T. P. AUSTIN.

Metallic Sieve.

No. 218,808. Patented Aug. 26, 1879.

Fig. 1

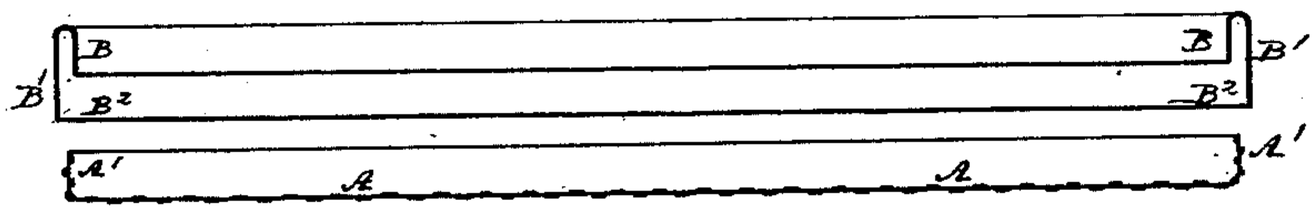


Fig. 2

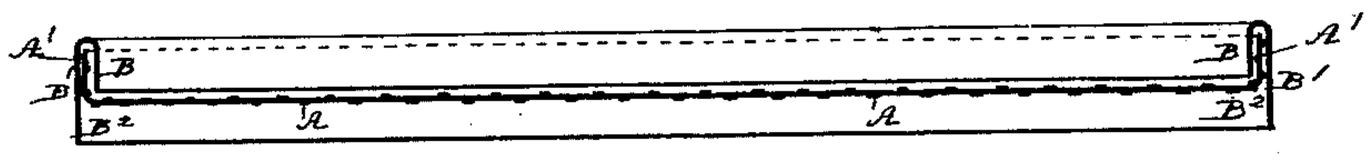


Fig. 3ª

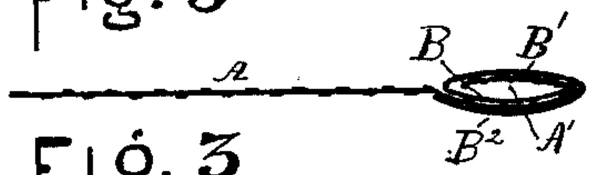


Fig. 3

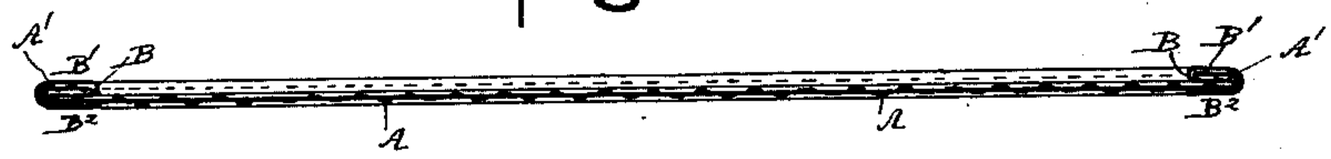


Fig. 4

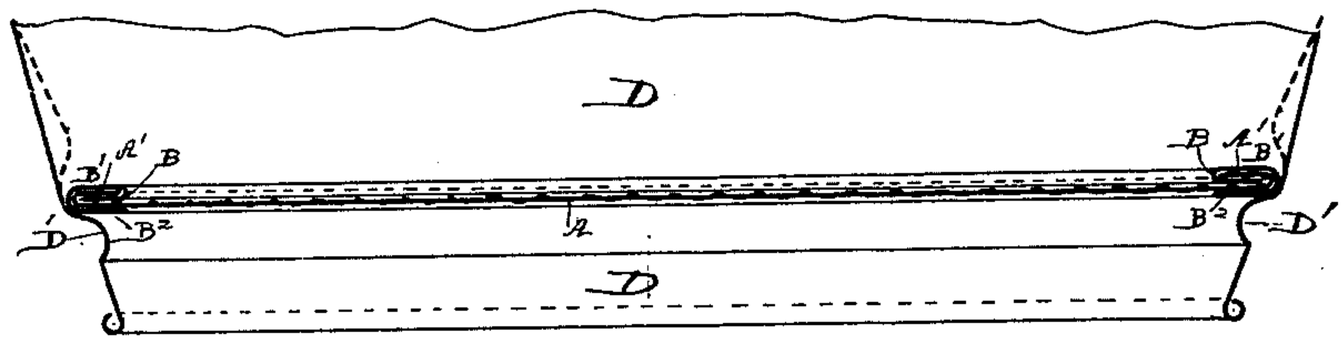
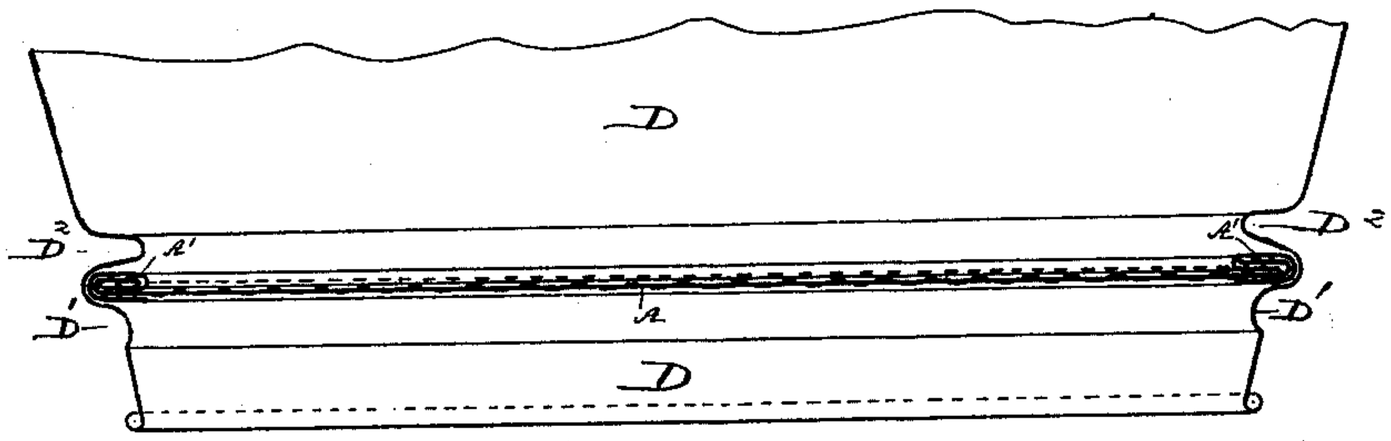


Fig. 5



WITNESSES:

W. C. Brookes

Chas. C. Stetson

INVENTOR:

Theo. P. Austin

by his attorney

Thomas D. Stetson

UNITED STATES PATENT OFFICE.

THEODORE P. AUSTIN, OF PORTLAND, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE UNITED STATES STAMPING COMPANY, OF NEW YORK CITY.

IMPROVEMENT IN METALLIC SIEVES.

Specification forming part of Letters Patent No. **218,808**, dated August 26, 1879; application filed August 14, 1878.

To all whom it may concern:

Be it known that I, THEODORE P. AUSTIN, of Portland, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements relating to Metallic Sieves, of which the following is a specification.

I have succeeded in producing a sieve with the wire-gauze tightly strained and effectively secured with little complication, in a manner which requires little labor or skill.

I believe my sieve will be much more durable than any ordinary construction.