

(No Model.)

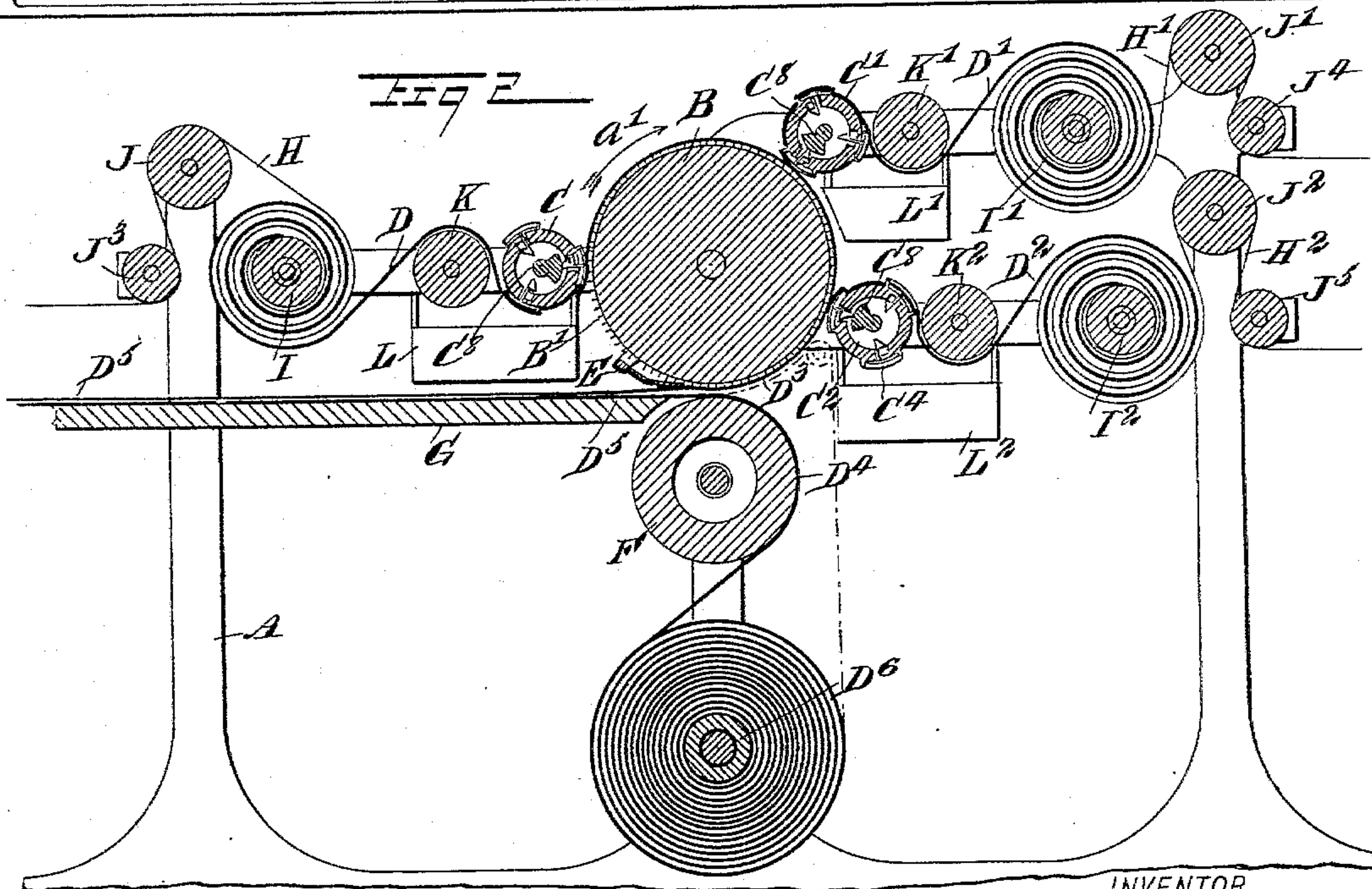
