

W. M. KELLY.
TYPE SETTING AND DISTRIBUTING MACHINE.
APPLICATION FILED JUNE 29, 1909.

978,456.

Patented Dec. 13, 1910.

2 SHEETS—SHEET 1.

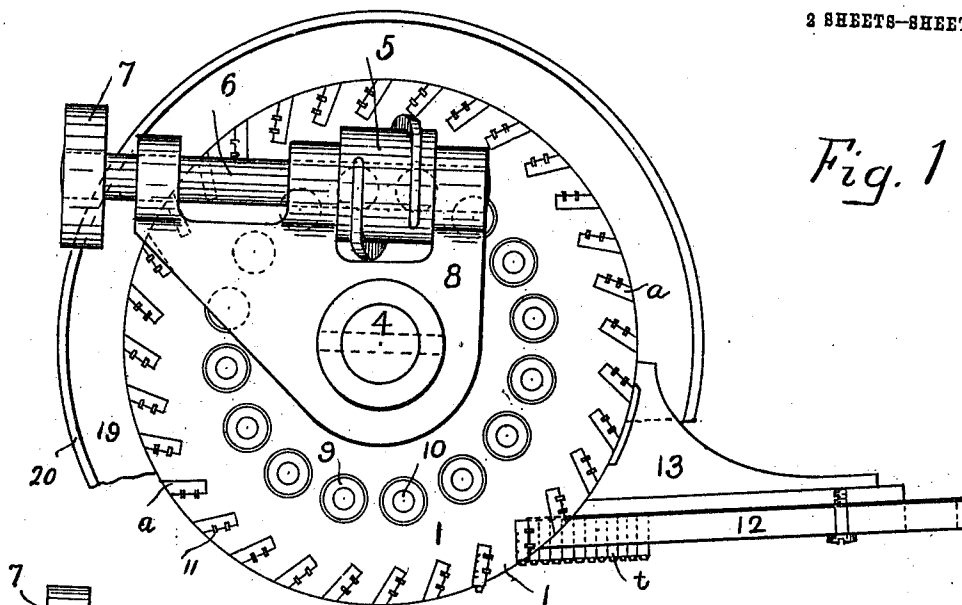


Fig. 1

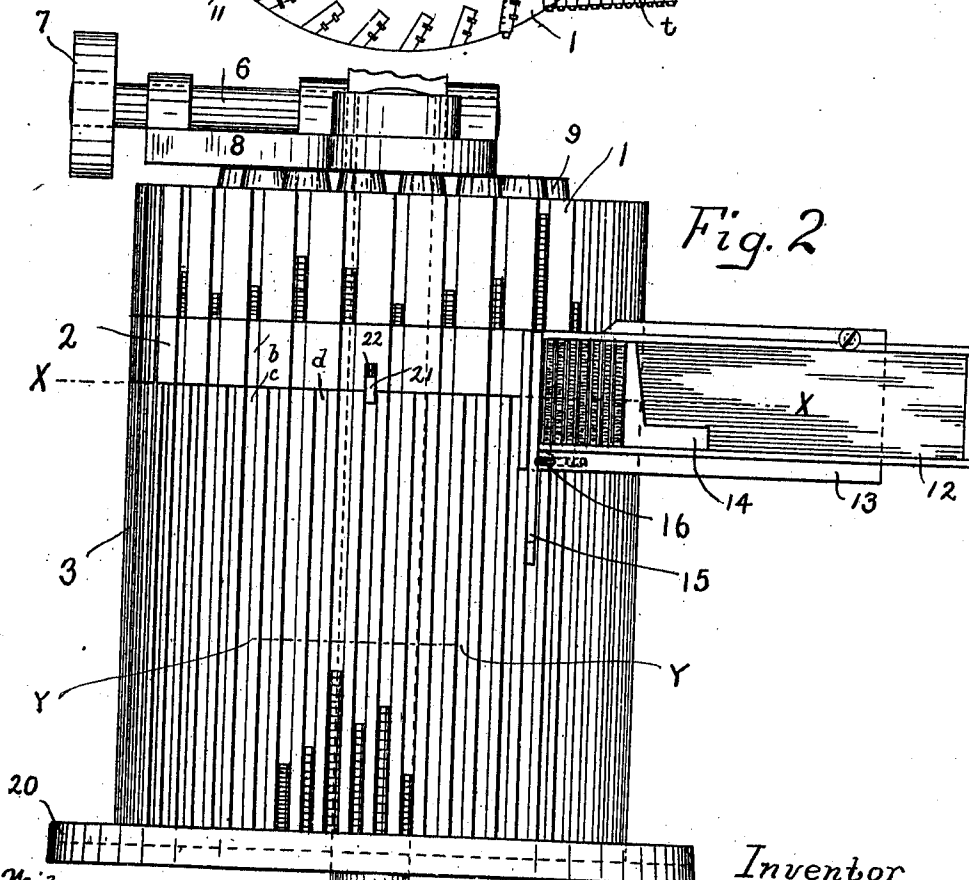


Fig. 2

Witnesses
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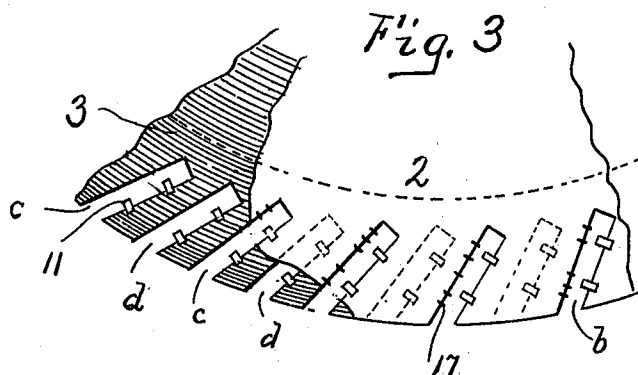


Fig. 7

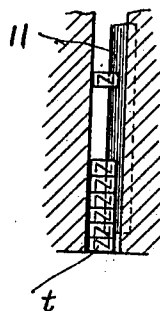


