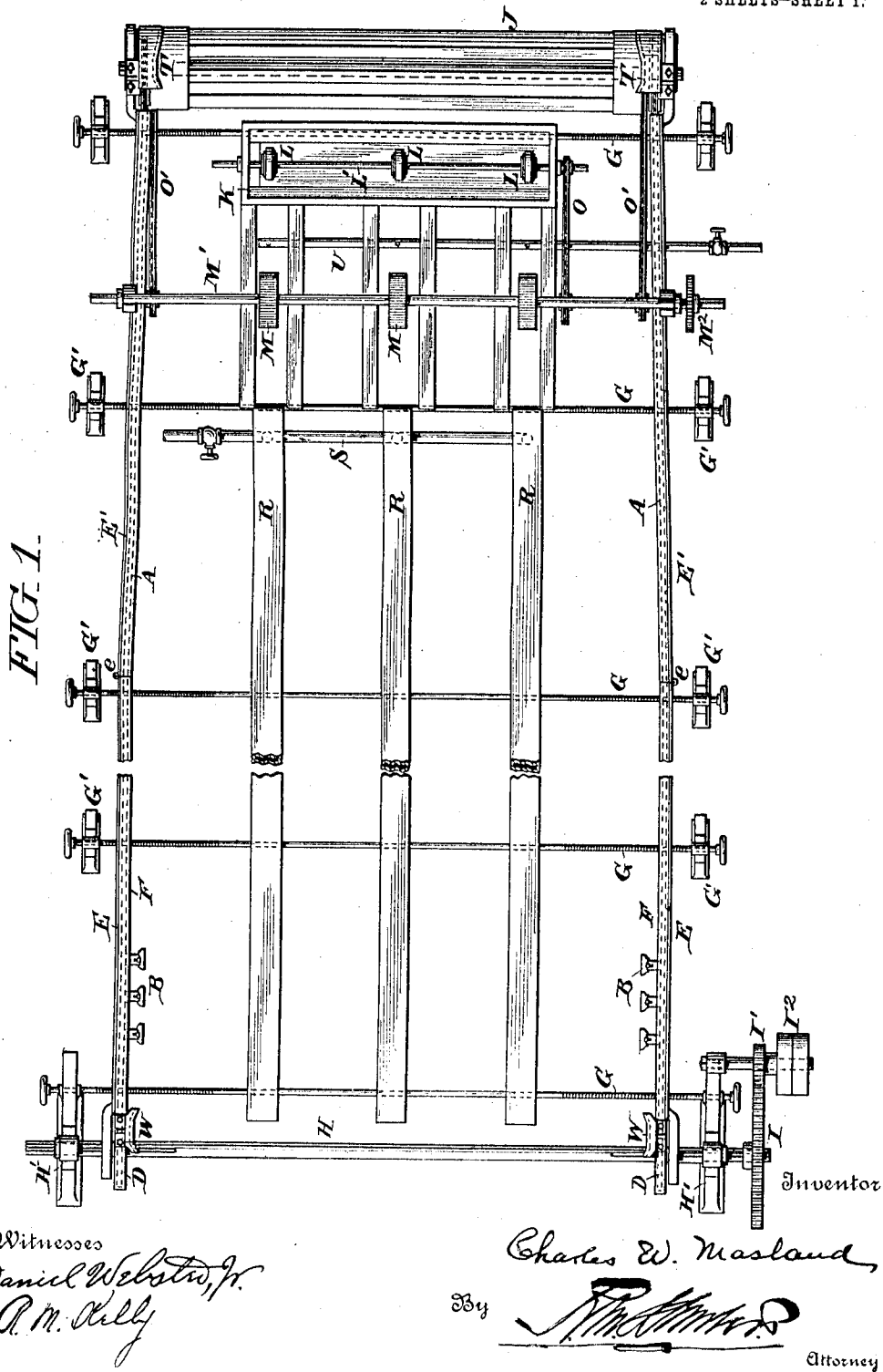


C. W. MASLAND.
MACHINE FOR IRONING RUG SEAMS.
APPLICATION FILED APR. 11, 1912.

1,051,608.

