(No Model.)

J. A. OLMSTEAD.

ART OF MAKING RUBBER SHOES AND BOOTS AND ROLLER DIES THEREFOR.

No. 272,308. Patented Feb. 13, 1883.

Fig1.

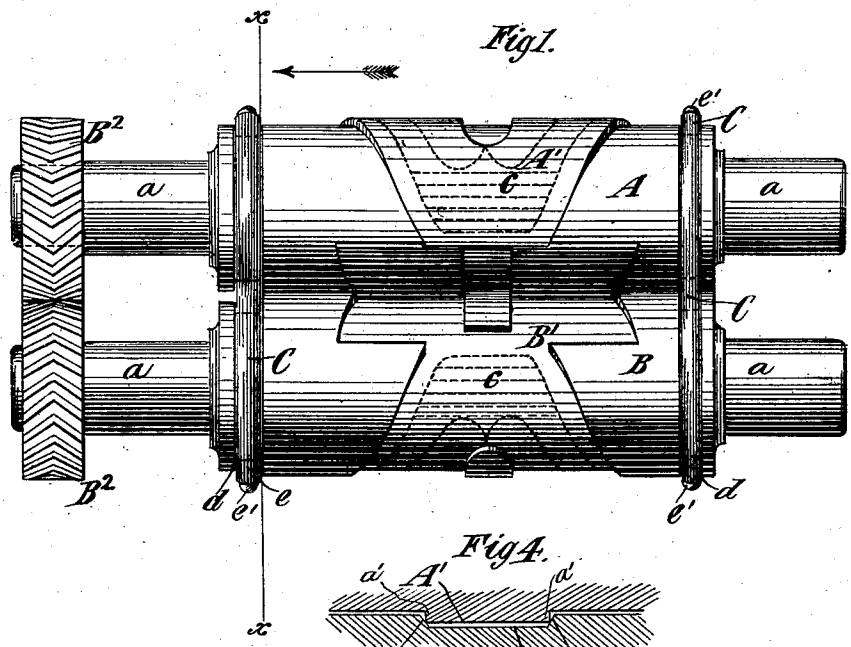


Fig2.

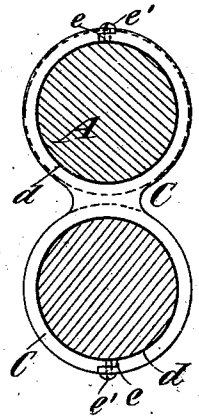
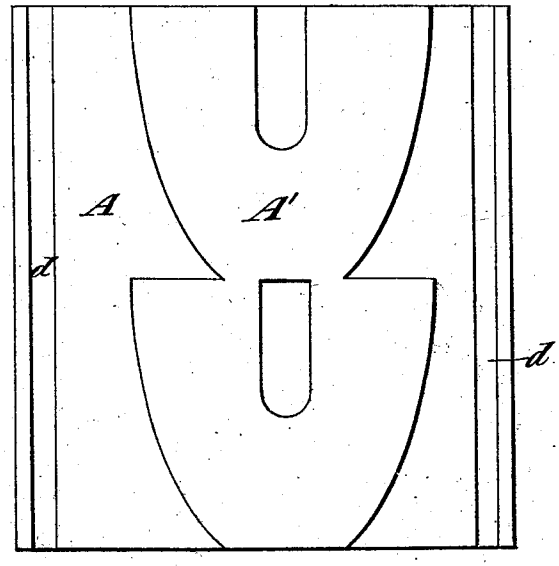


Fig4.

Fig3.



Witnesses
Chas. Hayner
Ed. L. Moran

Inventor
John A. Olmstead
by his Attorneys
Brown & Brown

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN A. OLMSTEAD, OF GRANITEVILLE, NEW YORK.

ART OF MAKING RUBBER SHOES AND BOOTS, AND ROLLER-DIES THEREFOR.

SPECIFICATION forming part of Letters Patent No. 272,308, dated February 13, 1883.

Application filed November 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. OLMSTEAD, of Graniteville, in the county of Richmond and State of New York, have invented a new and useful Improvement in the Art of Making Rubber Shoes and Boots, and in Roller-Dies therefor, and for other purposes, of which the following is a specification.

