(No Model.)

J. M. STONE.

Cylinder for Carding Machines.

No. 243,171. **Patented June 21, 1881.**

Fig: 1.

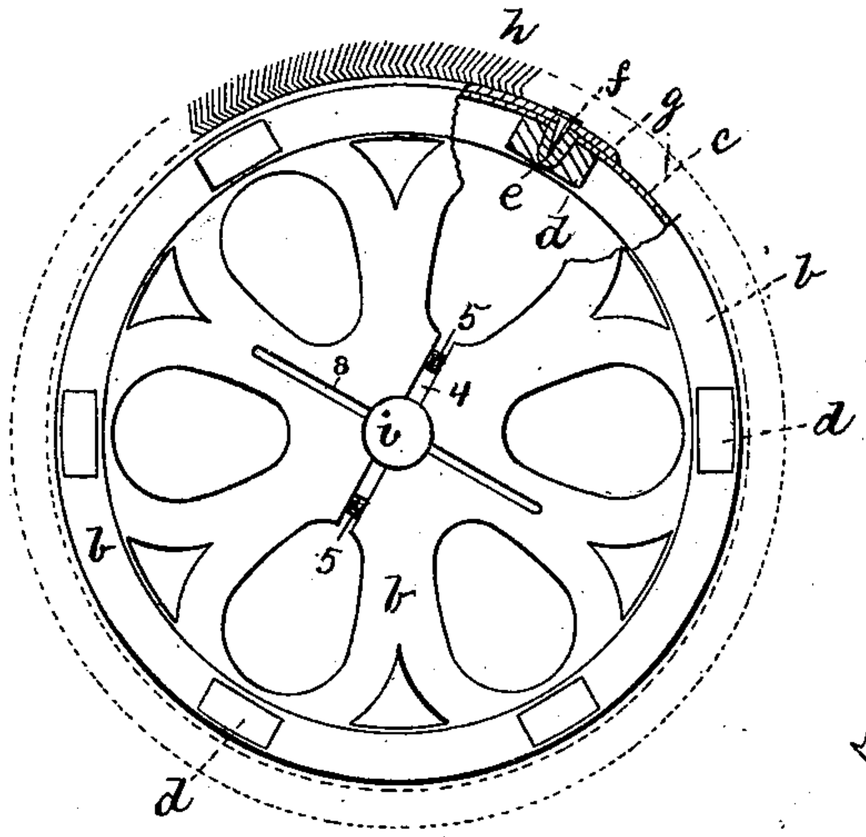


FIG. 4.

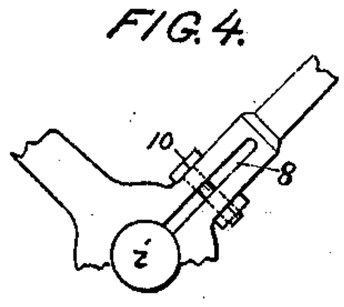


Fig: 2.

