C. I. W. SMITH.

VISIBLE WRITING ADDRESSING MACHINE.

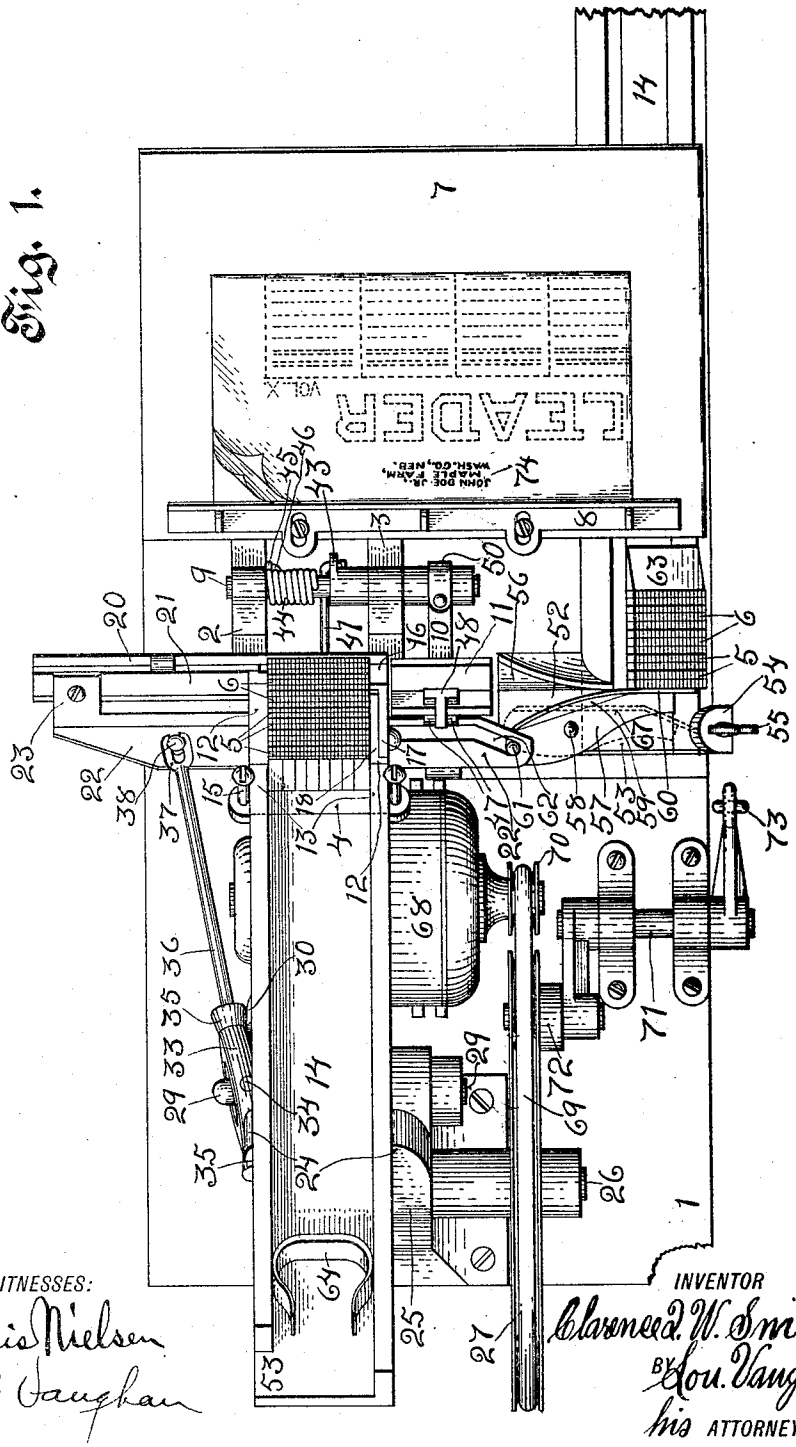
APPLICATION FILED MAR. 17, 1915.

1,200,661.

Patented Oct. 10, 1916.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

Morris Nielsen

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3 SHEETS—SHEET 2.

Fig. 2.

