

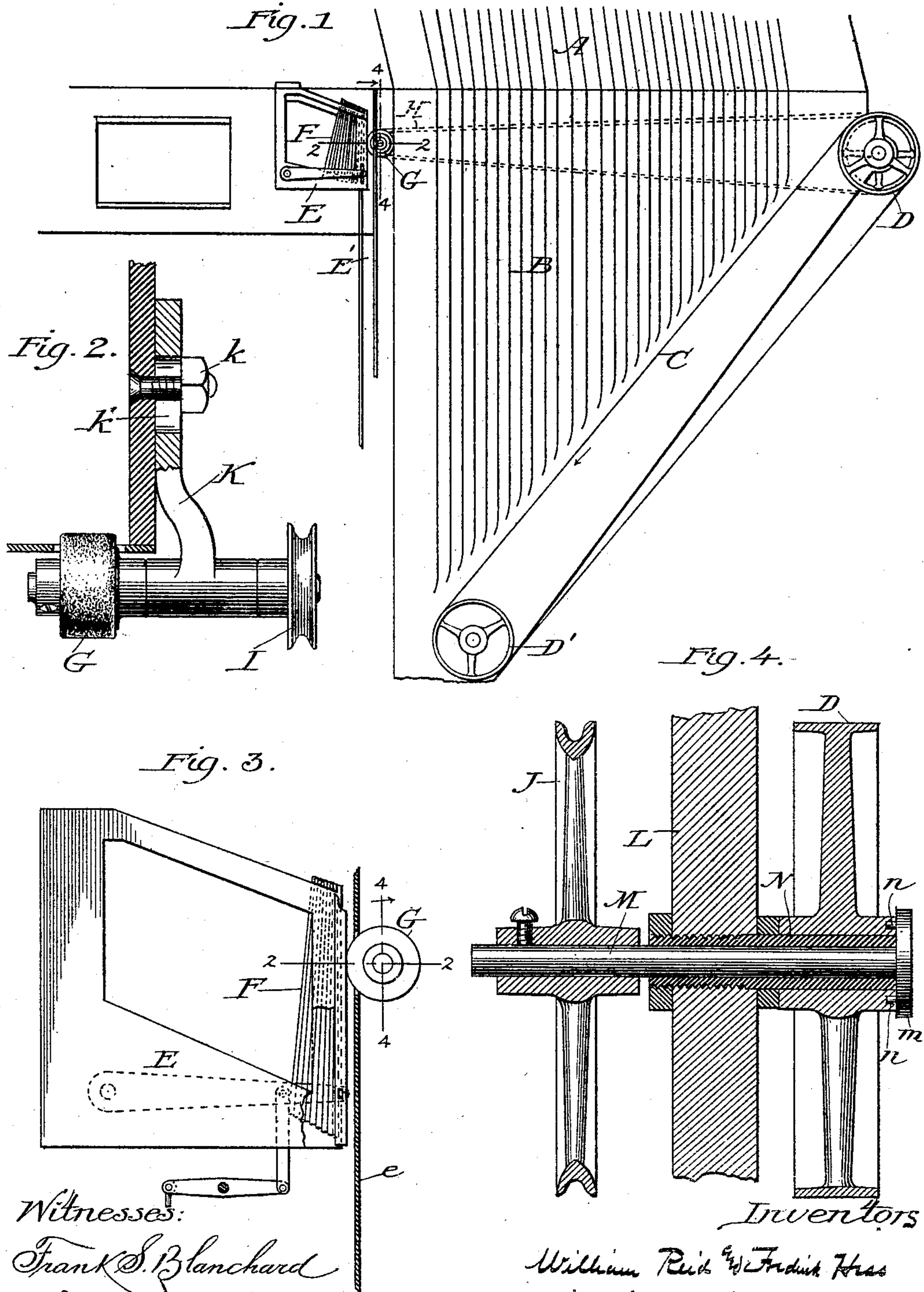
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W. REID & F. HESS.
LINOTYPE MACHINE.

(Application filed Mar. 13, 1897.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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LINOTYPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 636,390, dated November 7, 1899.

Application filed March 13, 1897. Serial No. 627,405. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM REID, of Chicago, Cook county, Illinois, and FREDERICK HESS, of San Francisco, San Francisco county, California, citizens of the United States, have invented a new and useful Improvement in Linotype-Machines, of which the following is a specification.

Our invention has reference more particularly to linotype-machines of the character represented in Letters Patent of the United States issued to Ottmar Mergenthaler on the 16th day of September, 1890, Nos. 436,531 and 436,532. In this machine letter-matrices are through the instrumentality of finger-keys delivered from a magazine or place of storage and assembled temporarily in line. At points where spaces are to occur in the line elongated spacers are delivered between the matrices during the course of composition. These spacers consist each of a short wedge which remains at rest in the line and of a longer wedge having a jointed connection with the first and arranged to be thrust through the line in order to increase the space and effect justification of the line.

In practice it is found that the repeated casting of the molten metal against the short wedges of the spacers at one and the same place, commonly known as the "casting-point," has a tendency to roughen them, so that the type-metal will adhere to and build up on the side of the space, forming an elevation or protrusion which is liable to injure an adjacent matrix when the spacer is introduced into a succeeding line.