My invention relates principally to the cutting out and embossing of the pieces for the uppers or stock of rubber shoes and boots; and the improvement in the art consists in cutting out and embossing such pieces simultaneously and at one operation by means of roller-dies, which respectively have relief and sunken portions for cutting out the uppers or stock, and patterns in relief and intaglio for embossing the uppers or stock to give them or it the desired ornamentation.

The invention likewise consists in the combination, with a pair of roller-dies provided with intermeshing gears, having respectively relief and sunken portions for cutting out pieces, and having coincident circumferential grooves or rabbets, of a clamp or double collar encircling the rollers in said grooves or rabbets, and holding the rollers in such close contact that the relief portions of one roller are held in the sunken portions of the other, and the rollers are held in exact position relatively to each other when they are out of the machine in which they are used. Roller-dies as heretofore used for cutting out other materials have the intermeshing gears upon their shafts, and where the rollers are entirely detached from each other when not in use in the machine it requires considerable care to place them in the machine so that their relief and sunken portions will exactly register. Several pairs of dies, to cut different sizes and patterns of articles, are usually employed in connection with one mill or machine, and according to my invention each pair is provided with the clamps or collars above described at one or both ends. Less time is then consumed in properly placing a pair of roller-dies in the machine.

In the accompanying drawings, Figure 1 represents a side view of a pair of roller-dies embodying my invention. Fig. 2 represents a transverse section upon the dotted lines *x x*, Fig. 1. Fig. 3 represents a diagram of the entire peripherical surface of one of the roller-dies, and Fig. 4 represents a sectional view of the impinging surfaces of the said dies.

Similar letters of reference designate corresponding parts in all the figures.

A B designate the two roller-dies of a pair, each of which is provided with necks or journals *a*, and which are connected by intermeshing pinions B^2. The rollers here represented are adapted to cut out at each revolution two pieces for rubber overshoes or boots, and to this end the roller A has portions A′ in relief, which are formed as best shown in Fig. 3, and the roller B has corresponding sunken portions, B′, which register with the relief portions. I preferably make the edges *b* of the sunken portions B′ inclined, as shown in the sectional view, Fig. 4, and the edges *a′* of the relief portions A′ straight or square. In order that the material may be simultaneously cut out and embossed, I engrave or otherwise form patterns *c* upon the relief and sunken portions A′ B′, one pattern being in relief and the other in intaglio. Near the ends of the rollers are formed coincident circumferential grooves *d*, and in them are fitted double collars or clamps C, which may be made of the form shown in Fig. 2. As there shown, each clamp consists of two rings made in one piece of metal, and split or divided at *e* in their outer sides. The divided ends may be secured together by screws *e′*. When these screws are removed the rings can be spread or expanded sufficiently to free them from the grooves *d*, and may then be slipped lengthwise off the rollers. When the double collars or clamps are in place they hold the rollers in contact, and the relief portions of the roller A fit in the sunken portions of the roller B. The collars or clamps always remain on the rollers, and when the pair of rollers are removed from the machine and laid aside they are kept together, and will always register when placed in the machine without necessitating careful attention.

Although I prefer to employ a collar or clamp at each end of the roller-dies, I may employ a collar or clamp at one end only, and, instead of fitting in a groove, the collar or clamp may fit in a rabbet in the rollers.

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

1. The improvement in the art of forming uppers or stock for rubber shoes or boots, consisting in cutting out and embossing simultaneously the pieces of which the said uppers or stock is or are formed by the use of roller-dies, which respectively have relief and sunken portions for cutting out the pieces of the desired shape and patterns in relief and intaglio for embossing the said pieces to impart to them the desired ornamentation, substantially as and for the purpose herein described.

2. The combination, with a pair of roller-dies provided with intermeshing gears, having respectively relief and sunken portions, and having coincident circumferential grooves or rabbets, of a clamp or double collar encircling the rollers in said grooves or rabbets, substantially as and for the purpose herein described.

JOHN A. OLMSTEAD.

Witnesses:
FREDK. HAYNES,
ED. L. MORAN.