

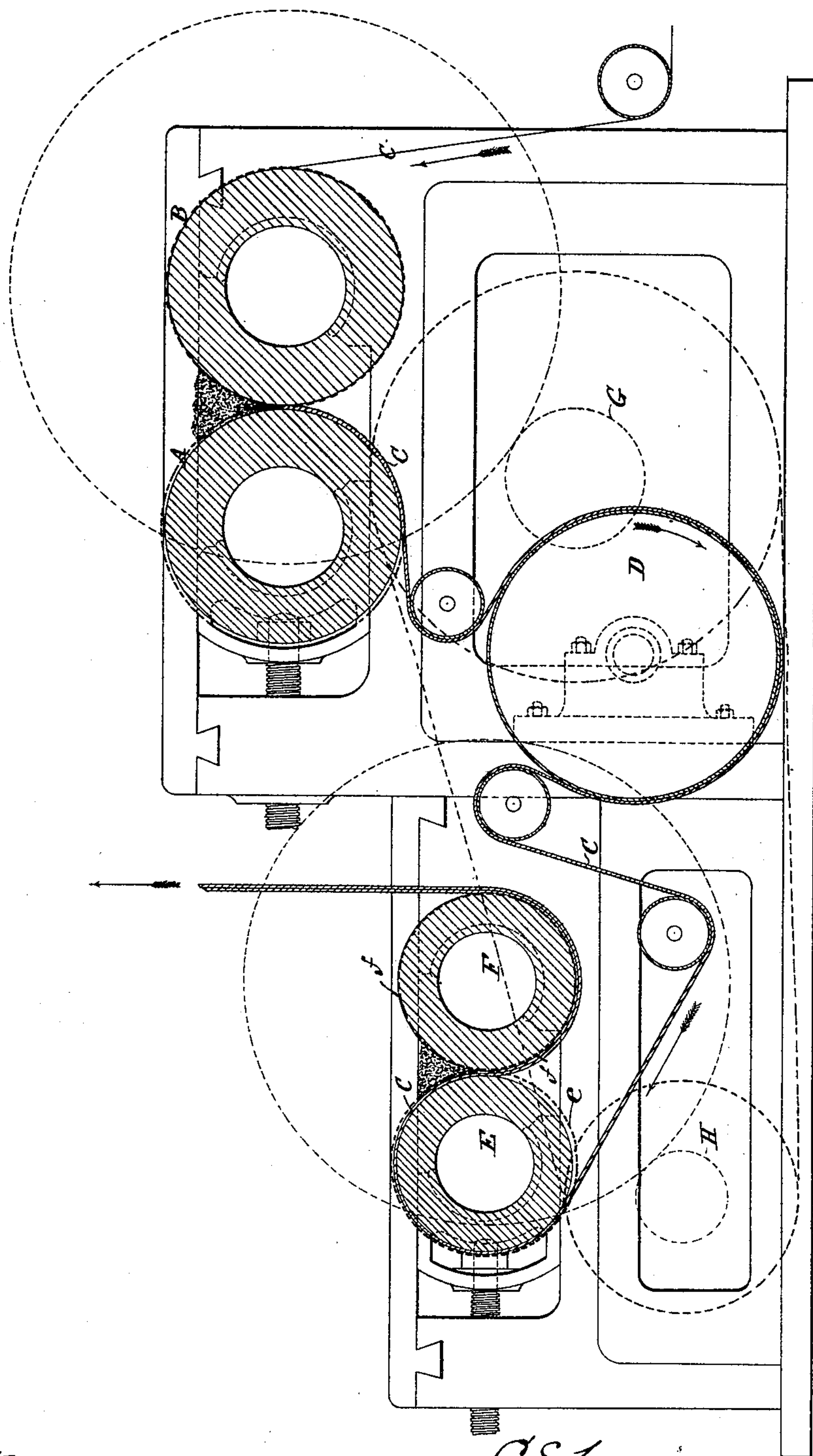
(No Model.)

C. E. LUCAS.

PROCESS OF MANUFACTURING LINOLEUM FLOOR CLOTH.

No. 386,926.

Patented July 31, 1888.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES EDWARD LUCAS, OF STAINES, COUNTY OF MIDDLESEX, ENGLAND.

PROCESS OF MANUFACTURING LINOLEUM FLOOR-CLOTH.

SPECIFICATION forming part of Letters Patent No. 386,926, dated July 31, 1888.

