

No. 731,906.

PATENTED JUNE 23, 1903.

A. HUCK, L. FISCHER, H. AHRLE & E. SCHMIEDER.

PROCESS OF PRODUCING METALLINE FILMS.

APPLICATION FILED DEC. 9, 1902.

NO MODEL.

Fig. 1.

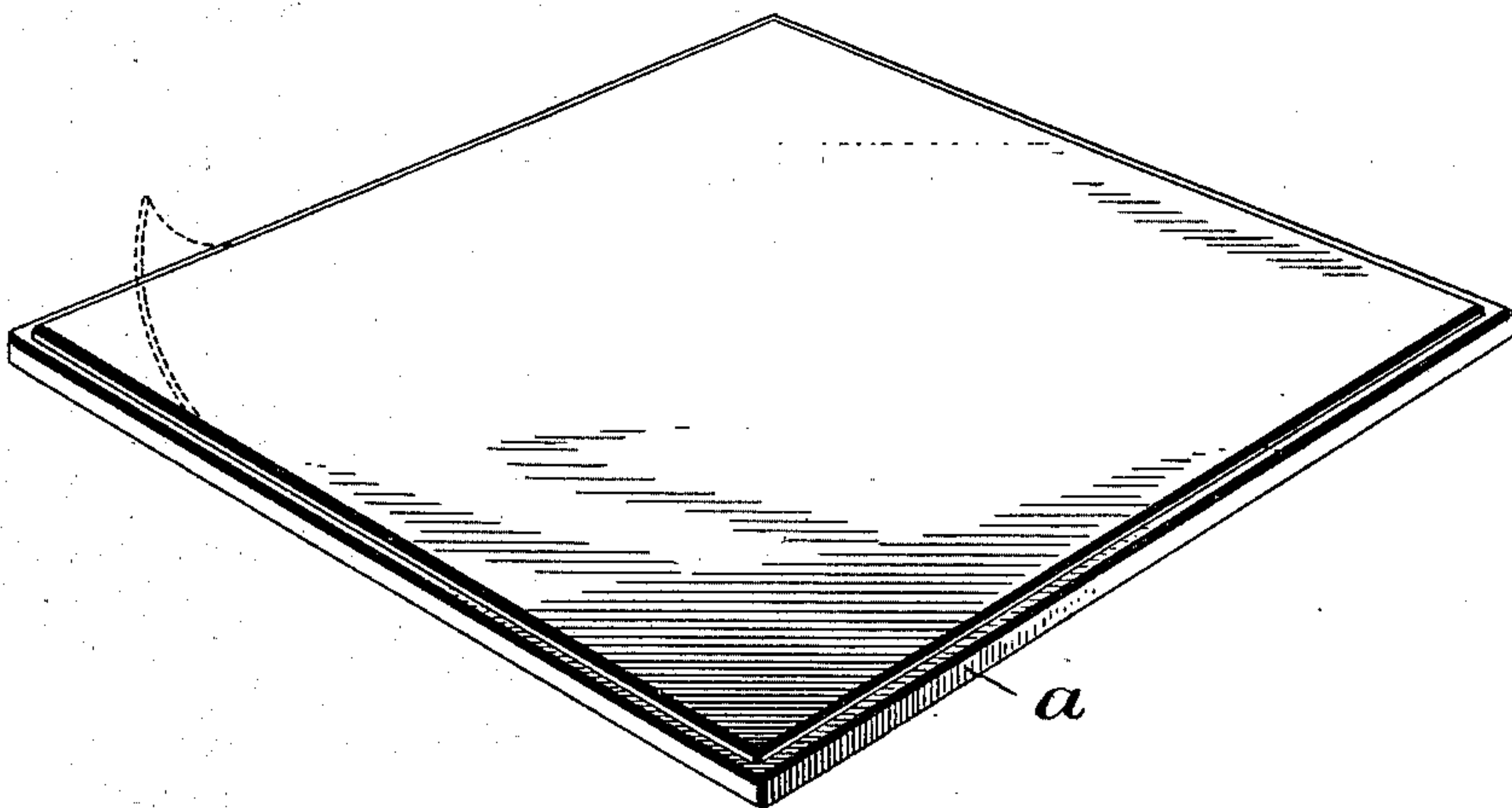


Fig. 3.

