

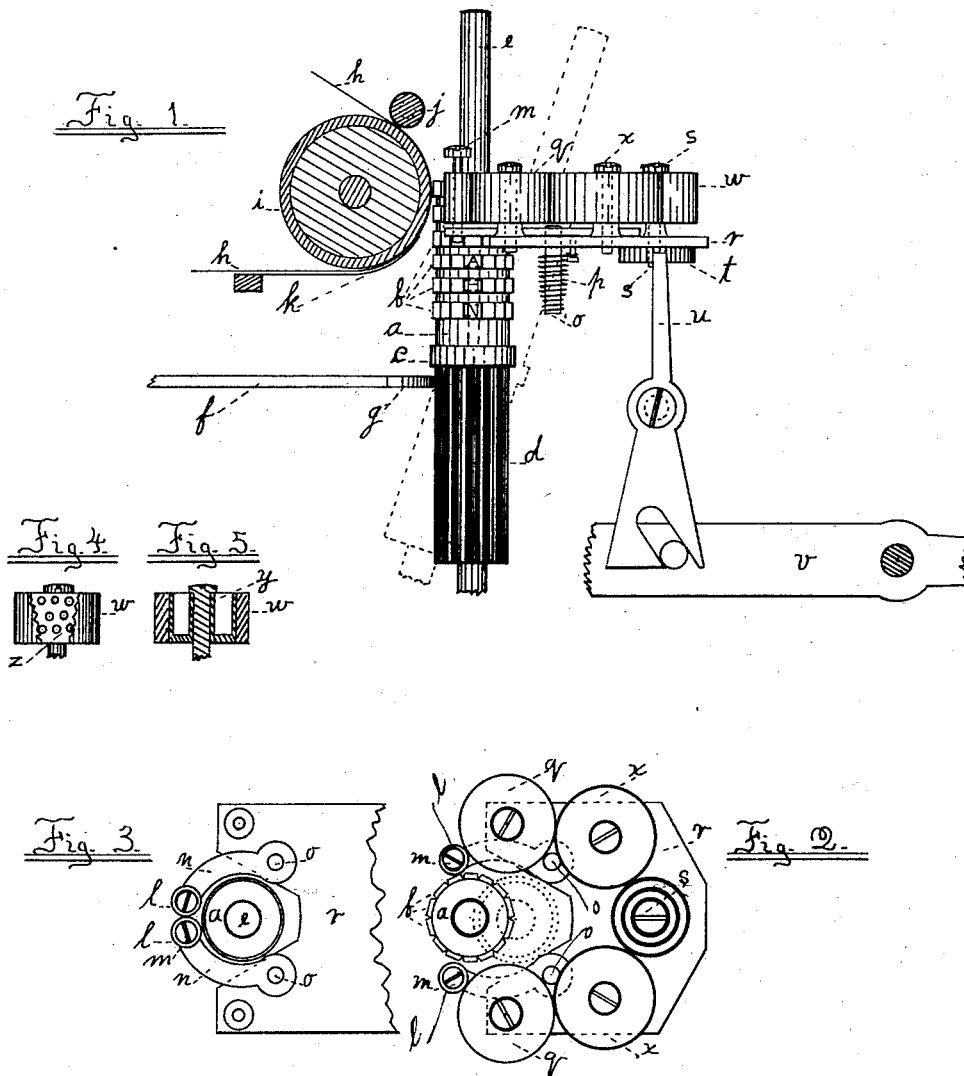
(No Model.)

L. S. CRANDALL.

INKING APPARATUS FOR TYPE WRITING MACHINES.

No. 342,244.

Patented May 18, 1886.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## INKING APPARATUS FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 342,244, dated May 18, 1886.

Application filed June 12, 1885. Serial No. 168,449. (No model.)

*To all whom it may concern:*

Be it known that I, LUCIEN S. CRANDALL, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Inking Apparatus for Type-Writing Machines, of which the following is a specification.

My invention consists of an inking device adapted to certain kinds of type-writers—more especially the “Crandall” type-writer—and is designed to supersede or obviate the use of the inking-ribbon in common use in type-writers. Its elements are more particularly set forth hereinafter.

Reference is to be had to the accompanying drawings, which form a part of this specification, and in which throughout the several views similar letters refer to similar parts.

In said drawings, Figure 1 is a side view of my invention in connection with such parts of the Crandall type-writer as are necessary to show the application thereof. Fig. 2 is a top view showing the general position of the parts when the type-sleeve of the Crandall type-writer is in the act of delivering its impression against the platen. Fig. 3 is designed to show the position of the inking-rollers and the oscillating arms which support them when the said type-sleeve is oscillated backward into position of rest, as indicated by the dotted lines in Figs. 1 and 2. Fig. 4 is a side view of the ink-fountain, with a portion of its outer covering cut away, so as to expose the perforations in outer wall of ink-well. Fig. 5 is a vertical cross-section of Fig. 4, and is designed to further explain the construction of the fountain.

