

(No Model.)

C. M. BURNETT.
MANUFACTURE OF PAPER.

No. 258,710.

Patented May 30, 1882.

Fig. 1.

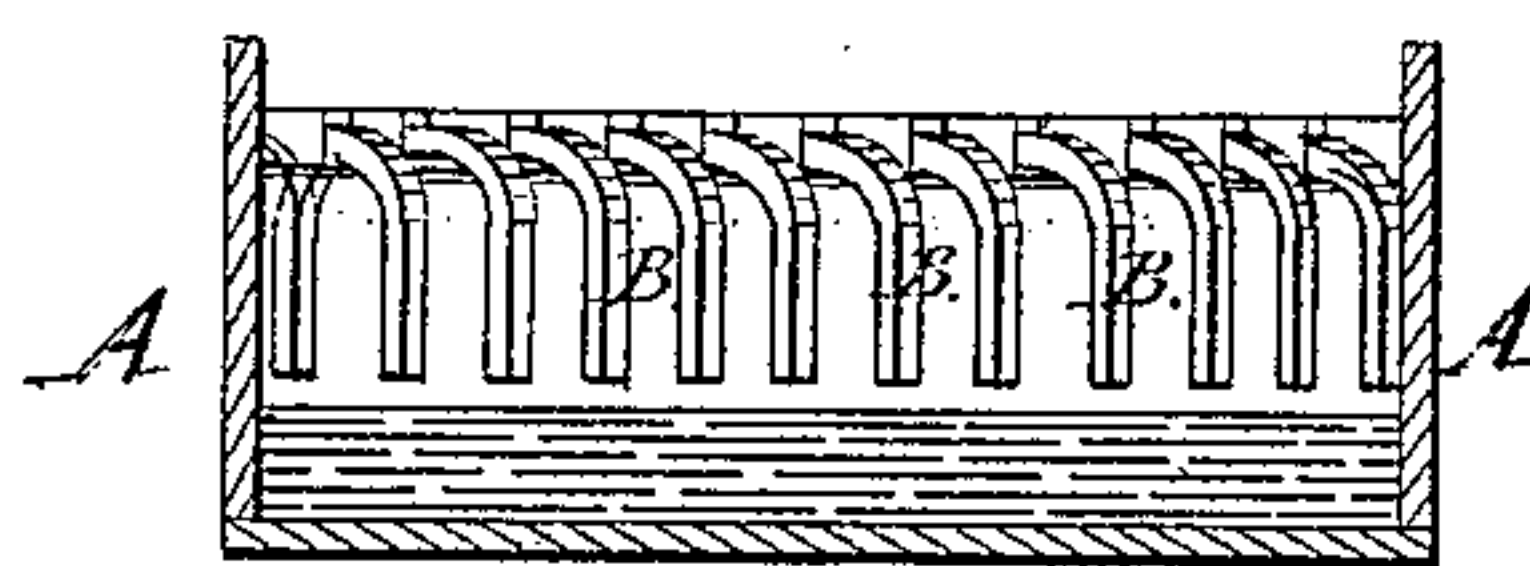
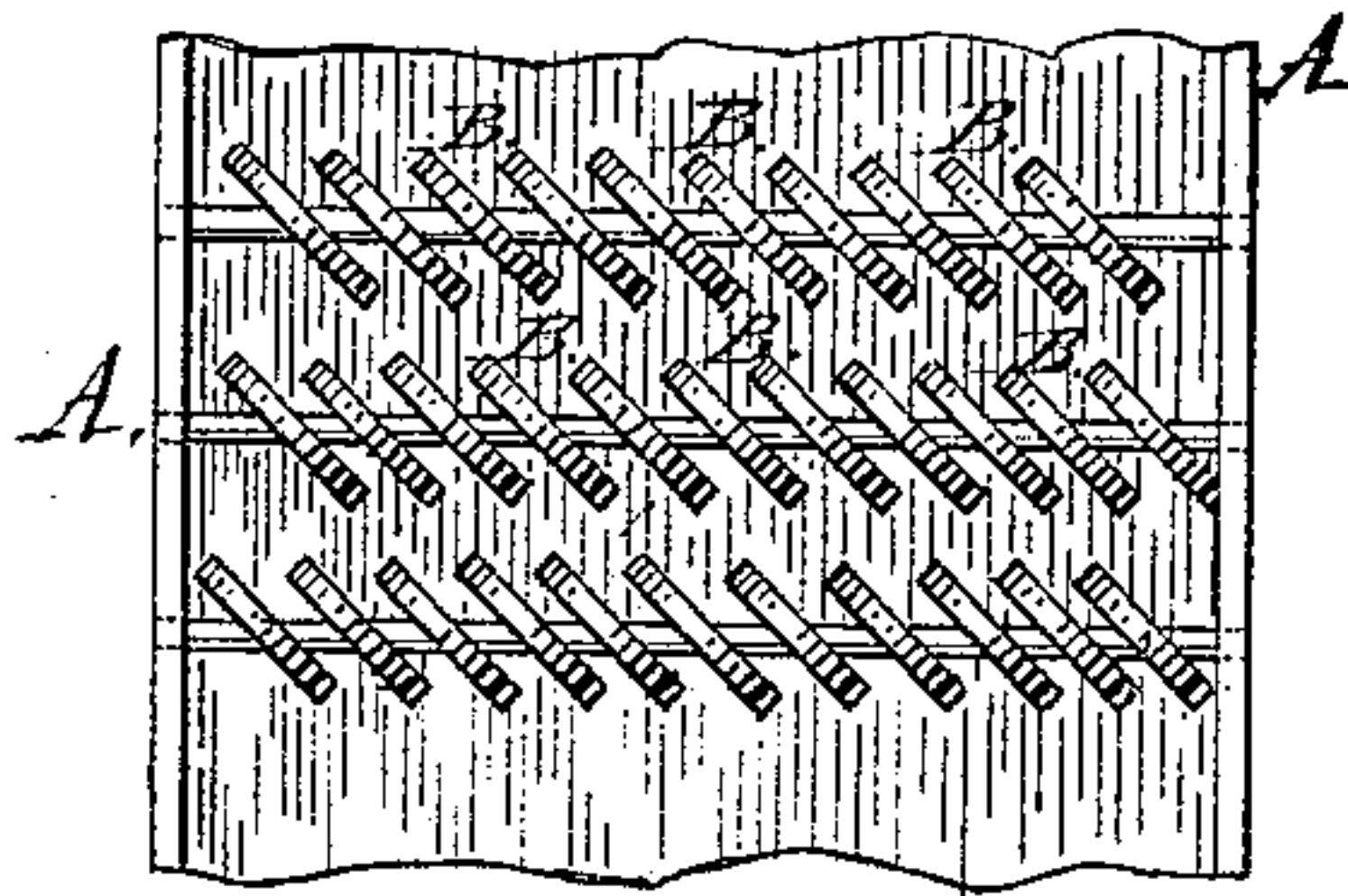


