

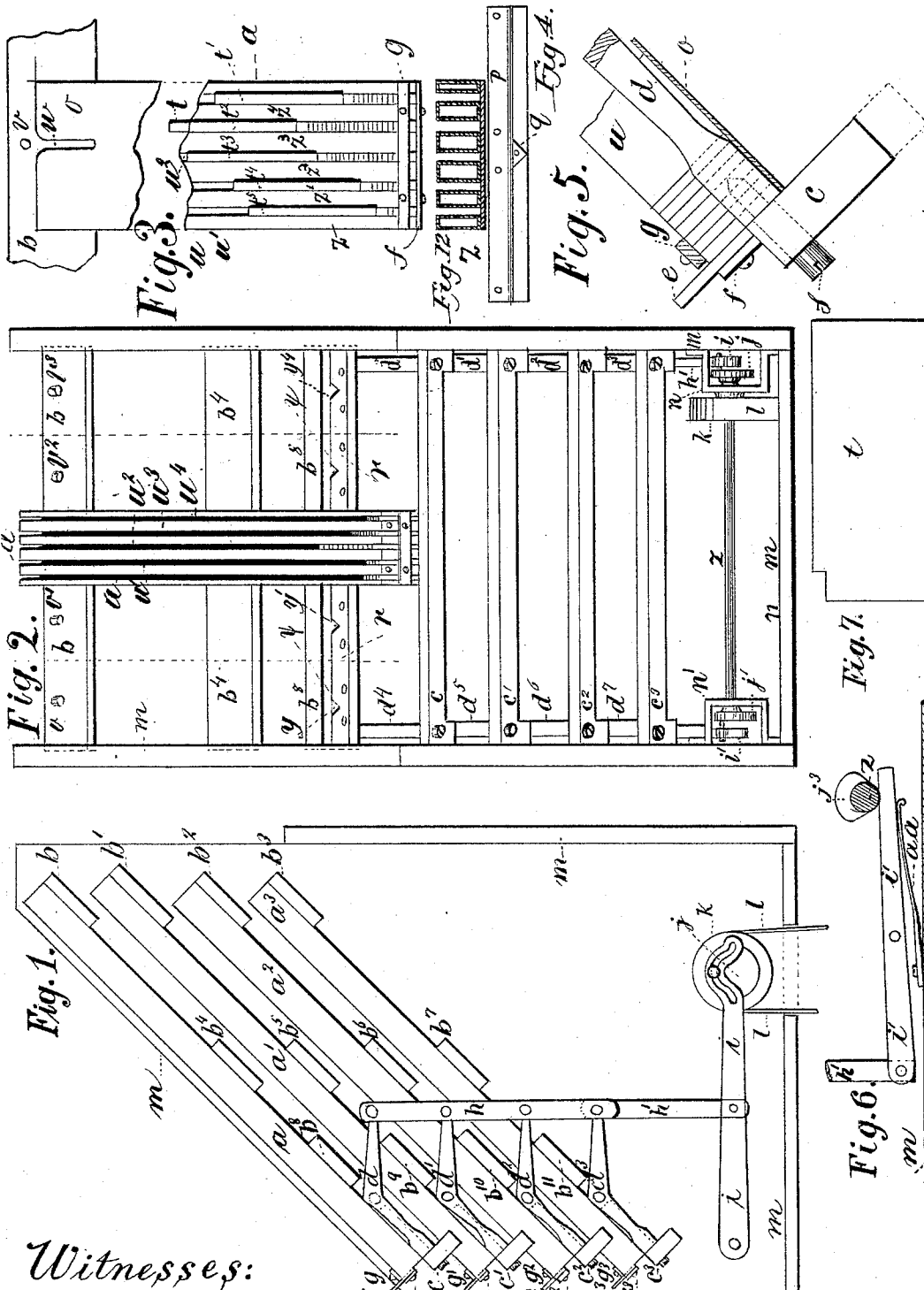
(No Model.)

2 Sheets—Sheet 1.

G. WHITE.
COMPOSITOR'S CASE.

No. 476,847.

