

G. REMNSNIDER.
 STENCIL MACHINE.
 APPLICATION FILED JUNE 26, 1908.

922,815.

Patented May 25, 1909.

4 SHEETS—SHEET 1.

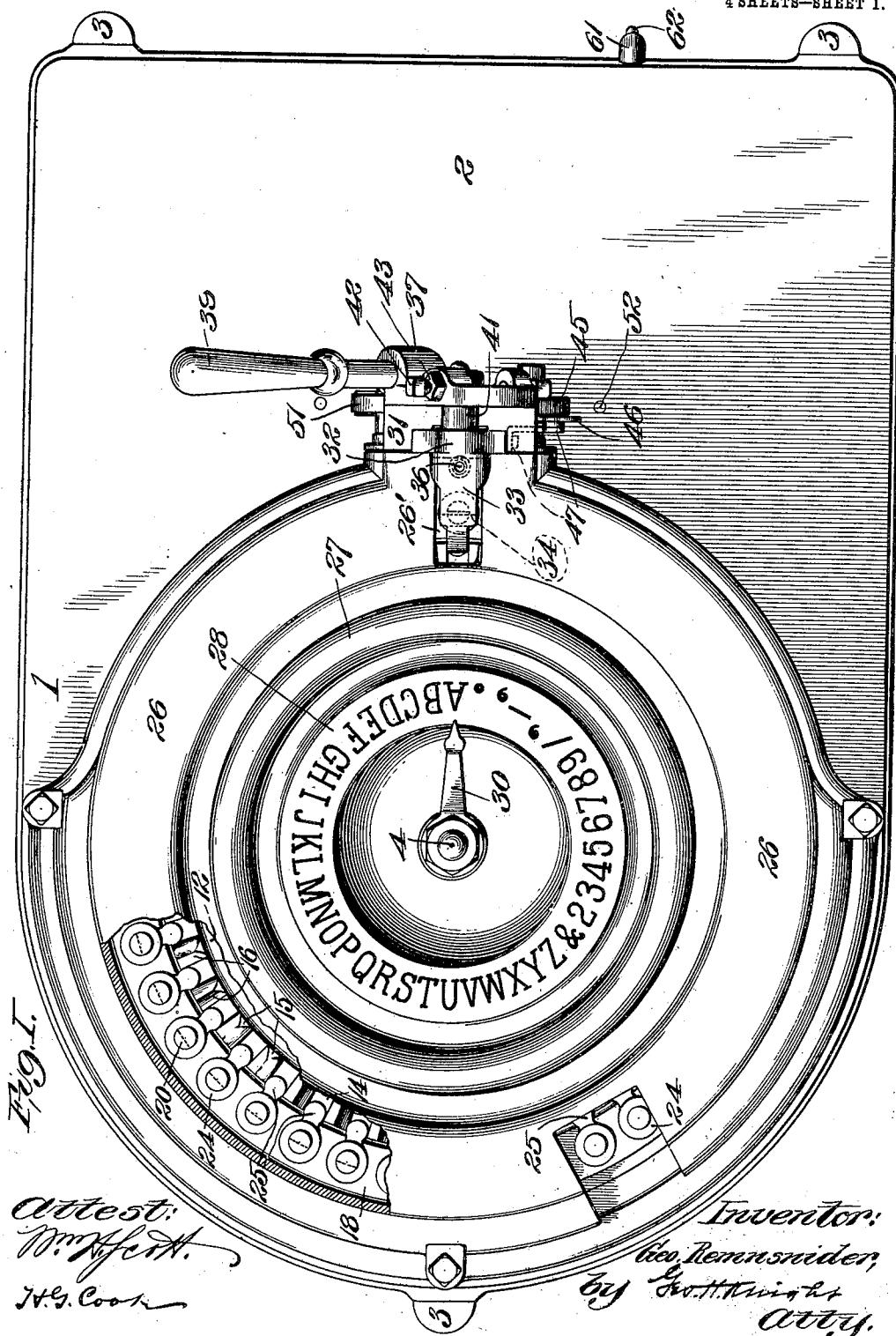


Fig. 1.