Fig. 2.



Witnesses:

William S. Fowles
Marcus Thomas

Inventor:

Charles M. Burnett.

per Jas S. Grinnell & W. D. Davis
Attys.

UNITED STATES PATENT OFFICE.

CHARLES M. BURNETT, OF TURNER'S FALLS, ASSIGNOR OF ONE-HALF TO
JOHN KEITH, OF GREENFIELD, MASSACHUSETTS.

MANUFACTURE OF PAPER.

SPECIFICATION forming part of Letters Patent No. 253,710, dated May 30, 1882.

Application filed April 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. BURNETT, of Turner's Falls, in the county of Franklin and Commonwealth of Massachusetts, have invented a new and useful Improvement in the Manufacture of Paper, of which the following is a full and true specification.

My invention relates to means by which the particles of iron and steel from crushed buttons, hooks and eyes, always occurring more or less in the pulp made from rags in the manufacture of paper, may be prevented from passing into the paper as it goes from the machine.

It is well known to manufacturers of paper, especially of writing-paper, that although the rags from which it is made are sorted with the greatest care, and especially to prevent any foreign substances from being ground with the rags, it is a matter of constant happening that buttons, hooks and eyes, and other dress-fastenings of iron or steel will elude the closest search and be ground into very fine particles, each one of which, passing in the pulp, goes into the manufactured sheet of paper, producing discoloration, and especially so when the sizing is applied, which usually contains a small amount of acid, which, acting on each particle of iron or steel, causes it to rust and stain, the result of which is the damage of a large amount of paper rendered worthless, or oftener ranked and sold as "seconds," causing a large loss. My invention is intended to correct this evil and to stop these small iron particles on their way to the machine.

In my drawings, Figure 1 is a transverse section. Fig. 2 is a plan view of the invention.

In the spout or chute A, which conveys the flowing pulp or water to the machine, and which is usually about two feet wide, and in which the flowing pulp is perhaps an inch and a half or two inches deep, I suspend a series of horseshoe-magnets, B B B, attached to a bar removably secured across the spout, preferably in a diagonal direction, with the ends of the magnets so nearly touching the bottom of the spout that no iron or steel particles can pass under without being arrested by the attraction of the magnet. In order that no portion of the flowing pulp shall escape the range of the

magnets, I place two or more sets of magnets suspended on bars across the spout, the magnets so arranged that one in each row shall cover the space between the magnets of the row next below it. The result is that in a few hours each of these magnets collects a large amount of these small metallic particles, which would otherwise pass through the machine to the great damage of the paper. Another very decided advantage has developed from this suspension of magnets as described. Across the bottom of the spout or chute are placed at intervals slight obstructions to the current, called "riffles." As the bars holding the magnets are placed over these, the partial stoppage and deflection of the current causes a sedimentary deposit or settling under each magnet of quite an amount of dirt, sand, and particles of metal other than iron and steel and other foreign substances, which otherwise would flow through and become incorporated in the paper. This proves to be a very material benefit. Each bar holding a series of magnets should be lifted out several times each day and cleaned, as they become coated with the floating metal. This is quickly done, and they are readily cleaned by turning on them a stream of water from a small hose.

To prevent oxidization, the magnets may be plated with nickel or silver without diminishing their effect.

I do not claim broadly the use of magnets to extract iron and steel from paper-pulp, as I am aware that such have been used before, arranged beneath flowing pulp, with a copper plate interposing; but

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

1. In the manufacture of paper, a series of magnets suspended upon rods, with their poles immediately above or within the flowing pulp, as and for the purpose set forth.

2. Two or more series of permanent or electro magnets arranged and suspended in quin-cunx order above or within the flowing pulp, substantially as and for the purpose set forth.

CHARLES M. BURNETT.

Witnesses:

JAMES S. GRINNELL,
WM. H. ALLEN.