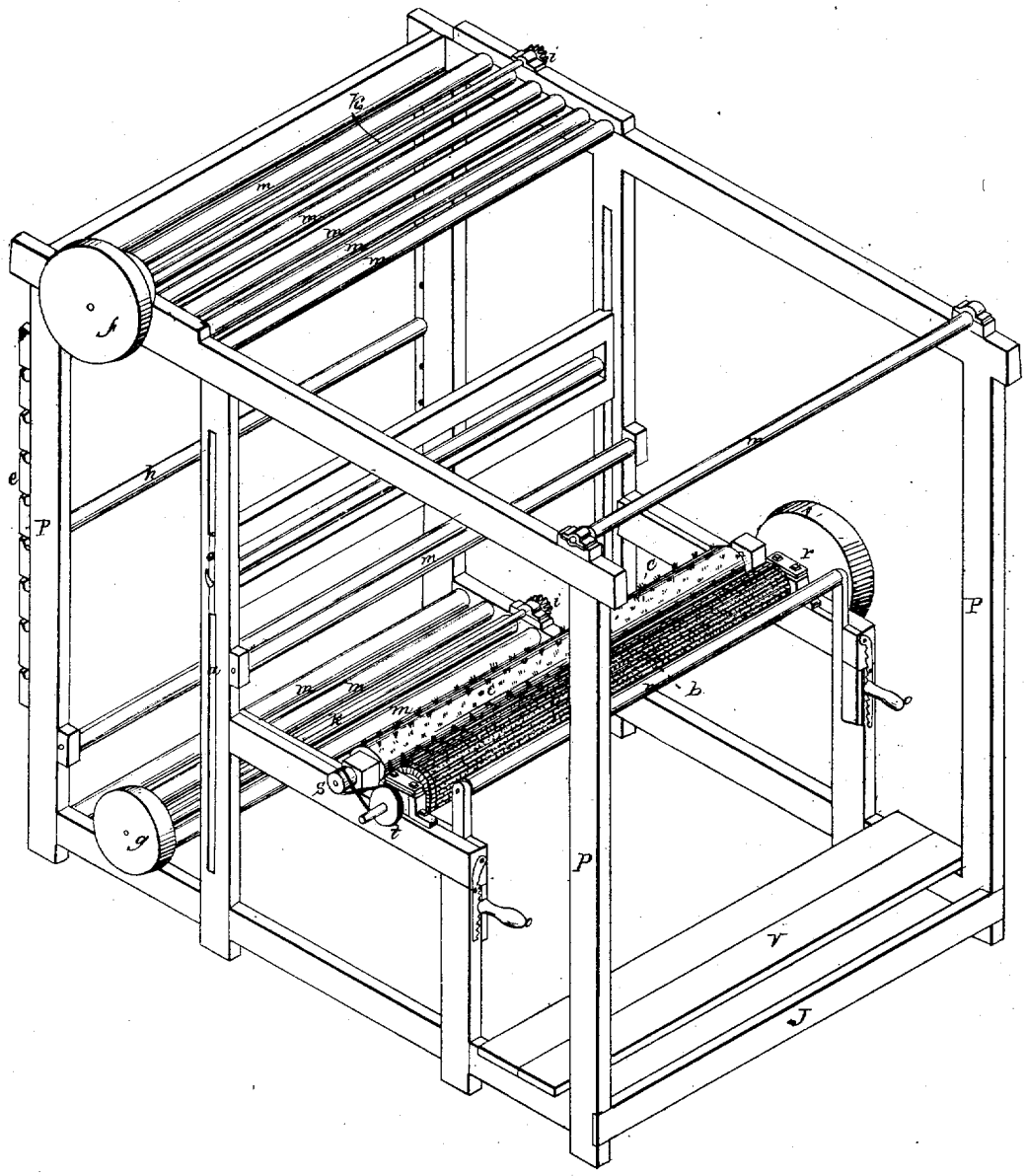
3 Sheets—Sheet 1.

6045X

T. HURD & J. FOX.

MACHINE FOR NAPPING CLOTH.

