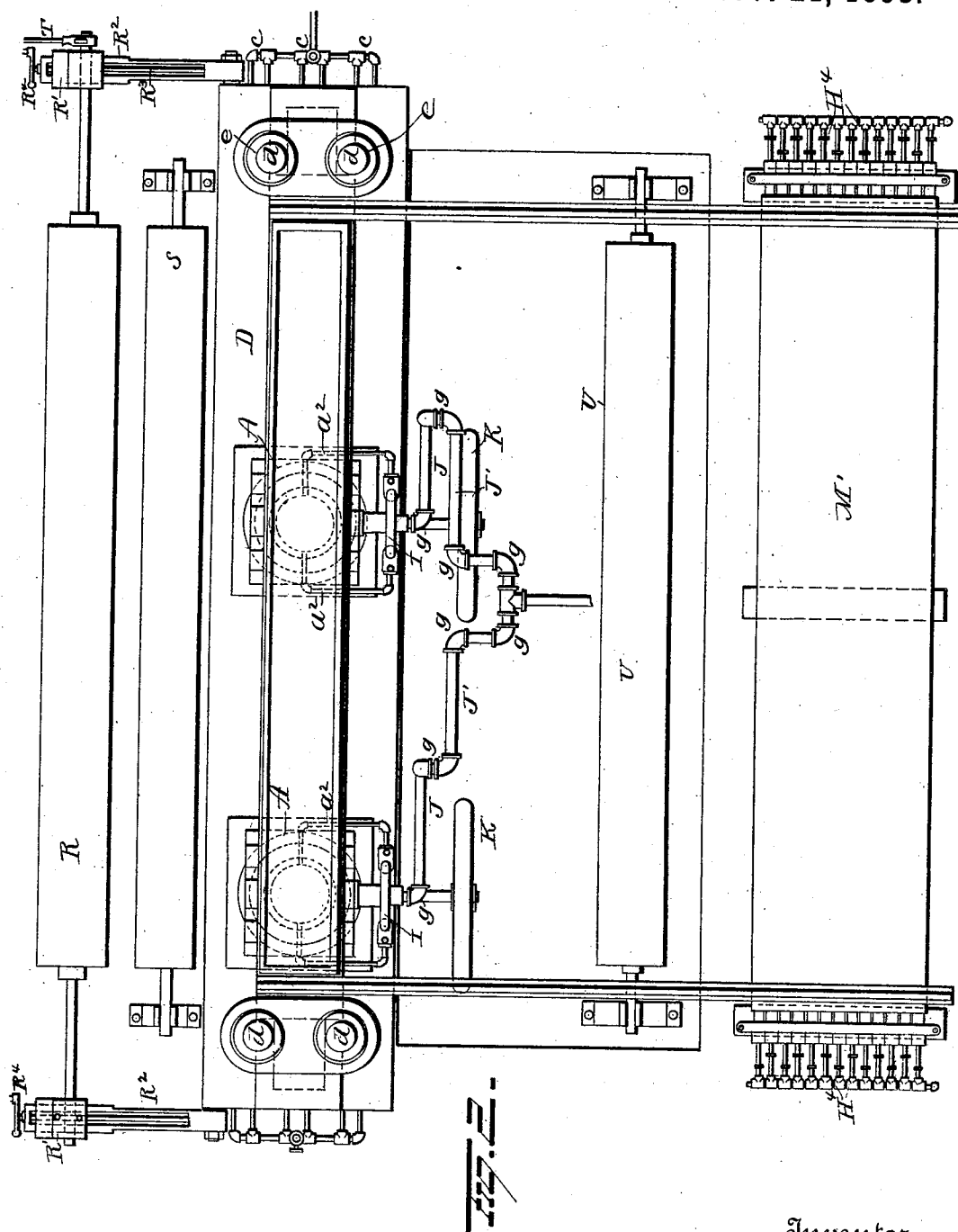


(No Model.)

4 Sheets—Sheet 2.

D. N. MELVIN.
APPARATUS FOR THE MANUFACTURE OF LINOLEUM.
No. 509,088. Patented Nov. 21, 1893.



Witnesses
G. F. Downing

Inventor
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Attorneys

(No Model.)