Patented Jan. 28, 1913.

2 SHEETS-SHEET 1.



1,051,608.

2 SHEETS--SHEET 2.



Witnesses

Daniel Webster Jr.
P. M. Kelly.



FIG 4

FLIGHT

FIG. 5.

FIG. 3.

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MACHINE FOR IRONING RUG-SEAMS.

1,051,608.

Specification of Letters Patent.

Patented Jan. 28, 1913.

Application filed April 11, 1912. Serial No. 690,059.

To all whom it may concern:

Be it known that I, CHARLES W. MASLAND, citizen of the United States, and resident of Oak Lane, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Machines for Ironing Rug-Seams, of which the following is a specification.

My invention has reference to machines for ironing rug seams and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

In the ordinary commercial manufacture of rugs of large sizes, several strips are separately woven, each containing a portion of the entire design, and these strips are then placed side by side and the adjacent selvages or edges sewed together, producing a rug having longitudinal seams, usually three in number. These seams, are furthermore, sewed by placing the two adjacent strips of the rug face to face and stitching the edges together at the back, and subsequently opening up the seam to bring the strips into the same plane. Owing to the nature of the stitching and from the fact that the seam is applied to the edges at the back with the fabric strips face to face, there is great tendency for these seams to resist being pressed into the flattened condition in the finished rug, and this tendency is highly objectionable, in that it destroys the appearance of the rug, not only from its failing to lie flat upon the floor, but also in indicating in a most pronounced manner that the rug is made up of strips sewed together, as distinguished from being woven in one integral piece, as is the case of the oriental rug which it is intended to represent.

The object of my invention is, therefore, to provide a suitable apparatus by which these seams in the built-up rugs may be quickly and positively flattened, and whereby the rug, as a whole, is subjected to a stretching and ironing treatment which at nominal cost, imparts to the rug a normal

condition in which it will lie perfectly flat upon the floor, rendering the seams imperceptible except by a most close examination.

My invention comprises traveling conveyers provided with clamps or other suitable means for holding the sides of the rug and stretching the rug, while at the same time conveying it from the receiving end to the discharge end of the conveyers, and combining therewith suitable starching devices for applying starch to the back of the rug along the seams, and a series of ironing metal surfaces maintained in a heated condition and over which the seams of the rug are caused to travel while the rug is held in a stretched condition, and whereby the said seams are, in effect, ironed and assume a permanently flat condition.

My invention also comprises the said construction when further provided with pressure rolls interposed between the starching means and the ironing surfaces for subjecting the starched or sized seams to a flattening pressure simultaneously with the stretching operation on the rug.

My invention further comprises a machine of the character above stated when provided with steaming means for subjecting the back of the rug to moist steam preliminary to the ironing operation.

My improvements also comprehend details of construction which, together with the features above specified, will be better understood by reference to the drawings, in which:—

Figure 1 is a plan view of a machine for treating and ironing rugs, embodying my invention, broken across to reduce the length required in the illustration; Fig. 2 is a side elevation of the same; Fig. 3 is a cross section on one side of the machine taken on line *x-x* of Fig. 2; Figs. 4 and 5 are respectively plan and end views of one form of clamp for the conveyers; and Figs. 6 and 7 are similar views of another form of holding device for the edges of the rug during the stretching operation.