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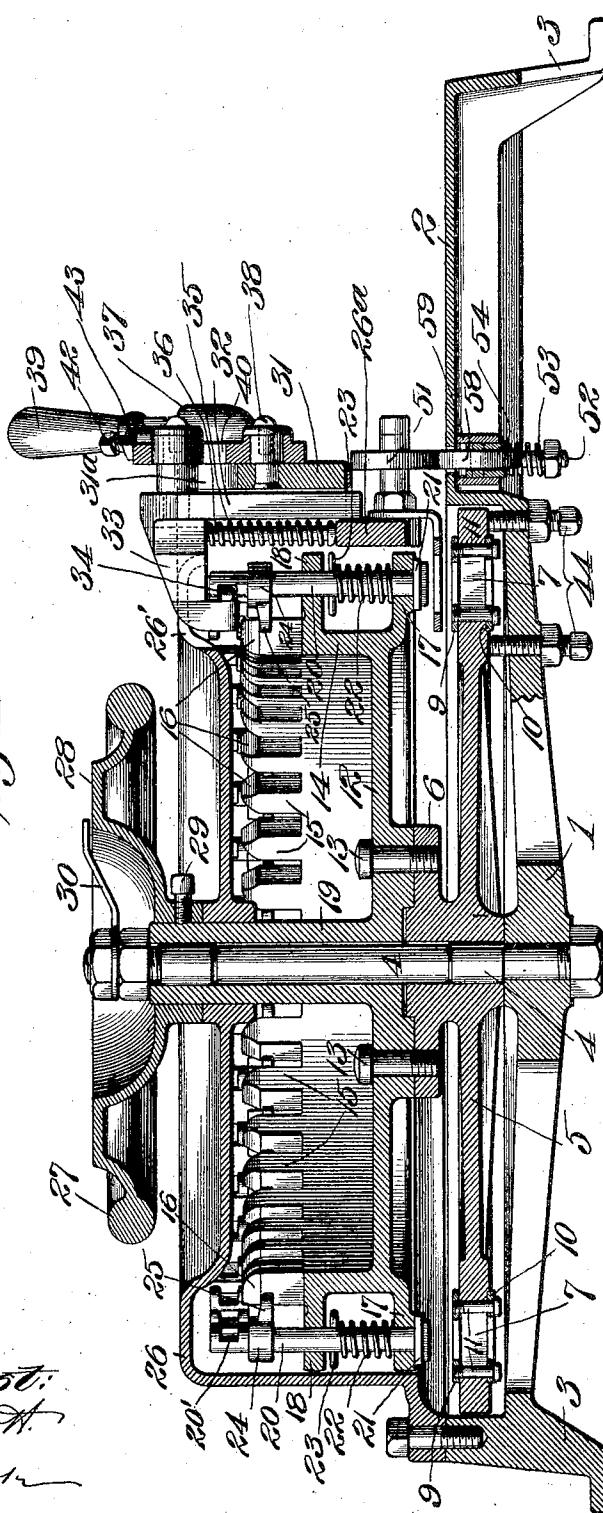
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Fig. II.



