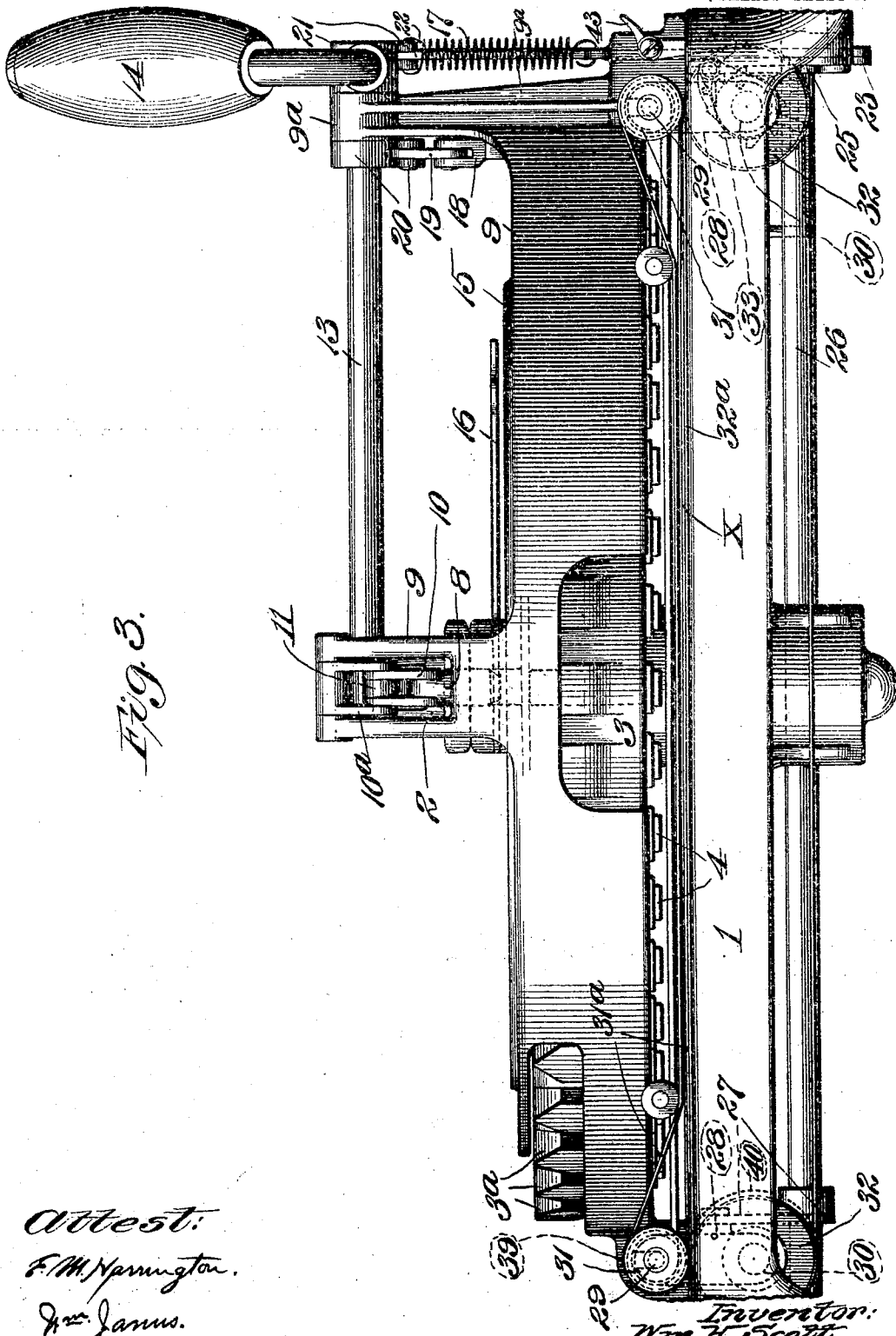
Patented Apr. 19, 1910.

4 SHEETS—SHEET 3.

Fig. 3.

Attest:
 F. M. Harrington.
 J. R. Janus.