Fig. 4

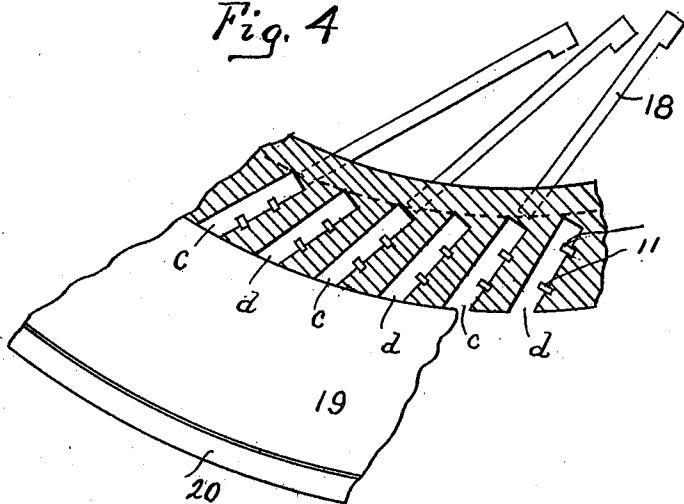


Fig. 5

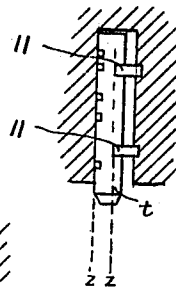
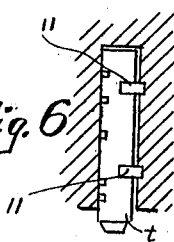


Fig. 6



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM M. KELLY, OF NEW YORK, N. Y.

TYPE SETTING AND DISTRIBUTING MACHINE.

978,456.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed June 29, 1909. Serial No. 505,063.