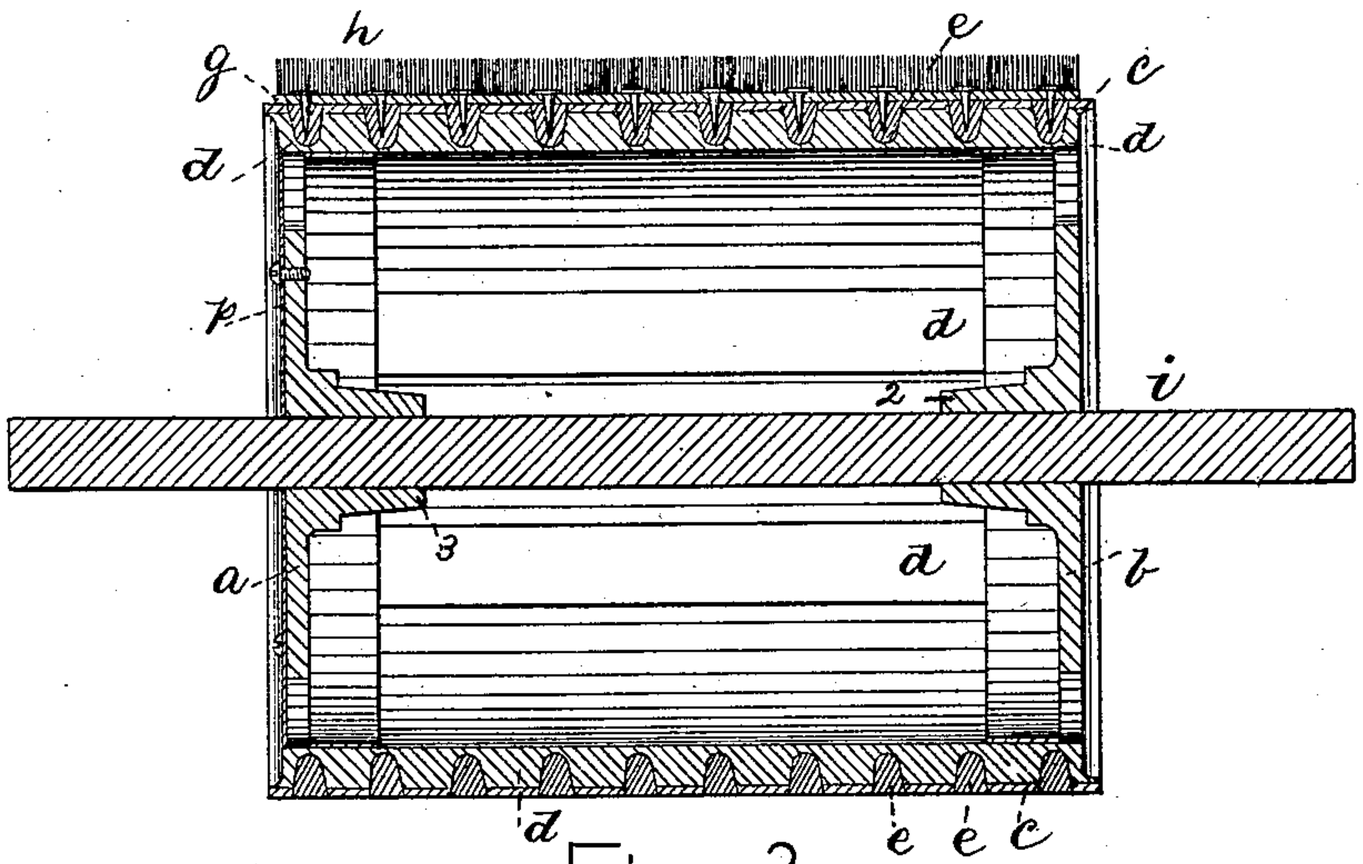
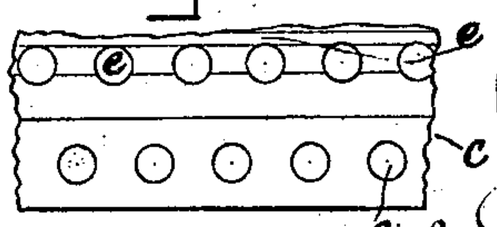


Fig: 3.



WITNESSES—

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UNITED STATES PATENT OFFICE.

JOSEPH M. STONE, OF NORTH ANDOVER, MASSACHUSETTS, ASSIGNOR TO GEO. L. DAVIS, JOHN A. WILEY, JOSEPH M. STONE, GEO. G. DAVIS, JOSEPH H. STONE, AND JAMES H. DAVIS, ALL OF SAME PLACE.

CYLINDER FOR CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 243,171, dated June 21, 1881.

Application filed February 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. STONE, of North Andover, county of Essex, State of Massachusetts, have invented an Improvement in Cylinders for Carding-Machines, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to the card-clothed cylinders of carding and other machines for working cotton and wool, and has for its object improvements in the construction of the cylinder, whereby it is made lighter, and whereby the card-clothing may be more easily, cheaply, and better secured thereto than in the plans now commonly practiced.

Figure 1 represents, in elevation, the end of a cylinder embodying my invention, a portion of the cylinder being broken out to show the wooden strip and plugs to receive the tacks which hold the card-clothing in place; Fig. 2, a longitudinal section thereof, the card-clothing showing only at one portion of the cylinder; and Fig. 3, a detail of the face of the cylinder, and Fig. 4 a modification of hub of spider.

