No. 765,191. PATENTED JULY 19, 1904.

J. D. O'BRIEN.

MACHINE FOR WEAVING SHEET LATHING.

APPLICATION FILED NOV. 4, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

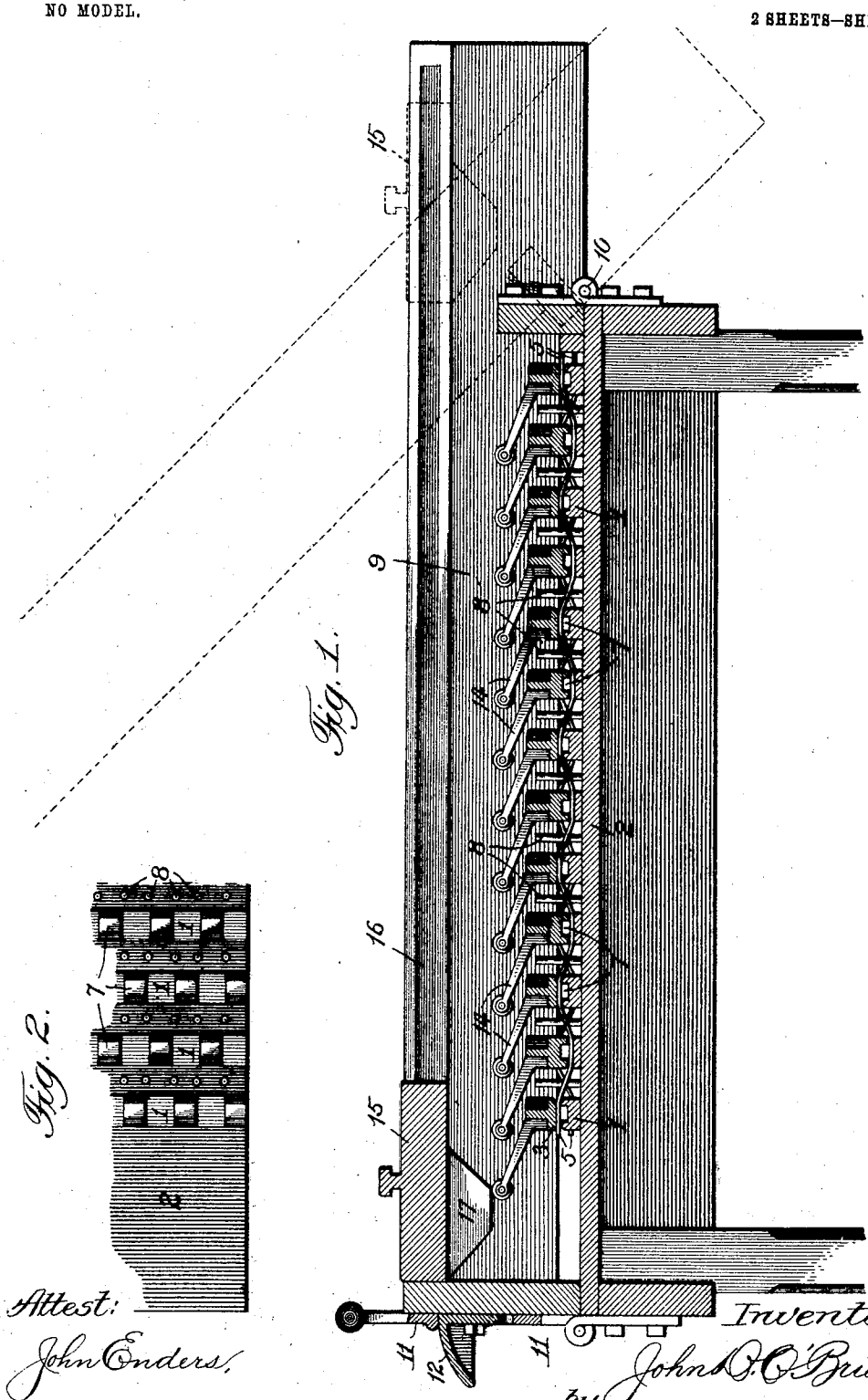


Fig. 1.

Fig. 2.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 6.