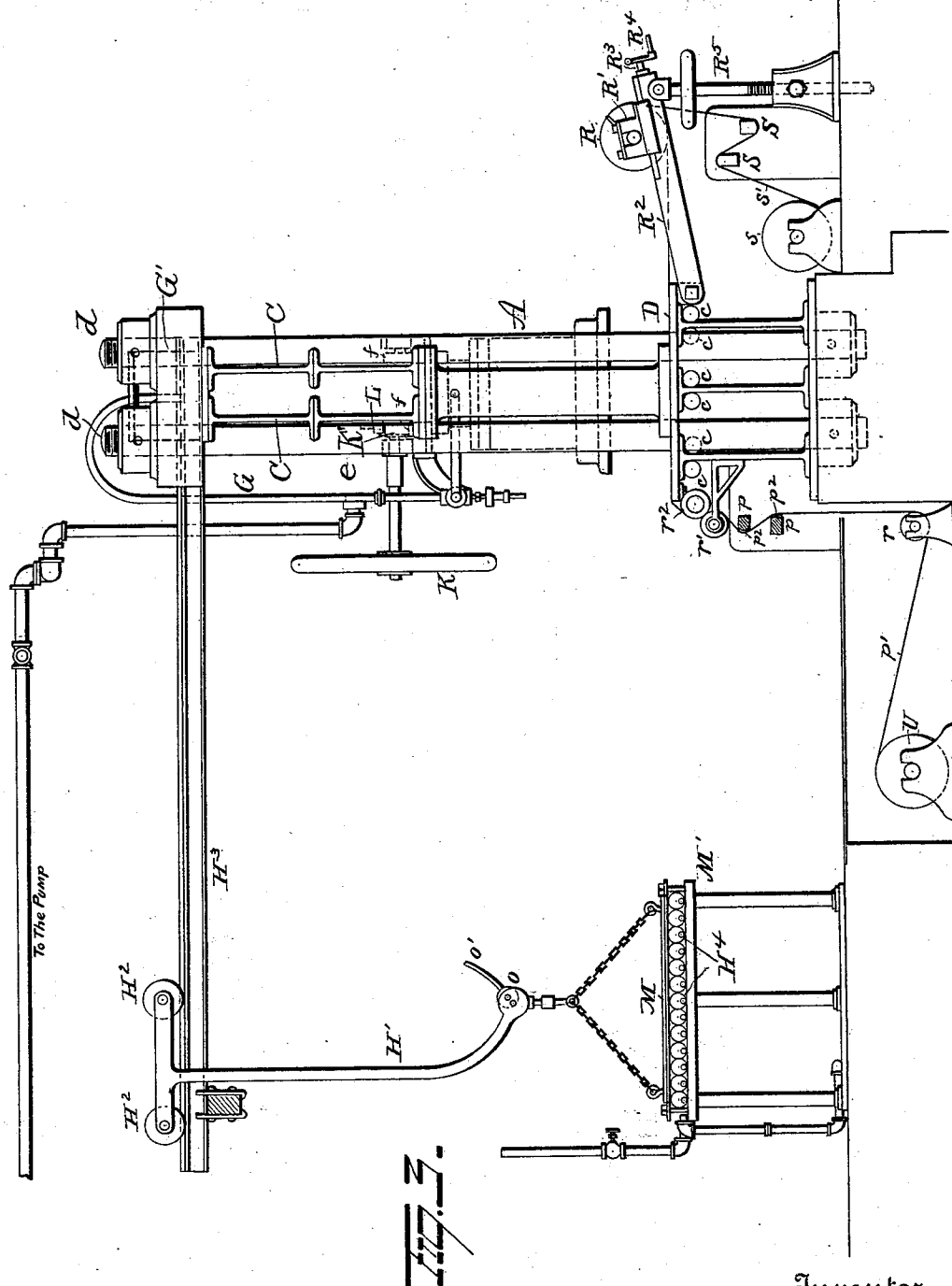
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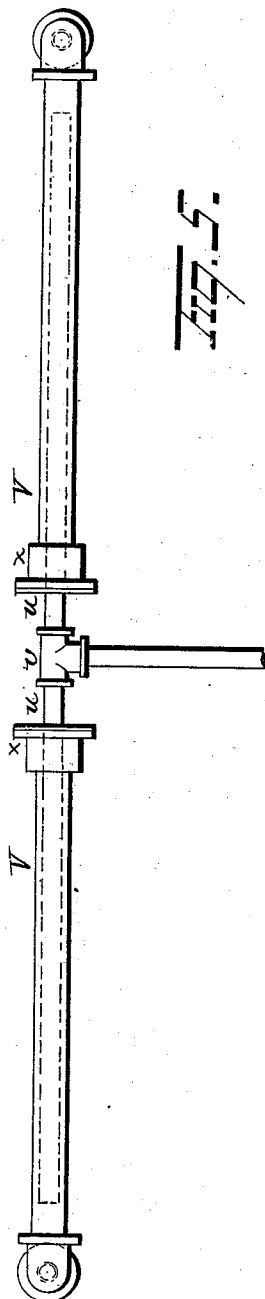