Patented June 23, 1830.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

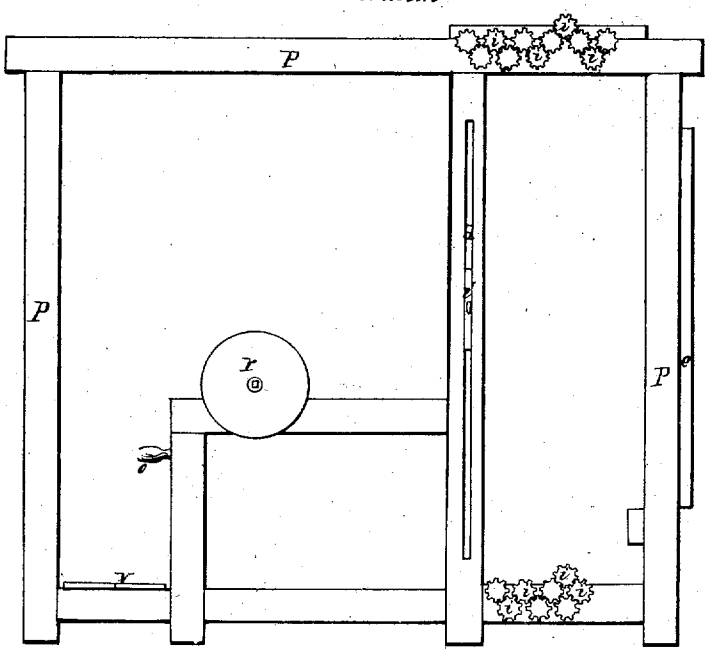
6045X

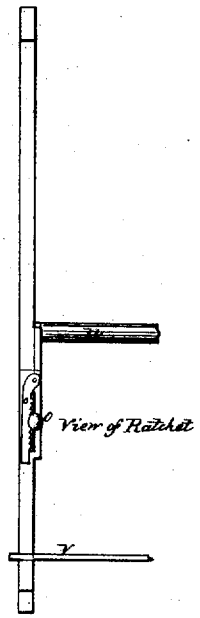
T. HURD & J. FOX.

MACHINE FOR NAPPING CLOTH.

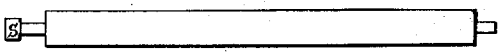
Patented June 23, 1830.

Side Elevation





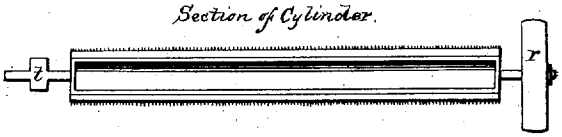
Section of Brush.



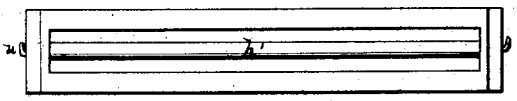
Napper.



Section of Cylinder.



Roller frame.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

6045X

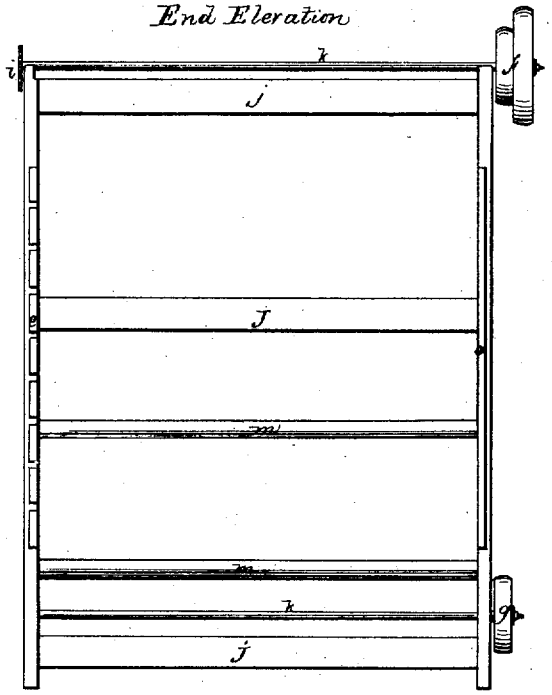
T. HURD & J. FOX.