The type-sleeve *a* of the Crandall type-writer is provided with a series of type upon its perimeter for a certain portion of its length, (represented by the square projections or faces *b*, an annular projection, *c*, and the long pinion *d*.) The whole is mounted upon a pin, *e*, which is stepped into a yoke (not shown) at its lower end. This yoke is hung upon a horizontal shaft at right angles to *e* at a point about midway of *a*, whereby *a* and *e* are, by suitable mechanism, caused to oscillate into the two positions shown by the full drawing and dotted lines in Figs. 1 and 2. A longitudinal motion is communicated to *a* by means of a pitman and intermediate mechanism, (not shown,) which connects with *a* at *c*.

Axial movement in opposite directions is also communicated to *a* by an oscillating arm, *f*, provided with a segment of gear, *g*, which meshes into *d*. These several movements of *a* are simultaneously performed.

When the parts are at rest, *a* stands in the position indicated by the dotted lines in Figs. 1 and 2. When any given key-lever of said type-writer is struck, *e* and *a* move forward into the position shown in Fig. 1, with *a* delivering its impression against the paper *h*, which is held upon the platen *i* by the roller *j* and apron *k*.

When the parts are in position of rest, as above, the inking-rollers *l* are closed against each other in front of *a*, as in Fig. 3. These rollers are loosely hung upon studs *m*, which admit not only an axial movement of *l*, but a slight longitudinal movement also by being made longer than *l*, as shown in Fig. 1. The studs *m* are fixed in the free ends of the laterally-oscillating arms *n*, which swing on the journals *o*, to which they are affixed, each of which journals is provided with a return-spring, *p*, Fig. 1. The retractile effort of *p* normally holds *n* in the position shown in Fig. 3; but when *a* is struck forward, as in Fig. 2, the free ends of *n* are oscillated outwardly, and *a* moves forward onto a line slightly in advance of *l*. As *a* thus moves forward to deliver its impression, it twirls to left or right, as the case may be, and in certain cases also moves a slight distance longitudinally, for the purpose of presenting any predetermined type to the printing-point. Thus shifting, on its journey to the printing-point, any type on the perimeter of *a* must come in contact with one or other of the inking-rollers *l*, whereby it receives ink, as in the common method of inking the type for letter-press printing.

In case of a simultaneous axial and longitudinal movement of the type-sleeve, as above mentioned, the impact of the type-sleeve upon *l* would cause *l* to not only rotate axially, but also slide upon *m* longitudinally.

Whenever, by the forward movement of *a*, *l* is pressed outwardly, as in Fig. 2, it takes on fresh ink by coming in contact with the distributing-roller *q*.

On the under side of the supporting-plate *r*, and hung on the lower end of the shaft *s*, is a

ratchet-wheel, *t*. A pawl, *u*, connected with the space-key *v* of said type-writer, substantially as shown in Fig. 1, communicates intermittent rotary movement to *t* whenever said space-key is struck. The fountain *w*, being rigidly attached to the shaft *s*, turns with *t* and gives ink to the intermediate wheels, *x*, whence it goes onto the distributing-wheels *q*, and finally onto *l*, as before shown.

10 The fountain *w* is provided with an ink-well, *y*, in the outer walls of which are perforations *z*, through which the ink makes its way into the felt covering or outer face of *w*. The outer face of *w*, *x*, *q*, and *l* is preferably of felt, although I do not confine myself to that substance, as it is evident that canton-flannel, silk, and other fabrics may be used. The ink passes from *y*, through *z*, into the outer covering of *w*, where by capillary action it is distributed. From *w* it is taken up and redistributed on *x* and *q*, and finally reaches the type through *l*.

It is evident that with proper type and a thorough distribution of the ink by an inking device such as herein shown the work of a type-writer may be made to more closely approximate letter-press than by the use of a ribbon. In the fountain, as herein shown, I have also aimed to provide a means of supplying ink to the type of a type-writer in a manner adapted to be used by comparatively unskilled persons.

I do not confine myself to the use of this inking device in combination with the type-sleeve of the Crandall type-writer, as it also may evidently be used in combination with type-wheels of various sorts.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A plurality of inking-wheels, substantially such as *l*, constructed and arranged substantially as described, so as to be capable of being simultaneously twirled axially and shifted longitudinally upon their axes, in combination with the type-sleeve or type-wheel of a type-writer, substantially as set forth.

2. A plurality of inking-wheels, substantially such as *l*, constructed and arranged substantially as described, so as to be capable of being simultaneously twirled axially, shifted longitudinally, and swung laterally, in combination with the type-sleeve or type-wheel of a type-writer, substantially as set forth.

3. A plurality of inking-wheels, substantially such as *l*, constructed and arranged substantially as described, so as to be capable of being simultaneously twirled axially, shifted longitudinally, and swung laterally, in combination with the type-sleeve or type-wheel of a type-writer impinging thereon and communicating motion directly thereto, and means, substantially such as *p*, for returning *l* to normal position laterally, substantially as set forth.

In witness whereof I have hereunto subscribed my name in presence of two subscribing witnesses.

LUCIEN S. CRANDALL.

Witnesses:

CHARLES M. CROUSE,  
F. J. GARNETT.