(No Model.) 2 Sheets—Sheet 1.

A. O. WRIGHT.

MACHINE FOR MAKING METAL LATHS.

No. 527,578. Patented Oct. 16, 1894.

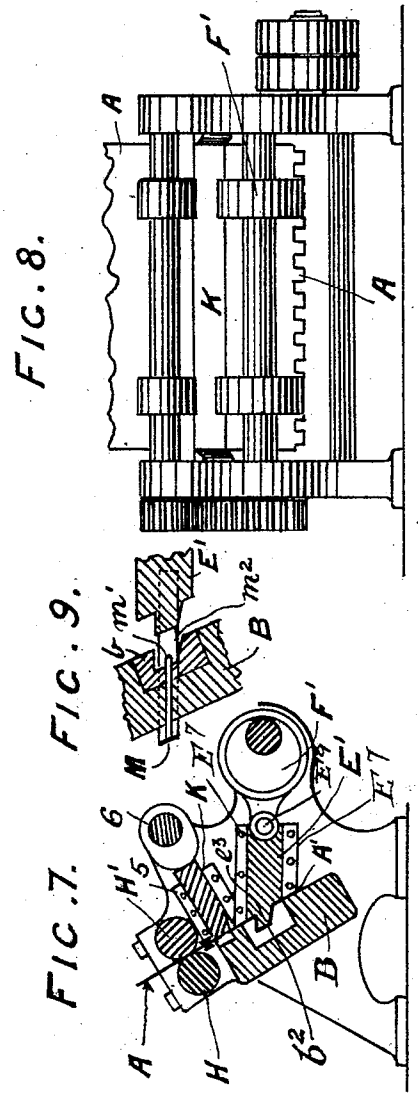

FIG. 8.

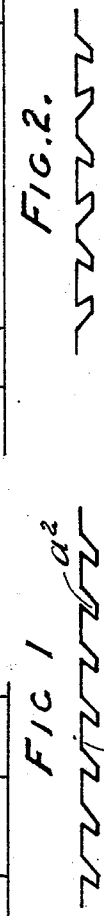

FIG. 2.

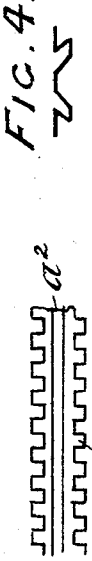

FIG. 4.

FIG. 5.

FIG. 6.

FIG. 9.

FIG. 7.

FIG. 1

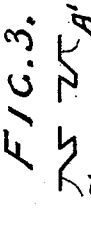

FIG. 3.

Witnesses:
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H. L. Peil

Inventor:
Arthur Octavius Wright
By Richards & Lee
his Attorneys.

(No Model.)

2 Sheets—Sheet 2.

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MACHINE FOR MAKING METAL LATHS.

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FIG. 13.

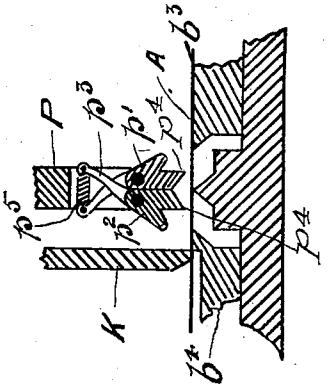


FIG. 14.

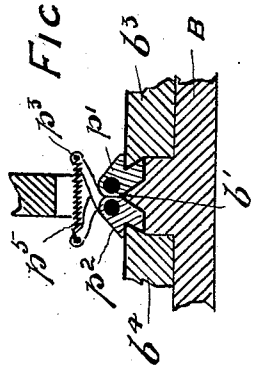


FIG. 15.

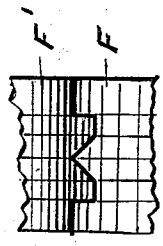


FIG. 12.

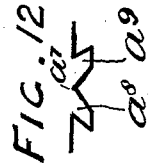


FIG. 10.

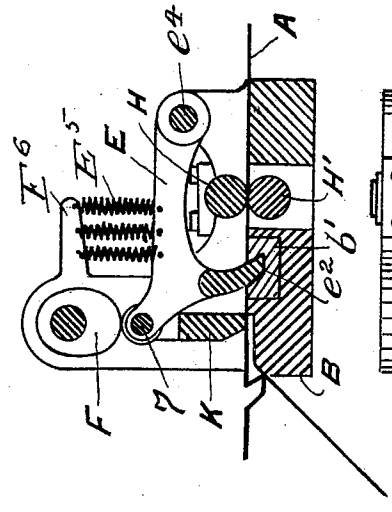
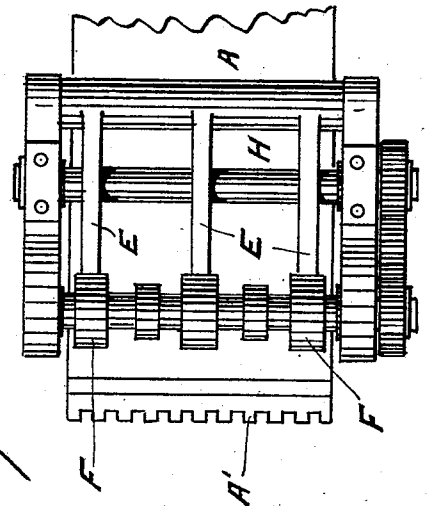


FIG. 11.



