(No Model.) 2 Sheets—Sheet 1.

J. DYSON & C. W. COOKSON.

CARDING MACHINE FOR THE MANUFACTURE OF MOTTLED ROVINGS.

No. 310,803. Patented Jan. 13, 1885.

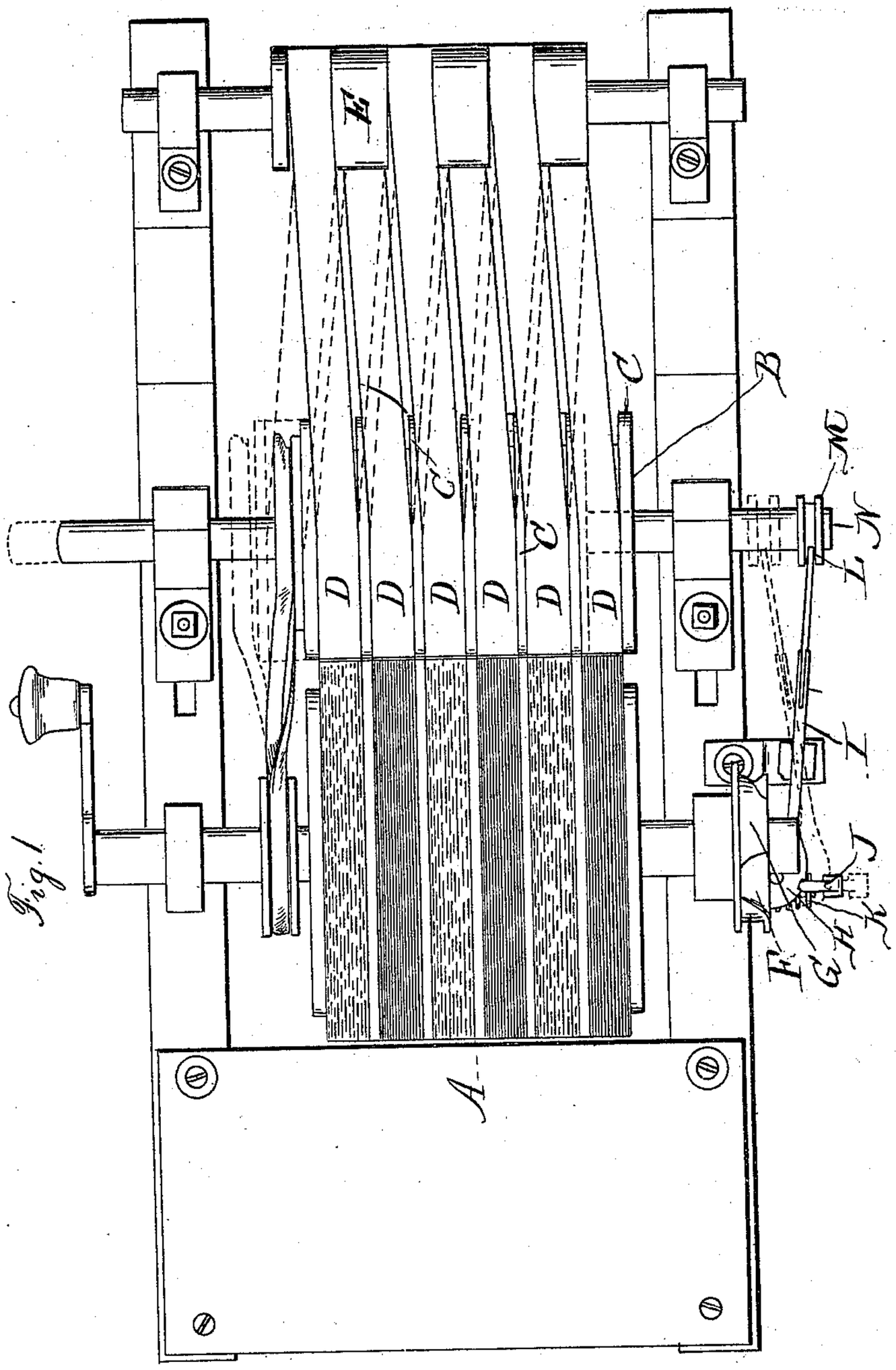

Fig. 1.

Witnesses.
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C. W. Whiting

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Fig. 2.