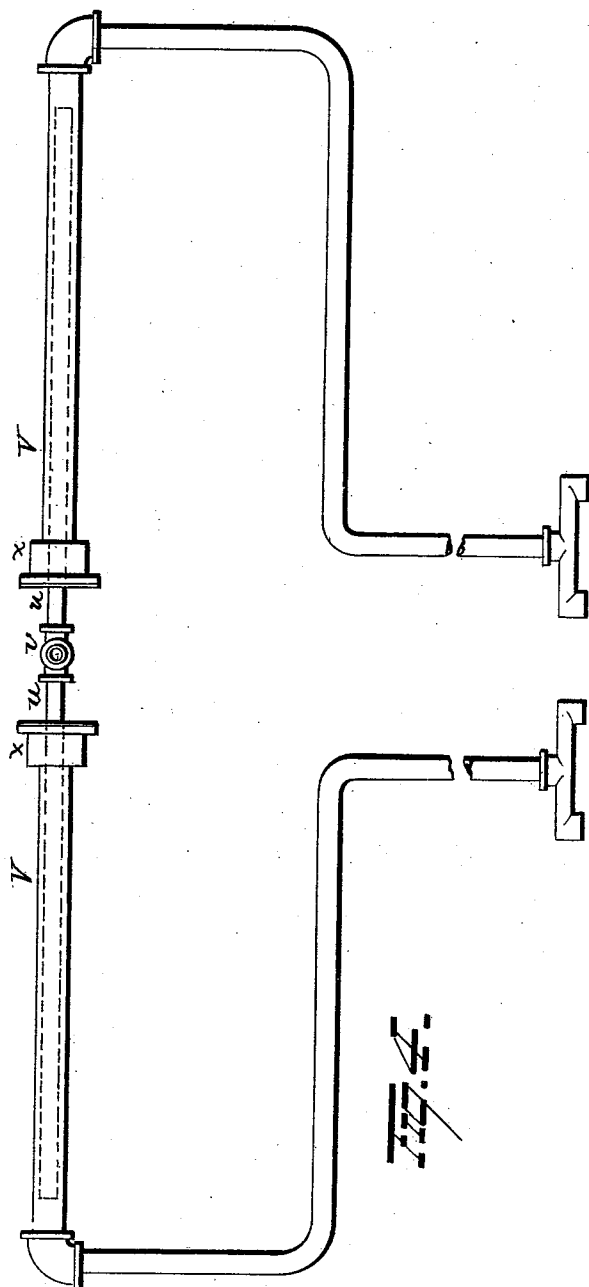
Witnesses
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(No Model.)