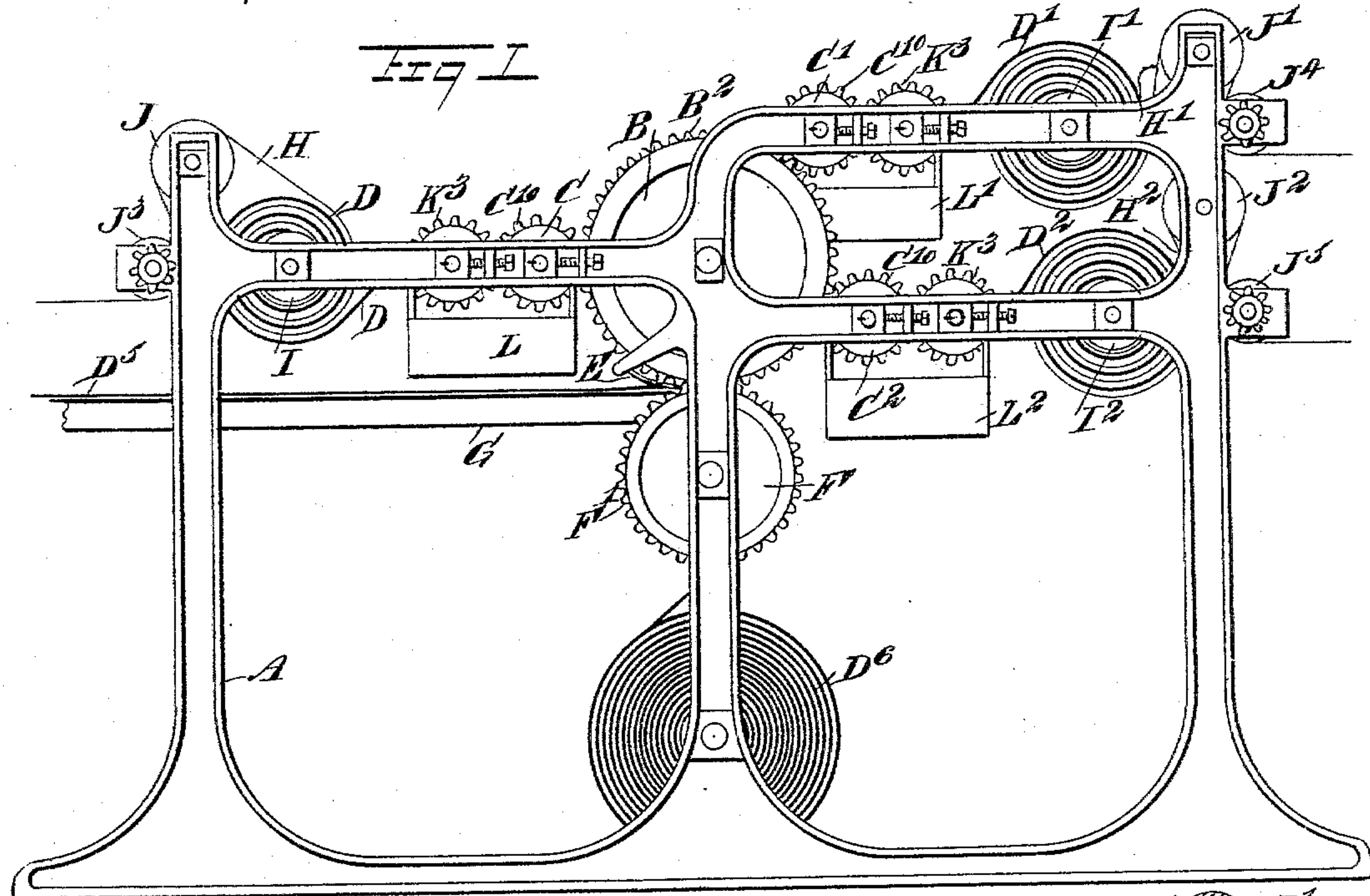
2 Sheets—Sheet 1.