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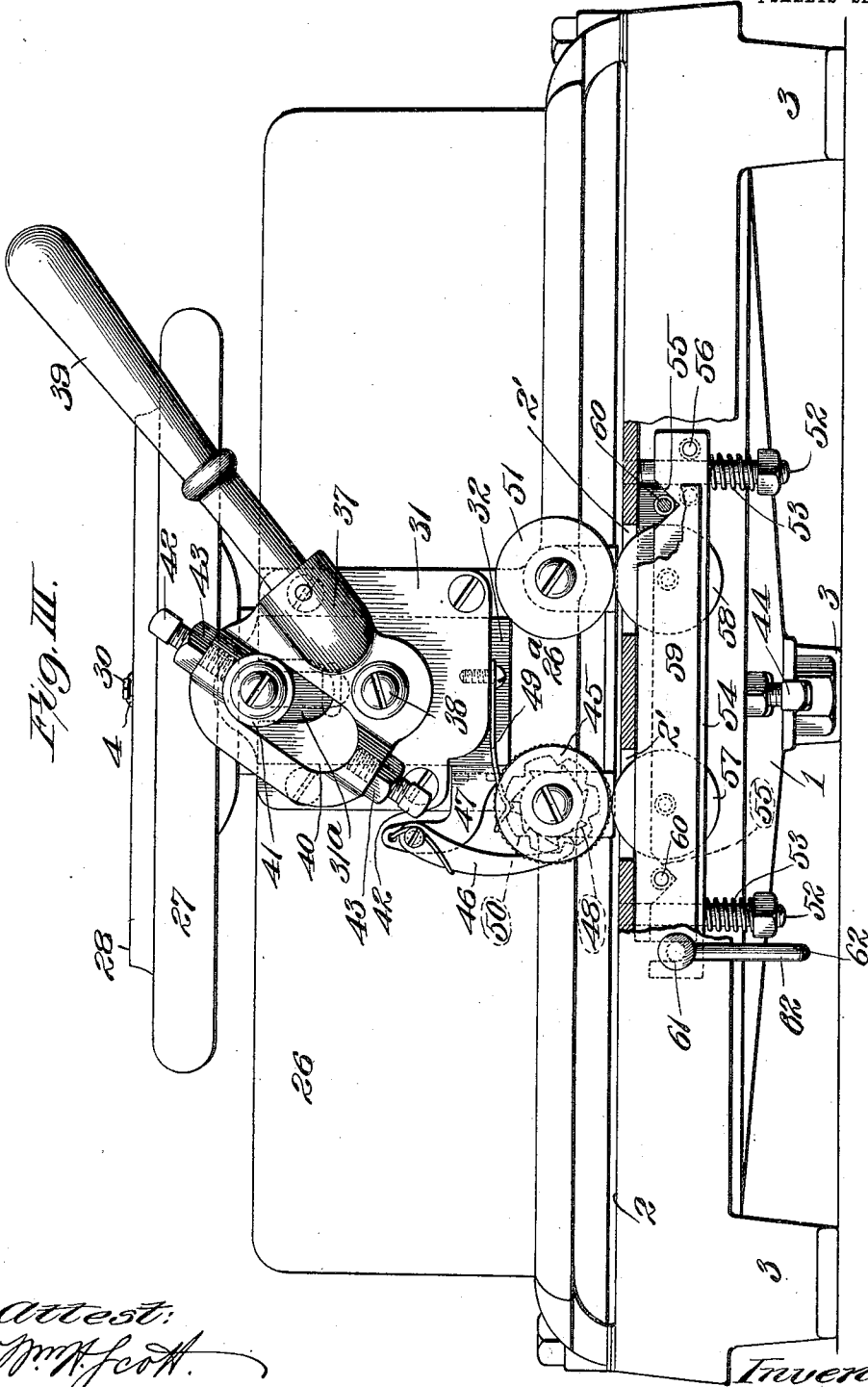
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4 SHEETS—SHEET 3.