Witnesses:
E. R. Bolton
H. L. Peil.

Inventor:
Arthur Octavius Wright
By Richards & Co.
his Attorneys.

UNITED STATES PATENT OFFICE.

ARTHUR OCTAVIUS WRIGHT, OF BIRMINGHAM, ENGLAND.

MACHINE FOR MAKING METAL LATHS.

SPECIFICATION forming part of Letters Patent No. 527,578, dated October 16, 1894.

Application filed October 21, 1893. Serial No. 488,807. (No model.) Patented in England April 13, 1893, No. 7,563, and June 30, 1893, No. 12,804.

To all whom it may concern:

Be it known that I, ARTHUR OCTAVIUS WRIGHT, manufacturer, a subject of the Queen of Great Britain, residing at 39 St. John's Road, Birmingham, in the county of Warwick, England, have invented certain new and useful improvements in machinery for the manufacture of metal laths and sheets for forming ceilings, floors, partitions, and other such like purposes, of which the following is a specification.

The invention has been patented in England, No. 7,563, dated April 13, 1893, and No. 12,804, dated June 30, 1893.

My invention has for its object improvements in machinery for the manufacture of metal laths and sheets for forming ceilings, floors, partitions and other such like purposes which has for its object the rapid manufacture of laths and sheets which are so grooved as to receive and retain the plastic material more readily.

In order that my invention may be clearly understood and more easily carried into practice I have appended hereunto two sheets of drawings upon which I have fully illustrated the nature of my said improvements.

Figure 1 is a section through one of the sheets having the diagonal grooves parallel to each other that is to say the undercut surfaces are parallel to each other. Fig. 2 is a similar section to Fig. 1 but showing each diagonal groove produced in an opposite direction. Fig. 3 is a cross section of a lath having a single diagonal groove formed therein. Fig. 4 is a similar cross section through a lath having double diagonal grooves but so arranged that the two laths when put together form a dovetail at the back. Fig. 5 is a plan view of one of the laths as seen at Fig. 3. Fig. 6 is an enlarged section of a single diagonal groove. Fig. 7 is a vertical cross section through a machine suitable for forming the laths. Fig. 8 is a front elevation of Fig. 7. Fig. 9 is a section through part of the plunger and bed showing the arrangement for kicking or forcing out the sheet or laths after the groove has been formed. Fig. 10 shows a modification in the machine for forming the laths or sheets. Fig. 11 is a plan of same. Fig. 12 is a section showing a special lath. Fig. 13 is a section through part of a machine for forming the lath shown by Fig. 12 in position prior to the lath being formed. Fig. 14 is a similar section to Fig. 13 but showing the tools in position while forming the lath. Fig. 15 shows another mode of forming the lath shown by Fig. 12.

Now referring to the drawings again the laths A′ which are manufactured by my improved machinery are formed from thin sheet metal the sheets being sufficiently long or wide to make one lath as regards the length and to make any convenient number as regards the width. The groove a^2 runs along each lath the said groove a^2 having both its sides so inclined that the groove is diagonal to the face of the metal the bottom a^3 of the groove being by preference and convenience of manufacture narrower than the mouth of the opening the said bottom being made preferably square as shown although it may be formed round or pointed if so desired. By this diagonal groove the plastic material with which the laths are covered when fixed upon the partition or other part enters the groove a^2 and is guided by the inclined side of the groove a^4 into the recess or under cut side where as it will be readily seen it is firmly keyed by the projection a^6 formed by the other inclined or undercut side of the groove and this of course applies equally to the grooves formed in the sheets A also whether they be formed doubly or singly as in making my grooves or laths the grooves may be so arranged as to run parallel with each other as shown by Fig. 1 or the grooves may be formed so that each alternate one is reversed in the direction of its inclination to the next one as shown by Fig. 2.

The machinery for forming my laths and sheets consists of any conveniently formed frame or bed such as B having the bolster b' mounted thereon the groove b^2 corresponding with the outside cross section of the lath being formed therein. In connection with this bolster I mount either a pivoted reciprocating arm E Figs. 10 and 11 or its equivalent namely the plunger E′ Figs. 7 and 8 the former being pivoted at e^4 and actuated against the material by the cam F and returned by the springs E^5 connecting the arm E with the arm E^6 of the frame and the latter by the eccentric F′ in such a manner that the point e^2 or e^3 of the arm or plunger forces the sheet A into the recess in the bolster thus

forming the diagonal groove in the sheet as required. In this latter form the plunger E′ reciprocates in guide E⁷ of the frame and it is connected with the eccentric by a strap E⁸ pivoted to the plunger at E⁹. The sheets are fed in by the rolls H and H′ which by means of any well-known arrangement such as a pawl and ratchet are provided with a step by step feed movement by which the sheets are allowed to remain stationary while the groove is being formed.