3 Sheets—Sheet 3.

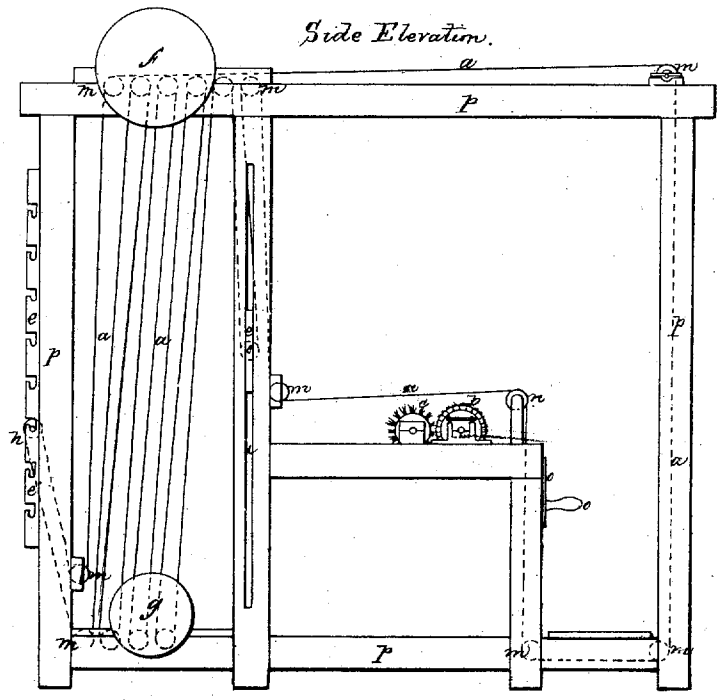
MACHINE FOR NAPPING CLOTH.

Patented June 23, 1830.

End Elevation



Side Elevation.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

X6045 June 29, 1830 129

Thomas Hurd & Jesse Fox, Citizens of

Letters Patent.

The Schedule referred to in these Letters Patent and making part of the same, containing a description in the words of the said Thomas Hurd & Jesse Fox themselves of their improvement in the mode of raising, straightening, & laying the nap on woollen cloths, & cloths on which a nap is commonly raised by teasing.

To all to whom these presents shall come, we Thomas Hurd, of the City of New York, in the County and State of New York, and Jesse Fox, of Lowell in the County of Middlesex, and State of Massachusetts, send Greeting. Be it known that we the said Thomas Hurd and Jesse Fox, have invented, constructed, made and applied to use, a new and useful improvement in the mode of raising straightening and laying the nap on woollen cloths and cloths on which a nap is commonly raised by teasing which invention and the principle thereof and the mode in which we have contemplated the application thereof, and the manner of using, and process of compounding the same are described as follows, that is to say. It is best that the operation should be performed upon the cloth while it is heated with steam or hot air and stretched so as to make it straight, free from wrinkles and even, where it is to be teased which teasing is to be done with pointed metallic wires or pins set and fixed compactly together, or very nearly so, and parallel with each other having the points all one way and upon the circumference of the same circle or upon the same plane having regard to the intended use of them whether upon a cylinder or a plane. These Metallic points wires, pins, or points. These set and fixed compactly or closely or exactly to each other, being very numerous can be made to act upon many points of the cloth at once. will wear as equal as each other require but a light touch and pressure of the cloth upon them while the operation is going on in order to accomplish the work, without taking a rough hold of the cloth

one

so as to injure it and may be made to print as lightly upon the cloth, as also to raise an uniform nap upon it with much more facility and expedition and in a far better manner than a nap can be raised upon cloth by cards, teasles or any other mode or means hitherto in use.