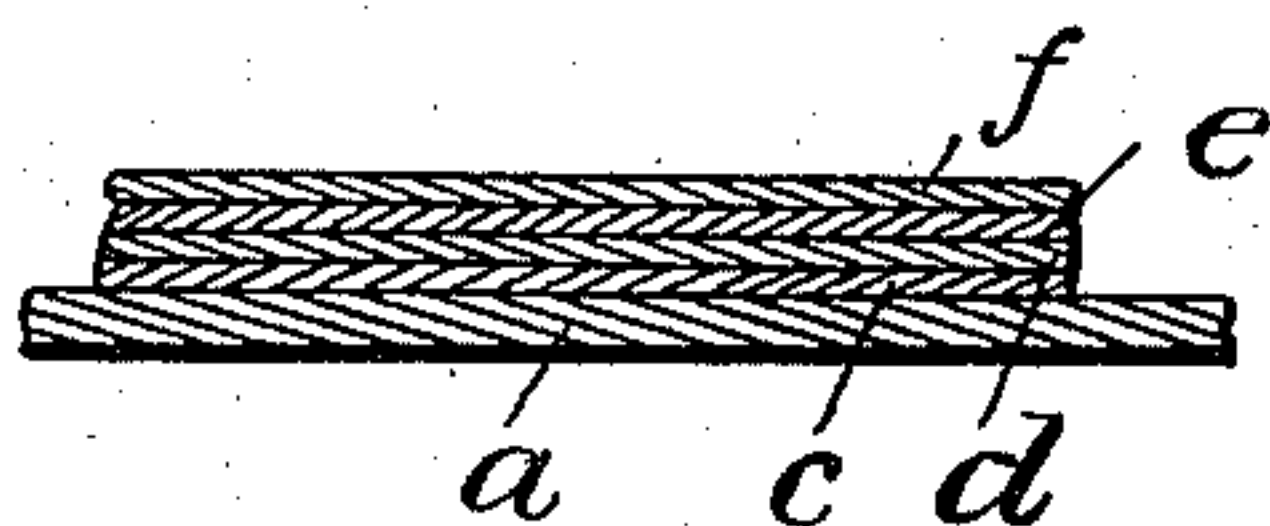


Fig. 4.

