

Sheet 1-3, Sheets.

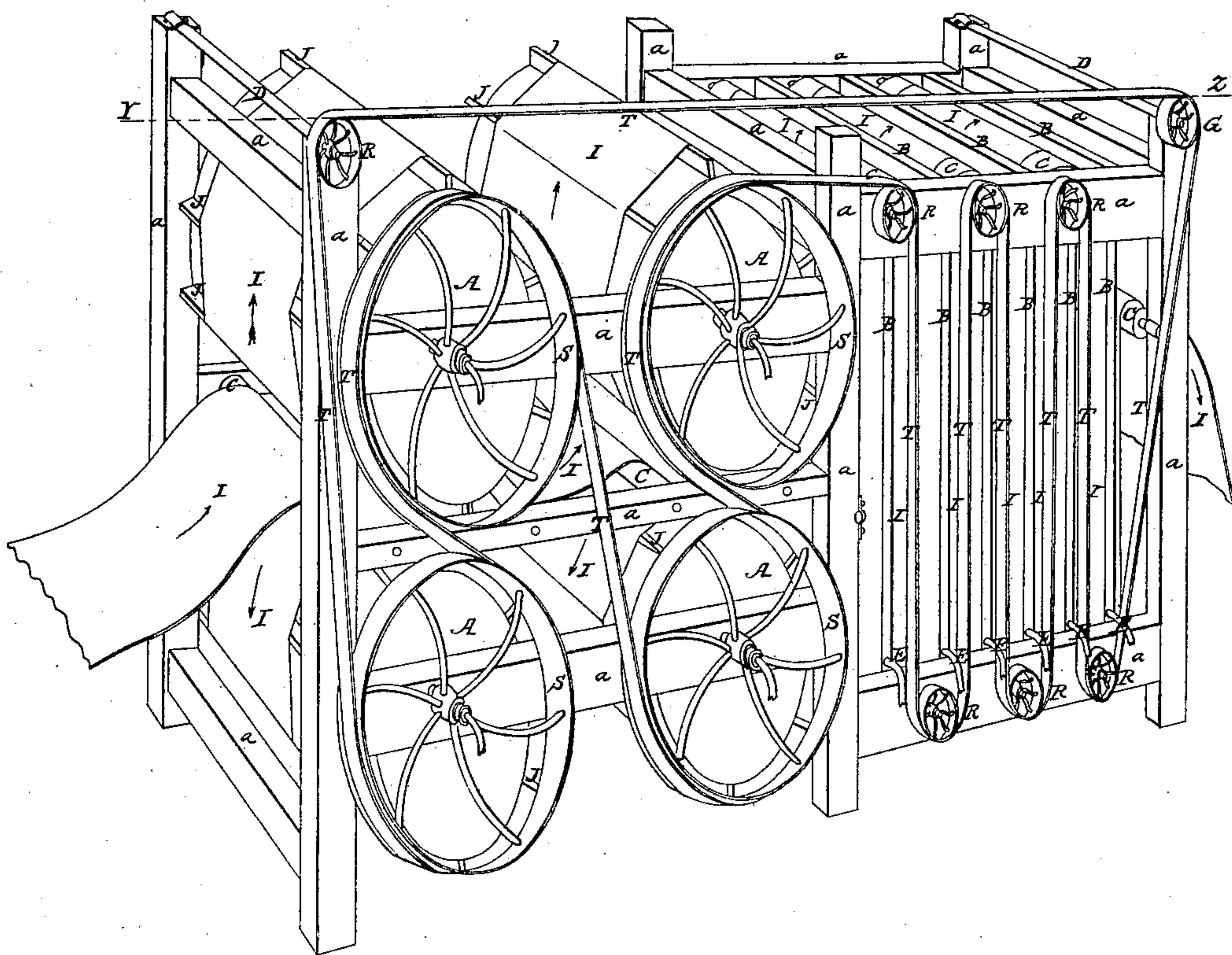
J. Hoyt.

Paper Dryer.

No.
32,870.

Patented Jul. 23, 1861.