These points ought in general to be as near to each other as those of pointed brass wires numbered twenty two when set compactly together or very nearly so in order to operate with them most advantageously, they may however be set a little nearer or farther apart according to the kind and quality of nap or fineness of the cloth to be operated upon. These pointed metallic wires, pins, or metallic points may be made or formed of brass or other metal of about the same hardness or hardness of any metal sufficiently hard and tough will answer the purpose. But this metal is deemed preferable as not being liable to rust, and being deemed sufficiently hard. When these pointed metallic wires or pins are to be put in frames as hereinafter mentioned, brass wires numbered twenty two cut into pieces of about three fourths of an inch long, and pointed nearly like the common brass pin, but with a point a little more tapering will answer best, but the common brass pin of ordinary size with the head removed will answer the purpose tolerably well. But if these pointed metallic wires or pins are to be set in holes perforated or made in metallic plates as hereinafter mentioned, the wires ought to be much smaller. They may be so small that the end of the wire will require but very little sharpening to bring it to a point or so that the end may serve for a point, and if the holes in the plate be made very near to each other these very small wires or pins when inserted as hereinafter mentioned being so numerous and near together will be sufficiently stiff. These pointed metallic wires, pins, or metallic points may be set or fixed upon a plane to be used as raised jacks, or upon a revolving cylinder. The best mode of operating with them is when set or fixed upon a cylinder. The cylinder may be made of brass or other metal of about the same hardness as the points and may be made hollow so as to contain steam or hot air by which it should be heated so as to heat the points and keep them

hot

but while the operation of teasing is going on need aid in the process of raising, straightening and laying them up as well as in expelling the flocks or downs produced by friction which have a tendency to lodge between the points. The steam or hot air may be sent into the barrel of the cylinder through a tube going into the end of the cylinder and from thence into the barrel. But heat may be applied to the points by means of a shell connected with a box into which steam or hot air can be admitted and partly encircling the cylinder upon which the points are set or fixed so that the points may be heated by revolving in the shell. They should be heated in order to operate best with them. The operation of teasing with these points however may be performed tolerably well without heating the points, by heating the cloth by steam to be sent into a tube passing under the cloth just before and near the cylinder and having a slit in it from whence the steam can be made to issue up and strike upon and heat the cloth as well as wet it. and it is best to apply the steam in this way as well as to heat the cylinder as before described. Cloth may nevertheless be teased without either the heating of the cylinder or the application of steam as before described, but these are deemed advantageous in the operation.

The metallic points or pins may be set or fixed upon the cylinder in various ways. The pointed brass wires or pins may be fixed in a metallic oblong frame of the length of the cylinder made of brass, copper or iron in compassing a space to be filled with the pins of the width of one half of an inch more or less according to the size of the cylinder as long as the widest cloth is intended to be teased. These pointed wires or pins must be filled into the spaces encompassed by the frame compactly and parallel with each other, and crowded tightly together with the points all one way until the spaces may be filled so as to form a solid compact as may be under that the pins shall project and be about three sixteenths of an inch or a little more above the outer surface of the metallic frame, and so that the points shall form a convex surface, corresponding with the circumference of the cylinder, or of about the same convexity