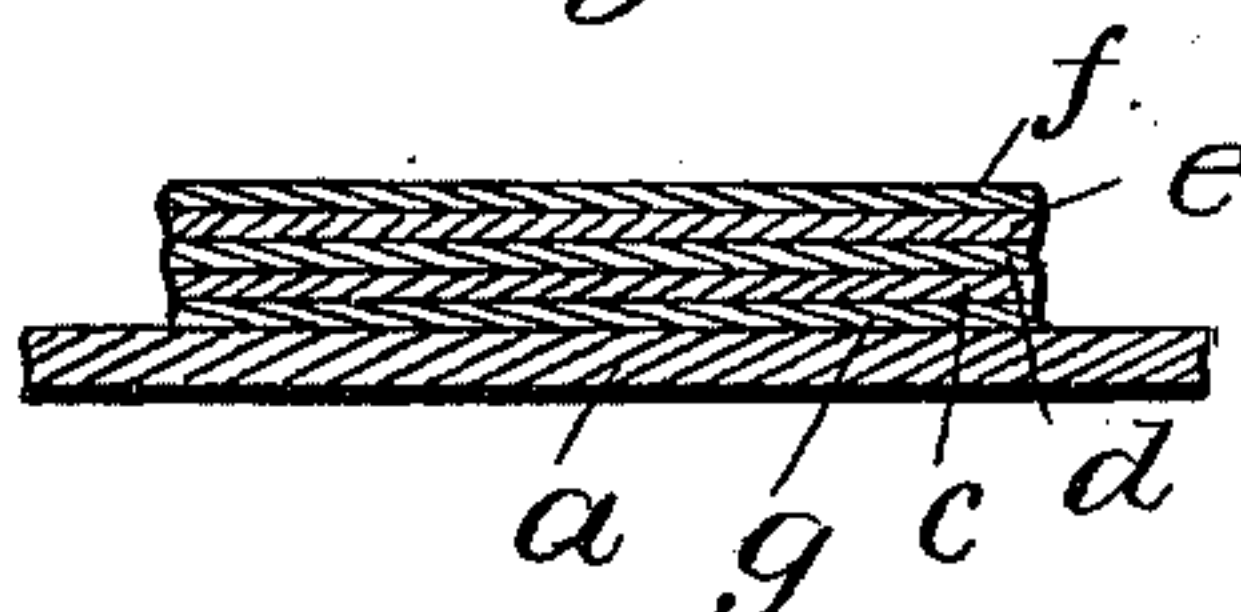


Fig. 6.

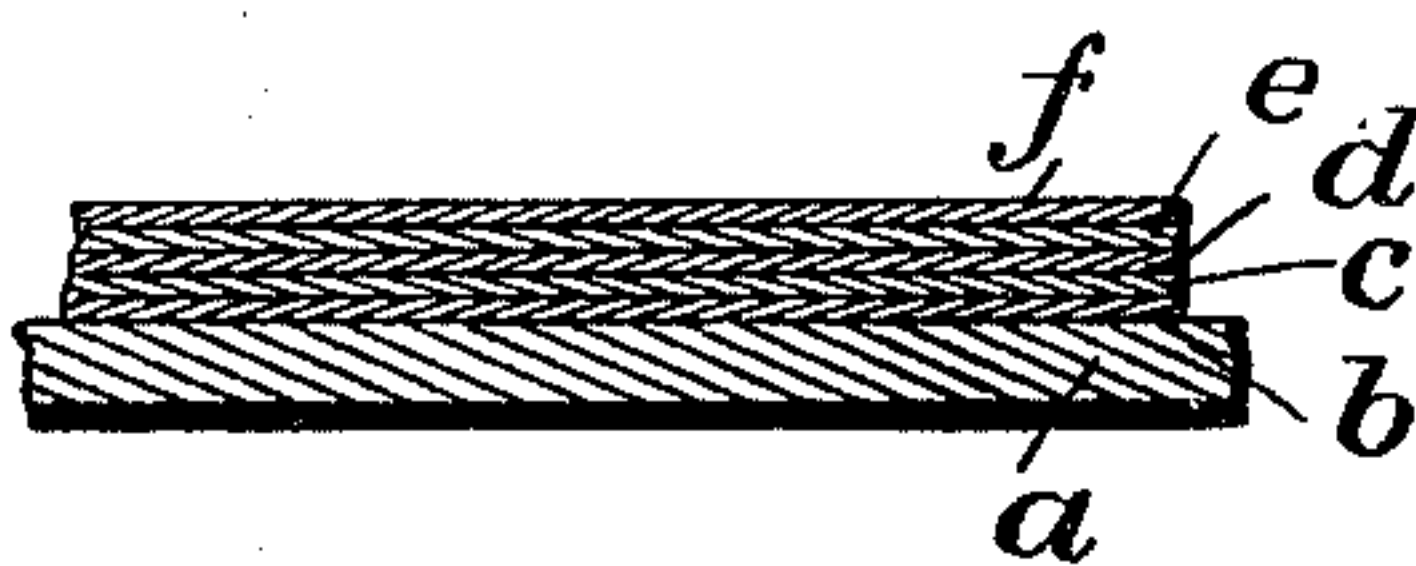
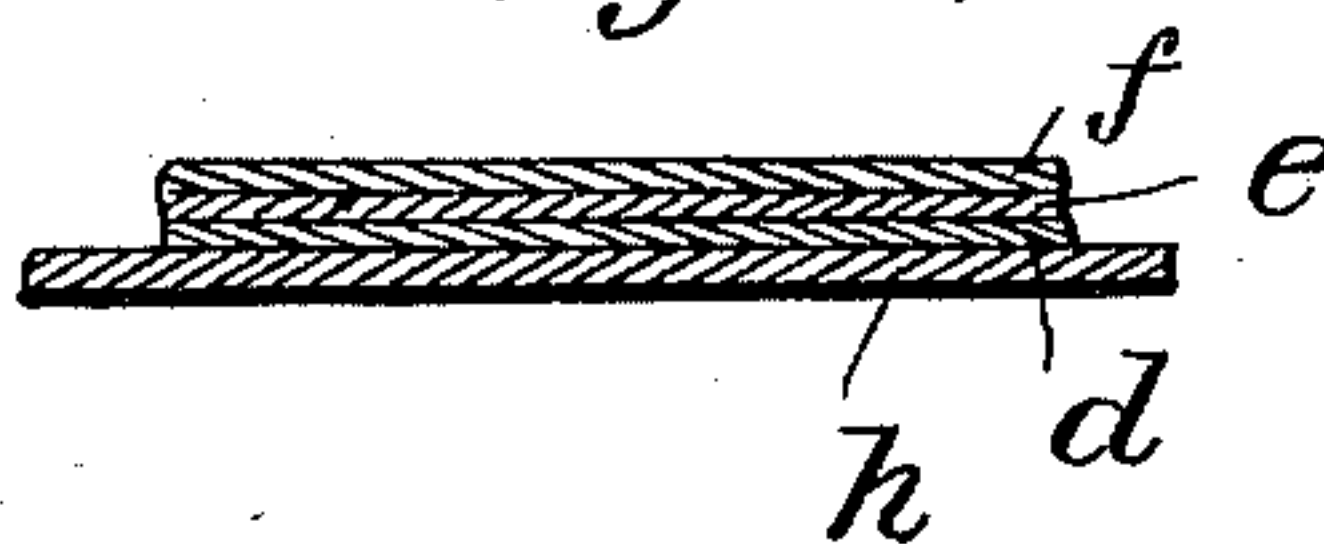