Application filed June 11, 1887. Serial No. 240,998. (No model.) Patented in England August 28, 1885, No. 10,221.

To all whom it may concern:

Be it known that I, CHARLES EDWARD LUCAS, a subject of the Queen of Great Britain, late of Thorpe Road, Staines, now of Bank Side, Staines, in the county of Middlesex, England, gentleman, have invented certain new and useful Improvements in the Process of Manufacturing Linoleum Floor - Cloth, (for which a patent has been granted to me in Great Britain dated August 28, 1885, No. 10,221,) of which the following is a specification.

Linoleum as usually made is a mixture of ground cork and oxidized linseed - oil with othersuitable ingredients spread or rolled upon canvas. The reverse or unprotected side of the canvas is afterward covered with a kind of paint called "backing;" but this backing material is not sufficient to entirely protect the canvas from the effects of damp. This dampness has long been known to exert an injurious effect upon linoleum floor-cloth, not only rotting the canvas back, but also causing unequal expansion or contraction of the material after being laid upon floors. Attempts have been made to obviate these objections by covering the canvas insertion on both sides with linoleum composition; but prior to this invention these attempts have been unsuccessful. I obtain a good result by passing the canvas through a pair of steam-heated rolls fed with linoleum material in the usual way, by which one coat—say the face—is applied. The fabric so coated then passes with the face side round a cooling drum or cylinder, the object of which is to render the composition hard and not liable to be displaced by the subsequent processes by which the back coating is applied. At a suitable distance I place another pair of rolls, one steam-heated and the other cooled by water, and round the latter roll the half-completed fabric passes to receive the back, which may be composed of a slightly- softer composition, and is spread or rolled by the steam - heated roll, to which I impart a slightly - accelerated speed. By this process the cost of backing the cloth is avoided, and, moreover, a cheaper quality of material can be used for the body of the cloth by reason of its greater flexibility. The hot roll that spreads the material forming the back or under coat may have its surface cut or embossed, so as to form parallel grooves in the back to

produce air spaces between the linoleum floor-cloth and the floor-boards, and thereby prevent rotting of the floors.

The drawing annexed is a longitudinal section of a machine for manufacturing linoleum floor-cloth in the above manner.

A B are a pair of rolls by which a face-coating of linoleum material is put on to one side of the canvas, C, in the ordinary manner, just as the coating of linoleum material is now applied to canvas in the manufacture of linoleum floor-cloth. The canvas with the coating upon it is then led around a drum, D, which is kept cool by water made to circulate through it, the axes of the drum being for this purpose made hollow, and a stream of water introduced through one and allowed to flow off through the other.

Afterward the canvas is conducted over guide-rollers to the second pair of rolls, E F. The roll E is kept cool by water, while the other roll, F, is heated by steam admitted to its interior. The rollers E F are geared together by toothed wheels *ef*, and the roll F is made to revolve at a somewhat quicker speed than the roll E by the toothed wheel on its axis being formed, say, with one tooth less than the number of teeth on the toothed wheel of the roll E. The roll E should revolve at the surface - speed at which the fabric is delivered from the rolls A B. Motion is given to the first pair of rolls from a pinion, G, on a driving-shaft gearing into a toothed wheel on the axis of the roller B.

From the driving-shaft motion is also transmitted by an endless band to a shaft, on which is a pinion, H, gearing with a toothed wheel on the axis of the roller F. The composition applied to the back of the fabric by the rolls E F, I preferably make somewhat softer when heated than the composition applied to the face. The softening of linoleum composition is usually effected by adding to them a greater proportion of resinous material. The coating applied to the back I also preferably make thinner than the face-coating—say about five one-hundredths of an inch for the back and eight one-hundredths of an inch for the face. The fabric after passing from the last pair of rolls is led away and wound into a roll in the ordinary manner.

The roll F may, as above stated, have small

parallel grooves cut around its circumference, so as to form parallel grooves in the backing of the cloth.

5 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

10 The hereinbefore-described improvement in the process of manufacturing linoleum floor-cloth, which consists in applying heated linoleum material upon one face of a strip of canvas, spreading it thereon to form a film or layer

of uniform thickness, uniting it therewith by pressure, then cooling and hardening this film and afterward applying heated linoleum material upon the other face of the canvas, spreading it thereon to form a film or layer of uniform thickness, and uniting it therewith by pressure, substantially as herein set forth. 15

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