No. 889,626. PATENTED JUNE 2, 1908.

C. R. KRUEGER & H. C. EVELYN.

LETTERING APPARATUS.

APPLICATION FILED SEPT. 7, 1907.

2 SHEETS—SHEET 1.

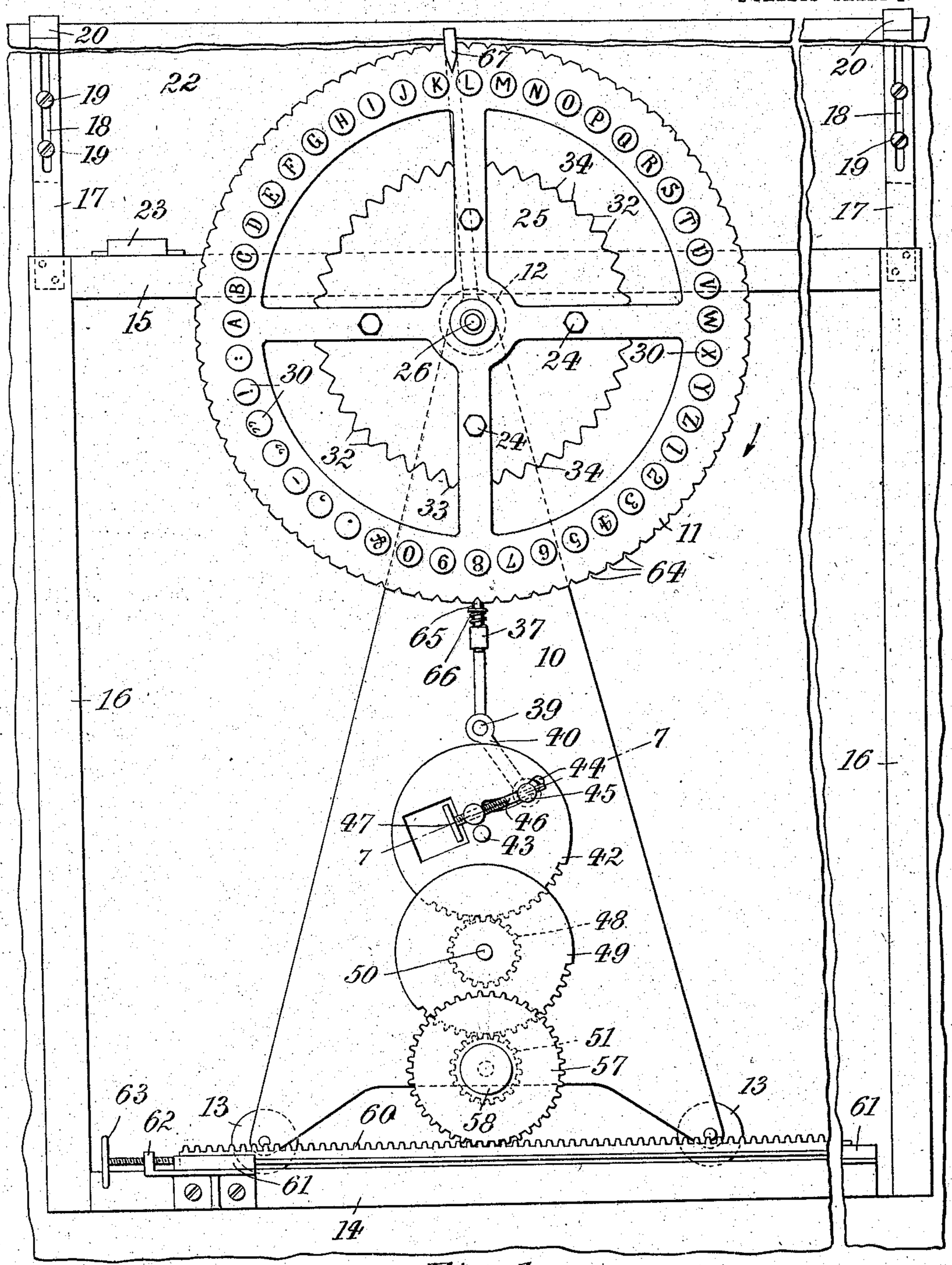

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

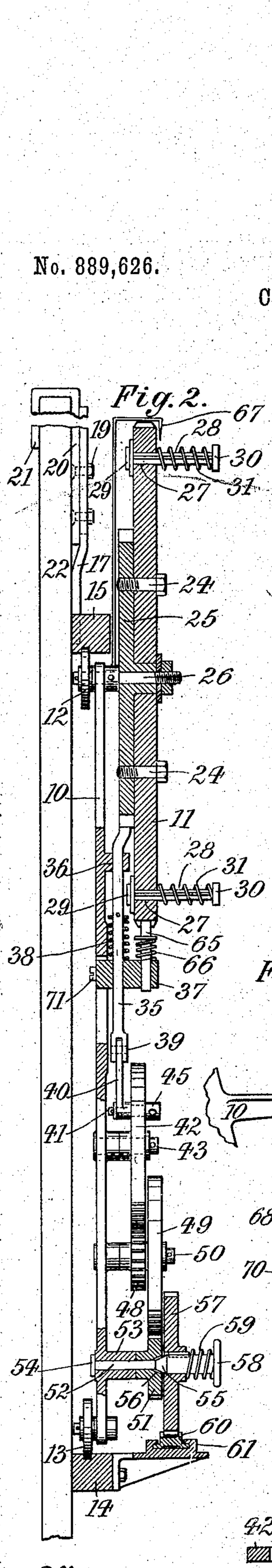