Patented June 14, 1892.



Witnesses:
William C. Mott
Edwin A. Purley

Inventor:
George White

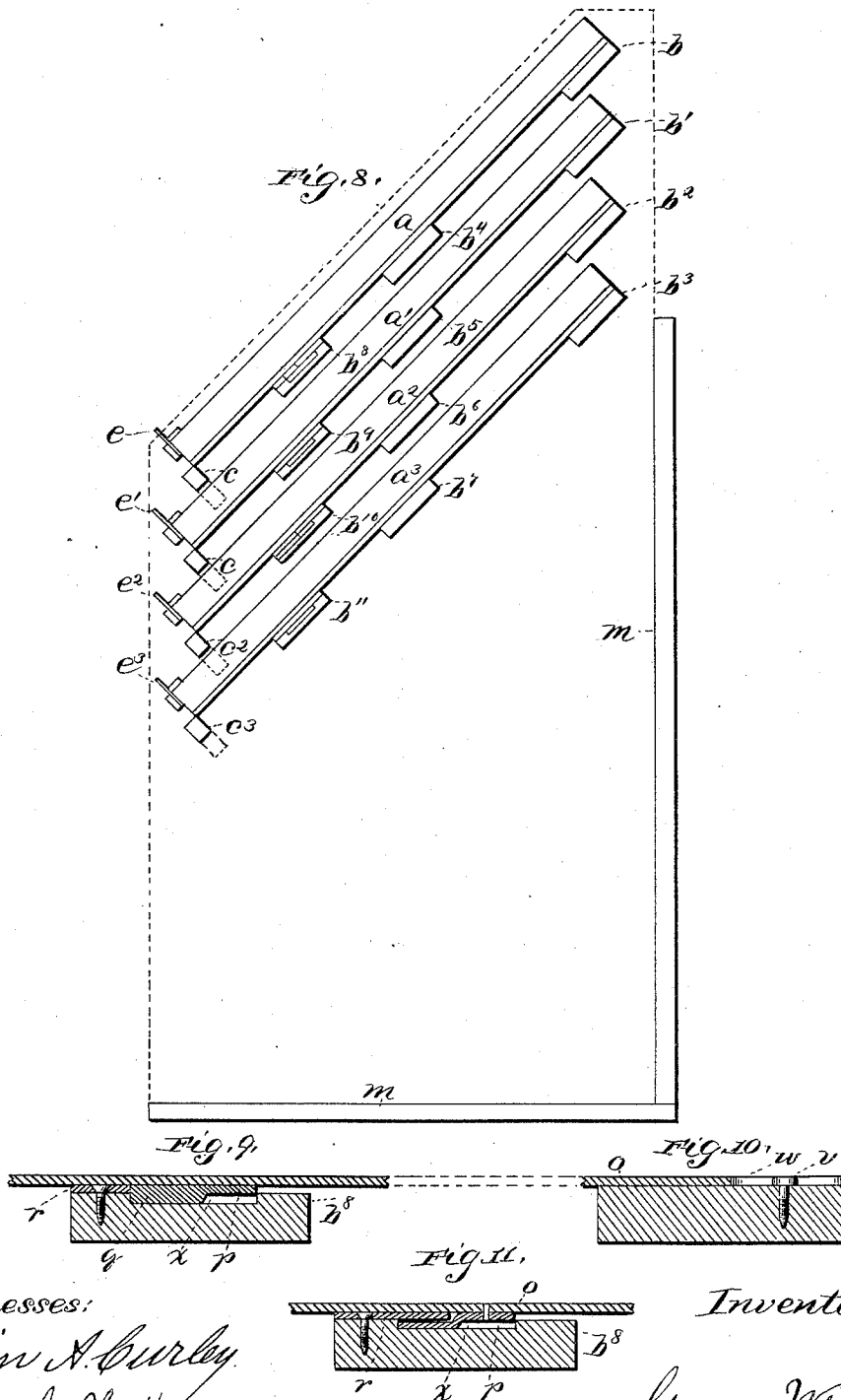
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2 Sheets—Sheet 2.