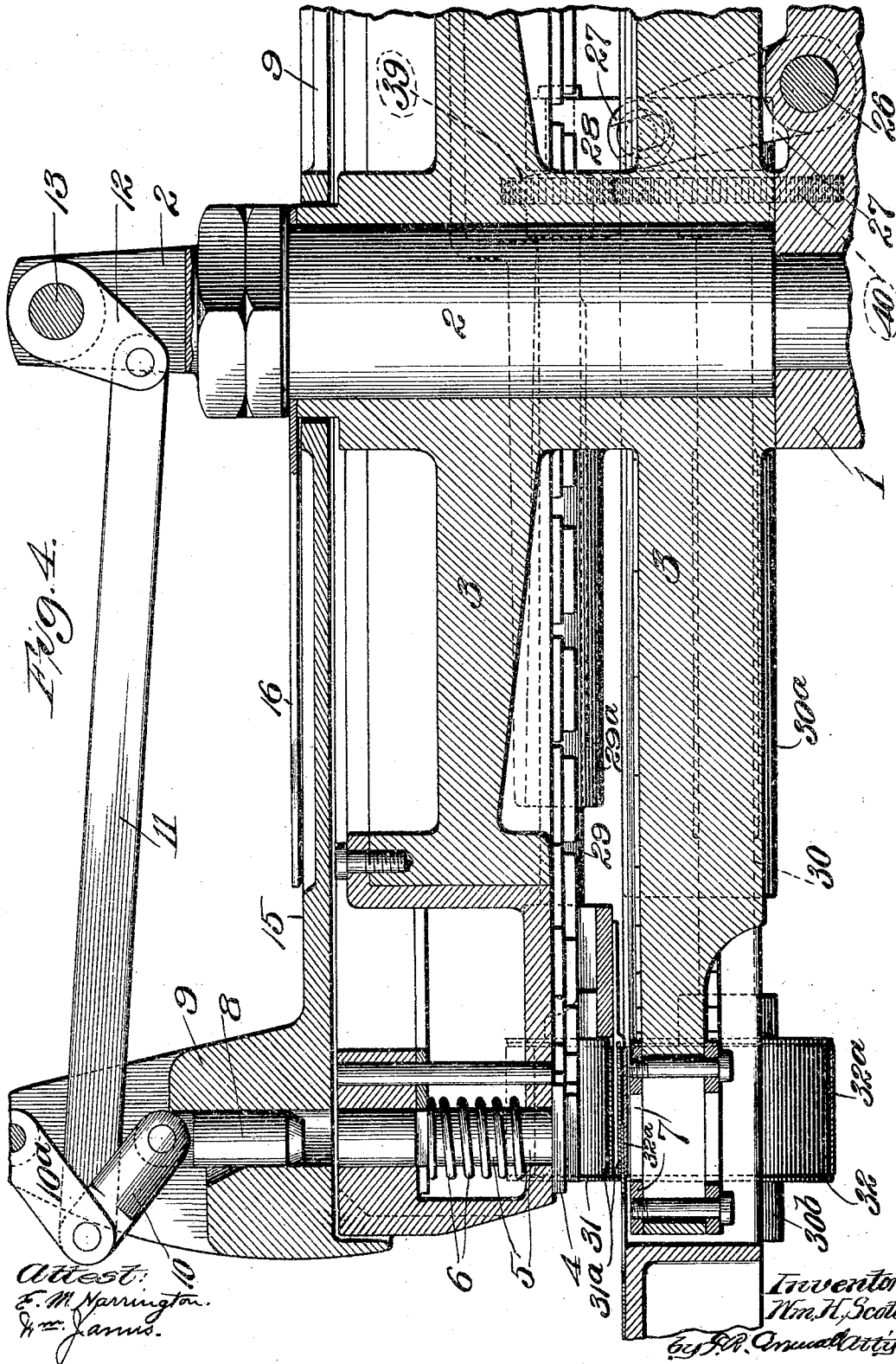
Inventor:
 Wm. H. Scott,
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955,216.

Patented Apr. 19, 1910.