A are two endless chains or conveyers which are provided throughout their length

with clamps or holders for the side edges of the rug, the said clamps or holders of the respective endless chains or conveyers being directed toward each other, as indicated in Fig. 1. These endless conveyers are guided in guideways F on side frames E E', which are hinged or jointed at e, and are adapted to be relatively adjusted to or from each other by transverse adjusting shafts G having right and left-hand screw threads respectively engaging the frames E and E' of the respective endless chains or carriers. At one end of the side frames E is arranged a transverse shaft H having chain wheels C over which the conveyer chains travel. This shaft H is driven by means of a gear I secured to it and a pinion I' meshing with said gear and driven by belt wheels I². The shaft H may be driven in any other suitable manner, if so desired. The wheels C for the chains are adjustable lengthwise of the shaft H, being carried with the side frames E and moving with them under the adjustment of the transverse screw shafts, but at all times maintaining their mechanical motion with the shaft H, the latter being supported in permanent bearings H'. At the most distant end of the frames E' are arranged guide wheels D for the endless conveyer chains, the same being carried upon a suitable shaft in bearings D' in the end of said frames, and these frames are supported by the transverse adjusting shafts G. All of the transverse adjusting shafts G are supported upon pedestals G', which latter extend to the ground or floor. Extending across the space between the guide wheels D is a guiding frame or table J which is preferably formed of a series of slats arranged on a curve, and over which the rugs to be treated are drawn by the conveyer chains. Immediately to the inner side of the said guide frame J is arranged a starch or size vat K, in which is journaled a shaft L' carrying the starch or size applying rollers L. This vat and the rollers together with their shaft are arranged substantially below a plane across from the upper portions of the two conveyer chains, so that when the rug is drawn through the machine by the conveyers, it travels above the size applying rollers.

Arranged at the opposite end of the machine and extending largely throughout the length of said machine are a plurality of hollow boxes or ironing surfaces R, into which steam is supplied by means of a steam pipe S. These ironing or drying surfaces R are arranged parallel and are located relatively to correspond to the lateral positions of the seams formed between the sections of the rug. These ironing surfaces are preferably of sufficient width as to ob-

viate the necessity of accurately positioning them in the exact alinement of the seams, and furthermore, this width is desirable so as to insure the drying of any moistened portions of the rug on either side of the seams.

Interposed between the size applying rollers and the forward end of the ironing or drying surfaces, I provide pressure applying devices, preferably comprising upper and lower rolls positively driven, and in which the upper rolls apply a reasonably heavy pressure upon the seams of the rug to flatten them after they have been sized and softened. As shown, the lower rolls N may be smooth rollers and secured upon a shaft N' which may be driven by means of sprocket chains and wheels O' from the shaft of the wheels D which are driven by the endless conveyers. The upper pressure applying rollers M are preferably of heavy weight, said rollers being formed of metal and having their weight supplemented by the driving shaft M' carried in bearings M² with freedom of vertical motion, said bearings being secured to the side frames E'. The shaft N' is also journaled in the same bearing frames M², but in this case, there is no free vertical motion. The two shafts M' and N' are geared together by gearing M³ to insure the two rollers rotating at the same surface velocities, and to insure the upper weighted rollers positively rotating under the driving action of the sprocket chains and wheels O'. The size applying rollers and their shaft L' are driven by means of sprocket wheels and chains O connecting the said shaft L' with the roller shaft N'. Any other suitable means for driving these shafts may be employed, if so desired. The pressure rollers, the size applying rollers and the ironing surfaces are all in the same general alinement and their relative positions are such that the seams of the rug which is carried through the machine by the endless conveyers are caused to pass successively over the size applying rollers between the pressure rollers and over the ironing or drying surfaces, and so that by the time the rug reaches the opposite end of the machine, it has been starched, pressed and ironed, and will be in a thoroughly flattened condition.

The operation of softening the seam and permitting the rug to be thoroughly stretched may be facilitated by the employment of a steam spray pipe U arranged between the pressure rolls and the size applying rolls, the said pipe being provided with means for spraying moist steam upward upon the under side or back of the rug and preferably more particularly in the vicinity of the sized seams.

The ends of the frames E' where the rug

is placed in the clamps B of the endless conveyers, are provided with cams T, the function of which is to open the clamps so that the side edges of the rug may be placed
 5 between the jaws of the clamps in succession, and thereby be drawn into the machine. At the other end of the machine, the frames E are provided with opening cams W which are employed to open the jaws of
 10 the clamps B in succession to liberate the rug from the conveyers and permit it to be discharged.