G. WHITE.
COMPOSITOR'S CASE.

No. 476,847.

Patented June 14, 1892.



Witnesses:
Edwin A. Burley
Charles J. Clarke

Inventor:
George White

UNITED STATES PATENT OFFICE.

GEORGE WHITE, OF NEW YORK, N. Y.

COMPOSITOR'S CASE.

SPECIFICATION forming part of Letters Patent No. 476,847, dated June 14, 1892.

Application filed June 11, 1889. Serial No. 313,855. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WHITE, a citizen of the United States, residing at 15 Vandewater street, in the city, county, and State of New York, have invented a new and useful Improvement in Compositors' Cases, of which the following is a specification.

My invention relates to that class of compositors' cases or machines for facilitating type-setting by hand in which all of the characters are arranged in channels in certain definite positions.

More than one-half of the compositor's time and effort in setting type from the ordinary case is expended in reaching to the farther boxes and in turning the characters into proper position as he places them in his stick.

My object is to make the case as compact as can well be done and to hold individual characters by means of mechanism requiring the minimum of care and attention in the most convenient position for grasping between the finger and thumb and placing in the stick.

In the drawings, Figure 1 shows the mechanism from the right-hand end, that part of the outer case being removed. Fig. 2 is a front elevation. Fig. 3 is a top view of portions of one of the nests of type-channels. Fig. 4 is a top view of a portion of the fastenings by which the nests of type-channels are secured in their places; and Fig. 5 shows, with one side removed, a portion of the lower end of a type-channel and of the mechanism by means of which the type or character in the lower end of each type-channel is moved into position for the compositor. Fig. 6 shows a modification in the mode of transmitting motion to place the type in position, and Fig. 7 is a side view of a slug or weight used in the type-channels. Figs. 8, 9, 10, 11, and 12 are sectional details.

In the drawings, *a*, Figs. 1, 2, and 3, and *a'*, *a''*, and *a'''*, Fig. 1, are nests of type-channels, by preference five or six channels to a nest. These nests rest on cross-bars *b b'*, &c., Figs. 1 and 2, in position, Fig. 2, so inclined that the type by the force of gravity will be pressed to the forward and lower end of each type-channel *u u' u''*, &c., Figs. 2, 3, and 5. These nests are made of rectangular brass tubes *z z' z''*, &c., (shown in section in Fig. 12,) by preference

about two picas in width, screwed or riveted to a brass bottom piece about one-third of a pica in thickness, with intervals between the tubes corresponding to the width of the type. The outer pieces of each nest may be narrower than the others.

At the rear end the bottoms *o*, Fig. 3, of the nests *a a'*, &c., are provided each with a slot *w*, corresponding to projecting pins *v v'*, &c., Figs. 2, 3, and 10, near the rear edges of the rear bars *b b'*, &c. Toward the forward end of the nest *a a'*, &c., a fitting *p*, (shown in Fig. 4,) of sheet-brass about one-third pica in thickness, is riveted across the bottom *o* of each nest. The forward part of this fitting *p* is bent outward, so as to leave a recess or channel about one-half pica in width between it and the bottom *o* of the nest for nearly one-half of the width of the fitting *p*. Near the center a V-shaped tongue *q* fills this channel and is riveted to the fitting *p*, Fig. 4, and the bottom *o*, Fig. 3, of the nest. In the forward bars *b^s b⁹ b¹⁰ b¹¹*, Fig. 1, are channels in the top, as shown at *b^s*, Fig. 2. A brass plate *r*, provided with V-niches *y y'*, &c., covers the forward part of the channel, as shown, Figs. 2, 9, and 11, and these niches correspond to the V-tongue *q*. (Shown in Figs. 4 and 9.) The nest is placed in position from the front of the case. The pin *v*, Figs. 3 and 10, readily takes in the slot *w*, and the nest is then slid backward sufficiently for the forward part of the fitting *p*, Figs. 4, 9, and 10, to drop into the channel *x*, Figs. 2, 9, and 11, when it slides forward and is caught under the plate *r*, Fig. 11, the V-tongue *q*, Figs. 4, 9, and 11, taking at the same time in the V-niche *y*, and the nest being thus brought with quickness and ease and held securely in the exact position desired, from which it can be removed with equal ease to be refilled or replaced by another.