4 SHEETS—SHEET 4.



WILLIAM H. SCOTT, OF MAPLEWOOD, MISSOURI, ASSIGNOR TO A. C. L. HAASE, LOUIS H. HAASE, EDWARD T. HAASE, WILLIAM H. HAASE, AND ANNIE RIESMEYER, ALL OF ST. LOUIS, MISSOURI, AND AMELIA MARX, OF CHICAGO, ILLINOIS, A COPARTNERSHIP UNDER FIRM-NAME OF AMERICAN DIAGRAPH COMPANY.

STENCIL-CUTTING MACHINE.

955,216.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed October 25, 1909. Serial No. 524,378.

To all whom it may concern:

Be it known that I, WILLIAM H. SCOTT, a citizen of the United States, residing at Maplewood, 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 plan view of my improved stencil cutting machine. Fig. 2 is a side elevational view, partly in section. Fig. 3 is a front elevational view. Fig. 4 is an enlarged vertical sectional view through the front portion of the machine. Fig. 5 is a detail view of the ratchet and pawl feed mechanism. Fig. 6 is a detail horizontal plan view, partly in section.

This invention relates to a new and useful improvement in stencil cutting machines, the object being to construct a machine of the character described so that the work thereof will be "visible".

The particular mechanism whereby the puncturing dies are forced through the blank in the formation of a stencil, may be of any desired form, such for instance as that illustrated in the patent to Remmers, No. 808,308, dated December 26, 1905. My present invention does not embody any special mechanism for operating the die to cut the stencil, hence any desired mechanism of this character may be used.

In the drawings, 1 indicates a base casting provided with a post 2, on which is revolvably mounted a die carrier 3.

4 are the male dies mounted upon the lower ends of stems 5, surrounded by springs 6, which tend to hold said parts elevated. The male dies cooperate with their complementary female dies 7 mounted in the lower part of the die carrier, under what might be termed the throat thereof. The male and female dies move together and are always in registration.

8 is a plunger slidingly mounted in the cap casting 9 and connected by toggle links 10 and 10^a to a link 11 operated by a rock arm 12 fixed to a rock shaft 13, one end of which finds a bearing in the upper end of

post 2. The opposite end of this rock shaft 13 finds a bearing in a post 9^a extending up from the cap casting 9. 14 is an operating handle connected to the shaft 13. There is an index dial 15 on the cap plate, and an indicating hand 16 on the die carrier. The cap plate 9 is cut away, preferably at the left hand side, as shown in Fig. 1, so that the operator can grasp and manipulate the die carrier with his left hand while the right hand operates the operating handle.

The operation of the machine thus described is briefly as follows: The operator rotates the die carrier until the indicating hand points to the desired character, after which the handle is operated by being pulled forward to the position shown by dotted lines in Fig. 2. This causes the plunger 8, whose lower end is preferably beveled, to engage the stem of the male die in line therewith, and force said male die into the female die. Upon releasing the handle, the spring 6 restores the male die to normal position. A spring 17, attached at some appropriate point to an immovable part and connected with the operating handle, is also preferably used to restore said handle to its normal position and hold it raised. If desired, a centering plunger 18, operated by a link 19, connected to a rock arm 20 on shaft 13, may be used in connection with the beveled faces 3^a on the die carrier to center the stem of the die carrier with respect to the plunger 8. This centering plunger operates in guides in the post 9^a. It is only necessary for the centering plunger 18 to bring the die stem within the zone of the centering point of the plunger 8, as the beveled lower edge of said plunger will accurately position the die at the time the penetration is made.

X is a blank in which the stenciling characters are to be punched. This blank is adjusted in position between feed belts, and in manipulating the operating handle to punch a selected character therein, said blank is moved in position under the operated die, and at the same time the blank is fed forward. The final movement of the operating handle punches the stenciling character in the blank. The return movement of the operating handle causes the blank to be moved outwardly into position to be seen by the operator. This movement of the blank ren-

ders the stenciling "visible," as it is called, and if, in the operation of the machine, the operator is compelled to leave the machine in the middle of a word, he is enabled to see at a glance, upon his return, the next letter to be selected and positioned in the further operation of the machine.

