

(No Model.)

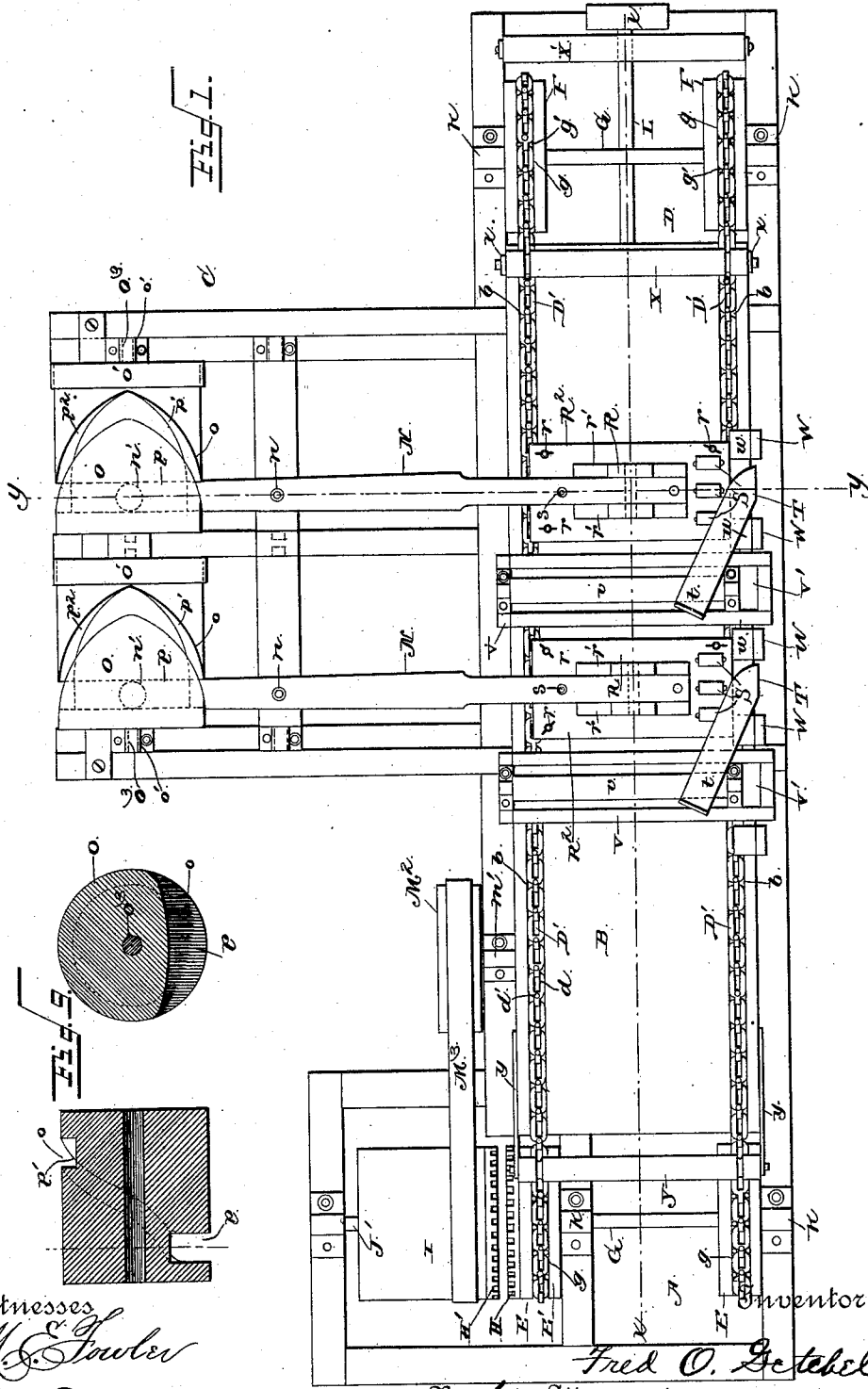
4 Sheets—Sheet 1.

F. O. GETCHELL.

MACHINE FOR PRINTING OIL CLOTHS, &c.

No. 352,123.

Patented Nov. 9, 1886.



Witnesses
M. S. Fowler
H. P. ...