Fig. 8, Sheet 2, is a perpendicular section of my invention through the center line A B of Fig. 2.

A cross-section of a front supporting-bar is shown in Fig. 9, with the bottom *o* of a nest of type-channels, the plate *r*, fastened to the cross-bar *b^s*, and the corresponding fitting *p*, fastened to the nest-bottom *o* and resting in the channel *x*. This cross-section is through the center of the V-shaped tongue *q*, Fig. 4.

Fig. 10 is a cross-section of a rear support-

ing-bar, as *b*, Fig. 8, showing the pin *v* taking in the slot *w* in the bottom *o* of a nest of type-channels, Fig. 3. Another cross-section of a front supporting-bar *b*⁸ is shown in Fig. 11, with the fitting *p* attached to the bottom *o* of a nest of type-channels and resting in the channel *x*. This section is at one side of the V-shaped tongue *q* and shows the nest of type-channels securely locked to the cross-bar by the fitting *p* taking under the plate *r* of the cross-bar *b*⁸.

When all of the type-channels on the same plane are combined in one tray, they are difficult to fit with precision and heavy and cumbersome to handle. When each is separate from the others, as in some machines, they must be removed one by one for refilling, and vastly more time and care are necessary to put and keep them always in their proper places.

A push-bar *c*, Fig. 5, and *c c' c² c³*, Figs. 1 and 2, is operated by the bent levers *d d'*, &c. The bottom *o* of each nest of type-channels and the lower half of the sides of the channels are cut away nearly the width of the thinnest type used. The reciprocating push-bar *c* fits into this niche and moves half of the length of the type from the bottom *o* to the stop-bar *f*, pushing the end type *e* into position to be grasped by the compositor. From the pressure of the other type or of the type and the slug *t*, Figs. 3 and 7, it will remain in that position when the push-bar recedes, and till it is removed by the hand no other type in that type-channel can get in the way of the push-bar; but as soon as it is removed and the push-bar has receded to the bottom *o* of the nest of type-channels the next type in the channel *u*, Fig. 5, will fall to the extremity of the channel, pressing against the stop-bar *f*, when on the rising of the push-bar again it will be raised into position to be taken by the compositor. When the push-bar *c* raises the end type, it would also sometimes raise one or more other types with it but for the stop-bar *g*, Figs. 1, 3, and 5, which in whole or in part covers the end of the next type and prevents its rising with the end one through its adhesion or other cause. This stop-bar *g* must leave sufficient room for the end type to pass freely and not sufficient for the second one; but some of the types in the same font are three or four times as thick as others. Consequently the stop-bars *g g'*, &c., must be varied in width or position or be fitted with niches to adapt them to the different thicknesses of type in the font. This can readily be done when the type-channels are in nests, as shown and described, by grouping the types so that those in no one channel in any one nest shall be twice as thick as those in any other channel of the same nest. The stop-bar *g* being then fastened so that the thickest type can just pass, it follows that no two of the thinnest in one channel can pass at the same time. With this arrangement niches in the stop-bar *g* are unnecessary.

