No. 811,342. PATENTED JAN. 30, 1906.

W. H. WALDRON.

OIL CLOTH PRINTING MACHINE.

APPLICATION FILED APR. 10, 1905.

2 SHEETS—SHEET 1.

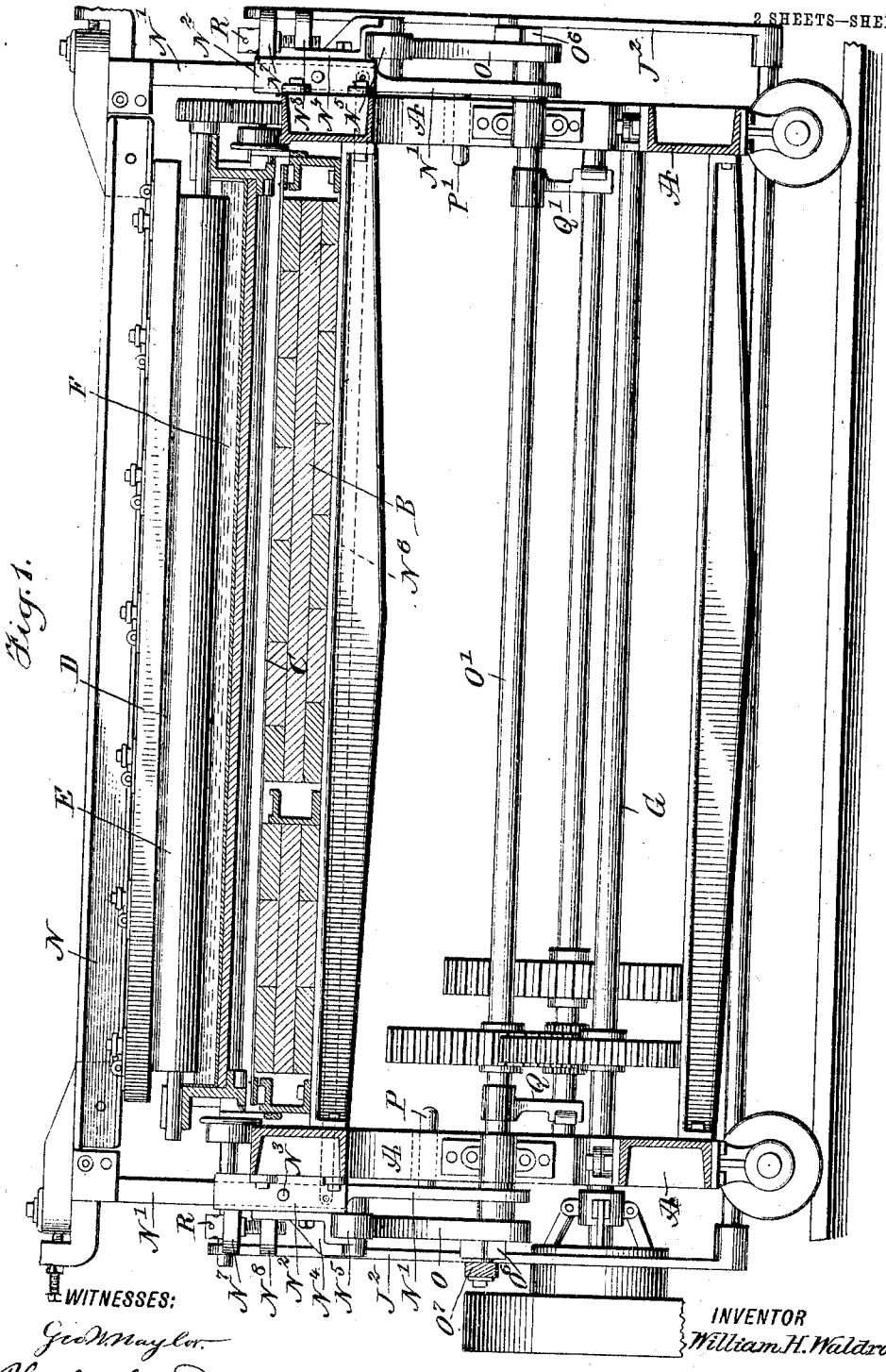


Fig. 1.

WITNESSES:

Geo. Mayler.

Percy J. Hoosten

INVENTOR

William H. Waldron

BY Munn & Co.