Referring to Fig. 2, 21 indicates a rock arm on the shaft 13, to which is connected a link 22, said link being connected at its lower end to a rock arm 23, whereby it is caused to move substantially as a member of a parallelogram.

24 is a pin or roller on the link 22, which operates in a cam slot in the end of a bell crank lever 25. This cam slot is so shaped that when the operating handle raises the link 22, the bell crank lever 25 will be moved in the first part of such movement, the latter part of the movement of the link 22 occurring while the bell crank lever remains stationary. As the bell crank lever is the operating medium for causing the feeding and positioning of the blank to be stenciled, the necessity for permitting the blank to remain stationary while the handle continues its final movement, wherein the punching of a blank occurs, will be appreciated.

The bell crank lever 25 is fixed to a rock shaft 26, to the opposite end of which is arranged an arm 27. This arm 27 and the bell crank lever 25 have slot and pin connections, with head blocks 28, in which are mounted shafts 29 and 30 in such manner that said shafts may rotate in the head blocks, but are not adjustable longitudinally relative thereto. This manner of mounting the shafts can be accomplished by forming shoulders on the shafts on each side of the head blocks, as shown in Fig. 2. The shafts 29 and 30 are slidably mounted in elongated bearings 29^a and 30^a formed in the base and cap casting, the bearings for the shafts 29 being enlarged vertically at their forward edges and preferably tapering thence rearwardly, so as to permit the forward ends of the shafts 29 to be raised slightly for the purpose of introducing a blank under the feed belt carried by said shafts.

The forward ends of shafts 30 rest in bearings 30^b under the base plate. On the forward ends of the shafts 29 and 30 are feed rollers 31 and 32, over which pass feed belts 31^a and 32^a, of rubber, leather, or other suitable material. The function of these feed belts is to grip the inner edge of the blank to be stenciled, as shown in Fig. 1, and to move the blank inwardly and forwardly to be punched, and outwardly to display the character punched therein, at each operation of the handle. The means for effecting the in-and-out movement is the bell crank lever 25, which, at each operation of the handle, is vibrated so as to move the two pairs of shafts and their carried feed belts inwardly

and outwardly. The means for effecting the feeding of the blank is a ratchet wheel 33 mounted on either the shaft 29 or the shaft 30. I have shown said ratchet wheel mounted on the shaft 30 (see Fig. 2).

34 is a pawl-carrying lever loosely pivoted on the shaft 30, said lever carrying a pawl 35 which coöperates with the ratchet.

36 is a projection on the pawl-carrying lever which coöperates with a cam plate 37 secured to the base casting of the machine. A spring 38 coöperates with this pawl-carrying lever so as to restore it to normal position, *i. e.*, retract the pawl when the shaft 30 moves outwardly, so that said pawl will take a new position behind the next adjacent ratchet tooth. When the handle is pulled forwardly to punch a character in the blank, the feed belts and the blank are moved inwardly by the bell crank lever, and the spring causes the pawl carrier to hug the cam face and to feed the blank forwardly until the shaft 30 is brought to a position of rest. Instead of relying upon spring action to operate the pawl, the cam plate can be provided with a slot so that it will positively rock the pawl to effect the feeding action and the recovery of the pawls. The shafts 29 and 30 are preferably geared together by means of meshing gear wheels 39 and 40, shown in Fig. 4.

Stencil blanks are usually of uniform size, for a given number of lines containing so many characters or letters per line. If it is desired to center a word or words containing a certain number of characters in a line, I provide a scale 41, as shown in Fig. 1, whereby this may be done. This scale is marked 1 to 20, but it is obvious that these numbers could be changed if different sized blanks were used. If there is but one character in the line and it is desired to locate that character in the center of a given sized blank, the left hand edge of the blank is positioned so as to coincide with the numeral 1 on the scale. When the means for operating the cutting dies is operated, the blank will be shifted inwardly and leftwardly, and the character will be punched directly in the center of the blank of given size. If the word or line of characters contains eleven characters, the left hand edge of the blank is positioned so as to begin at 11, and so on. The horizontal lines 42 on the supporting table are, of course, relied upon to position the long edges of the blank.