It is important in the treatment of built-up rugs in the process of flattening the
 15 seams by use of my improvements, that the rug shall be thoroughly stretched at the time the ironing or drying process is taking place, and it is also desirable that the size or starch paste shall be applied to the seams
 20 and the same subjected to pressure before the full stretching operation comes upon the rug, as at this time, it is more easy to cause the sizing or starch paste to penetrate the fabric and thereby insure a more per-
 25 manent flattening to the finished rug. By examination of Fig. 1, it will be seen that the frames E are at the widest distance apart, whereas the frames E' are arranged on an incline and approach each other at
 30 the receiving end of the machine where the table or guiding frame J is located. It will therefore be seen that the rugs will be easily placed in the clamps at this end, and as they are drawn through the machine, they
 35 will be subjected to the application of the size and pressure, and also to the steaming before being subjected to the full stretching, and that during the travel through the machine the sides of the rug will be drawn in
 40 opposite directions and the rug be subjected to the full stretched condition in completing the drying or ironing process, preliminary to delivering from the machine. The extent of this stretching may be varied to
 45 suit the requirements of the rug, the means for doing it being under the control of the operator.

Referring more particularly to the clamps B for the conveyer chains A, shown in Figs.
 50 4 and 5 and which I have found suitable for the purpose, said clamps comprise a lower jaw B' rigidly secured to the link of the chain A, and a hinged jaw B² hinged to the fixed jaw and spring pressed toward it
 55 by means of a spring B⁴. This hinged jaw B² is also provided with a projection B³ which coöperates with the cams T and W for opening the clamp, first for the purpose of permitting the edge of the rug to be inserted between the jaws, and secondly, to
 60 permit the rug to disengage itself from the jaws at the discharge end of the machine. Any other suitable form of clamping device or holder may be employed in connec-

tion with the conveyers, and these clamps 65 may be employed as closely together as desired. In Fig. 1 I have shown, by way of example, a number of these clamps on each chain, showing those of the respective chains directed toward each other. It is to be
 70 understood, however, that the entire lengths of the chains or conveyers are, in practice, provided with these holders or clamps, or their equivalent. For example, in Figs. 6
 75 and 7, I have shown another form of holder for the edges of the rug, and in this case, said holders B are provided with upwardly inclined teeth or pins B⁵ over which the rug is pressed. Any suitable means for holding
 80 the side edges of the rug may be employed in place of those shown.

It will be understood that the length of the machine may be varied to suit the speed at which the rugs are caused to travel over the drying and ironing surfaces R, the
 85 higher the speed and heavier the rug, the longer would be the machine under ordinary conditions. Furthermore, the temperature at which the ironing surfaces are maintained will also govern, to some extent, the
 90 length desirable in the machine. I have broken the machine across in Figs. 1 and 2 to indicate that there is no special limit in this respect.

I have shown the general construction of 95 machine which I have found in practice to be suitable for the carrying out of my invention, but it is manifest that the details may be greatly varied without departing from the method of operation, and conse-
 100 quently I do not restrict myself to the details which are here shown by way of example. The essential requirement in the treatment of rugs by my improvements, resides in the applying to the seams of a
 105 built-up rug of a size or starch paste, and then subjecting the rug in a stretched condition to an ironing process with respect to the seams, so that the said seams are flattened and permanently starched in such
 110 flattened condition, whereby they retain that condition throughout their use. It is also preferable that the sizing or starch paste shall be forced into the weave at the seams by the application of pressure before the
 115 ironing or drying operation. Broadly considered, it is immaterial how the rugs are stretched during the flattening and hardening of the sized or starched seams, and it will be evident that if the machine is long
 120 enough, the rugs may be maintained in a stationary and stretched condition over the heated surfaces R during the setting of the size or starch. I therefore do not restrict myself to the details of construction so long
 125 as the structure embodies the improvements recited in the claims.