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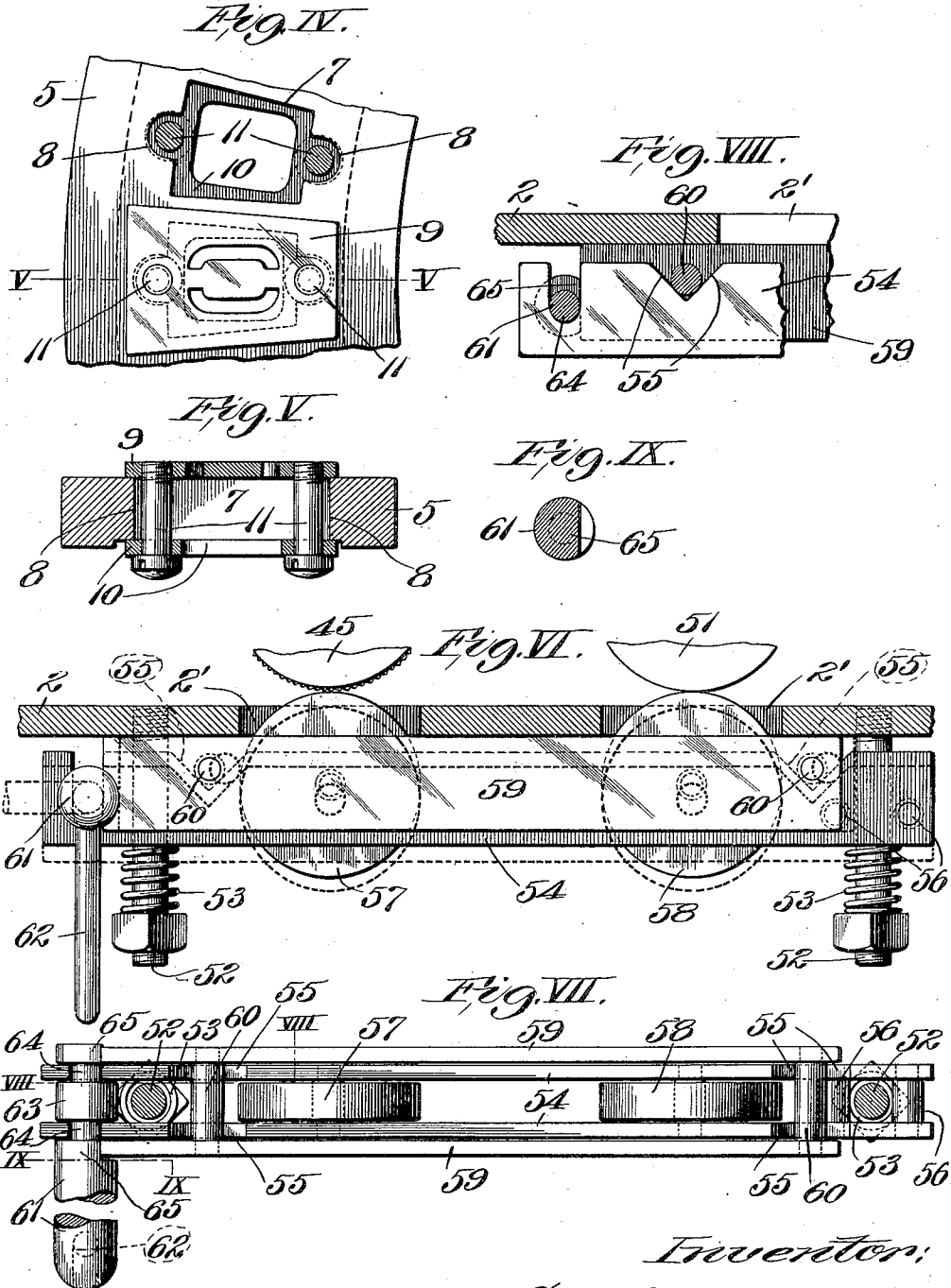
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

GEORGE REMNSNIDER, OF BELLEVILLE, ILLINOIS, ASSIGNOR TO THE BRADLEY STENCIL MACHINE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION.

STENCIL-MACHINE.

No. 922,815.

Specification of Letters Patent.

Patented May 25, 1909.

Application filed June 26, 1908. Serial No. 440,425.

To all whom it may concern:

Be it known that I, GEORGE REMNSNIDER, a citizen of the United States of America, residing at Belleville, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Stencil-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that character of machines used for producing stencils and it has for its object the production of a machine of this character which is of simple and inexpensive construction and in which the main mechanism is so housed as to prevent the operator from becoming injured by having the fingers of his hands caught in the moving parts of the machine when it is being adjusted.

Figure I is a top or plan view of my machine with a portion of the housing broken away to afford a view of the parts beneath the housing and the table being omitted. Fig. II is a vertical section taken centrally through the machine from the front to the rear thereof. Fig. III is an enlarged front elevation of the machine with the table shown in vertical section at the location of the lower or pressure members of the sheet feeding mechanism. Fig. IV is a top or plan view of a fragment of the lower die carrier. Fig. V is a cross section taken on line V—V, Fig. IV. Fig. VI is an enlarged view partly in vertical cross section through the table of the machine and partly an elevation of the stencil sheet feeding mechanism. Fig. VII is a top or plan view of the lower sheet feeding members. Fig. VIII is a longitudinal vertical section taken on line VIII—VIII, Fig. VII. Fig. IX is a cross section taken on line IX—IX, Fig. VII through the shaft of the operating lever by which the lower feed members are moved vertically.

In the accompanying drawings: 1 designates the base of my machine at the front of which is a table 2 upon which the sheets of material from which the stencils are to be made may be placed to rest while stencils are being produced. The base 1 is preferably supported by suitable legs 3 and is preferably in the main of spider or skeleton construction.

4 is a pivot post that is rigidly mounted centrally of the base 1 and which serves as a

journal member for the rotary die carriers of my machine.