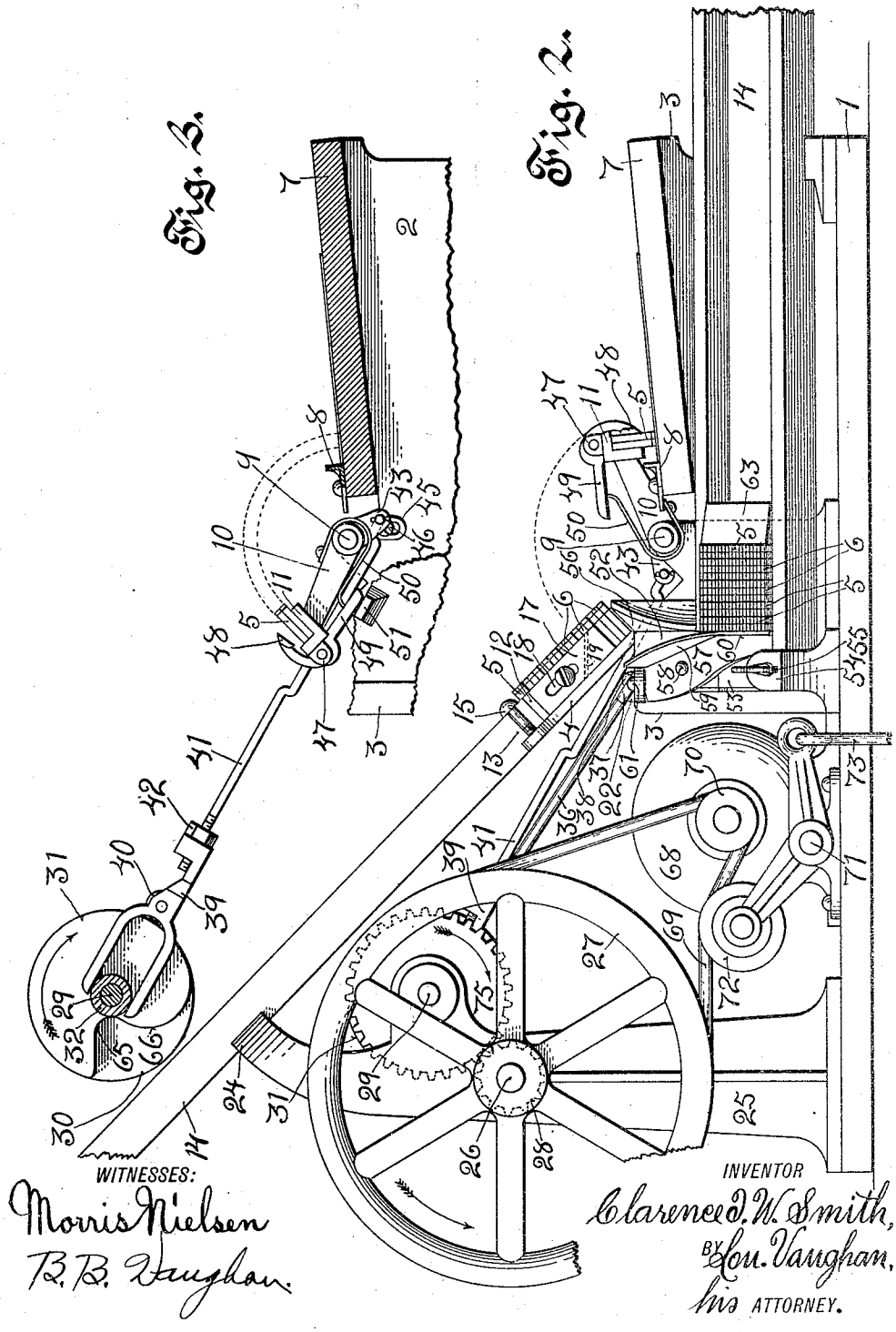


Fig. 3.

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3 SHEETS—SHEET 3.