In this application I make no claim to

the method of finishing rugs which is herein described, as the same will form subject matter of a divisional application.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a machine of the character described, means for holding and stretching a rug transversely to the length of its seams and moving it longitudinally in the direction of said seams, in combination with means for applying a sizing to the seams of the rug during the conveyance thereof by the holding and stretching means, and ironing means arranged in alinement with the means for applying sizing over which the seams of the rug are conveyed by the holding and stretching means.
2. In a machine of the character described, means for holding and stretching a rug transversely to the length of its seams and moving it longitudinally in the direction of said seams, in combination with means for applying a sizing to the seams of the rug during the conveyance thereof by the holding and stretching means, ironing means arranged in alinement with the means for applying sizing over which the seams of the rug are conveyed by the holding and stretching means, and pressure applying means interposed between the means for applying the sizing and the ironing means for subjecting the seams of the rug to pressure.
3. In a machine of the character described, means for holding and stretching a rug transversely to the length of its seams and moving it longitudinally in the direction of said seams, in combination with means consisting of a trough and rotating rollers therein for applying a sizing to the seams of the rug during the conveyance thereof by the holding and stretching means, ironing means comprising parallel steam heated metal surfaces arranged in alinement with the means for applying sizing over which the seams of the rug are conveyed by the holding and stretching means, and pressure applying means interposed between the means for applying the sizing and the ironing means for subjecting the seams of the rug to pressure, said means consisting of lower rolls over which the rug passes and heavy upper rolls above the lower rolls and supported so as to have freedom of vertical movement during their rotation.
4. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug while conveying and stretching it, guides for the endless conveyers for causing them to move apart during their travel to insure the stretching of the rug, means arranged between the endless conveyers where they are nearest together for applying a siz-

ing to the seams of the rug, and ironing means also arranged between the endless conveyers but at their portions where they are farthest apart over which the sized seams of the stretched rug are caused to pass.

5. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug while conveying and stretching it, guides for the endless conveyers for causing them to move apart during their travel to insure the stretching of the rug, means arranged between the endless conveyers where they are nearest together for applying a sizing to the seams of the rug, ironing means also arranged between the endless conveyers but at their portions where they are farthest apart over which the sized seams of the stretched rug are caused to pass, and pressure applying devices interposed between the size applying means and the ironing means for pressing the sized seams of the rug before they reach the ironing means.

6. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug while conveying and stretching it, guides for the endless conveyers for causing them to move apart during their travel to insure the stretching of the rug, means arranged between the endless conveyers where they are nearest together for applying a sizing to the seams of the rug, ironing means also arranged between the endless conveyers but at their portions where they are farthest apart over which the sized seams of the stretched rug are caused to pass, and means arranged adjacent to the sizing means for spraying the rug with moist steam.

7. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug while conveying and stretching it, guides for the endless conveyers for causing them to move apart during their travel to insure the stretching of the rug, means arranged between the endless conveyers where they are nearest together for applying a sizing to the seams of the rug, ironing means also arranged between the endless conveyers but at their portions where they are farthest apart over which the sized seams of the stretched rug are caused to pass, and means for adjusting the guides for the conveyers relatively to or from each other.

8. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug while conveying and stretching it, guides for the endless conveyers for causing them to move apart during their travel to insure the stretching of the rug, means arranged between the endless conveyers where they are nearest together for applying a siz-

ing to the seams of the rug, ironing means also arranged between the endless conveyers but at their portions where they are farthest apart over which the sized seams of the stretched rug are caused to pass, means for adjusting the guides for the conveyers relatively to or from each other, and means for operating upon the holders for the rug for automatically disengaging them from the rug after the completion of the sizing and ironing thereof.

9. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug, guides for the conveyers for moving them relatively to or from each other, a size box arranged below the level of a plane across the upper portions of the conveyers, revolving rolls in said size box for applying sizing to the back of the rug at the seam portions thereof, and a plurality of drying devices constituting long parallel surfaces arranged in alinement with the size applying rollers and over which the sized seams of the rug are conveyed while said rug is in a stretched condition.

10. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug, guides for the conveyers for moving them relatively to or from each other, a size box arranged below the level of a plane across the upper portions of the conveyers, revolving rolls in said size box for applying sizing to the back of the rug at the seam portions thereof, a plurality of drying devices constituting long parallel surfaces arranged in alinement with the size applying rollers and over which the sized seams of the rug are conveyed while said rug is in a stretched condition, and pressure applying devices interposed between the size applying rolls and the plurality of drying devices for pressing the seams while in a moist condition.

11. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug, guides for the conveyers for moving them relatively to or from each other, a size box arranged below the level of a plane across the upper portions of the conveyers, revolving rolls in said size box for applying sizing to the back of the rug at the seam portions thereof, a plurality of drying devices constituting long parallel surfaces arranged in alinement with the size applying rollers and over which the sized seams of the rug are conveyed while said rug is in a stretched condition, and pressure applying devices arranged between the size applying rolls and the plurality of drying devices for pressing the seams while in a moist condition, said pressure applying devices consist-

ing of an upper set of rolls and a lower set of rolls said rolls cooperating in pairs and between which the rug is passed and means for supporting said sets of rolls so that one set is movable toward the other set, and devices for positively rotating the rolls of one set.

12. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug, guides for the conveyers for moving them relatively to or from each other, a size box arranged below the level of a plane across the upper portions of the conveyers, revolving rolls in said size box for applying sizing to the back of the rug at the seam portions thereof, a plurality of drying devices constituting long parallel surfaces arranged in alinement with the size applying rollers and over which the sized seams of the rug are conveyed while said rug is in a stretched condition, pressure applying devices interposed between the size applying rolls and the plurality of drying devices for pressing the seams while in a moist condition consisting of a positively driven shaft having a plurality of rolls thereon, and a second shaft positively driven but movable to or from the first mentioned shaft and provided with a plurality of heavy rolls immediately above the rolls of the lower shaft.

13. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug, guides for the conveyers for moving them relatively to or from each other, a size box arranged below the level of a plane across the upper portions of the conveyers, revolving rolls in said size box for applying sizing to the back of the rug at the seam portions thereof, a plurality of drying devices constituting long parallel surfaces arranged in alinement with the size applying rollers and over which the sized seams of the rug are conveyed while said rug is in a stretched condition, and means for steaming the seams interposed between the size applying rolls and the drying devices.

14. In a machine of the character described, the combination of two endless conveyers provided with means for holding the edges of a rug, guides for the conveyers for moving them relatively to or from each other, a size box arranged below the level of a plane across the upper portions of the conveyers, revolving rolls in said size box for applying sizing to the back of the rug at the seam portions thereof, a plurality of drying devices constituting long parallel surfaces arranged in alinement with the size applying rollers and over which the sized seams of the rug are conveyed while said rug is in a stretched condition, pressure applying devices interposed between the size applying

rolls and the plurality of drying devices for pressing the seams while in a moist condition, and means for steaming the seams interposed between the size applying rolls and the pressure rolls.

15 5 In a machine for finishing built-up rugs in a permanently flat condition, the combination of a frame provided with holding devices for grasping the opposite edges
10 of the rug parallel to the longitudinal sewed seams thereof and stretching the same, with means for applying to the back of the rug along the seams thereof a paste or size, and

heated surfaces in line with the paste applying means so that seams may be brought into close relation with said surfaces after the paste or sizing has been applied for drying the sized or starched seams while the rug is stretched transversely to the length of the seams.

20 In testimony of which invention, I hereunto set my hand.

CHAS. W. MASLAND.

Witnesses:

R. M. KELLY,
E. W. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."