An essential feature of my invention is the mechanism for lifting the end types in all the type-channels simultaneously. Power is transmitted to the pulley *k*, Figs. 1 and 2, through the band *l* in the usual mode. The pulley-shaft runs in journals in the supports *n* and *n'*, within which are disks *j* and *j'* on the extremities of the shaft. An eccentric-pin in the disk *j* runs in the curved slot shown in Fig. 1 in the end of the lever *i*, thereby reciprocating the rods *h* and *h'*, which operate the bent levers *d d'*, &c. The slot in the lever *i* comprises one hundred and twenty degrees of a circle, corresponding to the path of the pin in the disk *j* in the upper part of its course. Consequently for one-third of the upper part of its course it will not move the lever *i* or the pushing mechanism connected therewith. During this period the push-bars *c c'*, &c., Figs. 1, 2, and 3, are at rest in the position in Fig. 1. If the type *e* is removed, the period of rest of the push-bar *c* in this position gives ample time for the next type in the channel *u* to fall to the end of the channel to be pushed up into position for the compositor as the pin moves the lever *i* downward and through the connecting mechanism, as described, moves simultaneously all of the push-bars *c c'*, &c., upward. The push-bars *c c'*, &c., run in grooved fittings at each end. They are attached to the levers *d d'*, &c., by pins *s*, Fig. 5, which are screwed into these levers through tapering holes in the ends of the push-bars, which allow sufficient play for the conversion of the curved motion of the levers into the rectilinear motion required in the push-bars.

Fig. 6 shows a modification of that part of my invention by which motion is communicated to the reciprocating rods *h'* and *h* and through them to the parts of the mechanism dependent thereon. *i'* is the actuating-lever, corresponding to *i* in Fig. 1, and *h'* is the upright reciprocating lever directly operated thereby. The shaft *z*, which is shown in Fig. 2 as operated by the band *l* on the pulley *k*, is shown in section, and *j³* is a cam on this shaft. That portion of the periphery of this cam which is farthest from the center of the shaft is a circular curve concentric with the shaft, and while this circular curve of the cam is pressing against and passing over it the lever *i'* will not move. This time is that in which the push-bars *c c'*, &c., are at their lowest point, and the operation of the cam is in this respect substantially that of the corresponding mechanism, hereinbefore described. The lever *i* is held against this cam *j³* by a spring *aa* beneath, which is sufficiently strong to move the mechanism; but if a type should be caught it would not be broken by the force of the machinery, but all between the obstructing type and the spring *aa* would be stopped till the obstruction was removed. This modification also permits the shaft *z* to pass through the sides of the case to carry an outside pulley and connect by a band directly

with overhead power. If desirable for convenience of position or otherwise to have the lever *i'*, Fig. 6, of the same order as the lever *i*, Fig. 1, the cam may be placed beneath the lever to lift, while the spring pushes or pulls downward. In this case the circular curve of the periphery of the cam will be the part nearest the center of the shaft *z*, and its general form will correspond approximately to the longitudinal section of an acorn. Fig. 7 is a side view of the slug or channel-weight *t*, Fig. 3. This slug is more than type high; but it has a niche or recess in the top of the forward part sufficient to allow it to pass under the stop-bar *g*, Fig. 5, so far that the last type in the channel will be crowded forward by this slug or weight against the stop-bar *f* to be lifted by the push-bar *c*, while it is impossible that the slug or weight can be caught by that bar to damage the mechanism.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The type-channels formed by rectangular tubes *z z'*, &c., fastened to a bottom plate *o* at regular intervals corresponding to the size of the type, substantially as described.

2. The continuous push-bars *c c'*, &c., each combined with and acting directly upon a series or a nest of type-channels having the bottom and lower part of the sides cut away at the forward end, substantially as described.

3. A nest of type-channels constructed for the grouping of the type so that those in no one channel shall be twice as thick as those in another channel in the same nest, substantially as described.

4. The combination of the nest of type-channels and the lever *d* with the continuous push-bar *c*, operating to raise the end types in said type-channels, substantially as described.

5. The combination of the several nests of type-channels, and the push-bars *c c'*, &c., and the connecting-rod *h* with the levers *d d'*, &c., operating to raise the end types in said type-channels, substantially as described.

6. The combination of the several nests of type-channels, and the lever *i*, the connecting-rods *h* and *h'*, and the levers *d d'*, &c., with the continuous push-bars *c c'*, &c., operating to lift the end types in said type-channels, substantially as described.

7. The combination of the several nests of type-channels, and a cam and lever, and the connecting-rods *h* and *h'* with the levers *d d'*, &c., and the continuous push-bars *c c'*, &c., operating to lift the end types in said type-channels, substantially as described.

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