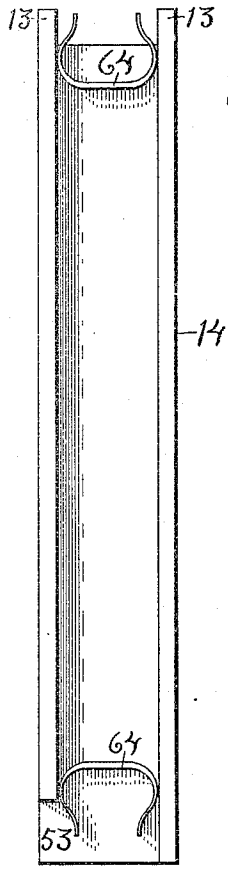


Fig. 5.

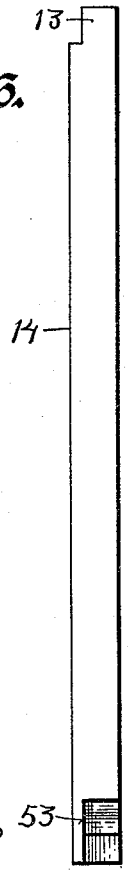


Fig. 6.

Fig. 4.

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UNITED STATES PATENT OFFICE.

CLARENCE I. W. SMITH, OF OMAHA, NEBRASKA.

VISIBLE-WRITING ADDRESSING-MACHINE.

1,200,661. Specification of Letters Patent. Patented Oct. 10, 1916.

Application filed March 17, 1915. Serial No. 14,916.

To all whom it may concern:

Be it known that I, CLARENCE I. W. SMITH, a citizen of the United States of America, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Visible-Writing Addressing-Machines, of which the following is a specification.

My invention relates to improvements in addressing machines for printing from linotype slugs, bearing a mailing list, and stored in portable magazine galleys; and the objects of my improvements are, first, to provide a visible writer, that is, one in which the address is instantly revealed after the impression is made; second, to provide engaging and delivery means to automatically accommodate variable thicknesses of different numbers of slugs packed and fastened together flatwise to bear addresses of variable length, longer than could be cast on a single slug; third, to supply means to simultaneously discharge from a carrier the slug or united pack of slugs by which the last impression was made and to seat in the carrier the slug or pack next in succession from the magazine galley; fourth, to provide a conveyer and packer to carry to and place the discharged slugs in a portable receiving galley to be used as a supply in reprinting the list; and fifth, to provide in a printing slug-carrier an automatically gripping and releasing device to fasten the slug or pack of slugs in the carrier during the printing stroke and to stand open while the carrier is seated to discharge and receive the slugs. These and other minor objects, hereinafter more particularly cited I attain by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top view of the complete machine as it appears at a stage of the operation, the pack of slugs last printed from being removed to better show the carrier and its gripping jaw standing open to receive the next pack bearing an address; Fig. 2, a side elevation showing the carrier in printing stroke; Fig. 3, a fragmental longitudinal section, showing the carrier mechanism in the position shown in Fig. 1; Fig. 4, a back view with the motor removed and a portion of the large grooved pulley cut away to disclose the packing contrivance; Figs. 5 and 6, are face and edge views respectively, of one of the portable galleys separated from the machine.

Throughout all these views like reference numerals refer to the same parts.

Upon a suitable base 1 the short uprights 2 and 3 are spaced laterally to support at opposite sides the magazine foot or base section 4, inclined about at an angle of 45 degrees to receive the lower end of a downwardly sliding column of variously packed linotype slugs 5 and 6, bearing letters or type arranged for printing addresses. The forward edges of these uprights are extended to support the slightly inclined printing table 7, having at its inner edge the adjustable rest 8, to assist in placing the matter to be addressed; which matter is handled manually.

Intermediately of the magazine base and the printing table the rocking shaft 9 is journaled across through the tops of the uprights. A type bar or rocker-arm 10 is mounted on a projecting end of the rocking shaft and has at its outer end the slug-carrier or seat 11, of L-shaped cross section. This arm is thus adapted to be rocked forwardly and the printing face of the slug or pack of slugs seated in the carrier will strike on the printing table, as shown in Fig. 2; or, to be rocked reversely, as shown in Figs. 1 and 3, to seat the carrier adjacent to one side of the magazine base, where its angular cross-sectional shape coincides with and is in alinement with the angular bottom end of the magazine base.