Fig. 1.



Witnesses.
Joseph B. Cook
Sidney G. Brock

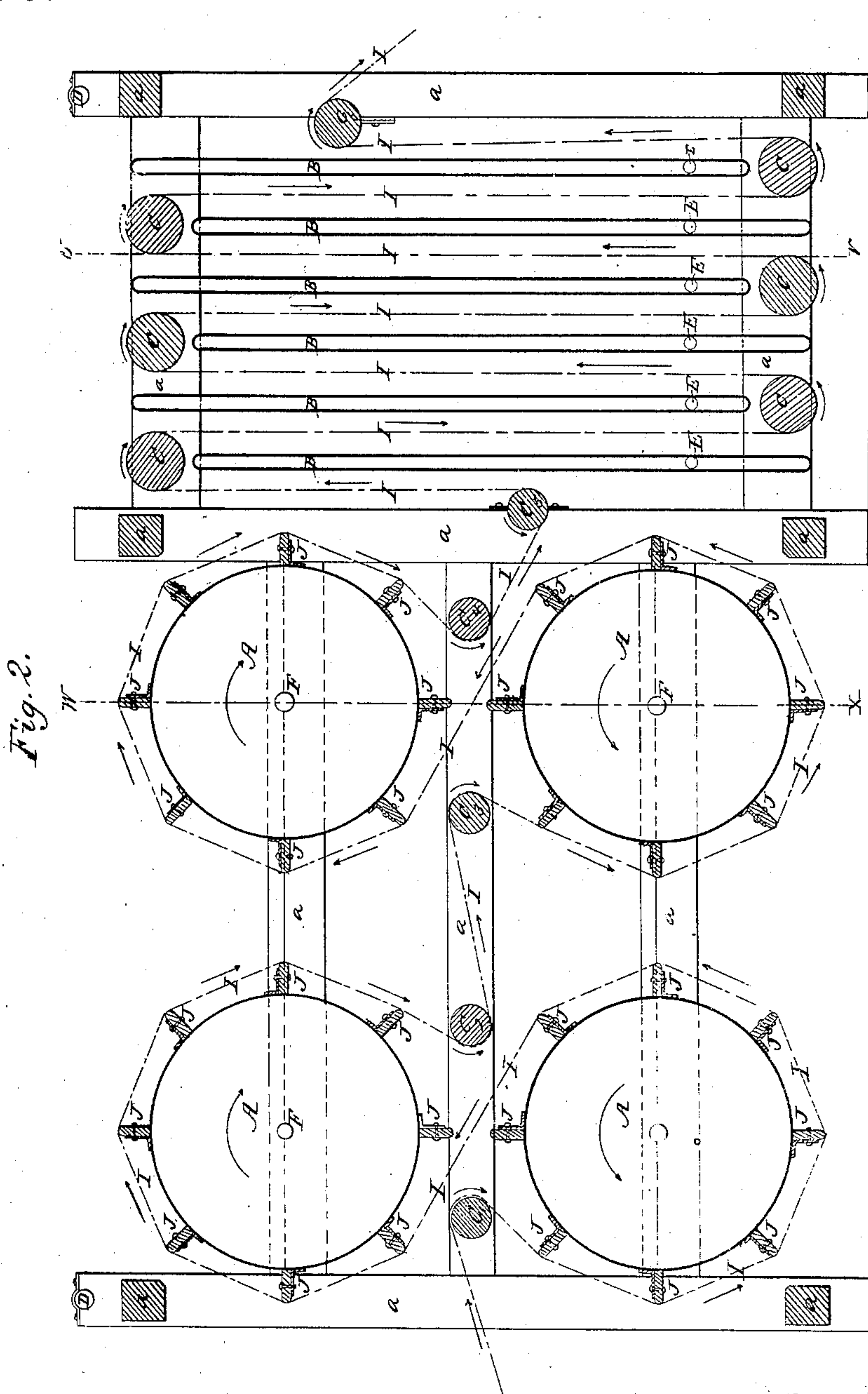
Inventor.
John Hoyt.