Their

Fig 1 is a plan view showing the manner of putting the wires into the former by means of which they are to be bent to the required form. Fig 2 is a section of the former on the line A B of fig 1. Fig 3 is a plan view of the former with the wires bent to the required form. Fig 4 is a section of the former on the line C D of fig 3. Fig 5 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position. Fig 6 is a section of the former on the line E F of fig 5. Fig 7 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay. Fig 8 is a section of the former on the line G H of fig 7. Fig 9 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections. Fig 10 is a section of the former on the line I J of fig 9. Fig 11 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other. Fig 12 is a section of the former on the line K L of fig 11. Fig 13 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln. Fig 14 is a section of the former on the line M N of fig 13. Fig 15 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed. Fig 16 is a section of the former on the line O P of fig 15. Fig 17 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired. Fig 18 is a section of the former on the line Q R of fig 17. Fig 19 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln. Fig 20 is a section of the former on the line S T of fig 19. Fig 21 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould. Fig 22 is a section of the former on the line U V of fig 21. Fig 23 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster. Fig 24 is a section of the former on the line W X of fig 23. Fig 25 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set. Fig 26 is a section of the former on the line Y Z of fig 25. Fig 27 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed. Fig 28 is a section of the former on the line A B of fig 27. Fig 29 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 30 is a section of the former on the line C D of fig 29. Fig 31 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster. Fig 32 is a section of the former on the line E F of fig 31. Fig 33 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set. Fig 34 is a section of the former on the line G H of fig 33. Fig 35 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed. Fig 36 is a section of the former on the line I J of fig 35. Fig 37 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 38 is a section of the former on the line K L of fig 37. Fig 39 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 40 is a section of the former on the line M N of fig 39. Fig 41 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 42 is a section of the former on the line O P of fig 41. Fig 43 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 44 is a section of the former on the line Q R of fig 43. Fig 45 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 46 is a section of the former on the line S T of fig 45. Fig 47 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 48 is a section of the former on the line U V of fig 47. Fig 49 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 50 is a section of the former on the line W X of fig 49. Fig 51 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 52 is a section of the former on the line Y Z of fig 51. Fig 53 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 54 is a section of the former on the line A B of fig 53. Fig 55 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 56 is a section of the former on the line C D of fig 55. Fig 57 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 58 is a section of the former on the line E F of fig 57. Fig 59 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 60 is a section of the former on the line G H of fig 59. Fig 61 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 62 is a section of the former on the line I J of fig 61. Fig 63 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 64 is a section of the former on the line K L of fig 63. Fig 65 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 66 is a section of the former on the line M N of fig 65. Fig 67 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 68 is a section of the former on the line O P of fig 67. Fig 69 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 70 is a section of the former on the line Q R of fig 69. Fig 71 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 72 is a section of the former on the line S T of fig 71. Fig 73 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 74 is a section of the former on the line U V of fig 73. Fig 75 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 76 is a section of the former on the line W X of fig 75. Fig 77 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 78 is a section of the former on the line Y Z of fig 77. Fig 79 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 80 is a section of the former on the line A B of fig 79. Fig 81 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 82 is a section of the former on the line C D of fig 81. Fig 83 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 84 is a section of the former on the line E F of fig 83. Fig 85 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 86 is a section of the former on the line G H of fig 85. Fig 87 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 88 is a section of the former on the line I J of fig 87. Fig 89 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 90 is a section of the former on the line K L of fig 89. Fig 91 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 92 is a section of the former on the line M N of fig 91. Fig 93 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 94 is a section of the former on the line O P of fig 93. Fig 95 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 96 is a section of the former on the line Q R of fig 95. Fig 97 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 98 is a section of the former on the line S T of fig 97. Fig 99 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 100 is a section of the former on the line U V of fig 99. Fig 101 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 102 is a section of the former on the line W X of fig 101. Fig 103 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 104 is a section of the former on the line Y Z of fig 103. Fig 105 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 106 is a section of the former on the line A B of fig 105. Fig 107 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 108 is a section of the former on the line C D of fig 107. Fig 109 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 110 is a section of the former on the line E F of fig 109. Fig 111 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 112 is a section of the former on the line G H of fig 111. Fig 113 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 114 is a section of the former on the line I J of fig 113. Fig 115 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 116 is a section of the former on the line K L of fig 115. Fig 117 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 118 is a section of the former on the line M N of fig 117. Fig 119 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 120 is a section of the former on the line O P of fig 119. Fig 121 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 122 is a section of the former on the line Q R of fig 121. Fig 123 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 124 is a section of the former on the line S T of fig 123. Fig 125 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 126 is a section of the former on the line U V of fig 125. Fig 127 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 128 is a section of the former on the line W X of fig 127. Fig 129 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 130 is a section of the former on the line Y Z of fig 129. Fig 131 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 132 is a section of the former on the line A B of fig 131. Fig 133 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 134 is a section of the former on the line C D of fig 133. Fig 135 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 136 is a section of the former on the line E F of fig 135. Fig 137 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 138 is a section of the former on the line G H of fig 137. Fig 139 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 140 is a section of the former on the line I J of fig 139. Fig 141 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 142 is a section of the former on the line K L of fig 141. Fig 143 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 144 is a section of the former on the line M N of fig 143. Fig 145 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 146 is a section of the former on the line O P of fig 145. Fig 147 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 148 is a section of the former on the line Q R of fig 147. Fig 149 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay divided into sections and with the sections separated from each other and with the sections placed in the kiln and with the kiln closed and with the sections fired and with the sections removed from the kiln and with the sections placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould and with the mould filled with plaster and with the plaster set and with the mould removed and with the sections of the cylinder of clay placed in the mould. Fig 150 is a section of the former on the line S T of fig 149. Fig 151 is a plan view of the former with the wires bent to the required form and with the cylinder of clay in position and with the wires embedded in the clay and with the cylinder of clay