To all whom it may concern:

Be it known that I, WILLIAM M. KELLY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Type Setting and Distributing Machines; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates especially to that class of type-setting and distributing machines, originated by Thorne, of which the Simplex and Unitype are later examples. Machines of this class, while they have come quite extensively into use, are handicapped on account of their being able to carry only a small number of characters and from the fact that they can set but one size of type—it being impossible to set two faces of type on one machine, unless they are cast on the same size body. By my invention, I am enabled to set five or six different sizes of type on one machine and at least two different sizes may be carried in a machine at one time and a change made from one to the other almost instantly.

The Thorne and Simplex typesetters being so well known, I have illustrated in the accompanying drawings only so much of a machine as is necessary to show the adaptation of my invention to such machines.

Figure 1 is a plan; Fig. 2 is a front elevation; Fig. 3 is a partial section on line X—X; Fig. 4 is a partial section on line Y—Y of Fig. 2; Figs. 5, 6, and 7 are enlarged details, showing type channels and how different sizes of type may be contained therein.

General description.—In machines of the Thorne class there are two cylinders—one placed on top of the other, which are provided with vertical channels for the type. The lower cylinder is a stationary magazine from which the type are ejected and the upper cylinder is a revolving, distributing cylinder, into which the dead matter is loaded line by line. The channels of the lower magazine are provided with selecting wards and the type are nicked in different combinations. The distributing cylinder is given a step-by-step movement and when a type finds its particular combination it falls into the channel. The type enter the magazine channels set-away and are prevented from turning edge for edge, by closely fit-

ting the channel—having only a running clearance in the channels. I use an additional, third cylinder, which is placed between the other two and which I call the selecting cylinder, since its channels contain the selecting wards. This cylinder I make quite short, its axial dimension being only an inch or two. It is stationary and the type are distributed into it in precisely the same manner as in the Thorne and Simplex machines. The lower or magazine cylinder I provide with a plurality of sets of channels, any set of which may be made to aline with the channels of the selecting cylinder and with the type-ejecting fingers, by turning the cylinder slightly on its axis. In other words, I make the magazine cylinder in two sections—one a stationary, selecting section and the other the magazine proper, with a plurality of sets of channels, any set of which can be made to aline with the channels of the selecting section.

I am enabled to put several different sizes of type into the machine, by making the type channels wide enough for the maximum size type body to be used—say 12-point, and by holding smaller sizes against one side of the channel, as they pass through the machine. This can be done in various ways; but I do it, preferably, by using blocking wards on the sides of the channels opposite the distributing nicks, which extend out into the channels, leaving just room for the smallest size type body to be used—say a 7-point, and by nicking the intermediate size bodies various depths, according to their size: that is, an 8-point would have nicks one point deep; a 9-point type would have nicks two points deep, etc.—a 12-point having nicks five points deep. These blocking nicks are the same for all sizes of type used on the machine, except that the depth varies for different body sizes.

By casting the blocking nicks and the distributing nicks in the type, instead of cutting them after the type are cast, they are strong enough to withstand any ordinary usage.

In the class of machines referred to, the dead matter is pushed into the channels of the distributing cylinder feet first, by a blade which pushes directly against the face of the type. Such a method being impossible in my machine, unless the blocking wards be made temporarily removable, I cut out

one or two channels of the selecting and magazine cylinders and bring the galley of dead matter so that the end line registers with one of the channels of the distributing cylinder, into which it is then pushed by an upward movement of a suitable slide—the top of the slide forming a bridge, over which the type in succeeding channels of the distributing cylinder can pass, as the cylinder is revolved. This method of loading has the advantage of not injuring the face of the type in case a line should stick from any cause.