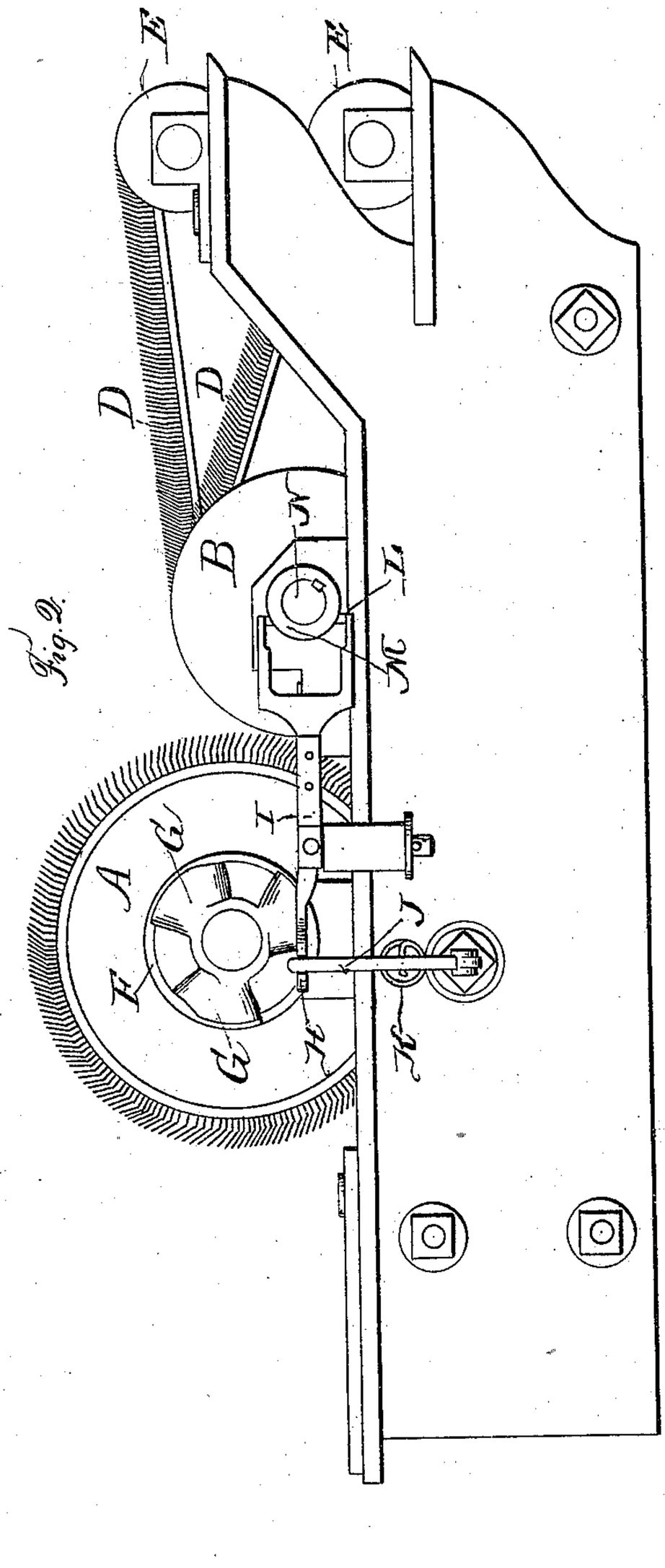

Fig. 3.

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UNITED STATES PATENT OFFICE.

JOB DYSON AND CHARLES WILLIAM COOKSON, OF NEW BRITAIN, CONN.

CARDING-MACHINE FOR THE MANUFACTURE OF MOTTLED ROVINGS.

SPECIFICATION forming part of Letters Patent No. 310,803, dated January 13, 1885.

Application filed January 28, 1882. (No model.)

To all whom it may concern:

Be it known that we, JOB DYSON and CHARLES W. COOKSON, residents of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Carding-Machines for the Manufacture of Mottled Rovings; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of the specification, and in which—

Figure 1 is a top view of the frame, the carding-cylinder, doffer-cylinder, belts of card-clothing, rollers over which said belts travel, and means for reciprocating the doffer-cylinder of our improved machine for carding mottled rovings. Fig. 2 is a side view of the same, and Fig. 3 is a view of one of the slivers.

Similar letters of reference indicate corresponding parts in all the figures.

Our invention has relation to that class of carding-machines in which different-colored stock is fed to the main cylinder, forming circumferential strips, and in which the said different-colored strips are removed by a doffer having a transversely-reciprocating motion besides its rotary motion, so as to remove slivers of alternating colors; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates the main cylinder, which is journaled in a suitable frame and covered with card-clothing in the usual manner.

