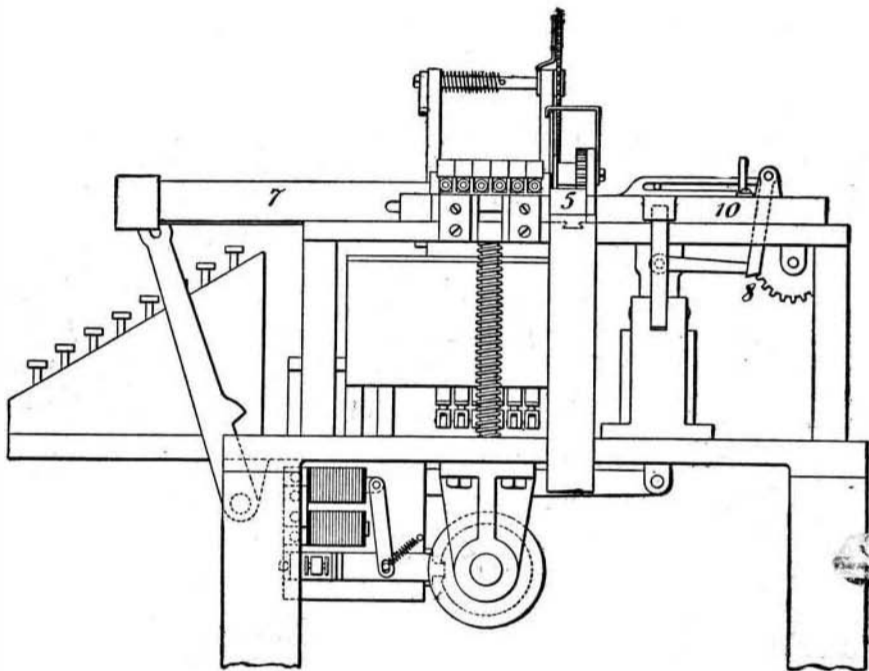


A NEW COMPOSING MACHINE.

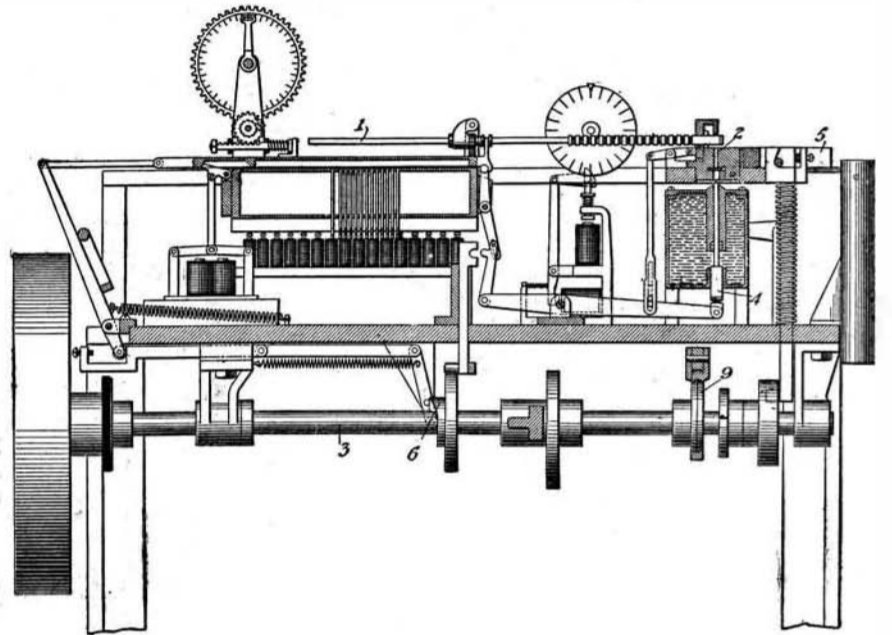
The announcement that a new typesetting and composing machine has been invented, is not calculated to arouse the interest that such an event produced fifteen years ago. Scores of composing machines have been devised in recent years, and of these only a very few have stood the test of actual practice. But the statement that a typesetting machine had been produced, which will cover a field distinctively its own, and one which has heretofore been impossible of attainment, certainly demands investigation. The machine which makes this ambitious claim is a simple bit of mechanism, but little larger than a sewing machine, as will be seen by a glance at the accompanying engravings, and the field it essays to cover is the casting and composing of advertising matter. It is well known that in advertisements, the main purpose of which is to catch the eye, certain words must be emphasized by the use of italics, full-faced type, and the like. This requires the use of a number of fonts. Some of the single-type machines at present in use are arranged to permit of a change from Roman type to italics, but for any further changes a new matrix magazine must be fitted to the machine, an operation requiring so much time that it is entirely out of the question to think of mak-