Fig. 3.

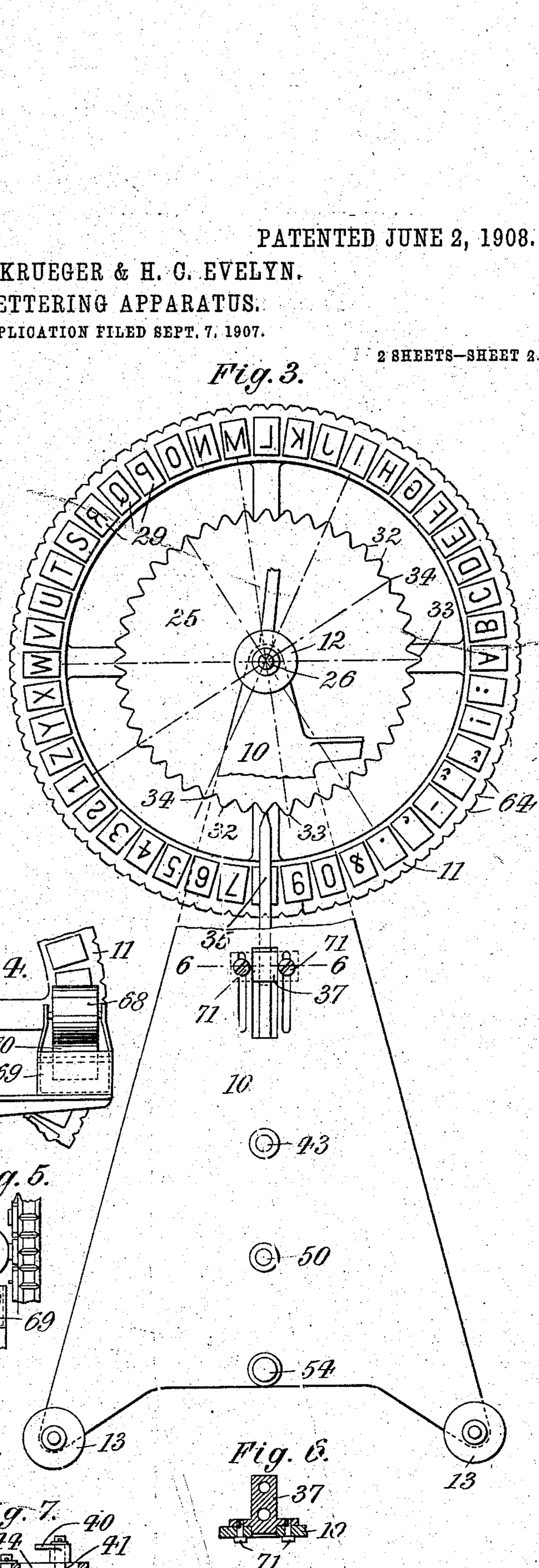


Fig. 4.

Fig. 5.

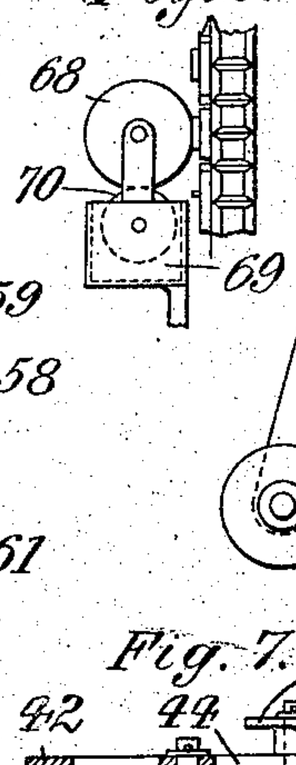
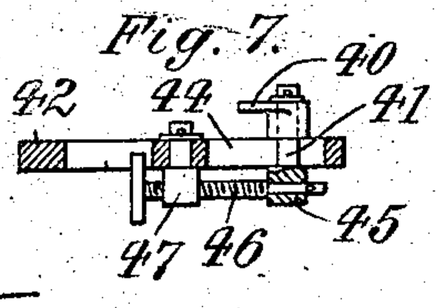


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

CHARLES R. KRUEGER AND HENRY CHARLES EVELYN, OF NEW YORK, N. Y.