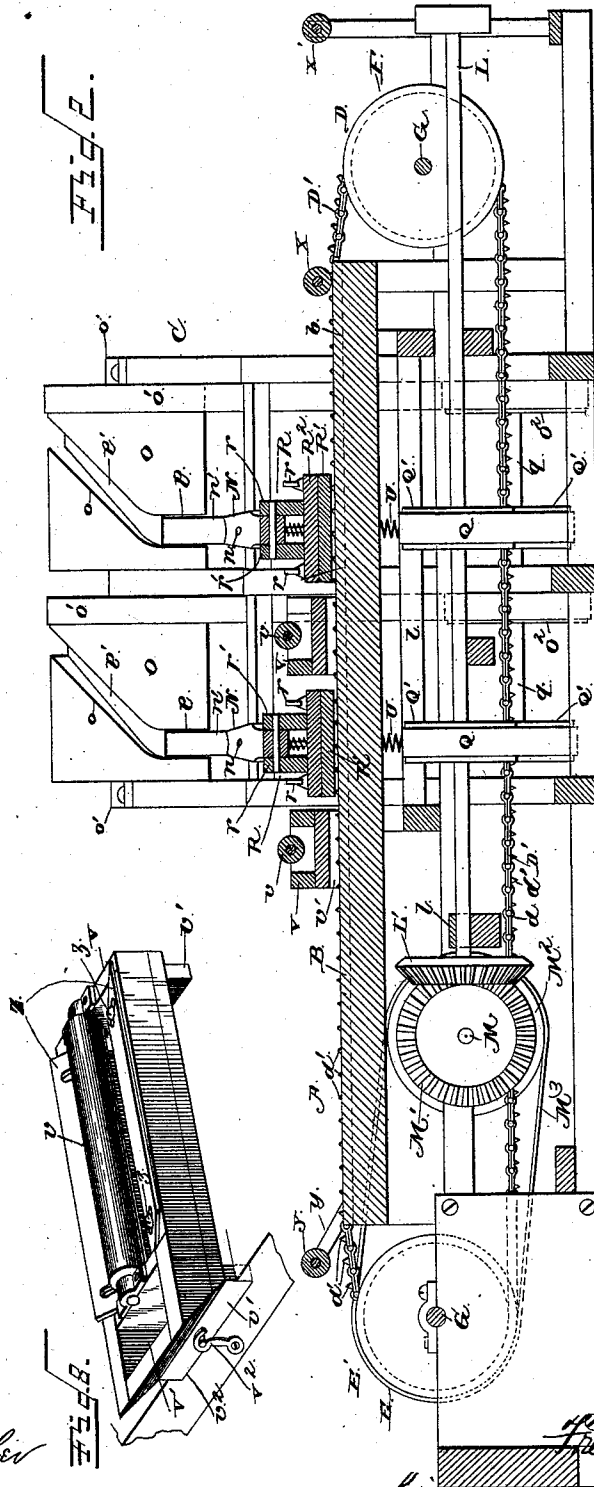
Inventor
Fred O. Getchell
 By his Attorneys
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(No Model.)

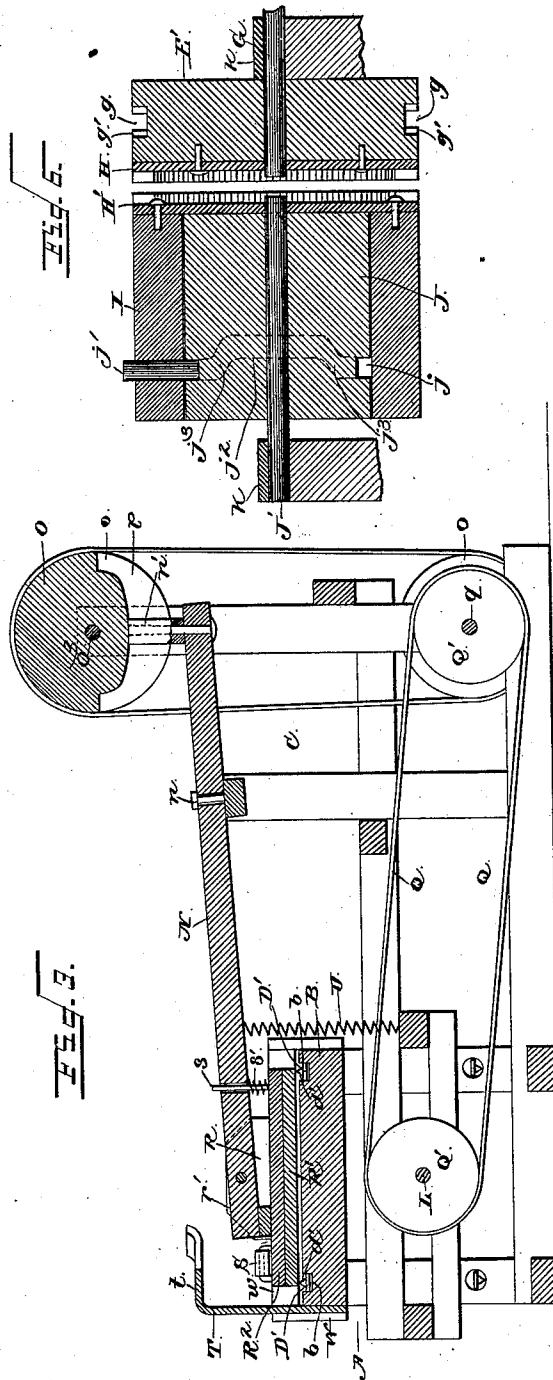
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Witnesses

M. E. Fowler

H. P. ...

Inventor

Fred O. Getchell

By his Attorneys

C. A. ...

(No. Model.)