faces matrices of a certain unit's width, arranged in single column, and each face of a bar carries matrices of a different font. To change from one font to another, it is merely necessary to operate a lever, which turns the bars over in their bearings, so as to present the desired face to the operative position. The operation of the machine can be traced in the accompanying drawings. When a key of the keyboard is struck, it releases one of the matrix bars 1, which slides over its respective mold 2, and when the desired matrix reaches the mold, the bar is stopped by a pin selected by this key. Both the release of the bar and the raising of the stop pin is effected electrically by means of electro-magnets. As soon as the desired matrix reaches the mold, a magnetic clutch is actuated, which couples the cam shaft 3 to the driving pulley, and the casting mechanism is set in operation. The type metal is injected into the mold from the bottom by a plunger, 4. The mold is kept cool by a water jacket, so that the metal instantly hardens. The sides of the mold are then withdrawn through the open channel thus formed, and the type is pushed laterally into a word magazine, 5, at the rear. These operations are performed by a single turn of the cam shaft, which, just before completing its rotation, draws the matrix bar to its origi-

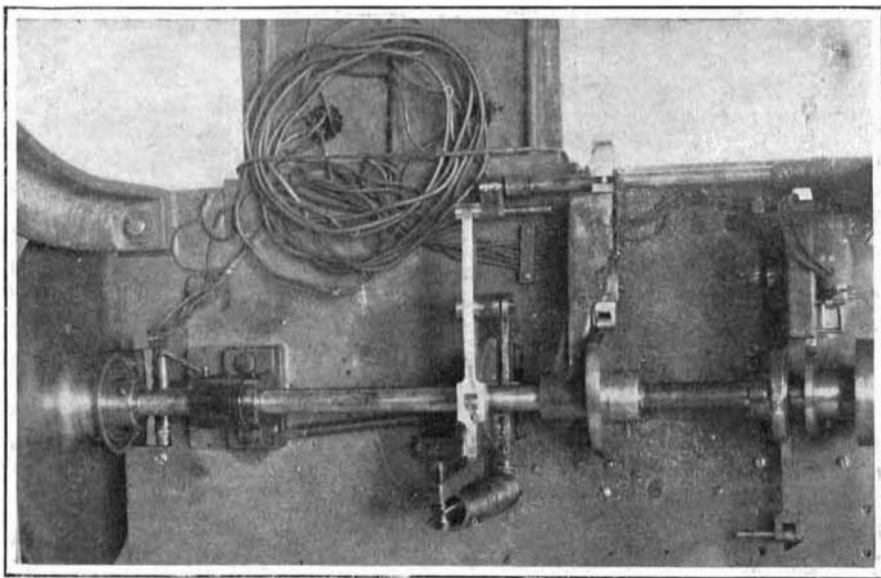
ejected from the mold and pushed with the words into the galley. The entire line is thus composed and completely justified. As it enters the galley, a latch, 8, is sprung, which throws the "follower" mechanism into engagement with a cam 9. The follower 10 pushes the line ahead just far enough to permit the next line to be assembled in the galley. When the last line has been composed a special key is touched, which causes the follower mechanism to act while the rest of the parts stand idle. The working model of the machine, from which the accompanying photographs have been taken, is somewhat crude, as viewed from a mechanical standpoint; but these are merely matters of design, and can be easily remedied. That the principles of the invention are sound and commercially practicable, is evidenced by the operation of even this crude first model. A new set of plans is being drafted for an improved machine, which will be far more compact than the present model, but no changes will be made in the general system of operation. The machine as at present constructed is composed of but 200 pieces, as against 1,800 parts in one of the most successful composing machines now in use. The simplicity of the little compositor and caster will permit of its being manufactured at a very low cost, bringing