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Fig. 4.

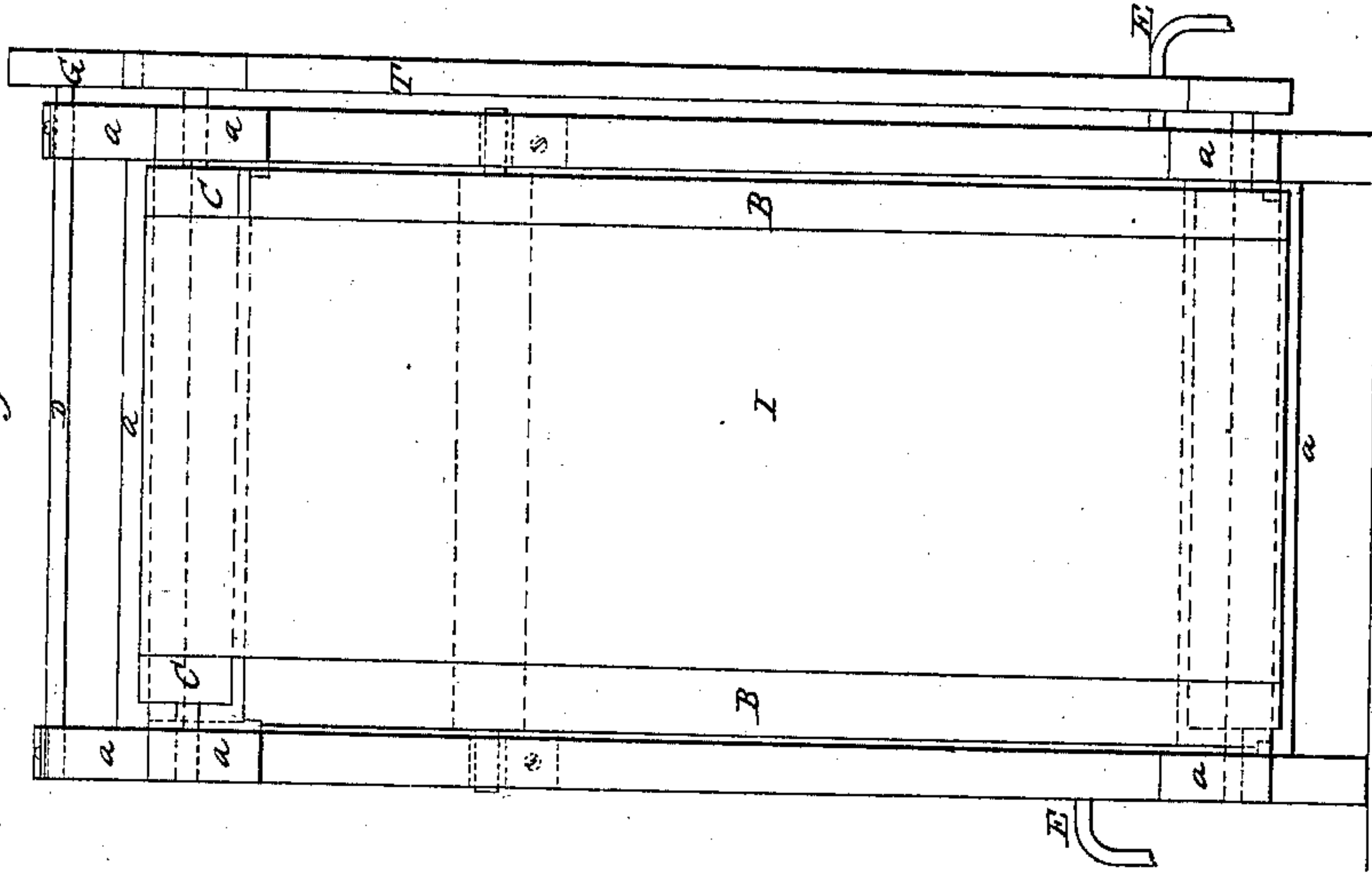
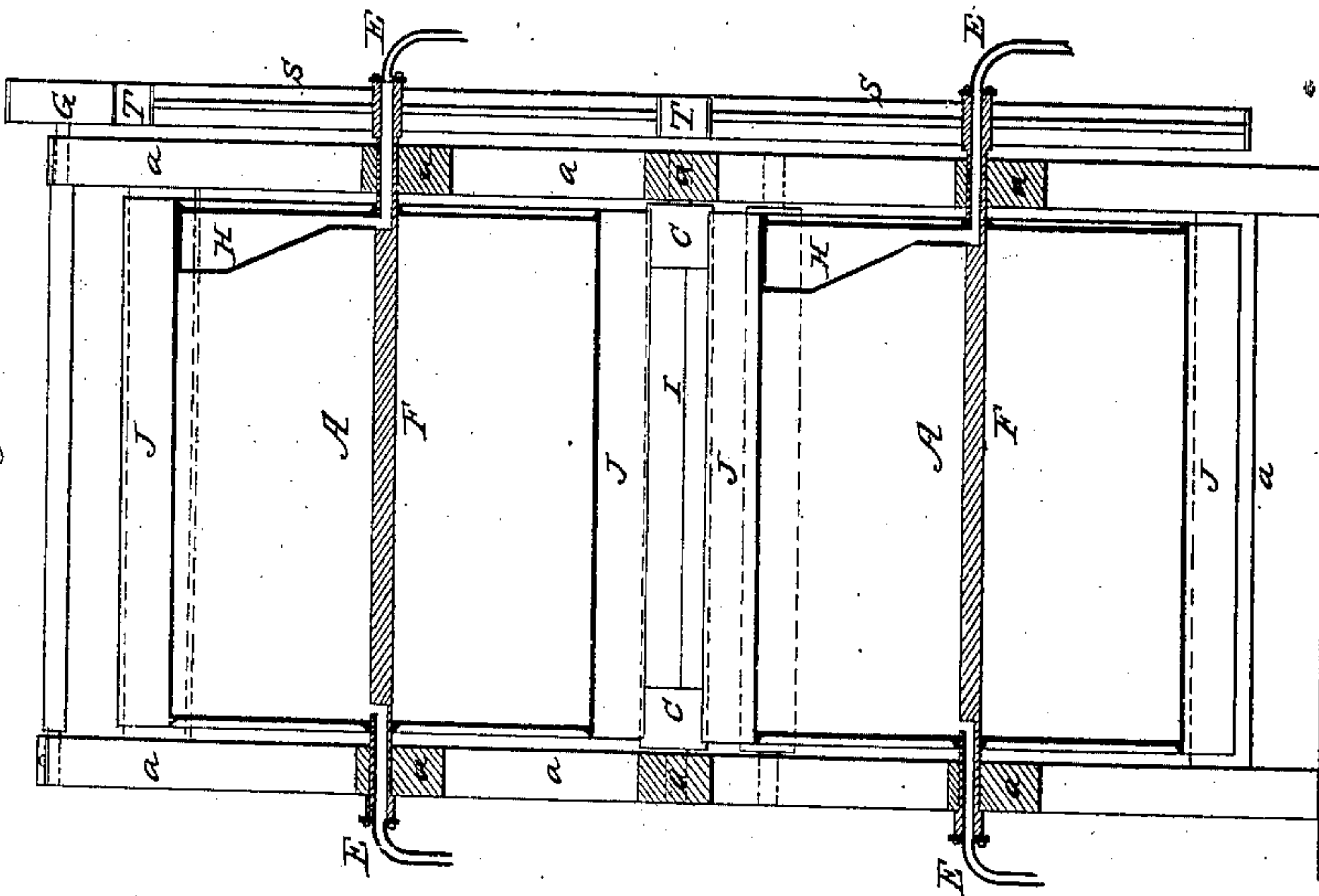