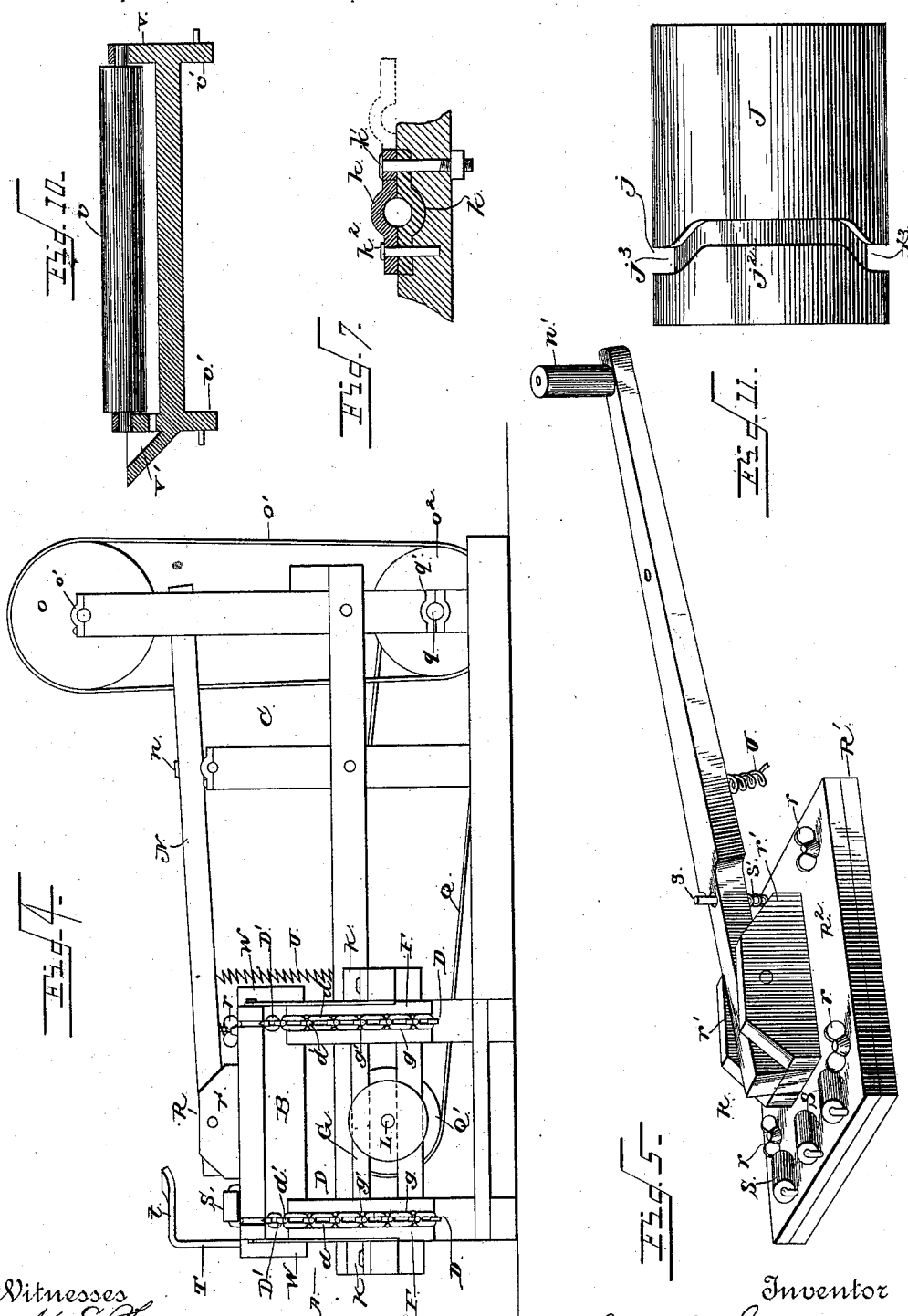
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F. O. GETCHELL.

MACHINE FOR PRINTING OIL CLOTHS, &c.

No. 352,123.

Patented Nov. 9, 1886.



Witnesses
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UNITED STATES PATENT OFFICE.

FRED OTIS GETCHELL, OF AUGUSTA, MAINE.

MACHINE FOR PRINTING OIL-CLOTHS, &c.

SPECIFICATION forming part of Letters Patent No. 352,123, dated November 9, 1886.

Application filed May 22, 1886. Serial No. 203,024. (No model.)

To all whom it may concern:

Be it known that I, FRED OTIS GETCHELL, a citizen of the United States, residing at Augusta, in the county of Kennebec and State of Maine, have invented a new and useful Improvement in Machines for Printing Oil-Cloths, Carpets, and the Like, of which the following is a specification.