L. W. LOWE.

MACHINE FOR MAKING CONTINUOUS INLAID LINOLEUM.

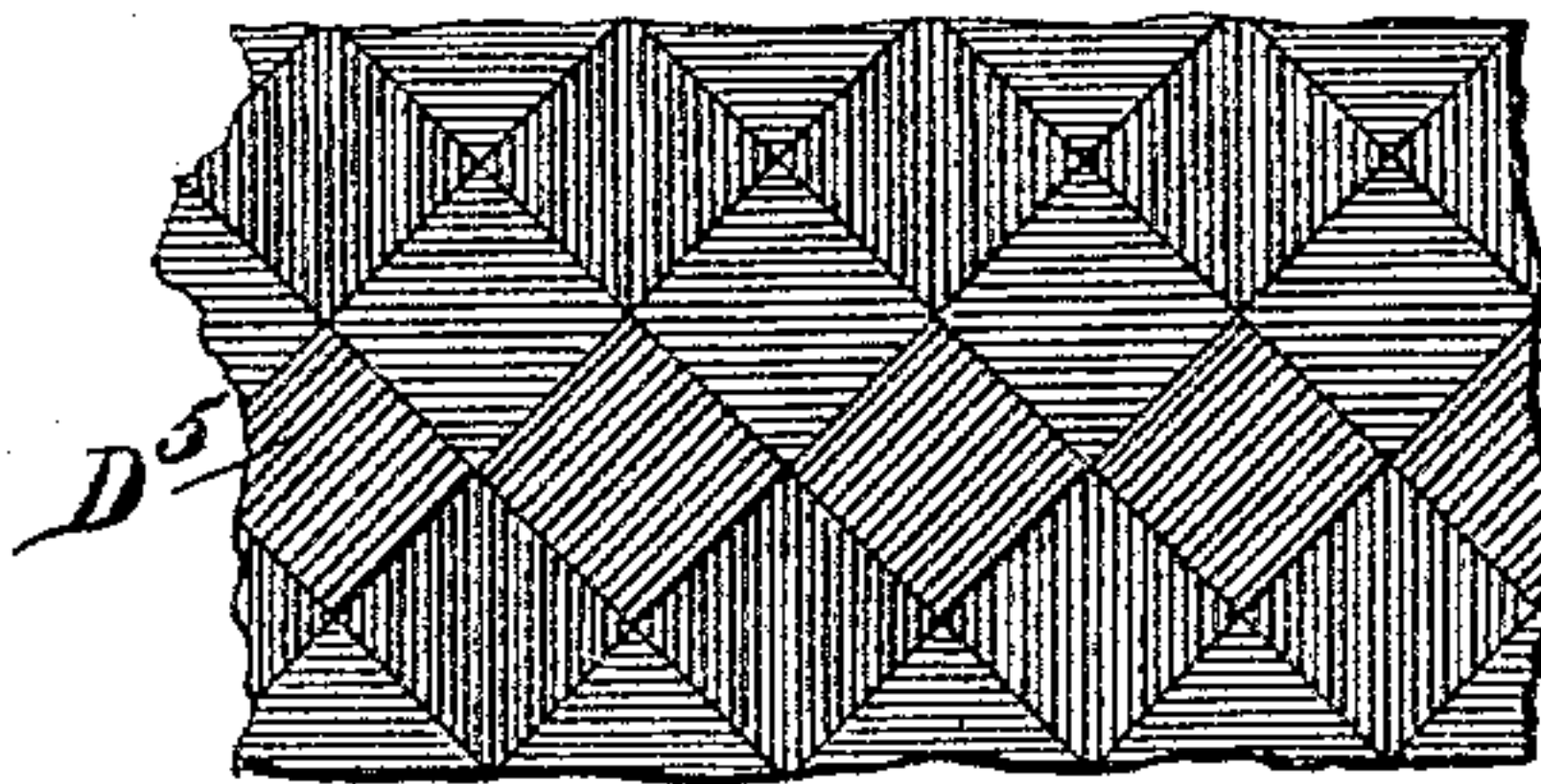
No. 562,840.

Patented June 30, 1896.



WITNESSES:

H. Walker
Geo. F. Smith



INVENTOR

Fig 7 L. W. Lowe

BY

Mum & Co

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

L. W. LOWE.

MACHINE FOR MAKING CONTINUOUS INLAID LINOLEUM.

No. 562,840.

Patented June 30, 1896.