B indicates the doffer-cylinder, which is provided upon its surface with a number of equidistant flanges, C, between which a number of endless belts, D, of card-clothing pass, which pass alternately over two smaller rollers, E E, journaled transversely in the forward end of the machine-frame. A disk, F, having a number of inclined projections, G, upon its outer face, is secured upon one end of the shaft of the main cylinder, and the inwardly-projecting rear end, H, of a lever, I, pivoted horizontally upon a bracket at the side of the machine-frame, bears against this disk, the inwardly-projecting end of the lever, following the contour of the projections upon the disk, being forced against the same by means of the upper end of a vertical lever, J, pivoted at its lower end upon the side of the frame, and having a contractible spring, K, secured to it and to the frame, which forces the vertical lever to bear with its end against the forward end of the horizontal lever. The forwardly-projecting end L of the horizontal lever is bifurcated, and the bifurcated ends are bent toward each other and engage the grooved periphery of a disk, M, secured upon the ends of the doffer-shaft N, which rotates and reciprocates in its bearings in the frame. It will be seen that as the main cylinder is revolved the projections upon the disk at the end of the shaft thereof will rock the horizontal lever, which will impart a reciprocating motion to the doffer shaft and cylinder, at the same time that said doffer shaft and cylinder receive a rotary motion by suitable belt-connection with the main shaft. The differently-colored wool is fed upon the main cylinder in circumferential bands or slivers of the same width as the doffer-belts, and the transverse play of the doffer-cylinder is adjusted according to the width of the doffer-belts and according to the number of colors desired to be mixed in the rovings, the doffer-cylinder reciprocating the width of all the bands of different colored wool desired to be incorporated in one roving.

In the drawings two colors are indicated by different shading as being fed upon the main cylinder, and consequently the reciprocating play of the doffer-cylinder is confined to the width of two bands, the two extreme positions of the doffer-cylinder, its belts, and the levers being shown, respectively, in full and dotted lines, and it will be seen that the doffer-cylinder, moving from one band to another, will cause the joint between the two colors of wool in the rovings to be oblique, thus tending to give to the yarn spun from these rovings a more perfect mottled appearance than in machines having a main cylinder and doffer-cylinders having alternating strips of card-clothing and smooth spaces and reciprocating relatively, which machines, by reason of the intermediate smooth spaces, will make the joints between the different colors of wool straight across the rovings, which in the yarn will show abrupt changes of color, and not the smooth

change from one color into another, which is especially desirable in mottled yarn.

We are aware that carding-machines have been made having a number of endless belts of card-clothing traveling over a doffer-cylinder and alternately over two smaller cylinders; but these machines are not capable of performing the function of our machine—viz., producing mottled rovings—each strip of card-clothing carrying a continuous strip of the same color as is placed upon the carding-cylinder; and we are also aware that machines for carding mottled rovings have been made in which two doffer-cylinders having alternating strips of card-clothing and blank spaces reciprocate transversely, one a distance above the other, in contact with the main cylinder, upon which the slivers of different colored wool are fed in circumferential strips; but the doffer-cylinders being placed one above the other, it follows that every time the cylinders are moved to one side or the other the strips of card-clothing upon the lower cylinder will strike spaces upon the main cylinder from which the strips upon the upper cylinder have removed the wool for a space equal to the distance between the points of contact of the doffer-cylinders, which will cause a break in the roving, and although such breaks may be made of only short duration by accelerating the speed of the main cylinder and by making the distance between the cylinders as short as practicable, still there will be a break in the roving, which will weaken the yarn and cause a too abrupt joint between the colors to produce a perfect mixed or mottled appearance of the yarn. In our machine the points of contact of the doffer-strips removing the different colors are all in one line, thus forming a perfectly continuous roving and a perfectly gradual blending of one color into another, which is the essential point desired to be accomplished by our machine. We therefore do not wish to claim any of these constructions, broadly; but

We claim—

The combination of the main carding-cylinder, the doffer-cylinder having equidistant flanges upon its surface, means, as described, for reciprocating said cylinder, the smaller rollers, journaled one above the other, and the endless belts of card-clothing passing over the doffer-cylinder and alternately over the rollers, as and for the purpose shown and set forth.

JOB DYSON.
CHARLES WILLIAM COOKSON.

Witnesses:
JAMES SHEPARD,
C. A. SHEPARD.