My invention relates to improvements in machines for printing oil-cloths, carpets, and the like; and it consists of the peculiar combination and arrangement of devices and novel construction of parts, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

The object of this invention is to provide novel means for automatically supplying the printing or stamping devices with the coloring matter or composition simultaneously with the movement of the feeding device or carrier; to convey the printed part or surface of the carpet or work from beneath or away from the stamping devices and bring another unprinted surface of the carpet beneath the stamping devices, to be acted on thereby and receive the impression therefrom; to provide means whereby the stamps are caused to evenly and uniformly take up their proper supply of coloring-matter from the supply-hoppers; to provide means whereby the stamping devices can be operated simultaneously, or any one or all of them can be thrown out of operative position; and, finally, to improve the machine in minor details of construction, so that ready access can be had thereto to clean or detach the parts; and the parts are simple and strong in construction, not liable to be easily broken or get out of order, and can be built or constructed comparatively cheap.

In the accompanying drawings, Figure 1 is a plan view of a carpet or oil-cloth printing machine embodying my invention. Fig. 2 is a vertical central longitudinal sectional view thereof on the line *x x* of Fig. 1. Fig. 3 is a vertical transverse sectional view through one of the printing or stamping devices on the line *y y* of Fig. 1. Fig. 4 is an end elevation looking at the delivery end of the machine. Fig. 5 is a detail view of one of the printing or stamping devices. Fig. 6 is a detached detail view of the clutch mechanism for actuating the traveling carrier or feed device. Fig. 7 is a

detail view of one of the journal-bearings to permit ready detachment of one of the rolls or shafts. Fig. 8 is a detached view of one of the supply-hoppers to the stamping or printing devices. Fig. 9 is a detail sectional view of drum O for one of the printing or stamping devices. Fig. 10 is a longitudinal sectional view through one of the supply-hoppers detached from the machine. Fig. 11 is a detached detail view of the cam-wheel J.

Referring to the drawings, in which like letters of reference denote corresponding parts in the several figures, A designates the main frame of my improved carpet or oil-cloth printing machine, which carries a table, B, for the support of the traveling carrier or feed device presently described; and C, the supplemental frame for the support of the mechanism for actuating the printing or stamping devices.

The table B is arranged longitudinally of the main frame A and elevated for a short distance above the latter and at a suitable height from the floor, so that the operator can readily reach the same, and the supplemental frame C projects or is arranged to one side of and at right angles to the main frame A, as shown; but I would have it understood that changes therein can be made, as the relative arrangement can be varied, if it is deemed necessary, without departing from the principle of my invention. The table B is provided at or near its side edges with longitudinal grooves or channels *b*, in which are arranged the chains or belts D', that compose the traveling carrier or feed device D. These chains D' are arranged on opposite sides of the table B, and they each comprise a series of flexibly-connected links or loops, *d*, of any preferred form, and each link is provided with an upwardly-projecting pin or stud, *d'*, that extends therefrom at an angle, and is adapted to take into the carpet, oil-cloth, or other work, to more effectually carry or convey the latter with the traveling carrier. The chains or belts of the carrier work or extend over drums or pulleys E and F, which are arranged at opposite ends of the table B. These drums E and F are arranged in pairs at each end of the table, and the drum of each pair is provided with a circumferential groove, *g*, between its edges, in which are fitted or work the chains of the traveling carrier, the drums being further provided with a series

of spaced pins or studs, g' , which are arranged in line with each other on opposite sides of the grooves g in the drum, and fit between two adjacent links of the chains of the carrier, as will be readily understood, to prevent the chains from slipping in the grooves of the drums.

The drums E and F are arranged on opposite sides of the table, so that the peripheral grooves g thereof are in line with the longitudinal grooves or channels b of the table, to permit the chains D' of the carrier to pass freely and easily from the drum to the table, and vice versa, and the carrier is given or operated by an intermittent motion by the mechanism which I will now proceed to describe, to wit: One of the drums, E', of the pair of drums E is arranged without or exterior to one of the side sills or beams of the frame A, and it carries a clutch face or hub, H, which may be either cast or formed therewith, or secured thereto by bolts or other suitable means, and with this clutch-face H is adapted to engage a similar clutch face or section, H', that is carried by a pulley or drum, I. This pulley or drum is made in the form of an annulus or ring, and it fits over and bears on the periphery of a cam, J, that is made in a complete circle at its periphery, and provided with a circumferential groove, j , into which projects a guide-pin, j' , that passes through the pulley I, and serves to retain the said pulley on the periphery of the cam J and prevent it from becoming displaced thereon. This circumferential groove j of the cam J is made straight for the greater part of its length, as shown; but it is provided with a portion or section, j^2 , that lies to one side of and is out of line with the straight portion j , and connected therewith by diagonal or curved parts j^3 , which extend in opposite directions to conduct the guide-pin j' successively into and out of the portions j and j^2 , as will be readily seen. The pulley I is driven in one direction continuously by an endless belt, which will be hereinafter described, and it carries with it the pin j' , and the fixed grooved cam J is rigidly secured on and supported by a short rod or bar, J', which is firmly and immovably secured at its outer end in the main frame A of the machine. The pulley I carries with it the clutch face or section H', and the rod or bar J', on which the fixed cam J is supported, is arranged in line with the shaft G, on which the drum E' is secured. It will thus be seen that during the greater part of a single revolution of the pulley I the side edges thereof lie in line with the corresponding edges of the fixed cam, and the pin j' rides or moves in the straight part of the groove on the said fixed cam, and when the said pin rides in the straight part or section j of the groove the pulley is arranged so that the clutch face or section H', carried thereby, is drawn away from and is out of engagement with the clutch-face H of the drum E'. When the pin j' of the pulley I rides in the section j^2 of the