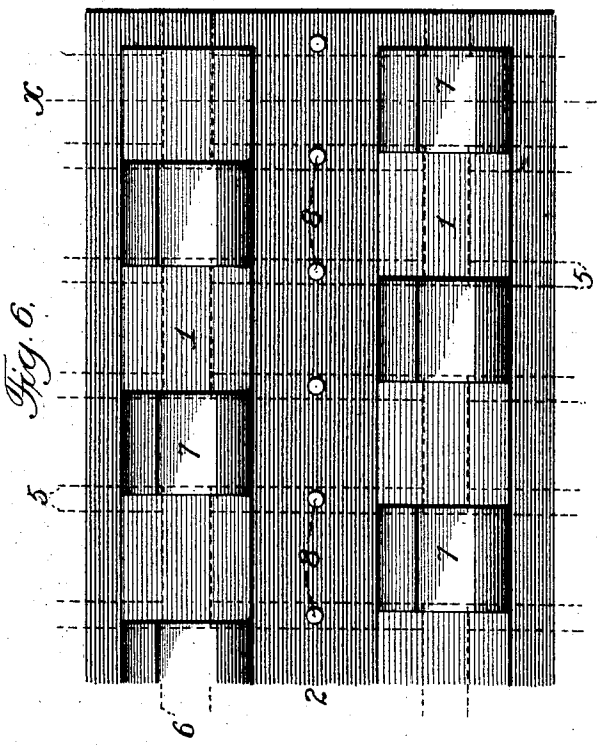


Fig. 4.

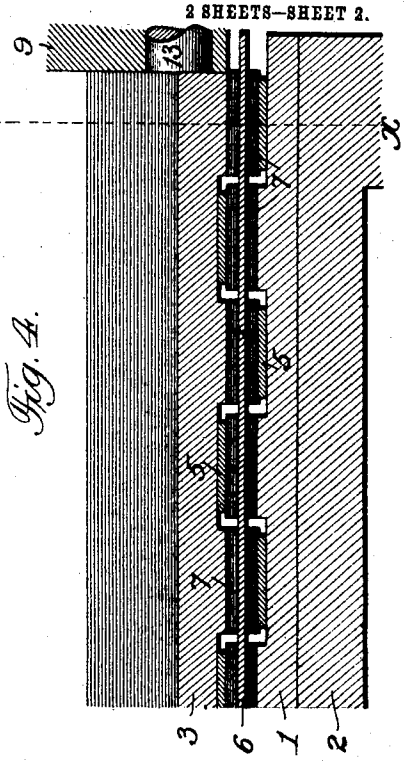


Fig. 5.

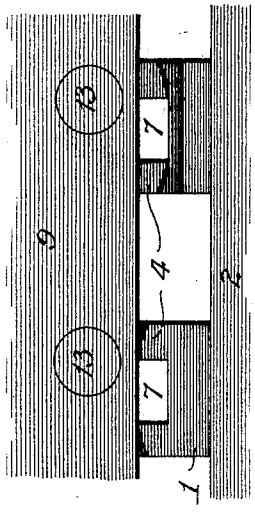
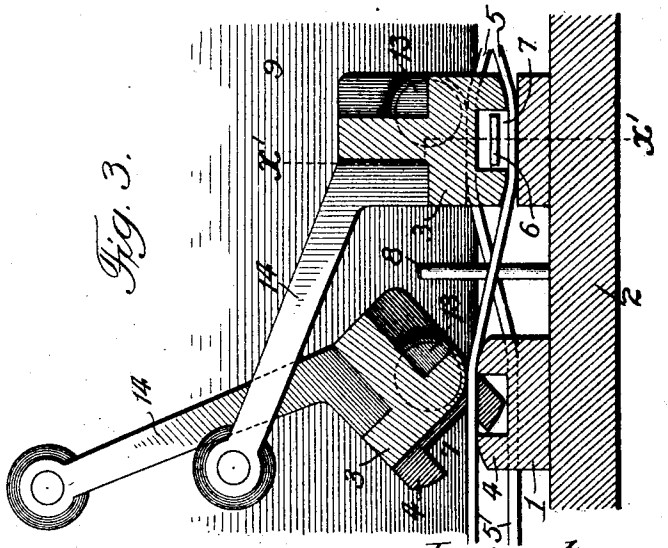


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN D. O'BRIEN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO NATIONAL PATENT LATH AND MANUFACTURING COMPANY, A CORPORATION OF MISSOURI.