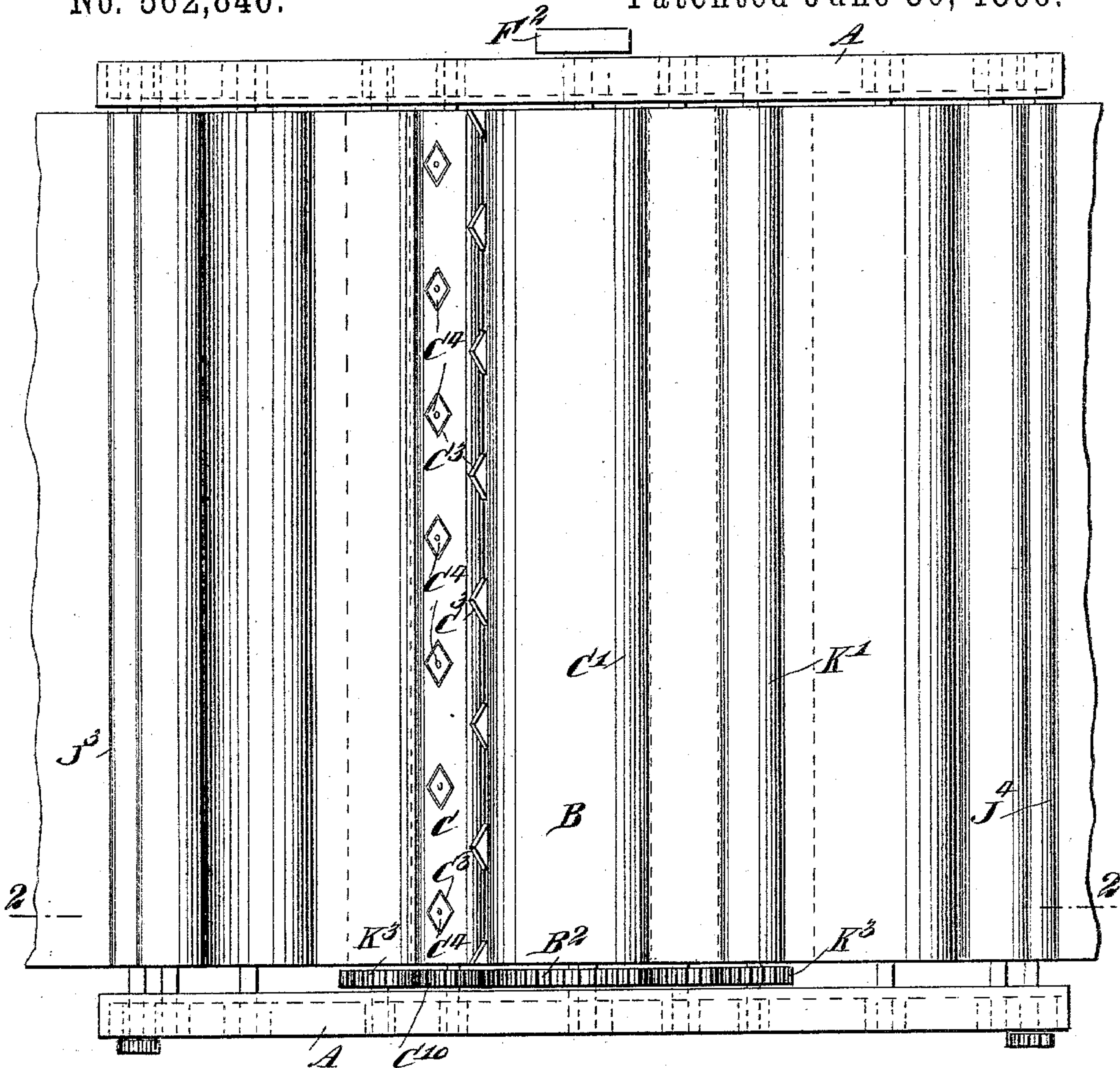


Fig 3