LETTERING APPARATUS.

No. 889,626. Specification of Letters Patent. Patented June 2, 1908.

Application filed September 7, 1907. Serial No. 391,825.

To all whom it may concern:

Be it known that we, CHARLES R. KRUEGER and HENRY CHARLES EVELYN, both citizens of the United States, and residents respectively, of New York city, Manhattan, county and State of New York, and New York city, Brooklyn, county of Kings, and State of New York, have invented new and useful Improvements in Lettering Apparatus, of which the following is a specification.

This invention relates to an improved lettering apparatus more particularly designed for providing doors, windows or other articles with inscriptions, in a ready and simple manner.

In the accompanying drawings: Figure 1 is a front view of our improved lettering apparatus, showing it attached to a door; Fig. 2 a vertical section on line 2—2, Fig. 1; Fig. 3 a rear view, partly broken away, of the carriage; Fig. 4 a detail rear view of the paint supplying device; Fig. 5 an end view thereof; Fig. 6 a cross section on line 6—6, Fig. 3, and Fig. 7 a section on line 7—7, Fig. 1.

The numeral 10 indicates a carriage supporting a type-wheel 11 and provided with a top roller 12 and a pair of bottom rollers 13. The latter engage a corresponding groove of a lower transverse rail 14, while roller 12 engages a groove in an upper transverse rail 15. Rails 14 and 15 are connected by upright braces 16, the whole constituting a frame for supporting carriage 10. This supporting frame may be secured to the door, window, etc., to be lettered, in any suitable manner. The drawing shows upper rail 15 provided with a pair of upright shanks 17 having longitudinal slots 18. Through the latter pass a pair of screws 19 secured to the shanks 20 of hooks 21, engaging the upper edge of a door 22. By the means described, the supporting frame may be adjusted to the door in any suitable height. If desired, one of the rails 14, 15, may be provided with a level 23, to insure a true horizontal position of the frame.

Type-wheel 11 is, by screws 24, secured to a cam wheel 25 loosely mounted upon a spindle 26 of carriage 10. Type-wheel 11 is provided with a series of perforations 27 arranged on a circle at a uniform distance apart. Within perforations 27 are slidably mounted plungers 28, said plungers being prevented from rotating by a groove and feather connection, or other suitable means. At its rear end each plunger 28 carries a type 29, while its front end is provided with a disk or push button 30, a spring 31 being interposed between said disk and wheel 11.

Types 29 comprise letters, numbers and punctuation marks, so that any desired name, number, etc., may be printed by the apparatus, in manner hereinafter described.

Means are provided for automatically so spacing the letters, that a uniform clearance is maintained between the letters, irrespective of the width of such letters. For this purpose cam wheel 25, hereinabove referred to, is provided with a series of peripheral tapering teeth, the number of which is equal to the number of types 29. These teeth being placed diametrically opposite the types 29, are of different height corresponding to the width of such types. The teeth 32 for the characters of medium width, such as N, O, P, L, etc., are of medium height. The teeth 33 opposite the wide character, such as M, W, are of greater height, while the teeth 34 opposite the narrow characters, such as I, l, etc., are of less height than teeth 32.

Cam 25 is engaged by the upper end of a plunger 35 guided in bearings 36, 37, and held in engagement with the cam by a spring 38. To the lower end of plunger 35 is pivoted at 39 a link 40 which is, in turn, pivoted to a post 41, adjustably mounted on a toothed wheel 42. The latter is loosely mounted on a pin 43 of carriage 10, and is provided with a curved slot 44 that receives the reduced stem of post 41. The disengagement of post 41 from slot 44 is prevented by a head 45 on the front end of such stem. Head 45 is engaged by the recessed end of a screw 46 tapped into a lug 47 pivotally mounted upon wheel 42. By adjusting screw 46, post 41 may be differently set for a purpose hereinafter described.

Toothed wheel 42 meshes into a pinion 48 secured to a toothed wheel 49 loosely turning on a pin 50 of carriage 10. Toothed wheel 49, in turn, engages a pinion 51 loosely mounted upon the reduced end of a spindle 52 slidably engaging a bearing 53 of carriage 10, and provided at its rear end with a head 54. Spindle 52 has a conical section 55, adapted to engage a correspondingly-shaped recess 56 of pinion 51, the parts 51, 55, thus constituting a coupling. Upon the enlarged front section of spindle 52 is slidably mount-

ed a toothed wheel 57, wheel and spindle being connected by a groove and feather connection. At its front end spindle 52 is provided with a push button 58, which is normally pressed outward by a spring 59 interposed between button 58 and wheel 57. The latter meshes into a longitudinal rack 60 adjustably mounted upon lower rail 14. Rack 60 is received within corresponding guides 61 of rail 14, one of which is provided with an upright arm 62. Into the latter is tapped an adjusting screw 63 engaging rack 60.