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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PROCESS OF PRODUCING METALLINE FILMS.

SPECIFICATION forming part of Letters Patent No. 731,906, dated June 23, 1903.

Application filed December 9, 1902. Serial No. 134,570. (No specimens.)

To all whom it may concern:

Be it known that we, AUGUST HUCK, private gentleman, LUDWIG FISCHER, private gentleman, HERMANN AHRLE, merchant, and
5 EMIL SCHMIEDER, photographer, subjects of the King of Prussia, Emperor of Germany, residing at Frankfort-on-the-Main, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in
10 Processes of Producing Metalline Films; and we 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
15 use the same.

Our invention relates to improvements in processes of producing metalline films, and is a specific improvement upon Patent No. 694,227, dated February 25, 1902.

20 The object of our invention is to produce a flexible metalline film either with a backing of paper or some other flexible material or without any backing at all. The films produced are perfectly flexible and may be at-
25 tached in any desired form to either flexible or rigid bodies. Such films with the pictures printed thereon, which, as is well known, are homogeneously combined with a layer of varnish mixed with bronze-powder, can be used
30 for all conceivable decorative purposes, as on the walls of a room, for example.

In carrying our invention into effect we take a rigid body—such as a plate of wood, glass, porcelain, metal, or the like—and care-
35 fully clean the same. Over this plate is then poured a layer of celluloid varnish or some similar varnish, such as celloidine or caoutchouc. The plate is then coated with a thin layer of tallow, vaseline, glycerin, or any suit-
40 able fat or grease. A thin layer of a solution of collodion or caoutchouc is then put over the coating of fat and the whole allowed to dry. After all these layers are dry they are coated with a suitable varnish, such as asphalt var-
45 nish or japan, but preferably japan. This coating is then allowed to dry, after which it is smoothed and polished. We then take a solution containing the following ingredients,