The cylinders now used in carding-engines, and which my improved cylinders are to replace, are made of cast-iron, and their peripheries are bored with holes to receive the plugs, into which are driven the tacks which hold the usual card-clothing. These cast-iron cylinders are heavy and difficult to make, and to bore them with holes is a tedious operation.

My improved cylinder is composed of spiders or heads *a b* and a thin sheet-metal shell, *c*, secured thereto. The rims of the spider or heads, at their outer portions or peripheries, are made as continuous rings to directly support the shell *c;* but the said rims have rectangular recesses or pockets to receive the ends of the wooden strips *d*, which extend from one to the other spider, *a b*, and upon said strips the interior of the shell *c* rests at intervals, six of the said strips *d* being shown in the drawings. The shell *c* will preferably be of wrought-iron welded or brazed together in the direction of its length; but it may be made of any other light wrought metal or thin low-grade steel. The material of the shell, preferably before the shell is secured in cylindrical form, will be punched with a series of holes, in number sufficient, and so located with relation to each other and as to distance, as to receive the proper number of plugs *e*, into which are driven the tacks *f*, which hold the leather or cloth backing *g* of the card-clothing *h*, as shown. The wooden plugs *e*, made conical and driven through the holes in the shell, thereafter enter holes in the wooden strips, the shape of the plugs acting to pin or securely hold the shell and wooden strips together. These plugs, as they are driven into the wooden strips, are supplied with glue, to thus insure the retention of the plugs in the strips.

The holes punched or formed in the thin metal shell *c*, in line with the wooden strips, may be in one row, or in two rows, as in Fig. 3, according to the kind of card-clothing to be applied and the manner of the joint.

When the two edges of a sheet of card are to meet, two rows of plugs enable the abutting ends of the card-backs to be put closely together.

The clothing may be a flat sheet, or in strips such as are wound spirally about the shell.

A cylinder may in this way be constructed very cheaply, may be made lighter in weight, and more durable than if of cast-iron, as heretofore usual and common. Some of the cylinders used in carding-machines are of such diameter and size that I may profitably employ drawn or seamless shells.

The spiders, having unbroken outer edges or peripheries to support the shell, have their hubs 2 split, as at 4, Fig. 1, the split hubs receiving between their halves the cylinder-shaft *i*. These hubs are each provided with adjusting and set screws 5, by which the hubs of the spiders may readily be placed on the shaft *i* and the shell be quickly adjusted with relation to the exact center of rotation of the said shaft *i*.

It is obvious that the tacks might be driven directly into the wooden strips; but I prefer to provide the said strips with the wooden plugs.

The open ends of the spiders are faced with

thin sheet-metal plates, as at *p*, (see left of Fig. 2,) to keep flyings, &c., from the interior of the cylinder.

To insure the most perfect adjustment of the spider and hub on the shaft *i*, I prefer to provide it with the slots S, extended into the arms of the spider, as in Fig. 1.

I have herein shown the cylinder as having but two spiders and six wooden strips; but in practice some of the cylinders will have a greater number of spiders and strips, according to their length and diameter, a cylinder of forty-eight inches in diameter having in actual practice twenty-four strips.

If desired, the hub and arms of the spider may be constructed as in Fig. 4, where the slots 8, extended into the arms of the spider, may be controlled by the bolts 10.

I claim—

1. The connected spiders or heads *a b*, and the wooden strips held at their ends by the said spiders, combined with the thin metal shell *c*, provided with the holes above the said strips, substantially as described.

2. The spiders, shaft, and perforated shell, and strips *d*, connecting the spiders, combined with the plugs *e*, driven therein and into the said strips, all substantially as described.

3. The spiders, shaft, and wooden strips *d*, combined with the perforated shell and tapering plugs *e*, driven therein, to bind the shell and strips together, and to receive the tacks which hold the card-clothing in place, substantially as described.

4. In combination, the shaft and wooden strips, and spiders *a b*, provided with sockets to receive and hold the ends of the wooden strips, and the wrought-metal cylindrical shell supported by the said wooden strips, substantially as and for the purpose described.

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

JOSEPH M. STONE.

Witnesses:
G. W. GREGORY,
BERNICE J. NOYES.