The object of the present invention is to prevent this accumulation of metal on the spacer at the casting-point and at the same time to facilitate the feeding of the spacers from their magazine into the line.

To this end the invention consists in a revolving power-driven roller arranged to act on the face of the spacer, this roller being driven in the direction in which the spacer descends and being preferably arranged in such relation to the magazine that it will act upon the foremost space while it is held in the magazine.

In the accompanying drawings we have represented our improvement as incorporated in an ordinary Mergenthaler machine, and we have restricted the drawings to those parts of the machine which are necessary to an understanding of the improvement. As to all parts other than those shown the machine may be of any ordinary or approved construction.

Figure 1 is a front elevation showing a portion of the assembling or composing mechanism, including a magazine for the spacers and our cleaning device. Fig. 2 is a horizontal cross-section on the line 2 2 of Figs. 1 and 3. Fig. 3 is a side elevation, on an enlarged scale, of the magazine for the spacer with our cleaning and feeding roller in position. Fig. 4 is a vertical section on the line 4 4 of Figs. 1 and 3, looking in the direction indicated by the arrow.

Referring to the drawings, A represents the lower end of the magazine, from which the matrices are delivered one at a time, as usual; B, the channels through which the matrices descend from the magazine; C, an inclined belt moving constantly in the direction indicated by the arrow and serving to carry the matrices down to the assembling-point, this belt being supported by the rolls D D'.

E represents the magazine or box containing the elongated wedge-spacers F. The edges of the box are inclined downward to the right, so that the spacers, supported by their top ears resting on these edges, descend by gravity toward the right.

E' represents a channel or guideway through which the spacers, released by lifting devices, descend one after another to the assembling-point.

G represents our rotary brush or roller located at the right-hand side of the space-box with one side protruding into the box in position to act on a short wedge or slide of the foremost space, preferably at the point at which metal is cast against said space when it is in use. The roller may be supported and driven by any suitable means. In the present instance it is carried by a horizontal shaft projected rearward through a supporting-bracket K and carrying at the inner end

a driving-pulley I, which is connected by a driving-belt H with a pulley J on the inner end of a spindle M. (See Fig. 4.) This spindle is projected forward through a fixed tubular arbor carrying the pulley D and at its forward end is provided with a head *m*, having studs *n* to enter the hub of pulley D. Under this arrangement motion is communicated from pulley D constantly and positively to the roller G, the action of which, bearing with moderate pressure against the space, serves not only to keep the space clean at the casting-point, but also to aid in driving the space downward when it is released. In practice this assistance to the movement of the space is of decided advantage, since the space is prevented from pausing or chattering in the guideway and carried downward into the line rapidly, so that there is no necessity for delay or hesitation on the part of the operator. The tendency of the spacers to descend toward the right causes the foremost space to be held with moderate pressure against the roller, while at the same time the pressure is kept within such limits that undue wear on the spacer is prevented.

The brush may be made of soft felt or similar material, and its supporting-bracket K is slotted, as shown in Fig. 2, and secured to a stationary part of the machine by bolt *k*, so that it may be adjusted forward and backward. The hollow arbor to carry the driving-spindle in is not an essential feature of the machine. It is adopted in the present instance in order to permit the ready application of my improvement to existing Mergenthaler machines.

We are aware that two rollers have been arranged in the path of the descending spacers and below the space-box of a Mergenthaler machine, as illustrated in Letters Patent of the United States No. 527,702; but we believe ourselves to be the first to drive a cleaning-brush positively in the direction in which the spacers descend and the first to arrange the rotary cleaning-brush in position to act upon the spacers at the casting-point while they are retained in their magazine or holder, so that the brush may act at the required point for an appreciable length of time. By

"casting-point," as herein employed, is meant that point on the spacers against which the molten metal is delivered in the act of casting the linotype or slug.

In practice the accumulation of metal on the space-band is limited to the casting-point thereon. Hence the importance of locating the brush in such position that it may act with a prolonged and continuing action on the space at the point named.

Having thus described our invention, what we claim is—

1. In a linotype-machine, a brush arranged to act upon the foremost spacer while the latter is held at rest, and driving connections from said brush to a constantly-rotating part of the machine, whereby the brush is positively rotated and caused to act with a continuing effect at one point on the spacer.

2. In a linotype-machine, the combination of spacers, a magazine or holder therefor and a rotary power-driven brush arranged to act on the spacers successively at the casting-point while they are held at rest.

3. In a linotype-machine, a rotary power-driven brush arranged to project into the space-box of a magazine and to act upon a spacer therein at the casting-point.

4. In a linotype-machine the herein-described space-band cleaner, consisting of the combination of the rotating brush G, the pulley I, the adjustable bracket K, the belt H, the pulley D, and the pulley J driven by D, all substantially as shown and described.

5. In a linotype-machine the herein-described space-band cleaner, consisting of the combination of the rotating brush G, the pulley I, the belt H, the pulley D, the pulley J, having the shaft M, having the head *m*, the stud N upon which D is journaled, and the lugs, *n*, *n* upon *m*, which set into the hub of D, substantially as shown and described.

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