by weight: sixteen parts of albumen, nine parts of honey, and twenty-three parts of wa-
50 ter. These materials are thoroughly mixed together and carefully filtered. The plate covered with the layers already described is then coated with this filtered solution, which penetrates into the fine pores of the varnish,
55 thus effecting a thorough combination between the solution and the varnish. Before the solution has become perfectly dry the metallizing or bronzing should be effected. This is done as follows: The fine dry metallic
60 powder is applied with a fine brush to the slightly-moist surface of the plate, the application being continued until a uniform metallic layer is produced which has a metallic
65 luster and is thoroughly combined with the coating formed on the layer of varnish by the solution. In this manner by the introduc-
70 tion of fine metallic particles into the solution and the varnish coating the metallic powder, the solution, and the varnish form a thoroughly homogeneous layer. This is then
75 allowed to dry and alcohol is poured over it, which by its evaporation hardens the layer. In this way a metalline film is formed upon the plate which acts as a base. When it is de-
80 sired to use this film, it may be easily peeled off from the coating of fat or the layer of celloidine varnish, because the succeeding layers, especially japan, do not combine with the layer of fat or the layer of celluloid varnish.

As modifications of our process it should be noted that in some cases a coating of fat or grease alone without any preceding coat-
85 ing of varnish on the plate may be sufficient.

Instead of using celluloid or similar var-
85 nish for the first coating we sometimes use a layer of gelatin, albumen, or any similar substance soluble in water. In this case when it is desired to remove the metalline film
90 from the base-plate the whole is placed in hot water and the edges of the various coatings are cleaned by rubbing them with glass-pa-
95 per, sandpaper, or cloth or by cautiously scraping them with a sharp knife or other implement in order to permit the hot water to soak into and dissolve the soluble layer of

gelatin or equivalent substance which is between the base-plate and the metalline film, after which the film may be easily and completely stripped from the base. In some cases it is desired to produce these films on a paper or other flexible base, in which case of course the metallic film is not stripped from the base, but is firmly connected therewith. In this case the paper or flexible base is first made impermeable by soaking it in or applying to it a solution of caoutchouc in chloroform, after which successive layers of japan, a solution of albumen, honey, and water, and metallic powder are applied and the whole treated with alcohol, as already described.

These metalline films may be produced of any suitable size and thickness.

In the accompanying drawings, Figure 1 represents the base with the metalline film formed thereon, the latter being also shown in dotted lines as it appears when the operation of stripping it from the base-plate is begun. Fig. 2 shows a cross-section of a portion of the same considerably enlarged. Figs. 3, 4, and 5 show cross-sections of modifications of portions of our invention considerably enlarged.

a represents the rigid base-plate; *b*, the layer of caoutchouc or equivalent material; *c*, the layer of fat or grease; *d*, the second layer of caoutchouc or equivalent material; *e*, the layer of japan or equivalent material, and *f* the metallic powder.

In Fig. 4, *g* represents a layer of gelatin, albumen, or some similar substance soluble in water.

In Fig. 5, *h* represents a base of paper or other flexible material.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. The process of producing metalline films,

which consists in applying to a base a layer of caoutchouc, a layer of japan, a softening solution, and fine metallic powder in succession, substantially as described.

2. The process of producing metalline films which consists in applying to a rigid base, a layer of caoutchouc, a layer of fat, a layer of varnish, a softening solution and fine metallic powder in succession, substantially as described.

3. The process of producing metalline films, which consists in applying to a rigid plate a layer of caoutchouc, a layer of grease, a layer of caoutchouc, a layer of varnish, a softening solution and metallic powder in succession, substantially as described.

4. The process of producing metalline films, which consists in applying to a rigid base a layer of caoutchouc, a layer of grease, a layer of caoutchouc, a layer of japan, a solution containing albumen, honey and water and metallic powder in succession, substantially as described.

5. The process of producing metalline films, which consists in applying to a rigid base a layer of caoutchouc, a layer of grease, a layer of caoutchouc, a layer of japan, then applying a solution composed of albumen, honey and water, then while still wet, brushing a dry metallic powder over the surface thereof, allowing it to dry, applying alcohol thereto, and finally stripping the film from the plate, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

AUGUST HUCK.
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Witnesses:

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