The magazine base has sides 12 and 12, of cross section agreeing with and spaced to agree with the sides of the galleys. The top ends of these sides are shorter than the bottom to receive the lower projecting ends 13 of the galleys 14. The guide screws 15 are seated in lateral extensions of the upwardly-projecting bottom to complete a seat for the lower ends of the galleys and bring all inner surfaces into rigid alinement. The sides of the galleys are spaced apart to loosely receive the slugs arranged endwise across. For this illustration the slugs are arranged in packs of two and three slugs each, intermixed as may be required to bring the addresses into alphabetical order. The lower ends of the magazine base sides are spaced away from the lower end 16 of the base which stops and supports the bottom end of the descending column of slugs. That side

adjacent to the printing slug carrier has a longitudinally adjustable end connected by a slotted overlap 17 secured by a screw disposed through the slot and threaded in the fixed thin shortened portion 18 of the side; the joint on the inside between these movable and fixed parts is ranged obliquely, as indicated by the broken lines 19 in Fig. 2, to insure a smooth positive descent of the slugs. The adjustable end 17 is shown spaced away from the magazine lower or stop end 16, to form a discharge port wide enough to allow a pack of three slugs 6 to be slid through endwise from the base of the magazine onto the carrier. It is obvious, that if two packs of two slugs each 5 occur at the base of the magazine, only the bottom one could be first forced through the opening onto the carrier; also, the opening may be narrowed to pass only packs of two slugs, or made narrower to feed only single slugs. The opposite side has its lower end fixedly spaced away from the magazine end 16 a distance slightly less than the thickness of a single slug, to pass a plunger that is too thin to engage more than a single slug, when printing from single or single and double slugs.

The base or stop end 16, is extended to form the laterally projecting guideway 20 to carry the plunger or push-bar 21 and direct its inner end across through the side openings or ports at the base of the magazine to slide the slugs from the magazine onto the printing slug carrier. The rectilinearly-reciprocating driving bar 22 is disposed transversely beneath the magazine, in guideways formed on the tops of the uprights 2 and 3, and has at its outer end the angularly-extended arm 23, by which it is connected to the outer end of the push-bar. To further support the connected galley in position for carrying a supply of slugs, it is removably seated in the bracket 24 at the head of the upright 25.

A driving shaft 26 is journaled through bearings on the upright 25 and has mounted on its outer end the grooved driven pulley 27, and on the opposite inner end the spur pinion 28. A stud journal 29 is disposed stationarily on the same support to project inwardly, parallelly with and spaced away from the driving shaft. Upon this stud journal is mounted an integrally constructed revolving member comprising the face cam-wheel 30, a peripheral cam-wheel 31, a connecting cylindrical axially-disposed waist 32 of smaller diameter and a spur gear wheel 75 disposed at the base of the stud journal to be engaged and driven by the spur-pinion 28 on the inner end of the driving shaft.

The oscillating follower yoke 33 is pivoted on the projecting ends of the pintle-pin 34 disposed through the end of the stud journal projecting loosely through the yoke, as shown in Figs. 1 and 4. On opposite ends of the yoke the anti-friction rollers 35 and 35 are mounted to travel on the curved actuating face of the adjacent cam-wheel. The arm 36 is rigidly attached to project from the yoke in the plane of its oscillation and its extended end 37 is forked to straddle the screw stud or wrist 38 seated in the reciprocating driving bar.

A follower yoke 39 has the intermediately disposed roller 40 to engage the peripheral cam. The forked end of this yoke is disposed astride the adjacent waist, to retain the roller in proper alinement, and the opposite end is bent at a right angle to receive the end of the connecting-rod 41 threaded therethrough and having the jam nut 42 to fasten the same at any desired adjustment of length. The opposite end of the connecting-rod is jointed to the arm 43 mounted rigidly on the rocking shaft 9. The roller traveling on the full-face part of the peripheral cam retains the rocking shaft and the slug carrier rocked to the position shown in Figs. 1 and 3, against the action of the coil spring 44, which is disposed around and one end fastened to the shaft; the opposite end is bent to form an elongated loop 45 to receive the fastening screw 46, by which means the tension of the spring is adjusted to give the type a light or heavy stroke.