peripheral groove of the fixed cam, the pulley is forced or moved laterally of the cam to throw the side edges of the cam and pulley out of line, and thereby cause the clutch face or section H' on the pulley to engage with the clutch face or section H of the drum E', to rotate the latter and the shaft G, on which it is secured, whereby the drums E and E' are rotated by the pulley I during a portion of the revolution of the latter and move or drive the traveling carrier or belt D a limited distance. The pulley I thus successively engages with and is disengaged from the drum E', to rotate the shaft G of the drums E and propel the carrier and to stop the motion thereof, and for the sake of convenience I will hereinafter designate the pulleys or drums E as the "driving-pulleys" and the pulleys F as the "idler-pulleys." These pulleys E and F are rigidly secured on and carried by shafts G, which are journaled in suitable bearings or boxes, K, that are secured to the frame A by bolts or other suitable means. One of these boxes is shown in detail in Fig. 7, and it consists of two sections, k , which are each provided with recesses on their inner opposing faces, one end of the sections being secured or connected together by means of a through-bolt and nut, k' , and the other end being connected by a removable pin, k^2 , whereby the pin can be readily removed to permit the upper one of the two sections k to be moved or adjusted out of line with the lower section, and thus enable the ready displacement of the shaft that is journaled in the box or bearing.

L designates a driving-shaft for operating the various mechanisms of the machine, which is arranged beneath and longitudinally of the table B, and this shaft is journaled in suitable bearings, l , which are of the form shown in Fig. 7. One end of this driving-shaft is extended beyond the frame A at one end thereof, and has a pulley, crank, or other suitable device secured thereon, whereby power from any suitable source may be applied thereto to rotate the shaft, and the other end of the driving-shaft carries a bevel gear-wheel, L', that meshes with a similar wheel, M', that is secured rigidly on a counter-shaft, M, arranged at right angles to the driving-shaft and journaled in bearings m' on the frame A, the opposite end of this counter-shaft extending beyond the frame A and carrying a pulley, M², over which passes a belt, M³, that communicates the motion of the driving and counter shafts to the pulley I and the drums E and the traveling carrier, as is obvious.

N designates the oscillating levers or arms for carrying the stamping devices, which are pivoted or journaled near one end, as at n , on the supplemental frame C of the machine, and these levers or arms are arranged at right angles to the traveling carrier and the table. A series of these levers is employed, which levers are arranged parallel with and a short distance from each other, and I prefer to employ nine of these arms or levers, although I

have shown only two herein, which, however, will serve to illustrate the construction and operation of my invention.

The rear ends of the levers are provided with vertically-disposed friction-rollers n' , which are journaled loosely on pins or studs carried by the levers, and which fit or work in serpentine grooves o , that are formed in the periphery of pulleys or drums O , one of which is provided for each of the levers or arms N . The cam drums or pulleys O are secured rigidly on and rotated by independent shafts O^2 , which are journaled so as to rotate freely and separately of each other in boxes or bearings o' , which are secured in the supplemental frame C , and the drums or pulleys are arranged above the outer ends of the levers or arms. Each of the circumferential grooves o of the cam-wheels comprises a straight portion, p , which is arranged parallel with and a short distance from one of the side edges of the drum, and two angular sections, p' and p^2 , which are arranged at an angle to each other and to the straight section p , and open into the same to form one continuous groove. When the roller n' of one of the levers works in the straight section p of the groove of its drum or pulley, the upper end of the roller bears on the circumferential bottom edge of the groove-sections p and allows the free end of the lever to descend toward and be elevated from the table. When it rides in the section p' , it is elevated above a supply-hopper and forced laterally or to one side and over the hopper to cause the platen carried thereby to take its ink from the hopper, and when it enters the section p^2 the free end of the lever is forced back to its first position and away from the supply-hopper, so that it can act upon the carpet on the table. It will thus be seen that the lever has a vertical and lateral movable movement, so that it is caused to successively be brought into position to first act upon the fabric on the table; second, elevated and carried laterally over the supply-hopper to ink the platen carried thereby, and, third, be brought again into position or returned to act upon the fabric or carpet.

The cam-rollers O are rotated by means of belts O' , which pass over pulleys O^2 , that are secured on and carried by shafts g , that are journaled in bearings g' , secured to the supplemental frame C , and arranged below the cam rollers or drums O ; and the pulleys O^2 are rotated by motion transmitted from the driving-shaft L by means of belts Q and pulleys Q' , the latter of which are secured on the driving-shaft.

