C. Sentell.

Renewing the Surface of Printers' Rolls.

No. 48453. Patented Jun. 27. 1865.

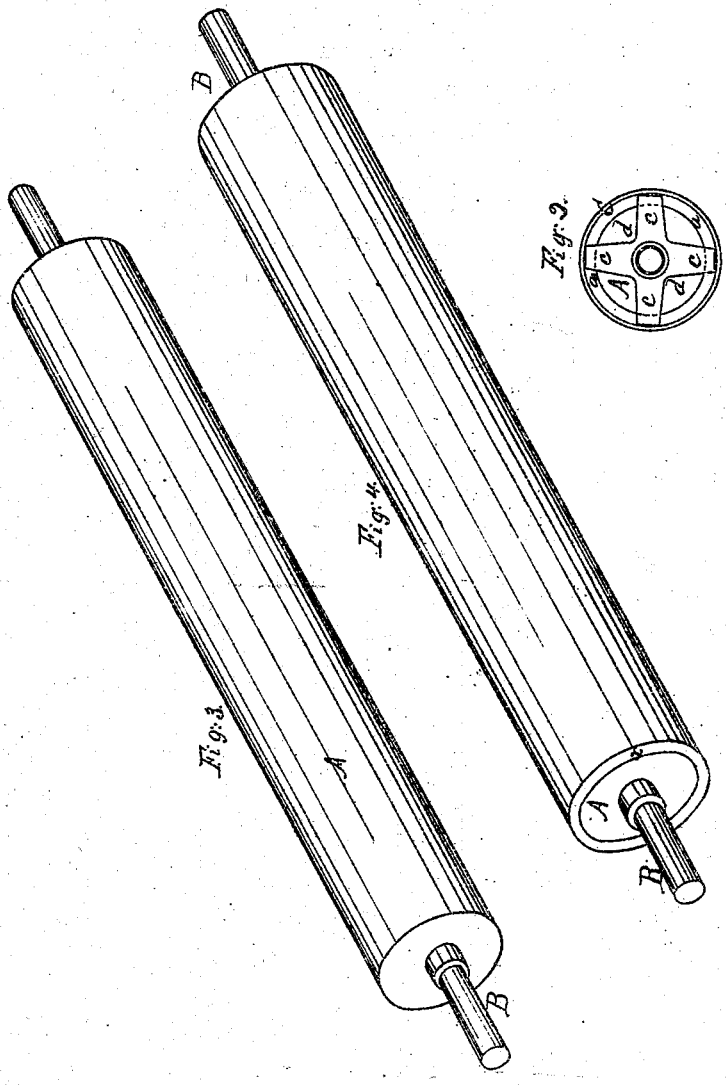
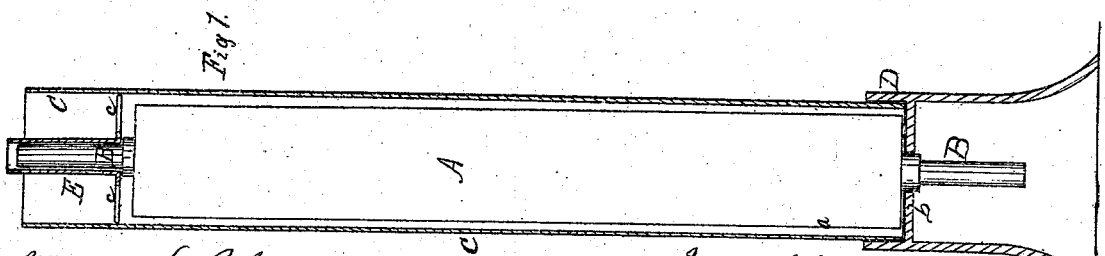


Fig 1.



Witnesses: R. F. Osgood, J. A. Davis

Inventor: Charles Sentell,

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UNITED STATES PATENT OFFICE.

CHARLES SENTELL, OF WATERLOO, NEW YORK.

MODE OF RENEWING THE SURFACE OF PRINTERS' ROLLS.

Specification forming part of Letters Patent No. **48,453**, dated June 27, 1865.