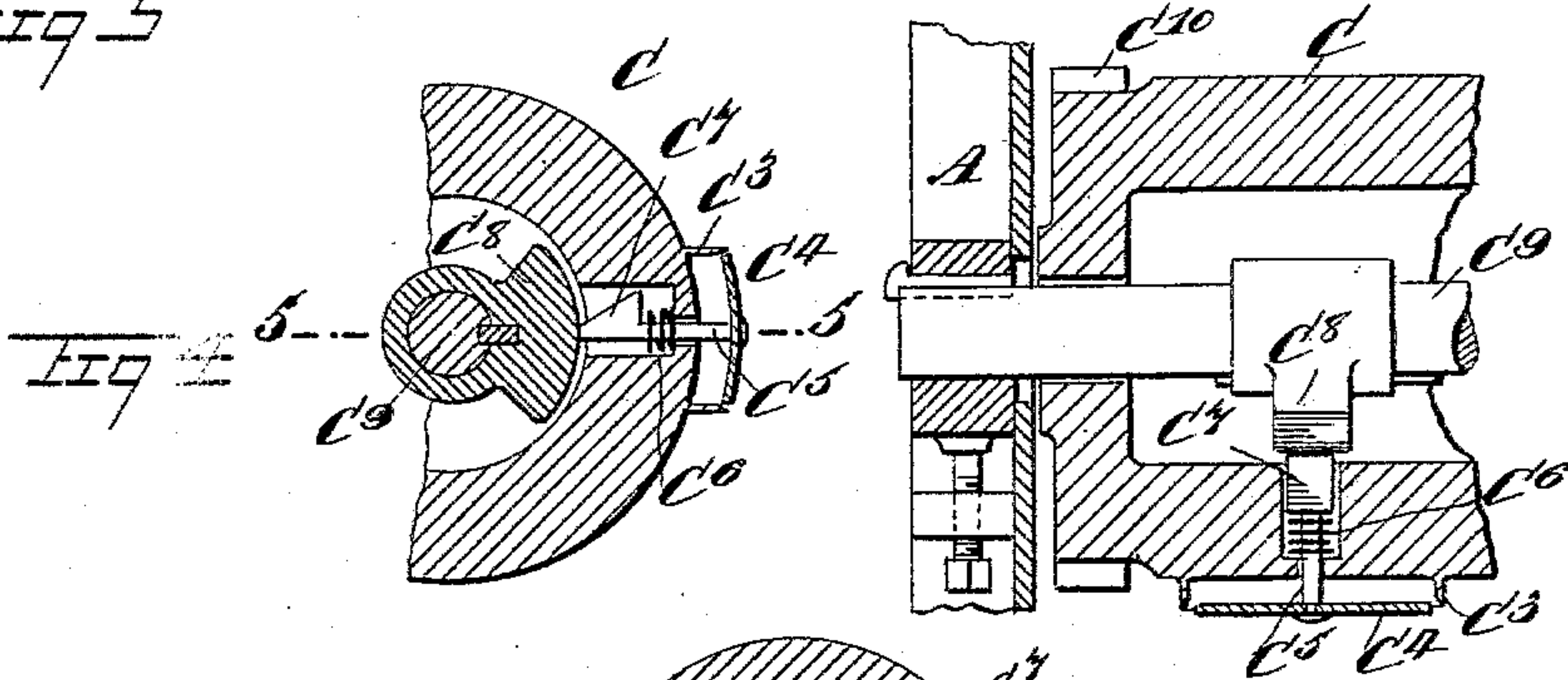


Fig 4

Fig 5

WITNESSES:

H. Walker
Geo. H. Koster

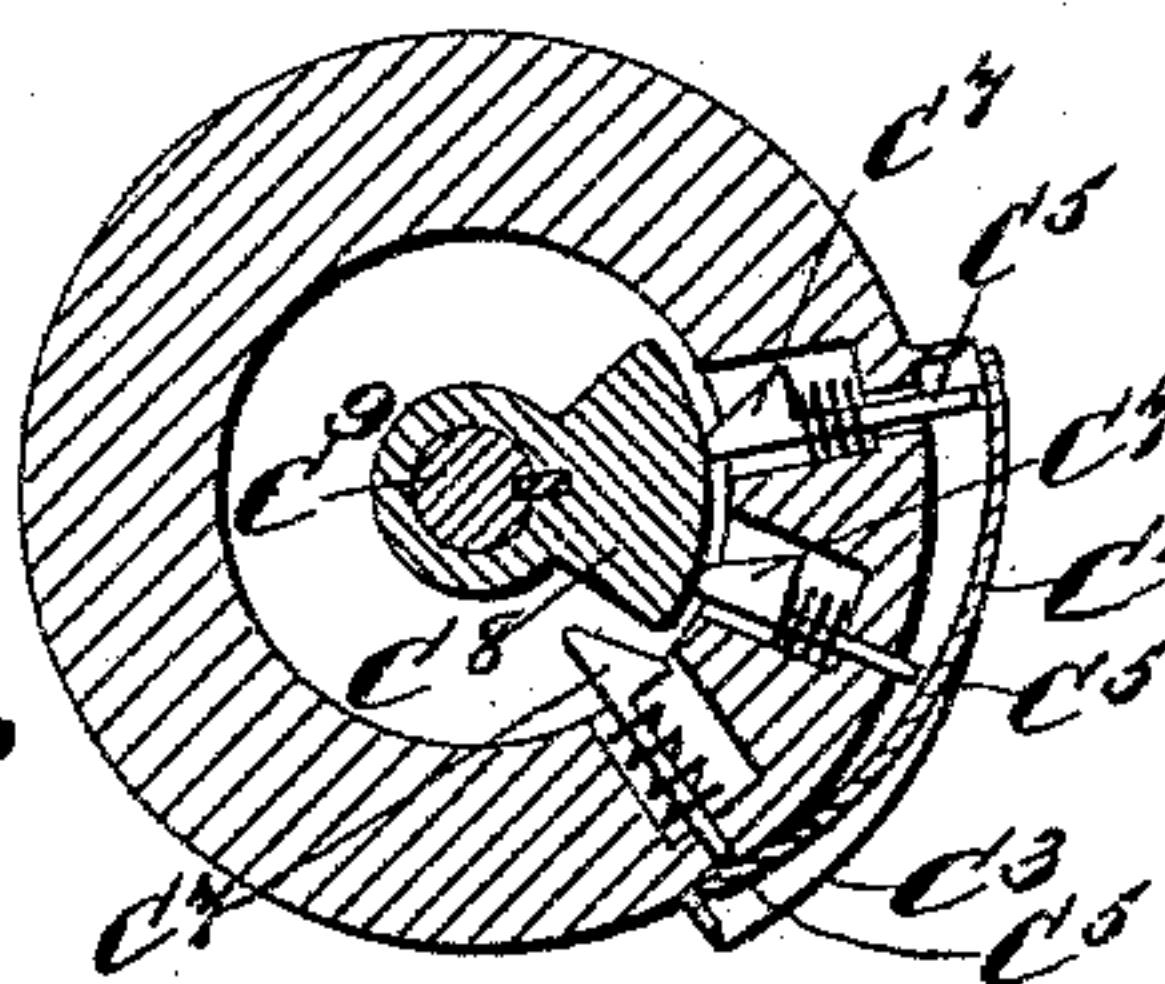


Fig 6

INVENTOR

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BY Munn & Co
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UNITED STATES PATENT OFFICE.

LOUIS WILLIAM LOWE, OF LINOLEUMVILLE, NEW YORK.

MACHINE FOR MAKING CONTINUOUS INLAID LINOLEUM.

SPECIFICATION forming part of Letters Patent No. 562,840, dated June 30, 1896.

Application filed September 9, 1895. Serial No. 561,934. (No model.)

To all whom it may concern:

Be it known that I, LOUIS WILLIAM LOWE, of Linoleumville, in the county of Richmond and State of New York, have invented certain new and Improved Machines for Making Continuous Inlaid Linoleum, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved machine for making continuous inlaid linoleum in a very simple and economical manner.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is a sectional side elevation of the same on the line 2 2 of Fig. 3. Fig. 3 is a plan view of the same. Fig. 4 is an enlarged sectional side elevation of part of one of the cutting-rollers. Fig. 5 is a sectional plan view of the same on the line 5 5 of Fig. 4. Fig. 6 is a sectional side elevation of a cutting-roller of a modified form, and Fig. 7 is a plan view of the finished article.

