J. S. BANCROFT & M. C. INDAHL.

STOP BAR.

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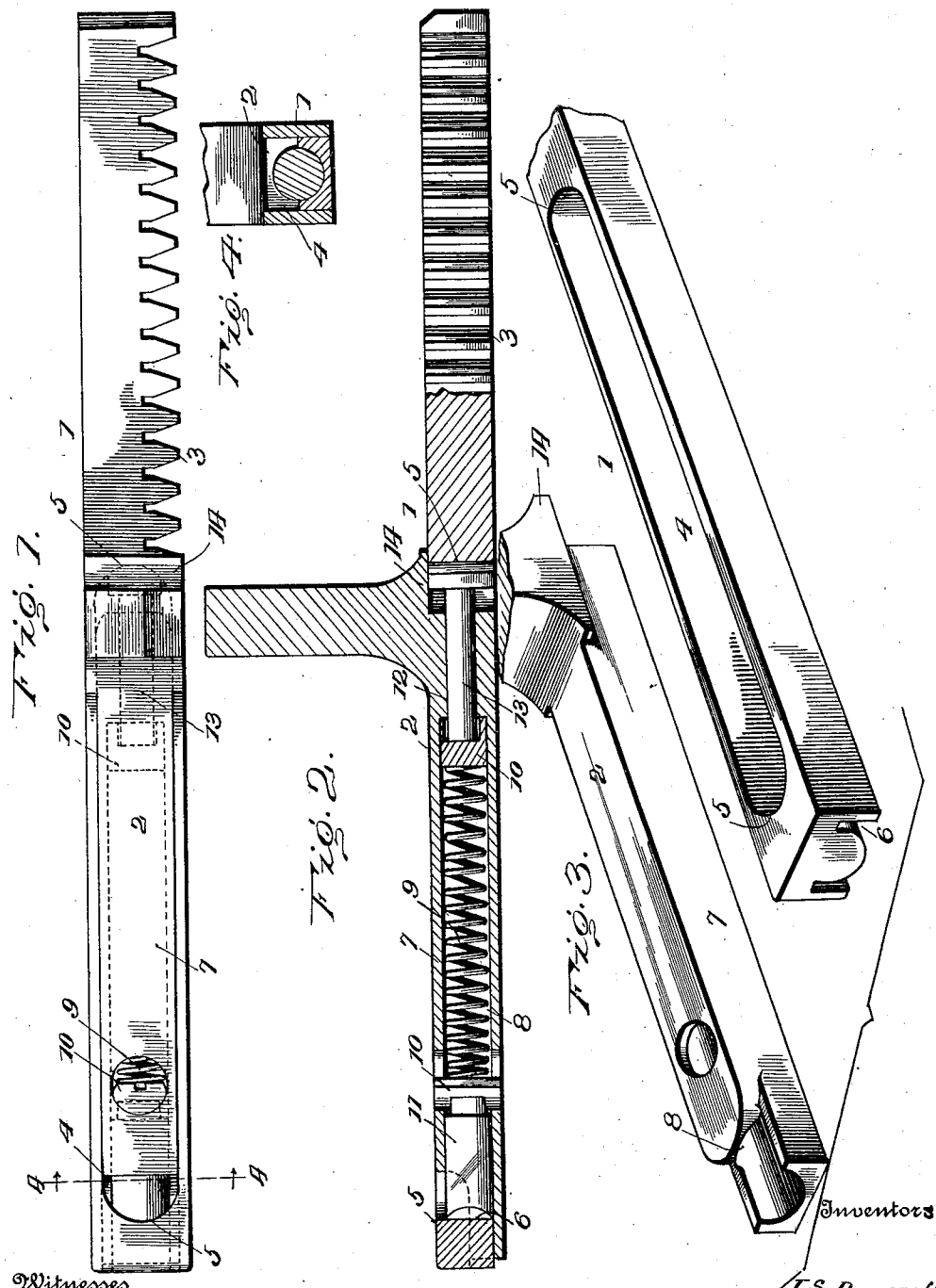
1,024,491. **Patented Apr. 30, 1912.**



COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN SELLERS BANCROFT AND MAURITZ C. INDAHL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO LANSTON MONOTYPE MACHINE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF VIRGINIA.

STOP-BAR.

1,024,491. Specification of Letters Patent. Patented Apr. 30, 1912.

Application filed August 8, 1911. Serial No. 642,942.

To all whom it may concern:

Be it known that we, JOHN SELLERS BANCROFT and MAURITZ C. INDAHL, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Stop-Bars; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to improvements in stop bars or racks for centering mechanisms, such, for example, as disclosed in Patent No. 625,998, dated May 30, 1899, and it has for its principal object to diminish the breakage due to the impact of the positioning members, and, incidentally, to increase the speed capacity of the machine as a whole.

In the accompanying drawings illustrating a preferred form of embodiment of the invention—Figure 1 is a top plan view; and Fig. 2 a longitudinal vertical section of the improved stop bar or rack. Fig. 3 is a perspective view of the detached contact section. Fig. 4 is a section on line 4—4, Fig. 1.

The same numerals designate like parts in the several figures.

By reference to Patent No. 625,998, it will be found that the stop bar—the "secondary gage or controller" of said patent, and commercially known as the "stop rack"—is the intermediary through which the adjustments imposed by the primary controller or gage upon the jaws of the primary positioning or gaging mechanism are transmitted to or imposed upon the jaws of the secondary positioning or gaging mechanism in centering the die case and adjusting the normal and justifying wedges.