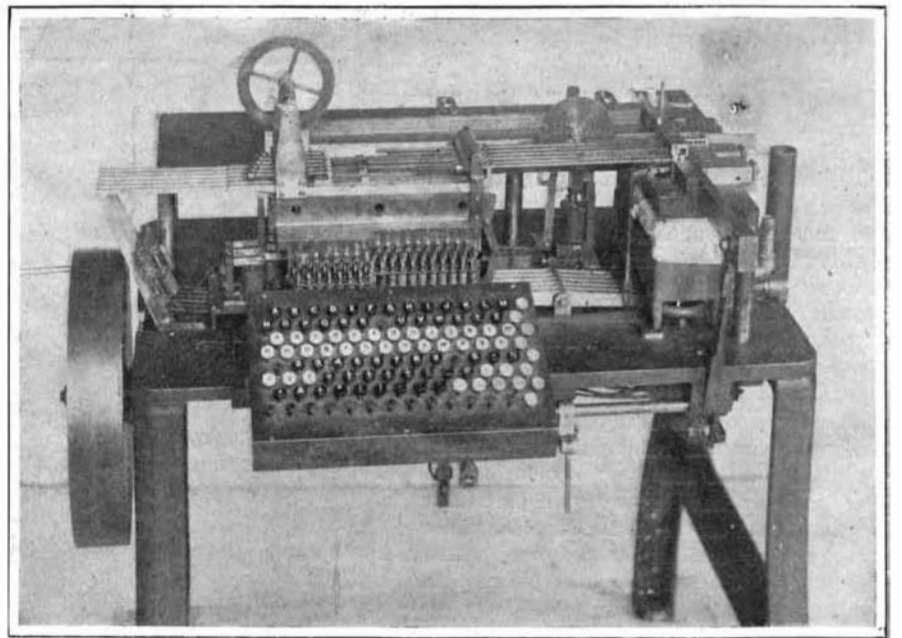
End View of the Machine.



Section Taken Longitudinally Through Center of the Machine.



View of the Underside Showing Simplicity of the Cam Shaft.



General View of the Composing Machine.

A NEW COMPOSING MACHINE.

ing the change for a word or even a paragraph of different-faced matter. For this reason, advertising matter is set by hand, making the cost of ad. composition disproportionately greater than that of the reading matter of a paper. The new machine intends to remedy these conditions; and in support of its claims, it may be stated that its matrix magazine comprises four different type faces, any one of which can be brought into operative position by the mere touch of a lever. Nor is the machine limited to four fonts; for it may carry six or eight different type faces without any further complication of the mechanism. And then, if desired, the matrix magazine may be removed and replaced with another of an equal number of fonts in less than two minutes. This time would include the changing of the molds to accommodate a different thickness of type body. However, even without changing his magazine, the operator has at his immediate command an ample variety of type faces, which can be introduced at will with scarce a moment's interruption. This result is effected in a remarkably simple manner. The magazine is composed of six bars of square cross section. Each bar carries on its four

nal position by means of cam 6, and breaks the circuit of the magnetic clutch disconnecting the shaft and pulley. The casting action, which from this description may seem quite complicated, is, as a matter of fact, very simple, and it takes but an instant of time. Before the operator can strike the next key of a keyboard, the whole operation is performed, and the various parts are returned to their normal positions, ready to cast another type. The word magazine is provided with a number of compartments, in which the types of each word are separately assembled. As soon as a word is completed, a key is struck which shifts the magazine to bring another compartment into line with the type ejector 7. The second word is then assembled in this compartment, after which the magazine is again shifted to receive the third word. And so the casting and setting continues until a sufficient number of words have been assembled to form a line. An automatic counter on the machine shows how many units the line still lacks of being completely filled, and indicates how wide the spaces must be between the words. The operator then touches the specified space key, and as the spaces are cast they are successively

it within reach of the small jobber and the country newspaper. The inventors of this machine, Messrs. J. R. and G. A. Pearson, have thus succeeded in killing two birds with one stone; for while their original purpose was to cheapen and expedite the work of the "ad. rooms" of our large daily newspapers, they have also come to the rescue of the small printer, who cannot invest in any of the existing composing machines owing to their prohibitive price, and who has long been struggling in an unfair competition with his more prosperous neighbors. It is not the purpose of the inventors to compete with composing machines now on the market, but it is expected that the large printing houses will find the new machine a useful adjunct to their plants, and the small printers will be enabled to turn out four times as much work as has heretofore been possible with hand compositors.

Work is under way on the construction of 50.66 miles of second main line from Sherman, Ill., northwest to Bloomington, on the Chicago and Alton Railroad. This will, when completed, give the Chicago and Alton a double line from Chicago to Iles, 187.2 miles.