To secure the slug in the carrier during the printing stroke, a bent lever is intermediately fulcrumed between the ears 47 on the back of the carrier. One end of the lever is T-shaped to form a jaw 48 disposed to close toward the opposite side of the carrier and grip the slug thereagainst. The opposite arm-end 49 is bent inwardly toward the hub of the carrier arm or rocker-arm. The spring 50 has its body disposed about the hub of the carrier-arm to which its base end is fastened; the free end of the spring is disposed to engage the inner side of the arm of the bent lever and yieldingly close the jaw onto the carried slug, as shown in Fig. 2. When the carrier is rocked back to its seat to take in a new slug, the back of the arm is engaged by the lug 51 on the adjacent upright support to open the jaw for the shift of slugs, as shown in Fig. 3.

An inclined slideway 52 disposed downwardly away from the discharging end of the slug carrier delivers the used slugs to the receiving galley. These galleys have one side shortened at their receiving end 53 to allow the slugs to slide endwise, laterally into the galley. The receiving galley is ranged endwise at right angles to the direction of the slideway and is removably seated in base supports to tilt it sidewise to agree with the incline of the slideway and to bring the bottoms of slideway and galley flush. An upwardly disposed bent arm

54 on the supporting base has the thumb screw 55 threaded therethrough to engage the top of the end of the full length side of the galley to releasably fasten it in its seat. The slideway has the winding front side 56 to assist to turn the discharged slugs from their laterally inclined position when leaving the carrier, to an upright plane as they enter the galley.

To correctly and certainly seat the slugs in the receiving carrier, the oscillating packer 57 is pivoted centrally on the lower end of the slideway at 58. It has an upstanding flange 59 at one edge to form a side opposite to the winding side of the slideway, and a bent portion at its lower end to form a packing foot 60 to press the slugs into the galley. The upper end has an upstanding wrist-pin 61 disposed through the crooked slot 62 in the adjacent end of the transversely-disposed reciprocating driving bar, by which means the oscillation of the packer is effected. A banking block 63 fitted to slide loosely in the galley holds the first received slugs upright until the galley is filled and the ordinary spring clips 64 are applied to retain the slugs while in storage. When in revolution, the abrupt depression 65 of the peripheral cam 31 has attained the requisite position to receive the roller 40, the roller slips into the depression releasing the printing mechanism to make an instantaneous stroke; then the roller traveling out on the curved steep incline 66, immediately returns the slug carrier to its position, as shown in Figs. 1 and 3, to receive the slug or pack of slugs bearing the type for the next successive address. The cams are shaped and timed, so that, while the peripheral cam retains the slug carrier seated at the delivery port of the magazine, the face cam actuates the reciprocating driving bar 22 to displace the last used pack of slugs by sliding in against it the next pack in succession from the base of the magazine; also, to open the packer, to the position shown by the dotted lines 67 in Fig. 1, to receive the discharged slug and by the return movement of the driving bar to close the packer foot to correctly seat the discharged slug in the receiving galley.

Any source of power, connected to the grooved driven pulley 27 and having facilities for readily stopping and starting, may be employed. But for a small generally portable addressing machine, I prefer a small electric motor 68, disposed on the machine base beneath the magazine galley and other mechanism, as shown in Figs. 1 and 2. A loose band 69 is disposed to directly connect the large grooved driven pulley with the driver 70 of the motor. A rocking shaft 71 journaled upon the machine base has an arm carrying the tightening pulley 72 and an arm connected by the rod or cable 73 with a treadle (not shown) placed accessible to a foot of the operator. Taking the pressure off the treadle, slackens the driving band to stop the machine; this, done at any time while the slug carrier is standing in position for receiving and discharging the slugs, permits free manual manipulation and consideration of all the slugs or packs of slugs and addresses carried in the galley being printed from.

Ink is applied to all of the type of the slugs or packs of slugs in a galley, before they are driven successively from the base of the magazine. This may be done manually with an ordinary smeared inking-roll, or by any of the usual machine methods.