During each revolution of the driving shaft, co-extensive with a cycle of operations, the stop bar receives the impact of both sets of jaws, one set acting while the stop bar is unconfined and free to move longitudinally, whereby it is translated to the position of adjustment determined by the primary gage, and the other set acting upon the stop bar while firmly held in its adjusted position by the locking bar, to bring the die case and normal or justifying wedges to the indicated position.

The pressure exerted by the jaws upon the stop bar increases with the speed of the machine, and is a distinct limitation upon its speed capacity. The maximum pressure occurs during the closing of the jaws of the secondary positioning or gaging mechanism while the stop bar is locked in position, and is estimated at approximately 400 pounds when running at the rate of 180 revolutions per minute. Such pressure is dangerously near the elastic limit of the material and not infrequently results in a rupture of the stop bar, usually in the vicinity of the point of engagement by the locking bar, or of the point of attachment of the jaw-engaging off-set with the body or guiding section of the stop bar. Moreover, the reactionary effect upon the connected operating mechanism is detrimental and contributes to a lowering of the speed of the machine.

Heretofore numerous attempts have been made, but with limited success, to eliminate or materially diminish this speed retarding factor, for while the stop bar is a distinct and separable element, its form and dimensions are limited and determined by those of the associated parts of the machine as a whole, and any material change in these respects would involve a more or less radical change in the present organization.

The remedy proposed and accomplished by the present invention consists essentially in providing the stop bar with a self-contained buffing mechanism competent to maintain or restore the jaw engaging and locking sections in coöperative relation and to yield when required and thereby sufficiently enlarge the time element so as to prevent the development of excessive or breaking pressure. To these ends the stop-bar is formed in two sections, a guiding or body section 1, and a jaw engaging section 2. The body section 1 conforms externally in form to that of the prior stop-bar, and in addition to the usual series of locking teeth 3, it is provided with a longitudinal slot or recess 4, preferably terminating at opposite ends in hemi-cylindrical bearings 5. For a purpose to be hereinafter explained, the lower portion of slot 4 is extended to form an undercut bearing 6 at the end of the body remote from that containing teeth 3.

The jaw engaging member extending

transversely from the body section is provided with a lateral extension 7 at its base adapted to fit within slot 4 in the body section and provided with a slot or opening 8 for the reception of a spring 9, the latter interposed between two blocks or bearing pieces 10, each engaging one end of slot 8. The end of extension 7 remote from jaw-engaging section 2, is cut away on its upper surface to enter beneath bearing 6 and is also provided with a longitudinal opening for the reception of a pin 11, the inner end of which takes a bearing upon block 10, while the outer end engages bearing 5 at one end of the slot 4 in body section 1. In like manner the wall at the opposite end of slot 8 is provided with a longitudinal opening 12 for the passage of a pin 13, the latter engaging the adjacent block 10 and provided with a hemi-cylindrical head contacting with the adjacent bearing 5 in body section 1.

In practice, a spring 9 exerting approximately 80 pounds pressure is inserted under compression between opposed blocks 10, and pins 11 and 13 being applied, the jaw-engaging section is inserted in the slot of the body section, by first introducing the cut away end of the extension 7 beneath bearing 6, and then tilting section 2 until the laterally extended base 14 of the jaw-engaging member rests upon the upper surface of the body section 1. The parts are so proportioned that when sections 1 and 2 are thus assembled there will be no appreciable play or lost motion between them and the sectional stop bar as a whole may be substituted for the integral stop bar as heretofore constructed and used in the commercial machines.

Under ordinary conditions, the sectional stop bar operates the same as the integral; but if excessive pressure is brought to bear upon the jaw-engaging member, in either direction, longitudinally of the body portion, spring 9, by yielding temporarily, will so extend the time element as to bring the pressure well within the elastic limit of the material, thereby preventing excessive strain upon connected elements and materially reducing the danger of fracture, both of said elements and of the stop bar itself. The reaction of the spring will immediately restore the sections to initial position so that the positioning function of the mechanism will not be interfered with to a perceptible extent.

It has been demonstrated in practice that by the use of the improved sectional stop-bar not only is the danger of breakage at heretofore maximum speed practically eliminated, but, owing to the relief afforded cooperating elements, the speed capacity of the machine as a whole can safely be increased in a material degree without danger to its operating mechanism including the stop bars.

What we claim is:—

1. A stop-bar for type casting machines comprising a body or locking section and a relatively movable jaw engaging section.

2. A stop bar for type casting machines comprising a body or locking section, a relatively movable jaw engaging section and yielding connections between said sections.

3. A stop bar for type casting machines provided with a body or guiding and locking section, an independently movable jaw engaging section, and a yieldable connection between said sections tending to maintain the same in a predetermined relative position but permitting independent movement under excessive pressure.

4. A stop bar for type casting machines provided with a slotted body or guiding and locking section, a jaw engaging section mounted to reciprocate longitudinally of said body section within the slot therein, and yieldable retaining means interposed between said jaw engaging and body sections.

5. A stop bar for type casting machines comprising a body or guiding and locking section, provided with a longitudinal slot or opening; a jaw engaging section supported to reciprocate in said slot and removably applied thereto; and yieldable tensioning means carried by said jaw engaging section and adapted to engage the body section to yieldably maintain said jaw engaging section in a predetermined relation to the body section.

6. A stop bar for type casting machines including in combination a body or guiding and locking section provided with a longitudinal slot or opening; an independently movable jaw engaging section guided in the slot of the body section and in turn provided with a slot or recess; a spring inserted under compression between movable bearings in said jaw engaging section; and two transmitting members each interposed between one of said movable bearings and the adjacent end of the slot in the body section.

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