MACHINE FOR WEAVING SHEET-LATHING.

SPECIFICATION forming part of Letters Patent No. 765,191, dated July 19, 1904.

Application filed November 4, 1903. Serial No. 179,778. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. O'BRIEN, a citizen of the United States of America, and a resident of the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Machines for Weaving Sheet-Lathing, of which the following is a specification.

The present invention relates to machinery for weaving the form of woven lathing for buildings which constitutes the subject-matter of my prior Letters Patent, No. 721,074, dated February 17, 1903, and has for its object to provide a simple and efficient structural formation and combination of parts for attaining a ready and accurate weaving together of the wooden warp and weft strips composing the sheet of woven lathing, all as will hereinafter more fully appear and be more particularly pointed out in the claims.

In the accompanying drawings, illustrative of the present invention, Figure 1 is a longitudinal sectional elevation of a lath-weaving machine embodying the present invention. Fig. 2 is a fragmentary plan view of the stationary bed or base of the machine and illustrating the arrangement of the series of fixed heddle-bars, &c., thereof. Fig. 3 is an enlarged detail longitudinal view of coacting pairs of the heddle-bars and immediately adjacent parts and taken at line $x\,x$, Fig. 4. Fig. 4 is an enlarged detail transverse sectional elevation of the same, taken at line $x'\,x'$, Fig. 3. Fig. 5 is an enlarged detail side elevation illustrating the pivotal arrangement of the upper series of heddle-bars. Fig. 6 is an enlarged detail plan view of the stationary heddle-bars, &c.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents a series of transversely-arranged stationary heddle-bars secured in separated relation upon a horizontal supporting-base 2, which may be the top portion of a table or other like stand.

3 represents a series of companion transverse heddle-bars arranged above the aforesaid series of stationary heddle-bars 1 and capable of movement to and from such stationary heddle-bars in the manner and for the purpose hereinafter stated.

4 represents rectangular projections arranged in transversely-extending series upon the opposed faces of each of the counterpart series of heddle-bars 1 and 3. Such projections are of a width equal to the width of the warp-strips of the lathing-sheet and are separated by intervening recesses having widths in excess of said projections equal to the open spacing between the warp-strips in the lathing-sheet, as illustrated more particularly in dotted lines in Fig. 6 of the drawings. In the present improvement the series of such projections on an individual heddle-strip are alternated or staggered with relation to the series of such projections on the next adjacent heddle-strip in both a horizontal and vertical plane, and the arrangement is such that with the series of movable heddle-bars 3 depressed upon the series of stationary heddle-bars in an actual operation of the present machine the series of interposed longitudinal warp-strips 5 will have a sinuous form imparted to each strip of the series and with the sinuosity of one strip alternating or staggered with relation to next adjacent strip or strips and so that the series of transverse weft-strips 6 of the lathing-sheet can be pushed transversely by hand between the aforesaid series of longitudinal warp-strips 5 to form the completed woven or interlaced sheet-lathing.

7 represents alined recesses or channels formed centrally in the series of projections of the heddle-bars 1 and 3 and extending in a direction transverse of the machine. Such channels are adapted to form ways for the passage and guidance of the weft-strips 6 in the insertion of the same into interlaced position between the warp-strips 5, as above described.

8 represents vertical temple-pins attached to the stationary base 2 in longitudinal series and in transverse spaced relation, as illustrated in Fig. 6. Such temple-pins are adapted to insure the proper separated and parallel relation of the warp-strips 5 during the operation of forming the sheet-lathing.

9 is a carrying-frame for the series of mov-

able heddle-bars 3. Such frame is adapted to move into a position removed from the stationary supporting-base 2, so as to permit of the convenient removal of a finished sheet of lathing, as well as permit of a ready placing of a series of longitudinal warp-strips 5 in position for the formation of a fresh sheet of lathing. In the construction shown in Fig. 1 of the drawings such movement of said carrying-frame is attained by a hinge connection 10 between one end of said frame and a corresponding end of the stationary base 2, and as arranged said frame is adapted to be swung upward out of the way, as illustrated in dotted lines in Fig. 1.

11 is a latch lever or hasp pivoted at the end of the stationary base opposite to the aforesaid hinge connection 10 and adapted to engage a cam-shaped keeper 12 on the corresponding end of the carrying-frame 9 to secure the same in its lower position in a strong and substantial manner.