ATTORNEYS

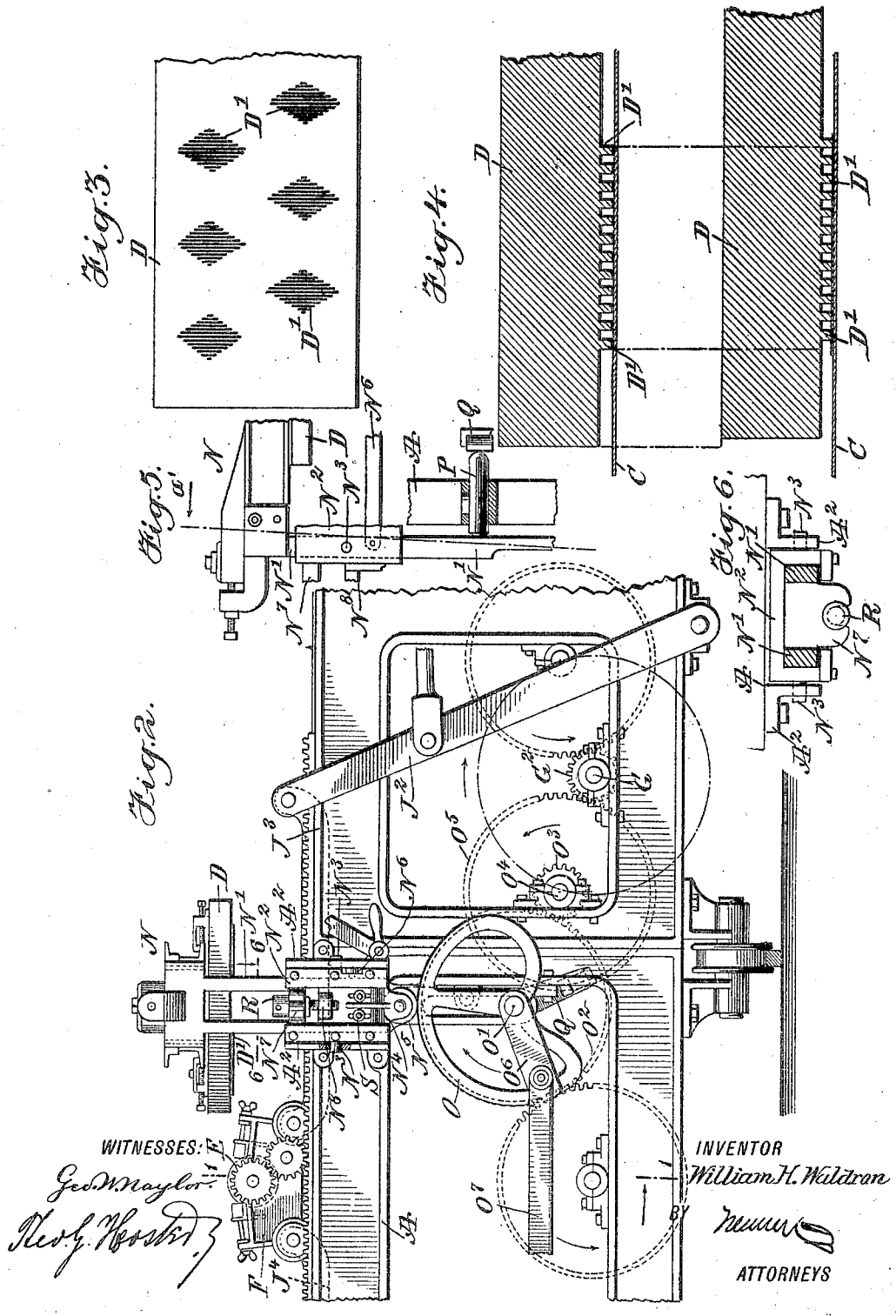
No. 811,342. PATENTED JAN. 30, 1906.

W. H. WALDRON.

OIL CLOTH PRINTING MACHINE.

APPLICATION FILED APR. 10, 1905.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

WILLIAM HUBELI WALDRON, OF NEW BRUNSWICK, NEW JERSEY.

OIL-CLOTH-PRINTING MACHINE.

No. 811,342. Specification of Letters Patent. Patented Jan. 30, 1906.

Application filed April 10, 1905. Serial No. 254,688.