The improved machine is provided with a main frame A, in which is arranged a pin roller or cylinder B, provided in its periphery with short pins B' or equivalent devices for holding the material, onto which are delivered the cut pattern-pieces by means of rollers C C' C², arranged around the said pin-cylinder B and rotating in unison therewith. Around the cutting-rollers pass the sheets D D' D², respectively, of a plastic material used in making linoleum, and are acted on by the said rollers C C' C², respectively, so as to cut out of the said sheets pattern-pieces D³, passed onto the pins B' of the cylinder B, so that the several pieces delivered to the said cylinder form a unitary design thereon, and are removed from the bottom of the cylinder by a comb E, supported from the main frame A (see Figs. 1 and 2) and extending transversely between the pins B'. The several cut pieces D³ removed from the cylinder B, pass onto a sheet D⁴, of canvas or other suitable material,

which latter sheet passes around a drum F onto a table G, as is plainly shown in Figs. 1 and 2. The drum F is heated by suitable means, so that the pieces D³ delivered onto the canvas D⁴ are likewise heated by the roller F and come firmly in contact with each other at their edges and adhere with their bottom surfaces upon the top surface of the canvas D⁴ to form a continuous sheet D⁵ of linoleum passing over the top of the table G, supported on the frame A.

The sheets D D' D² of plastic material are prepared in the usual manner, and are composed principally of resin, linseed-oil, wood-pulp, or cork dust, white lead, or other pigments, so as to give a desired color to each sheet, it being understood, however, that for producing inlaid linoleum the several sheets D D' D² are differently colored, and it is evident that any desired number of such sheets and cutting-rollers C C' C² may be employed if more than three colors are desired in the finished piece of linoleum.

The sheets D D' D² produced are wound with sheets of linen H, H', or H² on drums I I' I², respectively, mounted to rotate loosely in bearings in the main frame A. The sheets H H' H², when the material is unwound, pass over rollers J J' J², respectively, upon winding drums J³ J⁴ J⁵, respectively, all journaled in said frame. The sheets of material D D' D² pass from the drums I I' I², respectively, around intermediate rollers K K' K² onto the cutting-rollers C C' C², and around the same, to finally deliver the cut pieces upon the cylinder B, as previously described. The rollers K K' K² serve to press the material against forms C³, secured to the cutting-rollers, so as to cut said material into pieces of the desired shape. It is understood that the sheets H H' H² are necessary to prevent the adjacent layers of the sheets D D' D², when rolled up, adhering to each other, as the said sheets are still in a plastic state.

Each of the cutting-rollers C C' C² is provided on its peripheral surface with sets of forms C³, having sharp cutting edges and shaped according to the desired pieces of inlaid material. Several forms C³ of the different rollers C C' C² are arranged relative to each other in such a manner as to cut pieces which will form, when finally assembled, one

continuous sheet of linoleum D^5 with the backing D^4 .

In each form C^3 (see Figs. 4, 5, and 6) is fitted to slide a plunger C^4 , normally resting in the bottom of the form against the periphery of the corresponding roller C , C' , or C^2 , and this plunger C^4 is secured on a stem C^5 , fitted to slide in the roller C , C' , or C^2 and pressed inwardly by a spring C^6 , resting with one end on the roller and with its other end on a wedge-shaped head C^7 , formed on the inner end of the stem C^5 . This wedge-shaped head C^7 of each plunger C^4 is adapted to engage a fixed cam C^8 as the roller C , C' , or C^2 rotates, so as to cause the stem C^5 , and consequently the plunger C^4 , to slide outward in the form C^3 and press the piece of material cut by the form C^3 outward and onto the pins B' of the cylinder B at the time the said form C^3 moves into peripheral contact with the said cylinder.

Instead of moving the plunger C^4 outward at once, it may be gradually moved into peripheral contact with the cylinder B , and for this purpose I connect each plunger C^4 with a series of stems C^5 , as shown in Fig. 6, and the wedge-shaped heads C^7 of the stems successively engage the fixed cam C^8 to force the corresponding parts of the plunger outward as the roller rotates in unison with the cylinder B . The cam C^8 for each roller C , C' , or C^2 is secured on a shaft C^9 , on which the roller is mounted to rotate, and this shaft is fastened in the frame A , as indicated in Figs. 4 and 5.

