

# UNITED STATES PATENT OFFICE.

ROBERT KRAFFT, OF CARLSRUHE, GERMANY.

## TURF MATRIX-PULP FOR STEREOTYPING.

SPECIFICATION forming part of Letters Patent No. 698,028, dated April 22, 1902.

Application filed May 6, 1901. Serial No. 58,924. (No specimens.)

*To all whom it may concern:*

Be it known that I, ROBERT KRAFFT, paper-maker, a citizen of the German Empire, residing at Uhlandstrasse 5, in the city of Carlsruhe, Grand Duchy of Baden, Germany, have invented a new and useful Improvement in Stereotyping, of which the following is a specification.

My invention relates to the production of suitable dry or quick stereotype-plates for the printing industry and allied branches. The matrix-plates hitherto used for this purpose very soon become hard, whereby the type even in a short time gets extraordinarily worn, and to remain even in some degree fit for use must be continually kept moist. Besides, the production of the matrix as far as to the casting of the plates depends on a cumbersome process, causing loss of time to an extent approaching a full half-hour.

The subject of my invention is the discovery of a suitable composition for a matrix-pulp with which the advantage accrues that after the very first casting from this turf matrix-pulp its interior components maintain such a capacity of resistance that successively any number of casts may be taken without damaging the matrix in the least.

The invention consists in the arrangement of an intermediate pulp layer of such a character that it causes the type to be sharply impressed, that the required pliancy is retained, and that mold or mildew is entirely prevented, while by means of a suitable agglutinant all its parts firmly cohere.

The pulp as a whole is composed of three parts—viz., the under layer, the intermediate layer, and the top layer. While the under layer can consist of any paper-pulp and the top layer is also of such material, which may advantageously be made of two-thirds cotton and one-third linen in an unsized condition, (sized stuff being also employed for particular objects,) the intermediate layer is in this connection of especial importance. Such intermediate layer consists of about fifty-five to sixty per cent. of finely-ground turf with an addition of some ten per cent. of glycerin, ten per cent. of starch, and twenty to twenty-five per cent. of paper-pulp, which composition has further an admixture of about 0.5 per cent. of carbolic acid or some

other antiseptic. The turf insures that the type shall be sharply impressed. The glycerin by promoting moisture insures the continuous pliancy requisite. The starch acts as a binding material, and the slight percentage of carbolic acid or the like prevents formation of mold or mildew. It may be again pointed out that the choice is preferable of two-thirds cotton and one-third linen for paper-pulp; but, however, further admixture is allowable of another fibrous material which may tend, as does the paper-pulp, to impart somewhat more consistency to the fine turf fibers in forming this intermediate layer. These plates can be produced as easily by hand as by machine. In the first place, as in the method with hand-made paper and dipping, the under layer is prepared, then, last, the top layer, or the process may be reversed, the top layer being prepared first, and so on. These plates thus obtained of the various layers are pressed in a moist condition and dried by being hung between clamping-plates, as in the manufacture of hand-made paper, or in large quantities on drying-cylinders, and finally, if it be considered desirable, the surface of the top layer may as well be glossed in the ordinary manner. By wholesale or continuously produced the pulp is prepared on machines having several cylinders or other machines on which paper or pasteboard with various layers is worked—as, for example, machines for sugar-paper. That the type shall not be pressed through, the union of the three different layers, especially that of the top layer with the intermediate layer, is effected in a wet condition.

A type-matrix of the foregoing turf stereotype can be produced in five minutes, inclusive of the casting of the plate. In opposition to the paper matrix hitherto in use the turf matrix-pulp is stored only in a dry place. By virtue of its yielding composition it possesses also the advantages that when the mold is made it does not act detrimentally on the type and obviates as well the troublesome collecting of the spaces carrying no type, as after the plate is cast the pricking out of such spaces. After ensuing trimming of the four edges these plates can be immediately handed over to the printer and put in use. Be-



sides the advantages described and others not mentioned here these turf matrices can be supplied at a low cost, which confers an additional benefit on the industry concerned.

5 What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

As a new article of manufacture, a matrix-sheet comprising an inner and outer layer and  
10 an intermediate layer of pulp composed of a mixture of finely-ground turf, glycerin,

starch, paper-pulp and a small percentage of an antiseptic, such as carbolic acid, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of  
15 two subscribing witnesses.

ROBERT KRAFFT.

Witnesses:

JACOB ADRIAN,  
H. W. HARRIS.