The shafts of the rollers or drums O and O^2 to one of the swinging levers N are driven or rotated independently of the shafts of the fellow drums and rollers, and a belt and pulley, Q and Q' , are provided for each of the oscillating levers or arms, so that they are operated independently of the fellow arms. The arms or levers can be operated simultaneously, or any one of the levers can be thrown out of use

by merely slipping one of the belts O' or Q from the rollers O and O^2 , as will be readily understood. The opposite ends of the levers are provided with the stamping devices R , the construction of which is as follows:

Each of the stamping or printing devices comprises a platen, R' , a carrier-plate, R^2 , to which the platen is detachably connected by means of binding or thumb screws r , which pass through the carrier-plate and platen at the corners thereof, and the carrier-plate is provided with parallel flanges or lugs r' , between which is arranged and pivoted the free end of the oscillating lever or arm. The carrier-plate is further provided with a guide pin or bolt, s , which projects upwardly therefrom and passes through an opening in the pivoted end of the oscillating lever, and a coiled spring, s' , encircles this guide-pin and bears against the carrier-plate and the lever, to normally depress the platen and carrier-plate, so that the rear end of the platen can bear very squarely and firmly on the work when it passes beneath the same. The carrier-plate is further provided with friction-rollers S , which are loosely journaled in suitable shafts that are secured on the plate R^2 , and these rollers bear against a horizontal arm, t , of a vertically-disposed guide, T , which is arranged at one side of the table and suitably secured thereto. The front or free end of the oscillating lever to which the platen is secured is normally depressed by a coiled spring, U , which is connected at one end to the lever and at its other end to the supplemental frame, and when the lever and the printing device R , carried thereby, are elevated and moved laterally the platen is forced or brought into contact with a conveying-roller, v , which is loosely journaled in proper bearings on a supply-hopper, V . This hopper V is arranged to one side of the lever, and its roller works in the main chamber thereof, in which the printing or coloring matter or composition is placed, so that when the platen bears thereon the roller is rotated by frictional contact and conveys the coloring-matter from the hopper onto the lower or relief printing-surface of the platen, as is obvious.

The supply-hopper is provided with a supplemental chamber, V' , which opens or is in communication with the main chamber of the hopper by a suitable opening or port, and in this supplemental chamber is placed the coloring-matter, which flows through the port into the main chamber of the hopper, so that the hopper can be replenished at any time without interfering with the operation of printing. The hopper is also provided with depending feet v' , which fit in recessed seats v^2 , that are formed in the sides of the main frame A , to prevent longitudinal or lateral play or movement of the hopper; and it is more securely and firmly held and maintained in place by a locking device, V^2 , which preferably consists of a pivoted hook that is adapted to engage with an eye or staple. W designates a vertical bracket, which is arranged to and secured on

one side of the main frame A, and this bracket is provided with a shaft or pin, which projects at right angles therefrom, and carries a friction-roller, *w*, that is loosely journaled thereon. A series of these brackets is provided on each side of the frame A, and the friction-rollers *w* thereof project over the upper edges of the table, so that they bear on the chains D' of the traveling carrier, and the work secured thereon, to prevent the work from being elevated with the stamping or printing devices, and thus securely retain the work in place on the carrier while the rollers are free to revolve, and thus they do not hinder or retard the motion of the carrier.

One end of the table B is provided with the receiving guide-rollers X and X', the former of which is arranged in close proximity to the upper surface thereof, to cause the carpet as it passes beneath the same to engage with the pointed pins or studs of the traveling carrier, and the rollers are journaled in vertical standards *x*, which are arranged at the sides of and suitably secured to the table, the said roller X' being removably journaled in the standards, so that it can be detached therefrom when desired; and the opposite end of the table is also provided with a delivery guide-roller, Y, that is journaled in standards *y*, which are secured to the table, and elevate the roller journaled therein some distance above the table, whereby when the carpet passes over this roller it is freed from engagement with the pins or studs of the traveling carrier. Thus the work is kept in place on the carrier and delivered or disengaged therefrom without requiring the attention of the operator after the machine has been once set in motion.

The operation of my invention is as follows: The work or carpet is first passed over the roller X' and then beneath the roller X, which forces it in engagement with the pins or studs of the carrier, which conveys the work beneath the printing devices R. Motion is communicated to the driving-shaft L to rotate the latter, and the pulley I is driven by the miter and belt gearing intermediate of the said roller and the driving-shaft, so that the clutch-face H' is caused to engage the similar face, *h*, and thus rotate the driving rollers or pulleys E intermittently to propel the carrier D forward, the idler-drums F revolving under the motion of the traveling carrier. Simultaneously with the rotation of the driving-shaft the drums or cam-wheels O are rotated by the intermediate belt-connections, O² and Q, so that the friction-rollers *n'* of the oscillating levers N are caused to ride in the grooves of the cam-wheel O. The whole or any desired number of the cam-wheels and levers N can be actuated or employed, and simultaneously with the elevation of the front ends of the levers and the printing devices from the work or carpet the traveling carrier is moved forward by the clutch mechanism at the delivery end of the machine, to convey the printed surface of the carpet away from the printing or

stamping devices and bring an unprinted or unstamped surface of the carpet in position beneath the printing devices, so that upon the descent of the levers again upon the work the fresh or unprinted surface receives the impression and the carrier is then fed forward, this operation being continued until the desired quantity of carpet has been printed. Simultaneously with the traveling motion of the carrier the free end of the lever and the printing device carried thereby are elevated by the action of the cam-wheel O on the rear end thereof, and the friction-rollers carried by the carrier-plate of the printing device strike against the arm *t* of the guide, which depresses the front end of the printing device, so that when it is forced laterally the lower relief-surface will strike or impinge against the conveying-roller *v* of the supply-trough very evenly throughout its entire surface, so that the coloring-matter is uniformly spread over the lower face of the platen, and upon the retrograde movement of the lever and printing device the conveying-roller is further actuated to convey the matter from the trough onto the platen.

