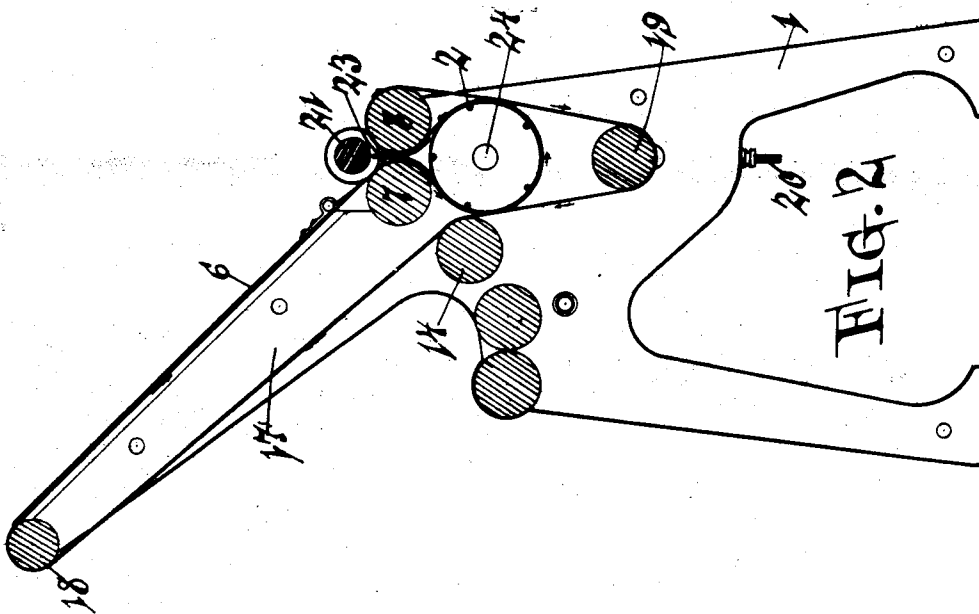
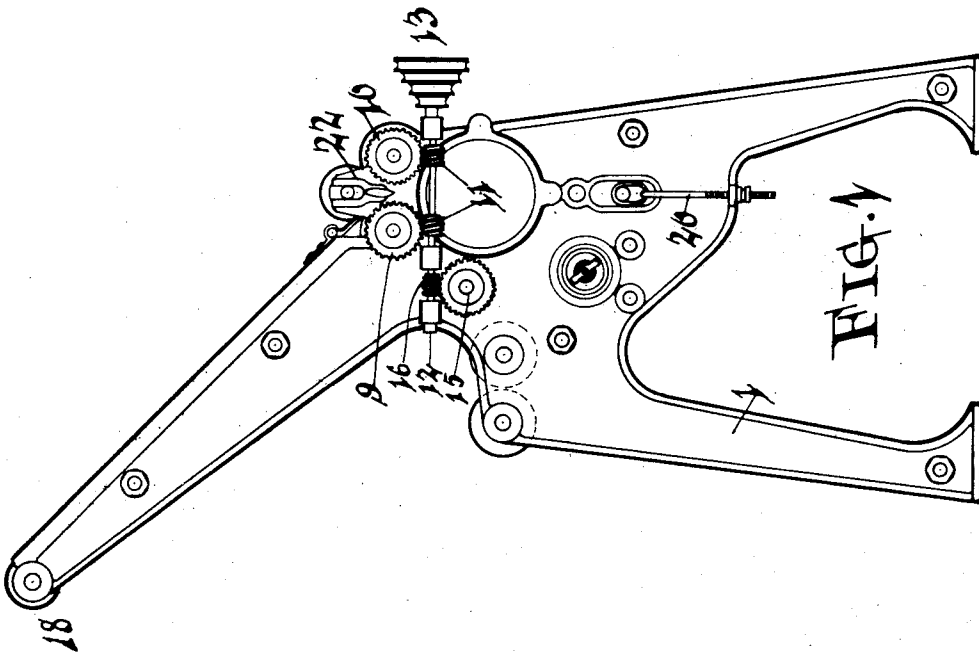


1,106,504.

Patented Aug. 11, 1914.

3 SHEETS—SHEET 1.



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1,106,504.

Patented Aug. 11, 1914.