To all whom it may concern:

Be it known that I, WILLIAM HUBELI WALDRON, a citizen of the United States, and a resident of New Brunswick, in the county of Middlesex and State of New Jersey, have invented a new and Improved Oil-Cloth-Printing Machine, of which the following is a full, clear, and exact description.

The invention relates to machines for imprinting a design in various colors upon oil-cloth and other fabrics by the use of intermittently-reciprocating printing-blocks; and the object of the invention is to provide a new and improved oil-cloth-printing machine arranged to insure solid impressions with a comparatively small amount of color.

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

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a cross-section of the improvement on the line 1 1 of Fig. 2. Fig. 2 is a side elevation of the same. Fig. 3 is an inverted plan view of part of one of the printing-blocks. Fig. 4 is an enlarged transverse section showing the printing-block in two different positions on the fabric. Fig. 5 is a cross-sectional view of the improvement, showing the means for imparting a transverse movement to the printing-block; and Fig. 6 is a sectional plan view of the same on the line 6 6 of Fig. 2.

On the main frame A of the oil-cloth-printing machine is held a table B, over which is intermittently moved the oil-cloth or other fabric C to be printed by the use of a series of printing-blocks D, (only one being shown in the drawings,) reciprocating intermittently in a vertical direction and capable of sliding transversely over the fabric during contact with the same to cause the block to spread the color and form a solid print or impression. (See Fig. 4.)

The printing-face D′ of each block D is supplied with color by a printing-roll E, mounted to turn in a color-trough F, adapted to travel intermittently forward and backward on the frame A at the time the printing-blocks D are in a raised resting position, so that the printing-roll E inks the face D′ of the block D, the several color-troughs F of the machine being linked together in the usual manner to move in unison.

The means employed for reciprocating the color-troughs F from the main driving-shaft G of the machine are preferably the same as those shown and described in the application for Letters Patent of the United States, Serial No. 236,011, filed by me December 8, 1904, so that further description of the same is not deemed necessary, it being understood that as the intermittently-rocking levers J^2 are connected by links J^3 with the first color-trough F and the latter is connected by a link J^4 with the next color-trough the several color-troughs of the series are connected with each other by links J^4, and hence all the color-troughs move in unison.

Each printing-block D is preferably supported by a frame N, mounted to slide with its side arms N′ vertically in guideways N^2, each provided at its sides with trunnions N^3, journaled in suitable bearings A^2, attached to or forming part of the main frame A. On the guideways N^2 are adjustably secured brackets N^4, carrying at their lower ends friction-rollers N^5, traveling on the peripheral faces of cam-wheels O, secured on a transversely-extending shaft O′, provided with a gear-wheel O^2, in mesh with a pinion O^3, secured on a shaft O^4, journaled on the main frame A and provided with a gear-wheel O^5, in mesh with a pinion G^2 on the main driving-shaft G. The first shaft O′ (shown in Fig. 2) is provided with the usual crank-arm O^6, connected by a link O^7 with a similar crank-arm on the next-following shaft O′, carrying a similar mechanism to that described for raising and lowering the frame N and the printing-block D. In other words, the several raising and lowering devices for the printing-blocks in the series are connected together, so that the several printing-blocks D are operated in unison and in unison with the color-troughs F, as previously explained.

In order to impart a transverse rocking motion to each frame N and its printing-block D at the time the impression is made, the following device is provided: On the sides of the main frame A are mounted to slide transversely pins P and P′, engaging with their outer ends the inner faces of the side arms N′ of the frame N, and the inner ends of the said pins P and P′ are adapted to be engaged by cam-arms Q and Q′, secured on the cam-shaft C′,

the said cam-arm Q being set somewhat in advance of the other cam-arm Q', so that when the shaft O' is rotated the cam-arm Q first engages its pin P and the latter acts on the corresponding side arm N' to swing the frame N in the direction of the arrow *a'*, the said frame turning on the trunnions N^3 as the fulcrum, and after this movement is completed the other cam-arm Q' engages the pin P', so that the latter acts on the other side arm N' to return the frame N to its former position. It is understood that this transverse movement of the frame N and its printing-block D takes place at the time the face D' of the printing-block is in contact with the fabric C, and consequently the color inked on the face D' is spread on the fabric C during the transverse movement of the frame N and its block D.

