B. F. HAIGH & L. E. GREENWOOD.

Art of Treating Rovings on Carding-Engines to Prevent their Disintegration.

No. 212,928 **Patented Mar. 4, 1879.**

FIG. 1.

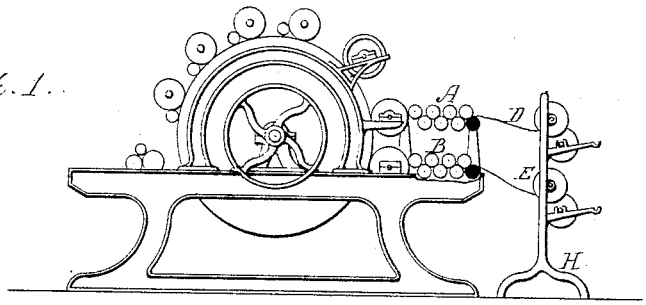
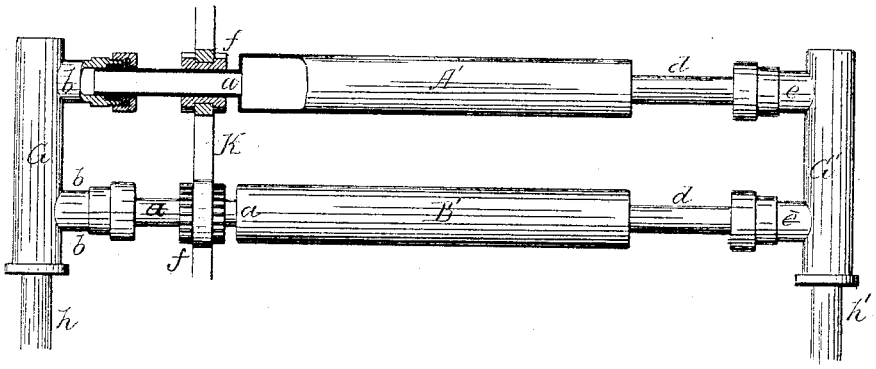


FIG. 2.



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UNITED STATES PATENT OFFICE.

BENJAMIN F. HAIGH AND LAFAYETTE E. GREENWOOD, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN THE ART OF TREATING ROVINGS ON CARDING-ENGINES TO PREVENT THEIR DISINTEGRATION.

Specification forming part of Letters Patent No. **212,928**, dated March 4, 1879; application filed November 14, 1878.

To all whom it may concern:

Be it known that we, BENJAMIN F. HAIGH and LAFAYETTE E. GREENWOOD, both of Philadelphia, Pennsylvania, have invented a new and useful Improvement in the Art of Treating Rovings on Carding-Engines to Prevent their Disintegration, of which the following is a specification:

The object of our invention is to prevent the disintegration and breakage of the rovings in a carding-engine at the point where they pass from the rub-rolls toward the spools; and this object we attain by heating one or more of the rub-rolls of each set, as fully explained hereinafter.

In the accompanying drawings, Figure 1 is a side view, in outline, of a condenser carding-engine, showing the rub-rolls, to which our improvement is preferably applied; and Fig. 2, a front view, drawn on an enlarged scale, of the two rub-rolls with steam-heating adjuncts.

In modern condenser carding-engines there are usually two sets, A and B, of rub-rolls, two sets, D and E, of rovings passing from these rolls to the spools on the stand H, Fig. 1.

The woolen rovings are so charged with electricity by the friction to which they are subjected that on leaving the rub-rolls, on their course to the spools, they become more or less disintegrated, frequently break, and are often wrapped round the rolls—evils which result in retarding the operations of the machine, and in the production of rovings of inferior quality and in detached lengths.

Different plans have been adopted with the view of remedying this evil. The common practice, however, is to sprinkle water on the rub-rolls—a plan which has a beneficial effect, but is attended with the inconvenience of charging the rovings with water.

We overcome the difficulty by simply heating one or more rub-rolls of each set, preferably the end roll only, as shown in black in Fig. 1.

The mode preferred of heating the rolls is shown in Fig. 2, in which A′ is the hollow end roll of the upper set, and B′ the hollow end roll of the lower set.

G and G′ are two pipes, one on each side of the machine, and secured to the frame-work of the same in any suitable manner, steam being admitted to the pipe G through a tube, *h*, and passing through the rolls and their tubular journals into the pipe G′, whence it is carried off through the waste-tube *h*′, which, as well as the steam-tube, is furnished with a suitable cock or valve to regulate the admission and discharge of steam.

The tubular journals *a a* of the rolls project into and turn freely in branches *b b* on the pipe G, the said branches being furnished with appropriate stuffing-boxes. In like manner the tubular journals *d d* of the hollow rolls pass through and turn in stuffing-boxes on the branches *e e* of the pipe G′.

In the present instance no longitudinal reciprocating motion is imparted to the rolls, which are rotated in the usual manner—that is, through the medium of cog-wheels *f*, which are adapted to bearings on the frame K, and are secured to the journals *a a*.

The opposite journals, *d d*, have their bearings, in the present instance, in the branches *e e* of the pipe G′.

If desired, the rub-rolls may be reciprocated as well as rotated in a manner well known to those familiar with carding-engines, the stuffing-boxes permitting this combined movement.

We have ascertained by practical tests that by thus heating the rolls A′ and B′ the above-mentioned evils are obviated, the rovings passing from the rolls to the spools in an undisturbed condition.

More of the rub-rolls than those referred to may be heated; but we have found in practice that the desired end is attained by heating the end roll of each set.

Heated air or gas-jets may be employed to impart heat to the rolls; but we prefer the use of steam. When the latter is used, minute perforations may be made in the rub-rolls, so that fine jets of steam will be projected from the same and onto the rovings as the latter pass between the rolls.

We claim as our invention—

The method herein described of preventing the disintegration of rovings in carding-engines, which method consists in subjecting the said rovings to the action of one or more heated rub-rolls, substantially in the manner specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

BENJAMIN F. HAIGH.
LAFAYETTE E. GREENWOOD.

Witnesses:
ALEX. PATTERSON,
HARRY SMITH.