43 is a bell crank lever which may be operated by hand, for the purpose of throwing out the paper feed pawl and permitting the free movement of the paper.

I am aware that minor changes in the construction, arrangement and combination of the several parts of my device can be made and substituted for those herein shown and described, without in the least departing

from the nature and principle of my invention.

What I claim is:

1. In a stencil machine, the combination
5 with a stencil cutting mechanism, and auto-
matically operating means actuated by the
stencil cutting operating mechanism for
moving the blank into and from position
with respect to the cutting die whereby the
10 work of the machine is visible.

2. In a stencil machine, the combination
with a stencil cutting mechanism, of means
for operating a positioned die, and means
for holding the blank to be punched, said
15 means being automatically moved by the die
operating means to feed the blank, and to
move said blank into and from position with
respect to the cutting die.

3. In a stencil machine, the combination
20 with dies and their coöperating parts, of
means for operating a positioned die, belts
for holding the blank to be punched, means
whereby said belts are shifted bodily at an
angle relative to their direction of travel and
25 means operable by said die-operating means
for driving said belts.

4. In a stencil machine, the combination
of punching dies and their coöperating
parts, means for operating a positioned die,
30 two belts between which the blank to be
punched is held and fed, said belts being op-
erable from said die-operating means, where-
by said belts are shifted bodily at an angle
relative to their direction of travel and one
35 of said belts being movable independently of
the other for the purpose of positioning the
blank between said belts.

5. In a stencil machine, the combination
of punching dies and their coöperating
40 parts, means for operating a positioned die,
two belts between which the blank to be
punched is held and fed, said belts being op-
erable from said die-operating means, and
one of said belts being movable at an angle
45 to the direction of its travel whereby it may
be separated from its companion belt to pro-
vide a space for the insertion of the blank.

6. In a stencil machine, the combination
of dies and their coöperating parts, means
50 for operating said dies, upper and lower
feed belts, means whereby said belts are
shifted bodily relative to their direction of
travel driving mechanism for said belts op-
erable from the die-operating mechanism,
55 the upper belt being supported in such man-
ner that it may be lifted to provide a space
for the insertion of the blank to be punched.

7. In a stencil machine, the combination
of cutting dies and their operating means,
upper and lower feed belts, and means op-
erable from said die-operating means for
60 moving said feed belts transversely the di-
rection of their feed.

8. In a stencil machine, the combination
of cutting dies and their operating means, 65
upper and lower feed belts, driving shafts
therefor, means for rotating said driving
shafts to effect the feed of said belts, and
means for effecting a longitudinal movement
of said shafts to render the work of the ma- 70
chine "visible".

9. In a stencil machine, the combination
of cutting dies and their operating means,
feeding mechanism for the blank, means
whereby said feeding mechanism is intermit- 75
tently actuated in one direction and alter-
nately shifting in a direction at right angles
to the direction of feed and means for render-
ing said feeding mechanism inoperative dur-
ing part of the movement of the die-operat- 80
ing means.

10. In a stencil machine, the combination
of cutting dies and their operating means,
feeding devices which include means for
holding and feeding the blank to be punched, 85
means operable by the die-operating means
to move the blank in and out so as to ren-
der the work of the machine "visible", said
in-and-out movement of the blank effecting
its feed. 90

11. In a stencil machine, the combination
of cutting dies and their operating means,
feed belts normally in registration with a
selected die to be operated, and means oper- 95
able by the die-operating means to move
said feed belts out of the way and to bring
the blank held thereby into position to be
cut by the die being operated.

12. In a stencil machine, the combination
with a stencil cutting mechanism of means 10
for operating a positioned die, a pair of belts
for holding the blank to be punched and
carrying the same through the machine and
automatic means operated by the cutting
movement of the machine for shifting the 10
belts at an angle relative to their line of
travel.

In testimony whereof I hereunto affix my
signature in the presence of two witnesses,
this 23rd day of October, 1909.

WILLIAM H. SCOTT.

Witnesses:

M. P. SMITH,
ALMA GEBHART.