It will thus be seen that all of the printing devices can be actuated simultaneously to print upon the carpet or oil-cloth, or only one or more can be used, and that the carrier has an intermittent motion, which takes place when the printing devices are elevated and moved laterally over the supply-hoppers to ink the platens thereof, whereby a fresh surface of the carpet is presented for the action of the printing devices thereon upon the return or retrograde movement thereof from the supply-hoppers. When the front ends of the levers are elevated, the retracting-springs U are extended, and they aid in depressing the front ends of the levers; and when the levers are lowered, so that the platens can impress the work, the spring *s'* of the lever bears against the rear end of the carrier-plate to depress that end of the platen and cause the same to bear very firmly and evenly upon the work. The platen, moving on a center which is formed by the pivot of the front of the lever, is liable to cause the printing or relief surface thereof to bear unevenly on the work, and thus deliver an imperfect impression, which objection I overcome by the use of the coiled spring *s'*.

If desired, regulating-plates Z may be secured to the supply-hoppers, to prevent too great quantity of coloring-matter from passing onto the rollers, and these plates are arranged on opposite sides of the conveying-rollers *v*, that work in the hopper, the plates being adjustable toward and away from the rollers by means of thumb or binding screws *z*, which are passed through slots in the ends of the plates, as will be readily understood.

I would have it understood that I do not desire to confine myself to the exact details of construction and form and proportion of parts herein shown and described as an embodiment of my invention, as I am aware that numerous

changes therein can be made without departing from the principle of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by

Letters Patent, is—

1. In a machine for printing carpets, the combination of a traveling carrier, a supply hopper or trough, a swinging arm or lever capable of vertical movement and a lateral movement over the hopper, and a printing device carried by the said arm or lever to impress the work on the vertical movement of the arm and take its supply of coloring-matter from the hopper on the lateral movement of the arm, the traveling carrier being capable of an intermittent motion which takes place simultaneously with the withdrawal of the arm or lever and the printing device from the work, substantially as described, for the purpose set forth.

2. In a machine for printing carpets, the combination of a traveling carrier, the driving and idler drums therefor, a hopper, the swinging arm or lever carrying a printing device and capable of vertical and lateral movements to impress the work on the carrier and take its supply of coloring-matter from the hopper successively, a driving-shaft, and clutch mechanism intermediate of the driving-shaft and the driving-drums for rotating the latter and feeding the traveling carrier simultaneously with the lateral movement of the swinging arm or lever and its printing device toward the hopper, substantially as described, for the purpose set forth.

3. In a machine for printing carpets, the combination of an intermittently-fed carrier, a supply trough or hopper arranged above the carrier, and a swinging lever or arm carrying the printing device and having a vertical movement to impress the work on the carrier and a lateral or swinging movement to take its supply of coloring-matter from the hopper, substantially as described.

4. In a machine for printing carpets, the combination of an intermittently-fed carrier, the delivery and receiving rollers thereto, the hopper arranged above and out of contact with the carrier, a swinging arm or lever having a vertical and lateral movement, and a spring-actuated printing device carried by the lever and pivoted thereto, substantially as described, for the purpose set forth.

5. In a machine for printing carpets, the combination of a traveling carrier, a swinging lever carrying the printing device, the driving and idler drums for supporting the carrier, and a continuously-rotated pulley capable of lateral movement during a part of each rotation thereof, to be successively engaged with and released from one of the carrier-drums to feed the carrier forward with an intermittent motion, substantially as described.

6. The combination of a traveling carrier, the driving-drums, one of which has a clutch-face, and a continuously-rotated pulley carrying a similar clutch-face and capable of lateral

movement during a part of each rotation thereof to successively engage with and be released from the clutch-face of the drum, substantially as described, for the purpose set forth.

7. The combination of an intermittently-fed carrier, a series of swinging levers carrying the printing devices and capable of successive vertical and lateral movements, and supply-hoppers arranged to one side of the levers and their printing devices to deliver their contents to the said printing devices when they are elevated and moved above the same, substantially as described, for the purpose set forth.

8. In a machine for printing carpets, the combination of a hopper, a swinging lever carrying the printing device and capable of a vertical and lateral movement, and a traveling carrier having an intermittent motion that takes place during the lateral motion of the printing device to feed a fresh surface of work beneath the printing device to receive the impression at the succeeding stroke of the same, substantially as described.