The laths may have plain edges or they may be notched in any suitable form such as shown by Fig. 5 in which case the cutter K is provided to sever the lath while it is still held in the groove by the plunger E′ or pivoted reciprocating arm E after which the sheet is withdrawn from the groove in the bolster by any suitable arrangement such for instance as the bar M Fig. 9 which runs the whole width of the machine and is attached to each end of the plunger E′ by the arms m^2 in such a manner that as the plunger recedes a number of studs or rods m' which are formed upon the bars force the grooved part of the sheet or lath out of the bolster after which in the case of the lath it drops to the ground in its complete state while in the case of the sheet it is automatically fed forward until the whole length has been grooved after which it falls upon the ground complete.

In Fig. 7, the cutter K is arranged to move in guides 5 of the frame and is operated by the cam 6 while in Fig. 10 the cutter K is carried by the pivoted reciprocating arm E being pivotally connected thereto at 7.

In forming the sheets the cutter K would be detached and for forming the double grooves such as shown at Fig. 2 the sheets would be reversed and passed through a second but similar machine or parts of the machine may be exchanged which will be well understood by mechanics to adapt the same method to the sheet in its now altered form.

The particular mode of giving motion to the various parts depends upon the designer and as to whether the machine operates in a vertical, diagonal or horizontal position.

The machinery for making the dovetail lath described in my application, Serial No. 472,097, will also make my improved lath such for instance as shown by Fig. 12, the rise a^7 being produced by shaping the top and bottom rolls as shown in Fig. 15 which so shape the bottom of the groove before it reaches the vertical or side rolls.

The center a^7 of my new lath Fig. 12 divides the plaster and directs it into the two inclined grooves a^8 and a^9 and this double lath may be formed by means of tools as illustrated by Figs. 13 and 14 in which the dividing jaw or split plunger p' and p^2 is mounted in the reciprocating plunger P in such a manner that as the plunger P comes down the points p^4 of the plunger press the metal A the jaw being opened by the point b' of the bolster B which causes the two parts of the jaw to divide and enter the recesses and thus forms the dovetail or fishtail lath shown by Fig. 12. The sides b^3 and b^4 of the bolster may be mounted as slides and made to recede as shown at Fig. 13 to enable the lath to be removed and the jaws are retained in a closed position until opened by means of the spring p^5 which draws together the tail pieces or arms p^3 of the jaws and thus opens said jaws.

During the formation of the lath the slides b^3 and b^4 would be partially or wholly open as seen at Fig. 13 thus allowing the metal to be drawn well down into the groove after which the sides b^3 and b^4 close up and finish the undercut side of the groove in the lath and in some cases the end of the plunger may be solid and shaped to fit the point b^5 of the bolster the slides b^3 and b^4 being open to allow of its entrance and afterward closing in to form the inclined side of the groove as before described.

It will be understood that the split plunger and knife shown in Figs. 13 and 14 may be operated by either the means shown in Fig. 7 or that shown in Fig. 10 and further the use of the discharge plunger is not confined to the form shown in Fig. 2, but may obviously be applied to Figs. 13 and 14 if desired.

What I claim, then, is—

1. In combination in a lath forming machine, the bolster having an inclined recess, the plunger arranged to press the metal therein and the discharge plunger for forcing the lath out of the recess, said plungers operating at an inclination to the surface of the bolster, substantially as described.

2. In combination in a lath forming machine, the bolster having the point b' and the inclined recesses on each side of the same and the split plunger having pivoted parts p' p^2 arranged to enter the inclined recesses on opposite sides of the point, said point being arranged to separate the pivoted parts and deflect them laterally into the inclined recesses substantially as described.

3. In combination in a lath forming machine, the bolster having the point b' and the movable parts b^3 b^4 arranged to form with said point inclined recesses, and the plunger comprising the two parts arranged to enter the two inclined recesses formed in the bolster substantially as described.

4. In combination the bolster having the inclined recesses and the point b' and the plunger comprising the two parts p' p^2 pivotally supported and arranged to be spread apart upon contact with the point b' and the spring connected to extensions p^3 of the pivoted parts for returning them to normal closed position, substantially as described.

In testimony that I claim the foregoing as my own I affix my name in the presence of two witnesses.

ARTHUR OCTAVIUS WRIGHT.

Witnesses:

LEWIS WM. GOOLD,

WILLIAM SMITH.