In the preferred form of the present invention the series of movable heddle-bars 3 are successively brought into their depressed and active condition, beginning with the depression of the heddle-bar at one end of the machine and successively depressing the series one after another toward the other end of the machine. Such operation is adapted to impart the heretofore-described sinuous form to the series of warp-strips 5 in a progressive manner without undue strain thereon and without liability to tearing the same, which would be the tendency were the series of movable heddle-bars simultaneously depressed. The serial depression of the heddle-bars 3 may be effected in any usual and suitable manner without departing from the scope of this part of the present invention. In the construction shown in the present drawings for attaining such serial depression of said heddle-bars an arrangement of parts is used as follows:

13 represents eccentrically-arranged pins on the ends of the heddle-bars 3. Such pairs turn in bearings in the side bars of the movable carrying-frame 9 and are adapted to eccentrically pivot said heddle-bars in said frame.

14 represents angular arms secured to the heddle-bars 3 and provided with bearing-rollers or other usual friction-reducing means on their upper ends.

15 is a weighted carriage having longitudinal movement in suitable guides 16 in the frame 9 aforesaid and provided on its under side with a depending shoe 17, having inclined faces, as shown in Fig. 1. With the described construction the upper ends of the angular arms 14 aforesaid project into the horizontal path in which the shoe 17 aforesaid has movement and are depressed by said shoe in a serial manner as said shoe is forced by hand to the forward end of the machine, and such arms when so depressed are adapted to bring the respective heddle-bars 3 from the raised position shown to the left in Fig. 3 into the depressed position shown to the right in said figure.

The frictional contact of the projections of said heddle-bars with the longitudinal warp-strips 5 are adapted to hold the heddle-bars in such depressed position while the weft-strips 6 are pushed into place by hand, as before described.

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

1. In a machine for forming woven sheet-lathing and the like, the combination of an upper and lower series of heddle-bars arranged in separated relation, each heddle-bar having a series of laterally-separated projections which are arranged in staggered relation to the series of such projections in the next adjacent heddle-bars in both a vertical and horizontal direction, and means for moving the one series of heddle-bars to and from the other series, for the purpose set forth.

2. In a machine for forming woven sheet-lathing and the like, the combination of an upper and lower series of heddle-bars arranged in separated relation, each heddle-bar having a series of laterally-separated projections each formed with a central recess, the projections of each heddle-bar having a staggered relation to the series of such projections on the next adjacent heddle-bars in both a vertical and horizontal direction, and means for moving the one series of heddle-bars to and from the other series, for the purpose set forth.

3. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a series of upper heddle-bars, a movable frame carrying said upper heddle-bars, each heddle-bar having a series of laterally-separated projections which are arranged in staggered relation to the series of such projections on the next adjacent heddle-bars in both a vertical and horizontal direction, and means for moving the one series of heddle-bars to and from the other series, for the purpose set forth.

4. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a series of upper heddle-bars, a movable frame carrying said upper heddle-bars, each heddle-bar having a series of laterally-separated projections each formed with a central recess, the projections of each heddle-bar having a staggered relation to the series of such projections on the next adjacent heddle-bars in both a vertical and horizontal direction, and means for moving one series of heddle-bars to and from the other series for the purpose set forth.

5. In a machine for forming woven sheet-lathing, and the like, the combination of a supporting-base, a series of lower stationary hed-

dle-bars secured thereto, a series of upper heddle-bars, a movable frame carrying said upper heddle-bars, each heddle-bar having a series of laterally-separated projections which are arranged in staggered relation to the series of such projections on the next adjacent heddle-bars in both a vertical and horizontal direction, a series of temple-pins arranged in longitudinal and transverse spaced relation on the stationary base and means for moving the one series of heddle-bars to and from the other series, for the purpose set forth.

6. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a series of upper heddle-bars, a movable frame carrying said upper heddle-bars, each heddle-bar having a series of laterally-separated projections each formed with a central recess, the projections of each heddle-bar having a staggered relation to the series of such projections on the next adjacent heddle-bars in both a vertical and horizontal direction, a series of temple-pins arranged in longitudinal and transverse spaced relation on the stationary base, and means for moving the series of heddle-bars to and from the other series, for the purpose set forth.

7. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a movable frame, a series of upper heddle-bars eccentrically pivoted in said frame and provided with operating-arms and means for serially operating the series of arms aforesaid, each heddle-bar having a series of laterally-separated projections which are arranged in staggered relation to the series of such projections on the next adjacent heddle-bars in both a vertical and horizontal direction, for the purpose set forth.

8. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a movable frame, a series of upper heddle-bars eccentrically pivoted in said frame and provided with operating-arms, and means for serially operating the series of arms aforesaid, each heddle-bar having a series of laterally-separated projections each formed with a central recess, the projections of each heddle-bar having staggered relation to the series of projections on the next adjacent heddle-bars in both a vertical and horizontal direction, for the purpose set forth.

9. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a movable frame, a series of upper heddle-bars eccentrically pivoted in said frame and provided with operating-arms, means for serially operating the series of arms aforesaid, and a series of temple-pins arranged on the stationary base in spaced relation laterally and longitudinally, each heddle-bar having a series of laterally-separated projections which are arranged in staggered relation to the series of such projections on the next adjacent heddle-bars in a vertical and horizontal direction, for the purpose set forth.

10. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a movable frame, a series of upper heddle-bars eccentrically pivoted in said frame and provided with operating-arms, a carriage arranged to slide horizontally in the movable frame, and an operating-shoe on said carriage adapted to serially engage and operate the arms of the upper heddle-bars, each heddle-bar having a series of laterally-separated projections which are arranged in staggered relation to the series of such projections on the next adjacent heddle-bars in both a vertical and horizontal direction, for the purpose set forth.

11. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a movable frame, a series of upper heddle-bars eccentrically pivoted in said frame and provided with operating-arms, a carriage arranged to slide horizontally in the movable frame, and an operating-shoe on said carriage adapted to serially engage and operate the arms of the upper heddle-bars, each heddle-bar having a series of laterally-separated projections each formed with a central recess, the projections of each heddle-bar having a staggered relation to the series of projections on the next adjacent heddle-bars in both a vertical and horizontal direction, for the purpose set forth.

12. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a movable frame, a series of upper heddle-bars eccentrically pivoted in said frame and provided with operating-arms, a carriage arranged to slide horizontally in the movable frame, an operating-shoe on said carriage adapted to serially engage and operate the arms of the upper heddle-bars, and a series of temple-pins arranged on the stationary base in spaced relation laterally and longitudinally, each heddle-bar having a series of laterally-separated projections which are arranged in staggered relation to the series of such projections on the next adjacent heddle-bars in a vertical and horizontal direction, for the purpose set forth.

13. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a movable frame hinged at one end to the stationary base and provided with a fastening means at the other end, a series of upper heddle-bars eccentrically pivoted in said frame and provided with

operating-arms, and means for serially operating the arms aforesaid, substantially as set forth.

14. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a movable frame hinged at one end to the stationary base and provided with a fastening means at the other end, a series of upper heddle-bars eccentrically pivoted in said frame and provided with operating-arms, means for serially operating the arms aforesaid, and a series of temple-pins arranged on the stationary base in spaced relation longitudinally and laterally, substantially as set forth.

15. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a movable frame hinged at one end to the stationary base and provided with a fastening means at the other end, a series of upper heddle-bars eccentrically pivoted in said frame and provided with operating-arms, a carriage arranged to slide horizontally in the movable frame, and an operating-shoe on said carriage adapted to serially engage and operate the arms of the upper heddle-bars, substantially as set forth.

16. In a machine for forming woven sheet-lathing and the like, the combination of a supporting-base, a series of lower stationary heddle-bars secured thereto, a movable frame hinged at one end to the stationary base and provided with a fastening means at the other end, a series of upper heddle-bars eccentrically pivoted in said frame and provided with operating-arms, a carriage arranged to slide horizontally in the movable frame, an operating-shoe on said carriage adapted to serially engage and operate the arms of the upper heddle-bars, and a series of temple-pins arranged on the stationary base in spaced relation laterally and longitudinally, substantially as set forth.

Signed at St. Louis, Missouri, this 31st day of October, 1903.

JOHN D. O'BRIEN.

Witnesses:
P. J. MOYNIHAN,
JAS. F. BRADY.