It is observed that all the slugs and packs of slugs, both in the magazine galley and in the receiving galley and that in the carrier seated to discharge or receive the next relay, are accessible; that an address 74 is printed by a quick stroke and return of the rocker-arm, immediately revealing the printed address and leaving the table free a major portion of the time for successively shifting the articles to be addressed. Added to this, the means to stop and start the machine at will of the operator, ample facilities are afforded to read, correct and rearrange the addresses.

I claim:

1. A magazine for an impelled supply of linotype slugs or packs of slugs and having a discharging port, an oscillating slug carrier for printing disposed to successively stand at the port of said magazine, a reciprocating push-bar to successively slide slugs or packs of slugs through said port, onto the carrier and against the preceding slug to discharge it therefrom, a receiving storage galley, and an inclined slideway disposed to extend from the discharging position of the carrier to the receiving end of the storage galley, in combination with an oscillating packer having a wrist-pin and having a packing foot disposed athwart the receiving end of the storage galley, and a reciprocating member connected to actuate the push-bar and having a crooked slot shaped to slidingly engage the wrist-pin to retire the packing foot when the push-bar advances to seat a slug.

2. The combination of a printing table, a spring-actuated oscillating linotype slug carrier disposed to normally swing a slug carried thereby against said table, a linotype slug supply magazine having a discharging port disposed to register with the slug carrier when swung away from the printing table, a spring-actuated jaw disposed on the carrier to normally grip the carried slug, suitable mechanism to set the jaw open when the carrier is in registry with the magazine port, a reciprocating push-bar disposed to slide the slugs from the magazine into the carrier, a revoluble member, a cam on the

revoluble member shaped to retain the slug carrier in registry with the magazine port and to release the carrier for a printing stroke, suitable mechanism to connect the cam and slug carrier, a cam on the revoluble member shaped and timed to actuate the push-bar while the slug carrier is in registry with the magazine port, and suitable mechanism to connect said last mentioned cam with the push-bar.

3. A printing table, and a magazine adapted to contain a forwardly impelled supply of linotype slugs or packs of slugs and having a discharge port, in combination with a spring-actuated rocker-arm having its outer end shaped to form a linotype slug carrier and disposed to normally swing a slug carried thereby against the printing table and capable of being reversely rocked to bring its carrier end adjacent to the magazine port, a reciprocating push-bar disposed to slide a slug from the magazine through its port and onto the carrier, a spring-actuated jaw pivoted on the rocker-arm to normally close on a slug seated in said carrier, and suitable mechanism to open the jaw and retain it open while the carrier stands at the magazine port.

4. A printing table, a rocking shaft, a rocker-arm mounted on said shaft to swing toward and from the table, and a linotype slug seat mounted on the rocker-arm, in combination with a lever shaped to form a jaw to coöperate with said seat and fulcrumed to the slug seat, a spring connected to close the jaw on a seated slug, and a stationary lug disposed to engage the lever and open the jaw when the arm and slug seat are rocked away from the table to a predetermined position.

5. A stationary printing table, a spring-actuated rocker-arm disposed to normally swing toward the table, and a linotype slug seat mounted on said rocker-arm, in combination with a spring-actuated jaw pivoted on said seat to normally grip a linotype slug seated therein, and suitable mechanism to open the jaw when rocked to a position away from the printing table.

6. A magazine for linotype slugs or packs of slugs bearing addresses, comprising an open channel, a base end to the channel, a side flange of the channel consisting of a stationary part, a longitudinally-adjustable base end part having a longitudinally-slotted overlap disposed to slide endwise on the stationary part, and a fastening screw disposed through said slot and threaded in the stationary overlapped part.

7. A magazine for linotype slugs or packs of slugs, comprising an open channel, a base end to the channel, and a longitudinally-adjustable side flange adapted to have its end adjacent to the base end of the channel spaced therefrom to form a lateral discharging port of variable width.

In testimony whereof I have affixed my signature in presence of two witnesses.

CLARENCE I. W. SMITH.

Witnesses:

GEORGE A. DOLL,

MORRIS NIELSEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."