Detail description.—The three cylinders referred to are shown in Fig. 2 and are marked 1, 2, and 3—1 being the upper, traveling or distributing cylinder, 2 the selecting cylinder and 3 the magazine. All three cylinders are mounted on a central standard 4, the middle cylinder being rigid with said standard. The magazine may be turned slightly on the standard, as will be explained later. The upper or distributing cylinder is provided with channels *a* (36 are shown). This cylinder is given a step-by-step movement by means of a cam 5, carried by a shaft 6, which is driven by power applied to a pulley 7—the whole being mounted on a supporting bracket 8, which is secured to the central standard 4. The cam 5 acts on conical rolls 9, which are held by studs or pins 10, in the upper face of the distributing cylinder—the construction being identical with that of the Simplex type-setter referred to.

As already stated, the channels *a* are cut for type of the maximum width of body to be used on the machine—say 12-point. I provide blocking wards 11, which extend into the channels so as to leave room for type of the minimum size body, say 7-point. The 12-point type have nicks for the blocking wards which are five points deep. Intermediate sizes are nicked so that there is always a “land” of seven points between the bottom of the nick and the opposite edge of the type. This “land” is represented by the distance between the two lines *z z*, Fig. 5, which figure together with Figs. 6 and 7 show clearly the method of retaining type of various sizes in the same size channels. My device is applicable to machines of the Thorne type, where the type are contained in the channels set-way—there being just a running clearance for the body of the type. The diagonal of a cross section of a type being longer than the body dimension, a type cannot turn edge for edge; but, in my machine, the type, instead of being held between the two sides of the channel, are held between the blocking wards 11 and the opposite side of the channel. That is, the blocking wards, acting on the bottoms of the blocking nicks, hold the type closely against the opposite side of the channel.

The type *t* to be distributed, are placed in a galley 12, which is supported by a bracket 13, which bracket is secured to the stationary cylinder 2. The lines of type stand on their ends as shown in Fig. 2 and are pushed to the left by moving a follower 14. Mounted at the left, in bracket 13, is a vertical line-loading plunger 15, which is held in its upward position, normally, as shown in Fig. 2, by a frictional detent 16. In this position the plunger fills up one of the channels of the separating cylinder and the type in the channels of the distributing cylinder pass over it as the cylinder is revolved. When one of the channels *a* of the distributing cylinder becomes empty, the plunger 15 is drawn down, the follower 14 pushed over, bringing the foremost line of dead matter over the plunger which is then pushed upward, thereby loading the line into the empty channel of the distributing cylinder. In a commercial machine, these movements would all be done automatically and the channels of the distributing cylinder would be provided with gravity or spring-seated followers the same as in the Simplex type-setter.

I have shown two blocking wards in each channel. One, two three or more might be used.

The channels of the stationary or selecting cylinder 2, contains the distributing wards 17, which are, of course, on the opposite side from the blocking wards—see Fig. 3. The manner in which the type are distributed into the channels *b* of this cylinder, by revolving the upper cylinder, is identical with that of the Thorne and Simplex machines and is so well known as to need no explanation.

In order to get more than one size type body in the machine at one time, I provide the lower or magazine cylinder with more than one set of channels. I have shown two sets in the drawings, *c* and *d*. Normally the set *c* line up with the channels of the selecting cylinder, so that any type which is distributed will enter these channels. These channels *c*, are opposite ejecting fingers 18, which are operated to push the lowermost type from the channels onto a traveling type ring 19, which is inclosed by a flanged, stationary support 20, the same as the Thorne and Simplex constructions.

The cylinders 3, which is loose on the standard 4, is held in the position just described, by a key 21, which enters one of the channels *d* and a slot 22, which is cut in the cylinder 2. By removing this key and turning the magazine slightly, the set of channels *d* will be brought into line with the channels of the selecting cylinder and the ejecting fingers, in which position it may be locked by the same key entering one of the channels *c*.

From the foregoing general description and explanation in detail, it is evident that my improvements will greatly increase the capacity of machines of this class and enlarge their scope. A Roman face may be used in one set of channels and an italic or bold face in the adjoining set; or two or more faces of body sizes may be carried in the machine at once and any of them brought into position for use very easily. Machines may be made with a range of two or three sizes or with the wide range described, according to the purpose for which it is to be used.