9. In a machine for printing carpets, the combination of a trough having a conveying-roller, a swinging arm carrying the printing device and capable of a vertical movement to be successively depressed upon and elevated from the work, and also of a lateral movement over the hopper to bring the relief-surface of the printing device in contact with the roller, and a traveling carrier arranged beneath the printing device and fed with an intermittent motion that takes place simultaneously with the lateral movement of the lever and the printing device carried thereby, substantially as described, for the purpose set forth.

10. In a machine for printing carpets, the combination of a swinging lever, a carrier-plate having a platen and pivotally connected with the lever, a spring for depressing the rear end of the carrier-plate, a guide against which the pivoted end of the carrier-plate abuts during the elevation of the lever, and a hopper having a conveying-roller, substantially as described.

11. In a machine for printing carpets, the combination of a swinging lever, a carrier-plate pivoted thereto, a platen detachably connected to the carrier-plate, the spring bearing against the carrier-plate and the lever, the rollers carried by the carrier-plate, a guide having an arm against which the rollers impinge during the elevation of the plate, and a hopper having a conveying-roller, substantially as described.

12. The combination of a hopper having a conveying-roller, a swinging lever, a carrier-plate pivoted to the lever, a detachable platen connected to the carrier-plate by binding-screws, the friction-rollers journaled at the front edge of the carrier-plate, a guide-pin secured on the plate and passing through the lever, a spring bearing against the lever and carrier-plate, a spring, U, connected with the lever, and a vertical guide having an arm, t,

against which the rollers impinge during the vertical movement of the lever and the carrier-plate, substantially as described, for the purpose set forth.

5 13. The combination of a traveling carrier, a pivoted swinging lever carrying the printing device and a friction-roller, and a cam-wheel having the circumferential serpentine groove into which the friction-roller of the lever projects, substantially as described, for the purpose set forth.

10 14. The combination of a carrier, a swinging pivoted lever carrying a printing device and the friction-roller, and a cam-wheel for 15 actuating the lever and having the straight groove-section p , and the inclined groove-sections p' and p'' , arranged at an angle to and opening into each other and the groove p , substantially as described, for the purpose set 20 forth.

15 15. The combination of the driving-shaft, a cam-wheel, O, having a serpentine groove, gearing intermediate of the cam-wheel and the driving-shaft for rotating the former, and a 25 swinging lever carrying the printing device and a friction-roller extending into the groove of the wheel, substantially as described.

30 16. In a machine for printing carpets, the combination of a driving-shaft, a counter-shaft driven thereby, a continuously-rotated pulley driven by the counter-shaft and carrying a 35 clutch-face, a cam upon which the pulley is mounted, and having a groove in which a pin of the pulley fits, and a driving-drum having a similar clutch-face, with which the pulley is adapted to be alternately engaged and released during a part of each of its revolutions, substantially as described.

40 17. The combination of a cam having a peripheral groove, with a lateral curved or inclined portion, as described, a pulley seated on the periphery of the cam, and carrying a projection which fits in the groove and actuates the pulley laterally when it rides in the lateral 45 curved portion thereof, so that the clutch-face carried thereby is alternately engaged with and released from a driving-drum, substantially as described, for the purpose set forth.

50 18. The combination of a table having the longitudinal channels, the swinging arms carrying the printing devices, the retaining-brack-

ets secured upon the table and having the rollers, and a traveling carrier working in the channels of the table, substantially as described, for the purpose set forth.

55 19. The combination of the table having the longitudinal channels, the driving and idler drums at the ends thereof, a traveling carrier working over the drums and in the channels of the table, the swinging arms carrying the 60 printing devices, and the vertical brackets having the rollers projecting over the edges of the table for preventing the work on the carrier being elevated by the printing devices, substantially as described. 65

20. The combination of a table, a traveling carrier, the swinging arms carrying the printing devices, and a hopper for each of the printing devices, and arranged to one side thereof and detachably secured on the table, substantially as described. 70

21. The combination of a table having the longitudinal channels, a traveling carrier working in the channels and having the projecting studs, the receiving and delivery rollers supported on the table, the driving and idler drums at opposite ends of the table for supporting the carrier, a hopper elevated above the traveling carrier and having the conveying-roller, a swinging arm carrying the printing device to impress the work on the carrier and take its supply of coloring-matter from the hopper, the cam-wheel O, for actuating the swinging arm, a driving-shaft, L, gearing intermediate of the driving-shaft and the cam-wheel 85 O, a counter-shaft driven by the driving-shaft, a continuously-rotated pulley actuated by the counter-shaft and having a clutch-face, and a cam-wheel upon which the pulley is seated for forcing the same laterally and alternately engaging its clutch-face, and releasing it from a similar clutch-face on one of the driving-drums, the whole arranged and combined substantially as described, for the purpose set forth. 90

In testimony that I claim the foregoing as 95 my own I have hereto affixed my signature in presence of two witnesses.

FRED OTIS GETCHELL.

Witnesses:

W. B. NICKELS,
S. B. GLAZIER.