UNITED STATES PATENT OFFICE.

JOHN R. CUMMINGS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE AMERICAN PRESS ASSOCIATION, OF SAME PLACE.

BACKING ELECTROTYPE-SHELLS.

SPECIFICATION forming part of Letters Patent No. 375,869, dated January 3, 1888.

Application filed June 23, 1886. Serial No. 206,010. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN R. CUMMINGS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in the Process of Backing Electrotype-Shells; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the process of backing electrotype-shells; and it consists in giving to such shells a backing in a manner that will leave the shell as thin and pliable as when unbacked.

In the usual process of backing an electrotype shell the shell is first tinned by the application of a soldering-fluid and tin-foil, for the purpose of making the metal adhere, and then quite a thick backing of lead, or what is known as "electrotype metal," is applied by melting on or pouring on the molten metal to the back of the plate until it is an eighth of an inch thick, or more, and a stiff heavy plate is produced. Now the end desired to be attained is the successful filling of the cavities of the letters without increasing the thickness of the shell—that is, to fill the cavities of the letters up to the level of the general under surface of the shell, which cannot be accomplished by the ordinary process.

My method consists in taking the shell after the tinning step and applying to it a backing, either by dipping it into a kettle of melted lead or other suitable material, or pouring the molten metal upon the shell, then at once scraping off the bottom (no metal adhering to its face) with a rule having a straight edge, or other equivalent device, whereby a perfectly smooth even surface is produced, and no more metal is left on the shell than suffices to fill the depressions and render the back smooth; or the filling may be applied without tinning by putting the soldering-fluid on the copper and then proceeding as described; but there are objections to this method.

The importance of this method of filling will be appreciated when it is known that by the old method several expensive machines and appliances are required—viz., backing-pan and table; saw-table for sawing off the margin and for sawing columns apart; a trimmer for trimming margins close to letters; a roughing-machine to make plate ready for shaving, and a shaving-machine to shave plate to exact thickness, which machines and appliances are expensive, besides requiring a number of men to operate them. By the old method, also, the plates require to pass through the hands of a finisher to be straightened and corrected, requiring a skilled laborer, which process is saved by my method. By the old method, also, the plate must be so thick as to be stiff enough to withstand the tendency of the shaver to crook it, which requires a considerable thickness of metal and a consequent large consumption. By the old method, also, if a column of plate is to be cut into pieces, as is usually necessary in making up newspaper-forms, it must be done with a saw, whereas a plate of this description may be cut with scissors between the lines almost as easily as paper.

The process is performed with great rapidity, and shells thus backed are as thin and pliable, practically, as before backing, the weight having increased only about two ounces per column of twenty inches in length. At the same time shells backed in this way are quite as strong and permanent as when backed in the old way.

What I claim as my invention is—

The method of backing an electrotype-shell, consisting of applying molten metal thereto, and then at once scraping off the back of the shell with a suitable device—such as a rule with a straight edge—whereby all superfluous metal is removed and a perfectly-finished, light, pliable shell is produced without further operation, substantially as described.

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

JOHN R. CUMMINGS.

Witnesses:
EDWD. G. PAULING,
HORACE WHITE.