As is well known, the printing-face D' of a block D is formed by spaced members, as plainly indicated in Figs. 3 and 4, the members being preferably in the form of parallel ridges, and consequently when an impression is made—that is, when the face D' moves in contact with the fabric C—the impression appears in the form of ridges; but as the printing-block D receives a shifting movement during the time the said impression takes place it is evident that the color is spread to form a solid print, as will be readily understood by reference to the lower portion of Fig. 4.

From the foregoing it will be seen that the usual amount of color carried by the printing-face D' is sufficient to make a solid imprint, and consequently the same amount of color is used as heretofore, with the addition that a solid imprint is had instead of the line-print, as heretofore practiced.

It is understood that the arms Q and Q' are fastened to the shaft O' in the proper relation to the cam-wheels O, so that the transverse shifting of the frame N and its printing-block D takes place at the time the printing-block D is in a lowermost or impression position.

In order to insure a uniform rocking of the two guideways N^2, I prefer to connect the same with each other by a connecting-link N^6. Each bracket N^4 can be vertically adjusted on the corresponding side arm N' to insure a proper contact between the printing-face D' of the printing-block D and the fabric C, and for this purpose an adjusting-screw R is preferably employed, turning in a bearing N^7 on the side arm N' and screwing in a nut N^8 on the bracket N^4, as plainly indicated in Figs. 1 and 2. After the desired adjustment is made the bracket N^4 is rigidly secured to the side arm N' by bolts S.

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

1. An oil-cloth-printing machine having a block provided with a printing-face arranged parallel with the surface of the fabric to be printed, means for reciprocating the said block to move the printing-face into contact with the surface of the fabric to make the impression, and means for shifting the block over the fabric and parallel to the surface thereof during the time the block is in contact therewith.

2. An oil-cloth-printing machine having a block provided with a printing-face arranged parallel with the surface of the fabric to be printed, and means for shifting the printing-block parallel with the surface of the fabric during the time the printing-face is in contact therewith.

3. An oil-cloth-printing machine having a block provided with a printing-face arranged parallel with the surface of the fabric to be printed, and means for shifting the printing-block transversely of the fabric and parallel with the surface thereof during the time the printing-face is in contact therewith.

4. An oil-cloth-printing machine having a block provided with a printing-face arranged parallel with the surface of the fabric to be printed, and means for shifting the printing-block across and back over the fabric and parallel therewith during the time the printing-block is in contact with the fabric.

5. An oil-cloth-printing machine having a printing-block, a frame carrying the said printing-block, means for intermittently lowering and raising the said printing-block, guideways for the side arms of the said frame to slide in, the guideways being mounted to rock, and means for imparting a rocking motion to the said guideways in unison with the said means for intermittently lowering and raising the said block.

6. An oil-cloth-printing machine having a printing-block, a frame carrying the said printing-block, means for intermittently lowering and raising the said printing-block, guideways for the side arms of the said frame to slide in, the guideways being mounted to rock, pins mounted to slide and adapted to successively engage the side arms of the said frame, and cam-arms engaging the said pins successively.

7. An oil-cloth-printing machine having a printing-block, a frame carrying the said printing-block, means for intermittently lowering and raising the said printing-block, guideways for the side arms of the said frame to slide in, the guideways being mounted to rock, pins mounted to slide and adapted to successively engage the side arms of the said frame, and cam-arms engaging the said pins successively, the said cam-arms being secured on the operating-shaft of the said lowering and raising means.

8. In an oil-cloth-printing machine and in combination, a support for the fabric, a plurality of blocks arranged transversely of the support and spaced apart from each other,

each of the blocks provided with a printing-face arranged parallel to the surface of the support, means for simultaneously moving the blocks into contact with the fabric upon the support, and means to simultaneously shift the blocks transversely of the support and parallel to the surface thereof while in contact with the fabric.

9. In an oil-cloth-printing machine and in combination, a support for the fabric, means for impressing a figure upon the fabric while on the support and comprising a block having a printing-face parallel with the surface of the support, and means for shifting said impressing means transversely of the fabric while in contact therewith.

10. In an oil-cloth-printing machine and in combination, a support for the fabric, means for impressing a figure upon the fabric while on the support and comprising a block provided with a printing-face parallel to the surface of the support, and means for shifting the impressing means as a whole transversely of the support and with the printing-face parallel to the surface thereof while in contact with the fabric.

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

WILLIAM HUBELI WALDRON.

Witnesses:
CHRISTOPHER B. STELLE,
SAM F. WYLIE.