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a central section through a ring of sheet metal partially formed according to my invention. This is the piece by which the wire-cloth is to be finally strained and kept in the proper extended condition, and immediately below this is shown in section the wire-cloth which is to apply therein. Fig. 2 represents the wire-cloth in position. The wire-cloth has its edges raised by stamping or otherwise, and is inserted in position within the sheet metal ready to be confined and strained by further treatment. Fig. 3 shows the same after it has been completely formed by folding the sheet-metal ring and the accompanying wire-cloth completely into position. This figure shows the parts as flat. In practice they assume, and I prefer they shall assume, a slightly-rounded position. Fig. 3^a is a sectional portion on a larger scale, showing the rounded condition which obtains in practice. Fig. 4 is a section of the lower portion of a partially-formed hoop or band—the sides proper—of the sieve. In this figure the hoop has been forced inward to produce the shelf or support underlying the wire-cloth and its straining-ring. I have indicated in dotted lines a condition of the metal above which the hoop may be afterward made to assume preparatory to the final crushing down of the metal into the form shown in Fig. 5. Fig. 5 is a section through the completed sieve, showing the metal of the hoop collapsed or crushed down to form a tight nip or hold on the wire-cloth and its straining-ring on the upper side as well as on the lower. This is the completed stage of the construction. In practice I press down the metal a little farther than is here shown.