Fig. 3.



Witnesses.
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Sidney G. Brock.

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UNITED STATES PATENT OFFICE.

JOHN HOYT, OF CLEVELAND, OHIO.

MACHINE FOR DRYING PAPER.

Specification of Letters Patent No. 32,870, dated July 23, 1861.

To all whom it may concern:

Be it known that I, JOHN HOYT, of Cleveland, in the county of Cuyahoga, in the State of Ohio, have invented a new and useful
5 Machine for Drying Sized Paper; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a
10 part of this specification, in which—

Figure 1 is a perspective view; Fig. 2 is a longitudinal section cut through the line Y, Z as shown on Fig. 1. Fig. 3 is a transverse section through the line W, X, of Fig.
15 2, and Fig. 4 is also a transverse section of Fig. 2 through the line U, V.

The object of my invention consists in providing a machine by which sized paper can be dried in the web and preserve the quality
20 of the size, and by preventing the paper from coming in contact with the heated metallic surfaces.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.
25

The frame of my machine (see letters *a a a* in different figures) should be made of iron properly fastened together by bolts. Into this frame are attached the steam cylinders A, A, A, A; the non metallic rollers
30 C, C, C, C, (see Fig. 2) kept properly in their places by suitable journal bearings, and also to this frame are attached the heaters B, B, B, B. At the ends of the shafts
35 which hold the steam cylinders A, A, A, A and the rollers C C C C, &c., are attached the large pulleys S, S, S, S, and the small pulleys R, R, R, &c. (See Fig. 1.) The small pulleys G, G, as seen in Fig. 1, are
40 used for the purpose of giving a continuous rotary motion to the belt T. The rollers C¹ C² C³ C⁴ C⁵ C⁶ are used to hold the paper to its proper position and are moved by the paper passing over them. These are at-
45 tached to the diameter of the steam cylinders guards J, J, J, J, &c., made of wood or other non metallic substance. These guards are for the purpose of keeping the paper at a suitable distance from the heated metallic surface. On the inside of these cylinders
50 and at the end at which the steam escapes

are placed scoops H, H, for the purpose of discharging the water caused by the condensed steam. (See Fig. 3.) Steam pipes are connected to the ends of the shafts of
55 the cylinders A, A, A, A, both for the ingress and egress of steam. At the place of connection the common contrivance of stuffing boxes is used.

The heaters B, B, B, B, &c., are made from
60 iron or any sheet metal. The length and breadth should be such as to conform to the size of the frame work of the machine. These heaters may be made with any convenient space for steam room. The plates are
65 to be properly stayed with bolts to give them strength. There are connected to these heaters pipes E, E, E, E for the ingress and egress of steam. (See Fig. 1.)

For the purpose of operating this ma-
70 chine, it is set in motion by being conveniently attached to the main driving power. The cylinders and heaters are to be heated by being connected to proper steam boilers.

The paper after leaving the sizing ma-
75 chine, passes into the driver at the boilers C¹, and around the cylinder A, A, A, A, in the direction of the arrows as seen in Fig. 2. From the steam cylinders the web passes under the roller C⁵ and over all the rollers
80 C, C, C, C, &c., and between the heaters B, B, B, B, when it is discharged at the roller C⁶. While the paper is thus passing through the size drier it is kept at a suitable distance from the heated metal of the
85 steam cylinders by means of the non metallic guards J, J, J, &c.; and it also passes between the heaters by means of the rollers C, C, C, C, C, placed at each end of them. (See Fig. 2.) By these means we are en-
90 abled to keep the sized paper at any suitable distance from the heated metal. If the sized paper was allowed to come in contact with the heated metal the quality of the size would become destroyed. By these
95 means also we are enabled to produce a free circulation of heated air from both sides of the paper, and, at same time, to carry off freely the dampness evaporated.

What I claim as my invention and desire
100 to secure by Letters Patent in machines for drying paper by steam is—

1. Steam heated cylinders with non metallic guards arranged as described, in combination with the stationary tubular heaters B, and non metallic rollers C, substantially
5 as above described.

2. The use of non metallic guards when placed around close steam cylinders sub-

stantially as described and for the purpose set forth.

JOHN HOYT.

Witnesses:

JOSEPH POL,
SIDNEY G. BROCK.