4 Sheets—Sheet 4.

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Inventor
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UNITED STATES PATENT OFFICE.

DAVID N. MELVIN, OF LINOLEUMVILLE, NEW YORK.

APPARATUS FOR THE MANUFACTURE OF LINOLEUM.

SPECIFICATION forming part of Letters Patent No. 509,088, dated November 21, 1893.

Application filed February 9, 1893. Serial No. 461,657. (No model.)

To all whom it may concern:

Be it known that I, DAVID N. MELVIN, a resident of Linoleumville, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Apparatus for the Manufacture of Linoleum; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in apparatus for the manufacture of linoleum.

Heretofore linoleum has been compressed onto a canvas foundation by means of a press, the platen of the press being large enough to press the whole width of the sheet at one operation, but this, in practice, is found to be limited by the strength and elasticity of the materials.

It is the object of my present invention to overcome the defects of prior constructions and to construct the machine in such manner that the material can be pressed in increments of say, eighteen inches or twenty-four inches square at a time, whereby the necessary total pressure is reduced and a machine can be constructed of a minimum weight and cost, to press any width of sheet.

A further object is to provide simple and efficient means whereby to maintain the foundation canvas straight and smooth and means for preventing the face of the finished linoleum from becoming disfigured by the contact therewith of the bottom of the canvas foundation.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings: Figure 1 is an elevation of my improved apparatus. Fig. 2 is a plan view. Fig. 3 is an end view. Figs. 4 and 5 are views of a modification of the devices for supplying fluid to the hydraulic cylinders.

A, A represent two hydraulic cylinders, and B, B, the rams fitted into them, with hydraulic leather packing at the necks in the usual way, and also packing rings at *a, a*, shown in dotted

lines, leaving an annular space *b*, for lifting the cylinder after it has completed its stroke.

The frame of the press is composed of overhead girders C, C, and a table D, beneath which latter steam heating pipes *c, c, c, c*, are located. The table and girders are joined together by means of columns *e* and bolts *d*, so as to constitute a rigid frame, from which the rams B of the two hydraulic cylinders A are suspended and carried by friction wheels *f*. Valves for operating the cylinders are placed in front of the latter, at E, E, and adapted to be operated by cranks *f'*. Connections are made with these valves by means of pipes, H, H, I, I, J, J, J', J'—these pipes being provided with swivel joints *g*, at the necessary places, so as to allow the hydraulic cylinders to be traversed across the table. The joints *g* are packed with leather in the usual manner. Water is supplied to these cylinders through the pipes from a set of pumps and accumulators in the well known manner of hydraulic plants. Pipes G, G, also communicate with the valves E, and receive the exhaust conveyed to the valves E by means of pipes *a*². The exhaust water from the cylinders is conveyed by the pipes G, to a tank G' on top the framework, from which it may be conveyed in any suitable manner.

The cylinders A, A, are moved along the girders by hand wheels K, K, on shafts carrying pinions K' gearing into a rack bar L. A plate M is provided and is of a size equal to the size of the top of the table and is carried by a hanger H' having wheels H² which run on a beam H³. The plate M is heated by a table M' composed of a series of steam pipes H⁴, and when it is required the plate M is raised up from said heating table by means of an eccentric *o* having a handle *o'*, so that it will be free to swing or roll into the press and when set fairly on the top of the material to be hot pressed, the handle *o'* is then turned so as to lower the plate, and the chains unshipped. After the hydraulic cylinders have performed the work required, the plate is swung back again to its position on the heating table, there to have the heat replenished and be ready for the next operation.

In order to keep the canvas foundation straight and without buckles, scrapers *p* with

helical grooves p^2 cut in their faces or edges are used. The canvas foundation p' is mounted on a drum U, from which it passes under a roller r and thence around the said helical faces,—the action being to spread the canvas out to its fullest width,—the tighter it is held against the scrapers the greater the action to spread the canvas. After passing over the grooved scrapers p , p , the foundation canvas is passed between rollers r' , r^2 and then over the table D, where the linoleum is placed thereon. The finished linoleum is wound on a roll or drum R. A roll s of felt cloth s' is provided and rolled up with the linoleum to prevent the face of the latter being injured by the threads of the canvas foundation. The goods are still hot when rolled up and the least irregularity will cause an impression to be made on the face. This felt cloth is spread out flat by grooved scrapers S, S, in the same way as the canvas foundation.

The roll or drum R is mounted in bearing blocks R' mounted to have a sliding movement on bars R^2 , said bearings being slid by means of screws R^3 carrying crank arms R^4 . The bars R^2 are pivotally connected at one end to the table and at their other ends to screw jacks R^5 , by means of which the height of the roll or drum R can be adjusted. The drum shaft is provided with a ratchet lever T, by means of which to turn it to wind the linoleum thereon.

In Fig. 4 another method of transmitting fluid under pressure to the hydraulic cylinders, in the place of the swivel jointed pipes above described, is illustrated. The pump or accumulator pipe is connected at v and the pipes u rigidly attached to the hydraulic cylinders and carry stuffing boxes at x , x , so that when the hydraulic cylinders are moved, the pipes u are slipped or telescoped over pipes V.