they are to be used is by making Metallic plates of suitable width and length corresponding with the length and convexity of the cylinders and perforating, punching or making holes in these plates so near to each other as may be and leave enough of plate to hold the pins just large enough to admit the blunt ends of the pointed metallic wires or pins. In these holes pointed metallic brads wires remembered about twenty eight more or less, or steel wires of a much smaller size, or of a size much smaller than the pins used for filling the frame as before mentioned and about three eighths of an inch long or a little more or less according to the thickness of the plate which may be of the thickness of about number twenty three or what is commonly called twenty four wire copper more or less if the plates be of that metal should be inserted so that the blunt ends may be even with the under surface of the plates, and the points must be graduated by a concave mould so as to conform to the surface of the cylinder on which they are to be used. These pointed Metallic wires or pins thus set in the plates may be soldered to the plate on the side opposite to the points with common solder by means of a mould attached thereto so that the solder can be poured in between the plate and the mould sufficient in quantity to secure the points to the plate and to each other. These plates thus prepared and filled with pointed wires or pins must be laid on the concave surface of the cylinder with the points outward and secured firmly to it by screws or otherwise until the concave surface of the cylinder is covered with the plates. When a cylinder with metallic points is intended only for smoothing and laying the nap, the points may be set and fixed in either of the modes above described at such an angle with the circumferences of the cylinder as in the operation to have little or no action upon the threads of the cloth but to smooth and lay the nap The cylinder upon which the pointed Metallic wires points or pins are set and fixed in any of the modes before mentioned may be driven or turned round with great velocity in the process of shearing shearing and lapping the nap by the power of steam or water by

Leith. X6043

by connecting the cylinder which is to be fixed in a frame with bolts to a dumm, and the cloth while paping over the cylinder should be made to touch the points lightly and its pressure upon the points may be graduated by a roller near the cylinder over which it passes connected with ratchets so that the roller may be raised or lowered as occasion may require. The cloth may be stretched upon rollers in any of the various modes now in use while it is made to pap over the cylinder. When the pointed metallic wires are to be used upon a plane as hand jacks or otherwise they may be set in either of the modes above mentioned excepting that the points in this case ought to be even with each other or in the same plane. When the operation is to be performed by points set or made upon a cylinder a revolving cylindrical brush having a motion contrary to the cylinder containing the points, should be so fixed as to be in contact with the points on that cylinder in order to assist in cleaning the flocks or down from between the points. Kersimeres and cloths of a similar kind may be stretched and made to pap over the cylinder in the following manner. The two ends of the cloth in the process of leasing should be sewed or connected together and the cloth should be made to pass alternately over and under revolving rollers fixed in a frame sufficient in number to take up the whole of the cloth so that no part of it may hang loose and so that it may pass over the cylinder in which the points are and that the surface on which a nap is to be raised straightened and laid may be made to touch the points lightly as it passes over the cylinder. One or more of the revolving rollers next to the cylinder should be so fixed in a moveable frame let in grooves that by means of handles and ratchets before mentioned the frame may be raised or lowered and with it the roller set in it so as to let the surface of the cloth to be leased down upon the points, or raise it and graduate the action or friction of the points upon the cloth at the direction of the operator. The cloth, during the operation of raising straightening and laying the nap should be stretched and kept