5 designates a lower die carrier that is loosely fitted to the pivot post 4 above the base 1 and is provided with a surmounting hub flange 6. Near the perimeter of the lower die carrier is a plurality of vertical apertures 7 that corresponds in number to the number of dies that are to be applied to said carrier. For the purpose of lessening the cost of the production of the lower die carrier and to facilitate the application of dies thereto, I produce the apertures 7 in said die carrier by casting them therein of a size larger than the characters in the dies and provide at the ends of the apertures pockets 8 of sufficient size to permit of connecting the lateral adjustment of screws therein by which the dies are attached to the die carrier.

9 are female dies that are mounted upon the die carrier at the location of the apertures 7 therein and 10 are binding plates positioned beneath the die carrier at the location of the apertures 7. The dies 9 and the binding plates 10 are united by connecting screws 11 which pass through the apertures 7 in the die carrier and occupy the end pockets 8. By making the die carrier with the apertures 7 cast therein and utilizing, in conjunction with the dies 9, the binding plates 10 and the connecting screws 11, I overcome the necessity of drilling holes in the die carrier to receive the connecting screws or bolts for the purpose of connecting the dies 9 to the carrier and I further provide a construction that permits of the dies 9 being adjusted to a nicety upon the carrier, the latter being possible, due to the end pockets at the ends of the apertures 7 being made of sufficient size to allow of the connecting screws being moved as may be necessary to properly position the dies 9.

12 designates a punch carrier that surmounts the lower die carrier 5 to which it is secured by suitable means, such as connecting screws 13, that pass through the central portion of the carrier 12 and are seated in the hub flange 6 of the lower die carrier. The punch carrier is provided with a circular rim 14 at the upper end of which are vertical teeth 15 spaced apart from each other and having tapered upper ends 16. The punch carrier is also provided with peripheral annular superposed flanges 17 and 18.

19 is a hub sleeve forming a part of the

punch carrier 12 and extending upwardly around the pivot post 4.

20 designates a plurality of punch rods corresponding in number to the number of female dies 9. These punch rods are vertically and loosely positioned in the flanges 17 and 18 of the punch carrier 12 and they have attached to their lower ends male dies 21 located above the female dies and adapted to enter into said female dies when the punch rods are lowered. The punch rods are normally held in uplifted positions by springs 22 located above the lower flange 17 of the punch carrier and suitable means, such as pins or keys 23 seated in the punch rods beneath the upper flange 18. Each punch rod is provided near its upper end with a notch 20' that is presented toward the axis of the punch carrier.

24 are guide collars fitted to the punch rods and provided with arms 25 that are adapted to operate between the teeth 15 of the punch carrier to direct the downward travel of the punch rods in order that the male dies may be properly presented to the female dies.

26 designates a housing mounted upon the base 1 and by which the punch carrier, die carrier and the parts associated with these carriers are inclosed. This housing has a depressed top and a short sleeve which is loosely fitted around the hub sleeve 19 of the punch carrier and said hub sleeve extends above the housing as most clearly seen in Fig. II.

27 is a hand wheel having a rim, a depressed central part, and a short sleeve secured to the hub sleeve above the housing by suitable means, such as a set screw 29, and by which the punch carrier 12 and the lower die carrier 5 may be rotated at will within the housing. The hand wheel 27 is provided with an elevated dial 28 upon which are arranged characters corresponding to those of the dies and punches of the machine. The dies and punches are arranged in the machine in an order corresponding to the arrangement of the characters upon the dial 28.

30 is a pointer mounted in a stationary position upon the pivot post 4 and extending into juxtaposition with the dial 28 to serve as an index in determining the position of the punches and dies of particular characters that are located at different times at the front of the machine, or in other words, in the proper positions for stencil cutting action.

At the front of the housing 26 is an opening 26' located in part in the top of the housing, see Figs. I and II, and which extends downwardly in the wall of the housing to a cross member 26^a, see Figs. II and III. This opening is adapted to receive the plunger by which the punch rods 20 are operated.

31 is a guide plate attached to the housing 26 and extending across the vertical portion of the opening 26'.