I am aware that different sizes of type have been carried in the same channel by using blocking pieces which are removable or adjustable; or by adjusting the sides of the channels; but my device is different from all these, in that it is fixed and unchangeable for all sizes for which the machine is designed. The blocking wards may be cut integral with the sides of the channels, instead of being set in as shown and other modifications are possible without departing from the broad idea contained in my invention.

What I claim is:

1. In a machine of the class described, a type channel having blocking wards from one side of said channel and adapted to receive type of various size body when assembled set-way therein—said type having nicks corresponding to said wards and the “land” at the bottom of said nicks being the same for various body sizes—whereby a plurality of body sizes of type may be held set-way in said channel.

2. In a machine of the class described, a type channel having blocking wards which project at least a plurality of type points into said channel and adapted to receive type of various size body having nicks corresponding to said wards, the “land” at the bottom of said nicks being the same for the various body sizes.

3. In a machine of the class described, a type channel having the width of a type body of maximum size; wards or projections from one side of said channel so as to restrict the channel to a type body of minimum size, the type bodies which are larger than the minimum size having nicks which correspond to the wards in said channel, the depths of said nicks corresponding to or being in proportion to the various body widths—whereby a plurality of body sizes may be held set-way in said channel.

4. In a machine of the class described, a selecting portion having a series of type channels with selecting wards; a type magazine having type channels which are in number a multiple of the number of channels in the selecting portion, thereby forming a plurality of sets of type channels any set of

which may be made to aline with the channels having the selecting wards.

5. A type magazine consisting of two sections—a stationary selecting section and a movable or adjustable section; said adjustable section being provided with type channels which are in number a multiple of the number of channels in the selecting section, thereby forming a plurality of sets of type channels, for the purpose set forth.

6. In a machine of the class described, a selecting portion having a series of type channels with selecting wards; a type magazine having a plurality of sets of type channels any set of which may be made to aline with the channels having the selecting wards and means for locking the selecting channels in alinement with any set of the channels of the magazine.

7. A type-setting machine provided with a magazine cylinder; a distributing cylinder and an intermediate selecting cylinder; each cylinder being provided with vertical type channels—the channels of the distributing cylinder corresponding in number and capable of being brought into alinement with the channels of the selecting cylinder; the number of channels of the magazine cylinder being a multiple of the number in either of the other two, thereby forming sets of channels in said magazine cylinder; said magazine cylinder being adjustable in reference to the selecting cylinder so as to bring any set of its channels into alinement with the channels of the selecting cylinder.

8. A type-setting machine provided with stationary cylinder having type channels with selecting wards; a traveling or distributing cylinder having type channels which are adapted to receive lines of dead matter and distribute it into the channels of the selecting cylinder and a magazine cylinder, which is provided with type channels which are in number a multiple of the number in either of the other cylinders, thereby forming a plurality of sets of type channels, any set of which can be made to aline with the channels of the selecting cylinder.

9. In a machine of the class described, a type magazine having a plurality of type channels, a certain portion of said channels, as the odd-numbered channels, constituting one set of type channels and another portion, as the even-numbered channels, constituting another set of type channels, thereby forming a plurality of sets of type channels; a type distributor; and means for distributing type into any set of channels of the magazine that may be desired.

10. In a machine of the class described, a type-selecting cylinder; a type distributing cylinder mounted thereon—each cylinder being provided with type channels—one of the channels of the selecting cylinder being used as a loading channel—a plunger mounted in

said loading channel which is adapted to deliver lines of dead matter into the channels of the distributing cylinder; means for locking the plunger in an upward position so as
5 to form a bridge over which the lines of dead matter in the distributing cylinder may pass.

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

WILLIAM M. KELLY.

Witnesses:

T. O. MACKINNON,
M. C. CRANE.