stretched

X6045

the cloth lengthwise so as to make the surface of the cloth on which the nap is to be raised as straight even and free from wrinkles as possible, which may be done by having one of the revolving rollers under which the cloth passes fixed in a moveable frame made to slide in a groove or mortise through the posts in the main frame capable of being moved up and down, at the two ends of which frame weights of sufficient magnitude to stretch the cloth are to be suspended upon hooks to be fixed upon this frame. The cloth should also be stretched widthwise which may be done with the hand or any other convenient way. A rotary motion is given to the cloth by the revolving of the rollers over and under which it passes and is stretched and which causes it to pass over the cylinder in which the Metallic points are set and fixed. But Satinetts and cloths of that kind may be better stretched in the modes now in common use. The description above given may be better understood by reference to the plans hereto annexed marked A.B.C, and the explanation thereof which is as follows, that is to say. Plan A exhibits a side elevation and an end elevation of the frame in which the Metallic cylinder with points the cylindrical brush and the rollers over and under which the cloth passes are set. Plan B, exhibits also a side elevation of the frame with a view of the pullies, ratchets, a section of the brush, a section of the Metallic cylinder with points one of the Metallic frames in which the points are to be set and the moveable frame containing a roller with the hooks attached to the frame from which the weights to stretch the cloth are suspended.
Plan C. exhibits a view of the frame with the Metallic cylinder, cylindrical brush and rollers set in it. a a a a a, are lines which represent the cloth with the two ends connected stretched and passing by a rotary motion over and under the rollers and over the cylinder in which the Metallic points are set and fixed while the cylinder is revolving with great velocity. b represents a hollow metallic cylinder on which the Metallic

points

points are set and fixed and which cylinder being set in the frame may be driven by the force of steam or water or otherwise being turned by means of a belt paping over a driving pulley connected with the arbor at one end of the cylinder so as to communicate motion from a revolving drum. C represents a revolving cylindrical brush set also in the frame and in contact with the metallic points which are upon the revolving metallic cylinder and having a driving pulley connected by a cross belt with a pulley at the end of the cylinder so as to give the brush a motion in a direction contrary to the motion of the cylinder for the purpose of clearing the down or flocks from between the points & represents a groove or mortise through the posts in the main frame for the moveable frame to slide in to which the weights for stretching the cloth are hung and wherein a roller under which the cloth passes is set. e' represents the moveable frame sliding in the groove or mortised for raising the roller h' to different heights & represents a double pulley with which belts are to be connected for giving motion to the rollers by means of gears & represents a single pulley for the like purpose and by means of a belt to connect the motion of the upper and lower rollers h' represents the roller set in the moveable frame under which roller the cloth passes and is stretched by means of weights suspended to hooks fastened in each end of the frame. iiiiiii represent bird gear or cog wheels to regulate the motion of the rollers so that they may move in one and the same direction. jjjj. represent cross braces to the frame in which the rollers cylindrical brush and metallic cylinder are set. kk represent the axis of the pulleys with gear for giving motion to the rollers. mmmmmmmmmmm represent rollers over or under which the cloth passes and from which it receives its motion. n represents a shifting roller to be set and used in any part of the frame e as the different lengths of the cloths may give occasion. o represents the roller set in a moveable frame for rolling the cloth down upon the points