Various other slight changes might be made in the details of construction of my apparatus without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details of construction herein set forth, but,

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

1. In an apparatus for the manufacture of linoleum, the combination with a frame, girders or trackways and a table, of a hydraulic press, constructed to travel on said trackways, and flexible connections with said hydraulic press for supplying the same with water, substantially as set forth.

2. In an apparatus for the manufacture of linoleum, the combination with a frame, trackways and a table, of a hydraulic press, rollers carried by said press adapted to run on said trackways, a rack bar, a shaft carrying a pinion to mesh with said rack bar whereby to move the press over the table, and means for operating said shaft, substantially as set forth.

3. In an apparatus for the manufacture of

linoleum, the combination with a frame-work, track ways and a table, of a hydraulic press adapted to be moved over said table, a water supply pipe, pipes connecting said water supply pipe with the hydraulic cylinder, and swivel joints connecting said pipes together and to the water supply pipe, substantially as set forth.

4. In an apparatus for the manufacture of linoleum, the combination with a framework, and a table, of a hydraulic press adapted to travel over said table, and means for heating said table, substantially as set forth.

5. In an apparatus for the manufacture of linoleum, the combination with a framework and a table, of a hydraulic press adapted to travel over said table, and steam pipes under said table for heating the same, substantially as set forth.

6. In an apparatus for the manufacture of linoleum, the combination with a framework and a table, of a hydraulic press for pressing linoleum on canvas foundation adapted to pass over said table, means for feeding said cloth to said table and means for withdrawing the finished linoleum from said table, substantially as set forth.

7. In an apparatus for the manufacture of linoleum, the combination with framework, a table and a press, of devices for feeding foundation canvas over said table, grooved scrapers over which said foundation canvas is adapted to pass and by means of which said foundation canvas is maintained straight and flat, substantially as set forth.

8. In an apparatus for the manufacture of linoleum, the combination with a table and a press, of devices for removing the finished linoleum from the table and winding it, and means for causing felt cloth to be wound with the finished linoleum in alternate layers, substantially as set forth.

9. In an apparatus for the manufacture of linoleum, the combination with a table and a press, of devices for feeding foundation cloth to said table to have the linoleum pressed thereon, scrapers having spiral grooves, over which said foundation cloth is adapted to pass and by means of which it is maintained straight and flat, a roll for receiving the finished linoleum, means for carrying felt cloth to be wound with the finished linoleum in alternate layers, and scrapers having spiral grooves to maintain said felt cloth straight and flat, substantially as set forth.

10. In an apparatus for the manufacture of linoleum, the combination with a table and a press for pressing the linoleum on a foundation canvas, of bars pivotally connected to said table at one end, screw jacks for adjustably supporting the other ends of said bars, bearings mounted to slide on said bars, means for sliding said bearings, and a roll mounted in said bearings to receive the finished linoleum after it leaves the table, substantially as set forth.

11. In an apparatus for the manufacture of

linoleum, the combination with a table and a press for pressing linoleum on a foundation canvas, of bars pivotally connected to said table at one end, screw jacks for adjustably supporting the other ends of said bars, bearings mounted to slide on said bars, means for sliding said bearings, a roll mounted in said bearings and adapted to receive the finished linoleum after it leaves the table, and a ratchet lever for rotating said roll, substantially as set forth.

12. In an apparatus for the manufacture of linoleum, the combination with a table and a press adapted to press linoleum on a foundation canvas, of a plate, a track way, a movable hanger on said trackway adapted to carry said plate and deposit it on the linoleum on the table, and means for heating said plate, substantially as set forth.

13. In an apparatus for the manufacture of linoleum, the combination with a table and a press adapted to press linoleum on a foundation canvas, of a plate, a trackway, a mov-

able hanger on said trackway, a cam at the lower end of said hanger, a handle connected with said cam, a plate suspended from the cam, and a heated table for heating said plate, substantially as and for the purpose set forth.

14. In an apparatus for the manufacture of linoleum, the combination with a table and a press adapted to press linoleum on a foundation canvas, of a plate, a table composed of steam pipes for heating said plate, and a traveling hanger for conveying said plate from the heated table and depositing it on the linoleum on the main table and back to the heating table, substantially as set forth.

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

DAVID N. MELVIN.

Witnesses:

GEORGE H. BROWNE,
P. HOLDER EGGER.