In order to impart a rotary motion to the cylinder B , rollers C , C' , C^2 , and drum F , I provide the latter with a gear-wheel F' in mesh with a gear-wheel B^2 on the cylinder B and in mesh with the gear-wheels C^{10} on the several cutting-rollers C , C' , C^2 . The gear-wheels C^{10} of the several cutting-rollers are in mesh with gear-wheels K^3 on the intermediate rollers K , K' , K^2 , so that the latter rotate in unison with the cutting-rollers to insure a proper feeding of the sheets D , D' , D^2 of the material to the said cutting-rollers. The latter as well as the rollers K , K' , K^2 are journaled in adjustable boxes or bearings, as is plainly indicated in Fig. 1, to cause a proper feeding of the sheets onto the cutting-rollers and also pressure of the material into the forms C^3 of the said rollers C , C' , C^2 .

The surplus material of each sheet D , D' , D^2 not passing into the forms C^3 drops down into boxes L , L' , L^2 , respectively, supported from the frame A , while the pieces cut out from the sheets are retained in the forms C^3 and carried forward and delivered onto the pins B' of the cylinder B as the latter rotates in the direction of the arrow a' .

Now it will be seen that the several cutting-rollers C , C' , C^2 , during the operation of the machine, deliver cut pieces of the sheets of material onto the cylinder B in such a manner and order that all the pieces form a continuous sheet of material, as the pieces are

placed one alongside the other with their edges meeting each other, and this continuous sheet is delivered at the bottom onto the backing D^4 . Now as the several pieces from the different rollers are of different shape and of a different color, it will be readily understood that a continuous sheet of linoleum is produced, having a pattern of a predetermined design, and each pattern-piece is of the same color throughout its thickness, so that the pattern will always remain visible even if the surface of the sheet of linoleum wears off during use.

To produce the sheet of linoleum illustrated in Fig. 7, for instance, the roller C has its sheet D of a red color to form diamond-shaped pieces, which are adjacent to the diamond-shaped pieces of a blue color cut by the roller C' from the sheet D' and these pieces are adjacent to the yellow pieces cut from the yellow sheet D^2 by the roller C^2 . It is understood that by heating the roller F the adjacent edges of the several pieces are readily united with each other and firmly adhere to the backing D^4 , which latter unwinds from a suitable roller D^6 . The finished article D^5 winds upon a suitable drum, (not shown,) or it may be otherwise disposed of after leaving the table G .

If necessary, the canvas D^4 may be passed over a roller close to the cutter C^2 before passing between the pin-cylinder and the heated pressing-roller F , (see dotted lines, Fig. 2,) so that the pieces in the pins are not liable to drop off between the cutter C^2 and the canvas at the roller F . The extra roller may also alone be used to press the pieces in position on the pins after leaving the last cutter C^2 .

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the assembling-cylinder provided at its periphery with devices for holding the material, feed mechanism arranged adjacent to the assembling-cylinder to deliver pieces of material thereto and form said pieces into a continuous sheet, and a guide-roller over which passes a sheet of backing, said roller being arranged adjacent to the cylinder but in advance of the feed mechanism to guide the backing to the continuous sheet of assembled pieces on the cylinder and bring said pieces and backing together to form a continuous coherent sheet, substantially as described.

2. The combination of the assembling-cylinder provided at its periphery with devices for holding the material, rollers over which passes the material and provided with means for cutting the material into pieces, said rollers being arranged adjacent to the assembling-cylinder to deliver the cut pieces thereto and form said pieces into a continuous sheet, and a pressing-roller over which passes a sheet of backing, said roller being arranged adjacent to the cylinder to guide the backing to the continuous sheet of cut pieces on the cylinder

and to compress said pieces and backing to form a continuous coherent sheet, substantially as described.

5 3. A machine of the class described, comprising a central assembling-cylinder provided at its periphery with devices for holding the material, a series of cutting-rollers adapted to deliver cut pieces of material onto the said cylinder, a heated pressing-roller

adapted to press the said pieces, to form a continuous sheet of linoleum, and a comb passing between the holding devices of the said cylinder to remove the pressed pieces from the cylinder, as set forth.

LOUIS WILLIAM LOWE.

Witnesses:

OTTO A. E. WOHRLE,
WILLIAM JONES.