set

set and fixed on the metallic cylinder or raising it. on. represent the Bandband ratchets for raising and lowering the rollers over which the cloth passes whereby its touch and pressure upon the points on the metallic cylinder may be graduated. PPPP represent principal parts of the main frame. z represents the driving pulley to the metallic cylinder. 8 represents the small pulley for the band to play upon to turn the cylindrical brush. 3 represents a small pulley at one end of the metallic cylinder connected by a band to the pulley at one end of the brush so placed so as to turn the brush in a direction contrary to that in which the cylinder moves. W represents the hooks attached to the moveable frame from which the weights are suspended. V represents a platform for the workman to stand upon. From these plans and the above description it is believed that the mode of operating in teasing cloth with which is dressed best with the points set and fixed as before mentioned may be easily understood. In general it is best that the cloth to be teased should be wet at the time of teasing it. The operation however may be performed in various ways with or without the application of heat or steam, and the cloth may be thus teased while the operation of teasing is going on by various other means than those above described. The size and length of the wires whether set or fixed in frames, or in or upon metallic plates or a metallic substance may be varied at discretion and inserted in or upon metallic plates, or a metallic substance These wires may be so small that the ends will serve as points with little or no sharpening, and these metallic wires pins or points may be set and fixed nearly together in any way in which they can be secured firmly in their places and may be used on a plane or upon a cylindrical surface, and if they be set on a cylinder in frames or plates this cylinder may be hollow or solid and of metal or wood if it be of sufficient strength and the size of the cylinder may be varied at discretion. And as metallic

wires

X6045

wires set and fixed in the manner of the common hand in leather or felt at a considerable distance from each other upon a plane or upon a cylindrical surface have heretofore been used for the purpose of teasing and raising a nap upon cloth, it is to be distinctly understood that wires so set, and such card and the setting or fixing of wires or pins in such manner as last aforesaid in any manner in which they have heretofore been set and used for the purpose aforesaid, is not claimed as a new invention. The chief advantage arising from our own invention consisting in the setting and fixing of pointed metallic wires pins or points or wires or pins small that the ends may serve for points with little or no sharpening in a firm manner in frames or in or upon metallic plates or in or upon a metallic substance or any substance in or upon which they may be so set and fixed with sufficient firmness compactly closely or very nearly together, and so much nearer to each other than they have heretofore been placed set or fixed on any such cards in leather felt or otherwise so that the points may the better serve as gages to each other, set upon many points of the cloth at once require but a light touch or pressure of the cloth upon them in order to accomplish the work and without taking such rank hold upon the cloth as to injure it raise a nap uniformly thereon with much more facility and expedition and in a far better manner than can be done by the cards or teazles aforesaid or any mode or means hitherto in use. And notwithstanding that we have mentioned and recommended the application of heat as steam & water in the operation, and described a mode of operating and Machinery which is deemed advantageous in the use of our invention but which may be used or not or varied at the discretion of the Mechanic or operator and which a Mechanic of ordinary skill will readily understand. We hereby severally explicitly declare that what is claimed by us as a new invention and improvement, and all which we the said Hurd and Fox, claim herein as our original invention and improvement is the

X6045

449

is the cutting, planing or fixing pointed metallic wires ... pins or points, and wires to mean that the ends may serve for points with little or no sharpening compactly closely or very near to each other in metallic frames or any frames of sufficient strength and durability or in or upon metallic plates or in or upon a metallic substance or any substance in or upon which they may be so set and fixed with sufficient firmness upon a plane or convex surface for the purpose of being used whereon each fixed made or placed firmly and near to each other as aforesaid for teasing and raising the straightening and laying the nap upon woollen cloth and cloths upon which a nap is usually raised by teasing and to finish and smooth such nap and no more of the instruments and machines above described and of any instrument or Machine for teasing cloth as is constituted by or composed of Metallic wire pins or points so set placed or fixed firmly in Metallic or frames or in or upon metallic plates or in or upon a Metallic or other substance compactly closely or near to each other as aforesaid.

In witness whereof we the said Thomas Heard, and Isaac Fox, have hereunto set our hands and seals this twenty seventh day of March in the year of our Lord one thousand eight hundred and thirty.

Signed sealed and executed
in presence of us ——

Thomas Heard [Seal]
Isaac Fox [Seal]

Augustus H. Fiske } Witnesses to the signatures and seals of
Thomas H. Dexter } said Isaac Fox.

W.H. Brunough } Witnesses to the signature
Edwin Cuny } and seal of said Thomas Heard
John Marden }

4650 words)

Lyd 1830.