To all whom it may concern:

Be it known that I, CHARLES SENTELL, of Waterloo, in the county of Seneca and State of New York, have invented a new and useful Improvement in Removing and Renewing the Surfaces of Printers' Rollers; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a central vertical section of the cylinder or mold in which the surface of the stripped roller is recast, having situated therein a roller whose surface has been removed ready for recoating; Fig. 2, a plan of the same device; Fig. 3, a perspective view of a roller with its surface removed ready for recoating; Fig. 4, a similar view of the roller after it has been recoated.

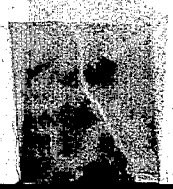
Like letters of reference indicate corresponding parts in all the figures.

Printers' inking-rollers are made of a composition of glue and molasses or sugar, in such proportions as to produce the desired elasticity and adhesiveness. In ordinary use these rollers soon become hard or dead on their surfaces, and lose those qualities that give them special value. But the surface of the roller only is injured, the interior being as good as when new. If, therefore, the surface could be removed and a new surface cast around the body of the roller, there would be no necessity of substituting a new roller in each case. In ordinary use, when the surface becomes useless the whole roller is thrown aside, and, as the cost of the material at the present time is about twenty cents per pound, there is thus considerable loss, as each roller weighs several pounds.

It is the object of my invention to remove the surface of the rollers thus become useless in such a manner that the roller can be placed in a hollow cylinder or mold of a little larger diameter than itself and have cast around it on every side sufficient of the new material to supply the place of that taken off.

As represented in the drawings, A is an ordinary printer's inking-roller, made of the material before mentioned, and cast around the usual shaft on bearing B. Fig. 3 represents the roller as having its surface removed to any suitable depth—say one-fourth of an inch, more or less. This may be accomplished in any convenient manner; but I prefer a machine of my own invention for the purpose, on which I have made application for patent. From the extremely elastic and yielding nature of the compound it is very difficult to remove the surface; but by my arrangement above referred to I accomplish it perfectly, and without tearing or mangling the roller in the least, leaving it in that slightly-roughened but uniform condition of surface that will best receive and hold the material that is cast around it. The roller thus prepared is placed in a hollow cylinder or mold, C, whose diameter is as much larger than that of the stripped roller as is necessary to form a perfect roller of suitable size. A space, *a*, is thus left between the roller and the sides of the mold, into which the melted material is poured. The lower end of the cylinder or mold fits closely into a socket or cup, D, which is provided with a floor, *b*, having in the center a hole, through which passes the end of the shaft B, as shown in Fig. 1. On the upper end of the shaft fits closely a socket, E, having radial arms *c c*, Fig. 2, which extend outward, resting against the sides of the mold, and leaving spaces *d d* between them, so that the composition may be poured in. By this means it will be perceived that the stripped roller is accurately centered in the molds. The roller being thus fixed in place in the mold, the composition is poured at the top into the space *a*, and when hardened by cooling a perfect roller is formed, as indicated in Fig. 4, in which the new coating is indicated by the thickness *x* in light color on the outside. The coating thus added, by its adhesiveness to the roughened surface of the stripped roller, forms an integral part of the latter, and is as effective as an entirely new roller just cast, the new coating adhering with great tenacity.

The advantages of this method are obvious without particular specification. It is only necessary to remove a thin coating from the surface of a roller at any time when the surface becomes dead or hard, or from any cause is injured, and recast it, and when so recast it answers the purpose of an entirely new roller. It is of equal value, when so recast, with a new one. It is more easily done than to strip the composition entirely from the core, making an



entirely new roller, and the saving it effects is in proportion to the quantity of composition remaining on the core, which is from one-half to three-fourths. The surface of the same roller may thus be renewed for an indefinite period, as the interior is not, like the surface, impaired in value by time or use. Indeed, there is reason to believe that rollers with surfaces so renewed will last for years. The experience of the undersigned warrants his assertion that such will be the case when rollers are properly made in the first instance.

The great economy of material is evident, and the value of the invention clearly manifest when it is remembered that from one-half to three-fourths of the composition of a roller is saved when its surface is renewed, because the composition, when stripped entirely from a roller, can rarely be remelted, and some of the best kinds in use cannot be remelted under any circumstances.

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

Removing the hardened surface of printers' rollers and recoating the same by placing them in the mold C and turning the melted material around them, substantially as herein set forth.

CHARLES SENTELL.

Witnesses:
R. F. OSGOOD,
J. A. DAVIS.