The rim of type-wheel 11 is provided with peripheral notches 64 opposite the centers of types 29, and with additional notches opposite the centers between such types. Notches 64 are adapted to be engaged by a detent 65 movable in bearing 37 and engaged by a spring 66.

In use, the frame is brought into the desired position with relation to the door, etc., to be lettered, by properly adjusting the shanks of hooks 21. After the place for the first letter, or the beginning of the inscription, has been ascertained, wheel 11 is turned by hand in the direction of the arrow, (Fig. 1), until said first letter, say L, (Figs. 1 and 3) arrives at the topmost position, *i. e.*, until it becomes alined with the vertical axis of carriage 10. The letter is now printed by pressing its button 30 inwards. After the imprint has been made, button 30 is released and spring 31 will return plunger 28 into its original position. Type-wheel 11 is now again rotated in the direction of the arrow, until the next letter, to be printed, arrives at the position marked by index 67. In this position, detent 65 engages one of the notches 64 arranged intermediate two adjoining types and plunger 35 has entered a recess between two teeth of cam 25. Button 58 is now depressed against the action of spring 59 to couple toothed wheel 57 to pinion 51. While maintaining button 58 in its depressed position, the rotation of wheel 11 is continued until the detent 65 has entered the succeeding notch, *i. e.*, until the letter to be printed has become alined with the vertical axis of the carriage. During the last-named movement of wheel 11, plunger 35, while riding along one of the teeth of cam 25, became depressed, which movement was imparted by link 40, and gear wheels 42, 48, 49, 51, to wheel 57. The latter, by engaging fixed rack 60, effected a lateral movement of carriage 10 and type-wheel 11. In this way the carriage, by turning type-wheel 11, has been automatically shifted to such an extent that the letter now alined with the vertical axis of carriage 10 will be printed at the proper distance from the letter previously printed. By providing teeth of different height on cam 25 for letters of different width, as above described, it will be seen that for a wide character, such as M, and *N*, a comparatively large lateral shift is imparted to carriage 10 and type-wheel 11, while for a narrow character, such as I, l, a comparatively small lateral movement of carriage 10 and type-wheel 11, takes place. In case two wide characters are to be printed in succession, an additional lateral movement is imparted to carriage 10, by slightly rotating adjusting screw 63 and thereby laterally displacing rack 60 and carriage 10.

The device for providing the types with the paint desired, may be of any suitable construction, the drawing showing a roller 68 engaging the types and receiving the paint from a receptacle 69, by means of a roller 70. Means are also provided for securing type-wheels of different size to cam 25, so that characters of different size may be printed by the same apparatus. If it is desired to use a large type-wheel, bearing 37 is correspondingly lowered by loosening screws 71 that hold the bearing in position and retightening them according to the diameter of type-wheel 11. The space between the letters may also be readily changed by adjusting screw 63, to accordingly vary the position of post 41 in relation to wheel 42.

It will be seen that by our improved lettering apparatus, the characters are automatically so spaced and printed, that the same distance is provided for between the letters of the imprint.

We claim:

1. In a lettering apparatus, a frame, a carriage movable in the frame, a type-wheel journaled in the carriage, a type carried by the type-wheel, a cam secured to the type-wheel, a plunger engaging the cam, a gear-wheel operable by the plunger, a rack engaged by the gear wheel, and means on the frame for adjusting the rack, substantially as specified.

2. In a lettering apparatus, a frame, a carriage movable in the frame, a type-wheel journaled in the carriage, types of different widths carried by the type-wheel, a cam secured thereto and having teeth of different heights, and means controlled by said teeth for laterally shifting the carriage according to the widths of the types, substantially as specified.

3. In a lettering apparatus, a frame, a carriage movable in the frame, a type-wheel journaled in the carriage, types carried by the type-wheel, a cam secured thereto, a plunger engaging the cam, a gear wheel, a post adjustably mounted on the gear wheel and operatively connected to the plunger, and means controlled by the gear wheel for laterally shifting the carriage, substantially as specified.

4. In a lettering apparatus, a frame, a carriage movable in the frame, a type-wheel journaled in the carriage, a cam secured to the type-wheel, a spring-influenced plunger

engaging the cam, a gear wheel, a post adjustably secured to the gear wheel, a link connecting the plunger to the post, a rack operatively connected to the gear wheel, and means on the frame for adjusting the rack, substantially as specified.

Signed by us, at New York city, (Manhattan,) county and State of New York, this sixth day of September, 1907.

CHARLES R. KRUEGER.
HENRY CHARLES EVELYN.

Witnesses:
ARTHUR E. ZUMPE,
PAUL P. REID.