Similar letters of reference indicate like parts in all the figures where they occur.

A is a circular sheet of wire-cloth, having a turned-up edge, A′. This is the condition in which the wire-cloth is introduced into its straining-ring. The straining-ring is indicated in Fig. 1 by B B^1 B^2. There are two unequal folds, the fold B being the shortest. A little space is left between the parts B and B^1 B^2, sufficient to easily receive the lip or turned-up edge A′ of the wire-cloth. After these parts are applied together, as indicated in Fig. 2, they are afterward treated in dies which fold the whole into the condition shown in Fig. 3, or, more exactly, in the condition shown in Fig. 3^a. In this folding operation, changing the condition from that in Fig. 2 to that in Fig. 3, the upper parts, B B^1, are folded inward, and the lower part, B^2, is also folded inward. This movement tends to induce a contraction of the upper and lower edges. The metal resists this contraction, and the result is a compromise. The middle portion of the straining-ring grasps tightly on the wire-cloth and is distended. In other words, the straining-ring assumes a mean condition as to diameter. The inner edge of the straining-ring is of less diameter than before, and the outer edge or the extreme periphery of the straining-ring is of greater diameter than before. In this greater diameter it carries the annexed portion of the wire-cloth with it. It thereby imparts a properly severe and permanently remaining strain to the wire-cloth.

D D^1 is a band or hoop of sheet metal, which forms the sides of the sieve. Its upper edge (not represented) may be wired or finished in any approved manner. Its lower edge is wired or hemmed, as shown. At a proper distance above the lower edge I form a continuous internal bead, D^1, extending quite around. This forms a shelf, upon which the wire-cloth and its straining-hoop B B^1 B^2 are confined.

Above the wire-cloth and its straining-ring

I first indent the metal a little by any suitable tool, and subsequently fold it down tightly. The dotted lines in Fig. 4 represent what I may describe as the first internal beading above the wire-cloth. This lays out the proper quantity of metal for the upper internal bead, D^2. (Shown nearly fully completed in Fig. 5.)

I believe that the final forming down or crushing of the internal bead, D^2, may be produced by wheeling or by dies. I have not completed my experiments in that portion of the work. I do not confine myself to any particular method or process of forming the bead. The commencement of this bead may be produced in the treatment of the hoop before the wire-cloth and its straining-ring are inserted. I believe that it is practicable to spring in the wire-cloth and its attachment after the metal of the hoop has been formed inward to an extent fully as great as is indicated by the dotted lines in Fig. 4.

No solder is required in thus carrying out this invention. I can, however, if I prefer, solder the wire-cloth A A′ to its straining-ring, B B^1 B^2, or solder the latter to the inclosing-hoop, D D^1 D^2, or both.

I claim as my invention—

1. The wire-cloth A, having a turned edge, A′, in combination with a flattened straining-ring formed of the folded sheet metal B B^1 B^2, the said edge A^1 being inclosed between the folds B B^1, and a portion of A being inclosed between B and B^2, and the folds B B^1 B^2 being all in planes parallel with the wire-cloth A, substantially as described, the wire-cloth being stretched in folding the said rings, as set forth.

2. The metallic sieve described, having a straining-ring, B B^1 B^2, wire-cloth A A′, and hoop or sides D D^1 D^2, as herein specified.

In testimony whereof I have hereunto set my hand this 13th day of August, 1878, in the presence of two subscribing witnesses.

THEO. P. AUSTIN.

Witnesses:

W. COLBORNE BROOKES,

W. L. BENNEM.