32 designates a plunger arranged for vertical movement within the guide plate 31 recessed therefor and provided with a rearwardly extending arm 33 which is adapted to operate in the opening 26' of the housing 26. This arm has a downwardly extending portion, seen most clearly in Fig. II, and at the front of which is a tooth 34 that is adapted to enter the notches 20' of the punch rods 20, whereby upon the movement of the plunger the punch rods are lowered and elevated. The plunger 32 is normally upheld by a lift spring 35 located beneath the plunger arm and surrounding a rod 36 that rests upon the cross member 26^a of the housing and is loosely fitted in the plunger arm.

37 designates a lever pivoted at 38 to the guide plate 31 and by which the plunger 32 is operated. The lever has a handle 39 and it is provided with a cam slot 40 that receives a stud 41 carried by the plunger 32 and operable in a vertical slot 31^a in the guide plate 31, see Fig. III. In the lever at each end of its cam slot is an adjustable limitation screw 42 equipped with a jam nut 43 and by which the degree of movement of the plunger 32 through the medium of the lever may be regulated.

In the operation of my machine the punch and die carriers are rotated through the medium of the hand wheel 27 each time that a character is to be punched in a stencil sheet until the proper punch and dies are brought into cutting position at the front of the machine. The handle of the lever 37 is then grasped by the operator and moved downwardly and in lateral direction relative to the table of the machine, whereby the lever is caused to impart a downward movement to the plunger 32. As the plunger descends the downwardly extending portion of its arm enters between the tapered upper ends of the punch carrier teeth 15 located next adjacent to the punch rod that is to be lowered and then descends between said teeth, whereby the male die carried by this particular punch rod is properly centered over the female die beneath it for registration therewith and when the punch rod is completely lowered stencil cutting action takes place. During the stencil cutting action the die carrier 5 is supported at the front of the machine by rest screws 44. When the lever 37 is released said lever, together with the plunger 32 and the punch rod that has been lowered, are returned to normal positions by the springs 22 and 36 that are associated respectively with the punch rod and the plunger.

Referring now to the stencil plate feeding mechanism of the machine: 45 designates an upper feed wheel preferably having a milled periphery and which is journaled to a stem protruding from the housing 26

beneath the guide plate 31. Rotation is imparted to this feed wheel by a spring controlled pawl 46 that is pivoted to an arm 47 carried by the plunger 32 and arranged in engagement with a ratchet wheel 48, see dotted lines Fig. III. The feed wheel is controlled in its step by step rotation by a detent 49 that engages the notched wheel 50 associated with the feed wheel. 51 is an idler wheel journaled to a stem also projecting from the housing 26 and located in alignment with the feed wheel 45 above the table 2 of the machine which is provided immediately beneath said feed wheel and guide wheel with slots 2'.

52 designates bolts or legs secured to the table of the machine and extending downwardly therefrom. These legs are surrounded by lift springs 53 which serve to yieldingly support members of the feed mechanism to be described.

54 are bars arranged parallel with each other beneath the table 2 and which straddle the legs 52 and rest upon the springs 53. These bars are provided with V-shaped notches 55 extending downwardly from their upper edges and they are separated at one end by distance pieces 56 that straddle one of the legs 52.

57 is a feed wheel located between and journaled to the bars 54 and 58 is an idler wheel located between and journaled to said bars. The feed wheel 57 is located immediately beneath the feed wheel 45 and is adapted to extend upwardly through the slot 2' in the table beneath said feed wheel while the idler wheel is located beneath the idler wheel 51 and is adapted to project upwardly through the other slot 2' in said table.

59 designates a pair of shift bars arranged parallel with each other and which straddle the bars 54.

60 are shift rods mounted in the shift bars 59 and located between them in the notches 55 of the bars 54.

61 is a shift rod provided with a hand lever 62. This shift rod is provided with an enlarged portion 63 located between the wheel carrying bars 54 and serving to distance said bars at their ends opposite those separated by the distance pieces 56. The shift rod is also provided with journals 64 that occupy positions in the wheel carrying bars and with segmental portions 65, see Figs. VIII and IX, which bear against the ends of the shift bars 59 adjacent to said shift rod.

When the lower feed wheel 57 and lower idler wheel 58 are in their uppermost positions, as seen in full lines Figs. II, III and VI, they are in positions for stencil sheet feeding action but it is necessary to lower the lower wheels before the stencil sheet can be satisfactorily introduced between the upper and lower feed wheels and idler wheels.

At the time that the lower wheels are in their most elevated positions the flat faces of the segmental portions 65 of the shift rod rest against the ends of the shift bars 59. The operator, to lower the lower wheels, grasps the hand lever 62 and by imparting rotation to the shift rod 61 in either direction, causes the rounded faces of the segmental portions 65 to be brought into contact with the ends of the shift bars, and as a consequence, the shift bars are moved end-wise beneath the table of the machine. In this movement of the shift bars, the shift rods 60 carried thereby travel against inclined faces of the V-shaped notches in the wheel carrying bars 54 and as a consequence, said wheel carrying bars are depressed against the action of the lift springs 53, whereby the lower wheels are lowered to the position shown in dotted lines Fig. VI, to permit of the introduction of the stencil sheet. The shift rod 61 is then returned to its normal position and the lift springs 53 act to elevate the wheel carrying bars 54 and lower the wheels to their active positions in order that the stencil sheet may be fed upon each operation of the plunger 32 and the pawl 46 carried by said plunger with which the upper feed wheel cooperates.

I claim:

1. In a stencil machine, the combination of a base, a die carrier and a punch carrier rotatably mounted above said base punch rods mounted in said punch carrier, a plunger for operating said punch rods and which is provided with a stem and a stud, and an operating lever provided with a cam slot in which the stud of said plunger operates, and limitation screws mounted in said operating lever and adapted to be extended into the slot therein to engage the stud of said plunger, substantially as set forth.

2. In a stencil machine, the combination of a die carrier provided with a plurality of apertures, dies seated on said carrier at the locations of the apertures, binding plates adjustable endwise and opposing said dies at the opposite side of the die carrier, and adjustable means for connecting said dies and binding plates, substantially as set forth.

3. In a stencil machine, the combination of a die carrier provided with a plurality of apertures, dies seated on said carrier at the locations of the apertures, binding plates adjustable endwise and opposing said dies at the opposite side of the die carrier, and adjustable binding screws connecting said dies and binding plates, substantially as set forth.

4. In a stencil machine, the combination of an upper sheet feeding wheel, a lower sheet feeding wheel, a depressible support for said lower feeding wheel and which is provided with an inclined way, shifter bars movable longitudinally of said wheel support and arranged for engagement therewith

at the location of said inclined way, and means whereby said shifter bars may be operated, substantially as set forth.

5 5. In a stencil machine, the combination
of an upper sheet feeding wheel, a lower
sheet feeding wheel, a depressible support
for said lower feeding wheel and which is pro-
vided with a V-shaped notch, shifter bars
movable longitudinally of said wheel sup-
10 port and arranged for engagement therewith
at the location of said notch, and means
whereby said shifter bars may be operated,
substantially as set forth.

15 6. In a stencil machine, the combination
of an upper sheet feeding wheel, a lower
sheet feeding wheel, a depressible support
for said lower feeding wheel, and which is
provided with an inclined way, shifter bars
movable longitudinally of said wheel sup-
20 port and provided with a member adapted
to operate against the support at the location
of said inclined way, and means whereby said
shifter bars may be moved longitudinally of
said support, substantially as set forth.

25 7. In a stencil machine, the combination
of an upper sheet feeding wheel, a lower
sheet feeding wheel, a depressible support
for said lower feeding wheel, comprising a

pair of parallel bars having inclined ways, a
shifter straddling said wheel support and 30
having a member for engagement with the
support at the location of said inclined way,
and means whereby said shifter may be
moved longitudinally of said support, sub-
stantially as set forth. 35

8. A stencil machine comprising a base, a
central pivot post fixed to the base, a die car-
rier loosely mounted on the pivot post, a
punch carrier having a hub sleeve loosely
mounted on the pivot post above the die car- 40
riage and secured to the latter, spring punch
rods having notches and mounted in the
punch carrier, means secured to the punch
carrier for rotating the carriers, a housing for
the carriers, a guide plate having a slot and 45
attached to the housing a spring plunger slid-
able on the guide plate and having a stud
working in the slot of the guide plate and an
arm provided with a tooth adapted to engage
in the notches of the punch rods and a lever 50
pivoted to the guide plate, and having a cam
slot receiving the stud on the spring plunger.

GEORGE REMNSNIDER.

In the presence of—
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