3 SHEETS—SHEET 2.

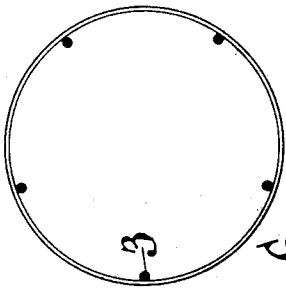


FIG. 6

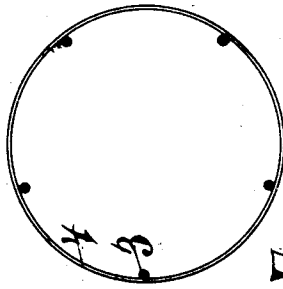


FIG. 7

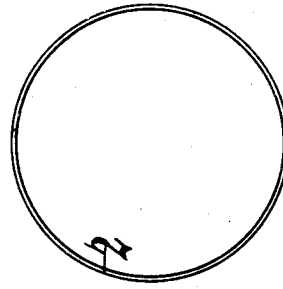


FIG. 8

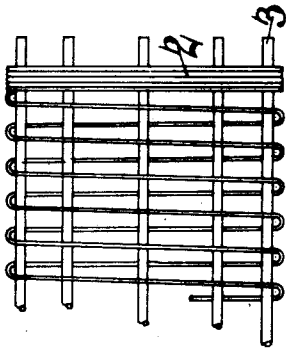


FIG. 4

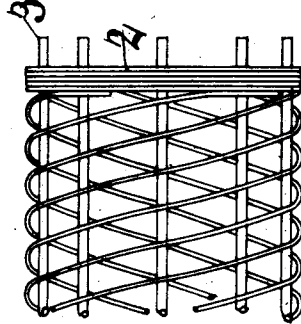


FIG. 5

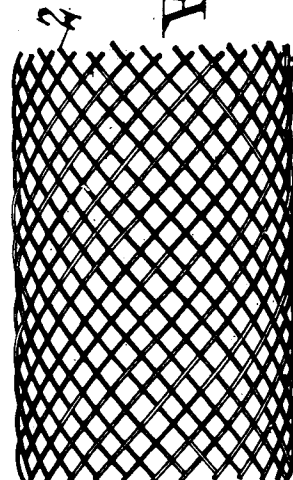
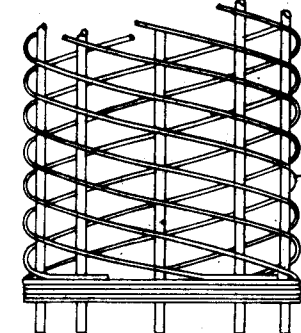
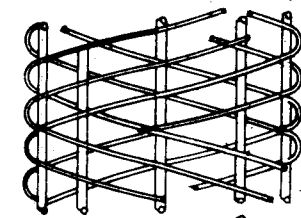


FIG. 5

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BLUE PRINT MAKING MACHINE.
APPLICATION FILED AUG. 19, 1912.

1,106,504.

Patented Aug. 11, 1914.

3 SHEETS—SHEET 3.

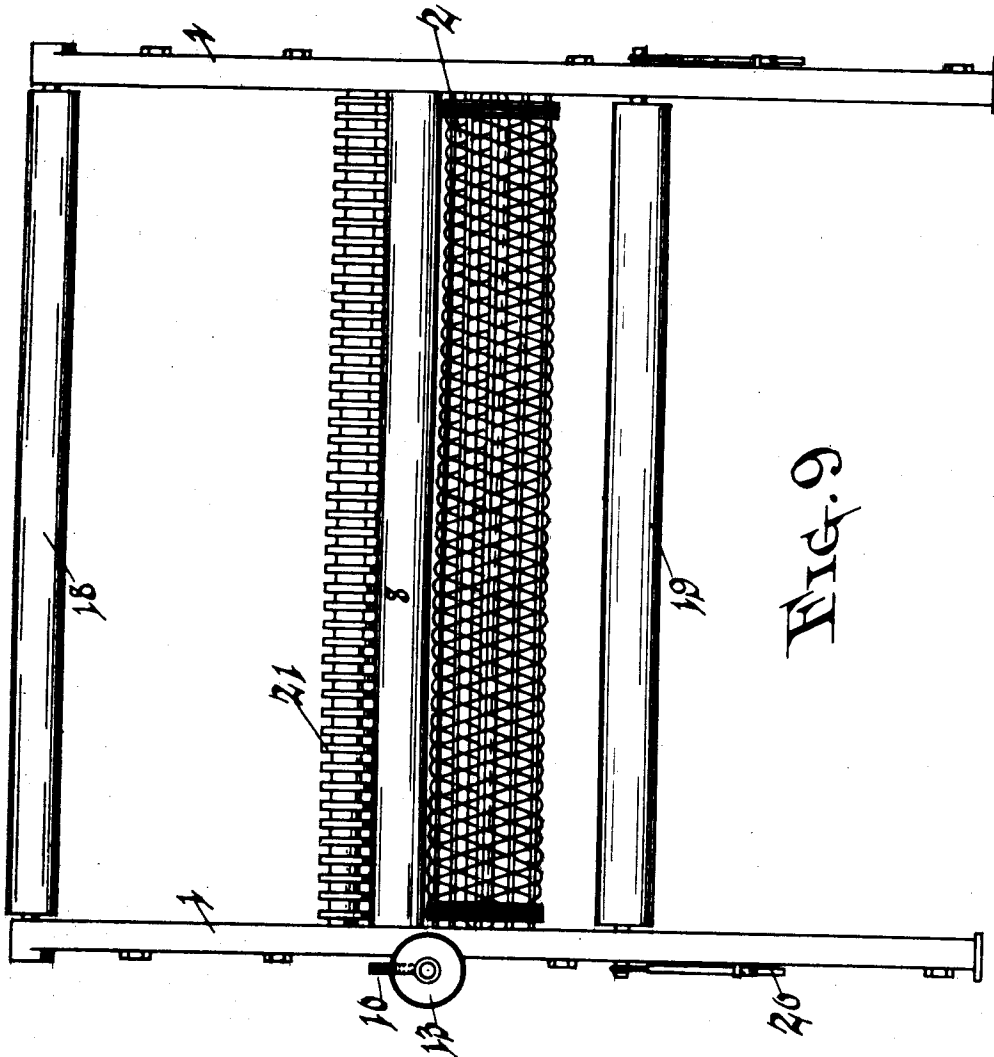


Fig. 9

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BLUE-PRINT-MAKING MACHINE.

1,106,504.

Specification of Letters Patent.

Patented Aug. 11, 1914.

Application filed August 19, 1912. Serial No. 715,808.

To all whom it may concern:

Be it known that I, FREDERICK S. FLOETER, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Blue-Print-Making Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention is a machine for making prints by exposing the sensitized surface of paper, cloth, or other material to the action of light, and relates more particularly to so-called blue print machines in which electric lights are employed, in combination with a cylindrical or other surface over which the tracing cloth and blue print paper are passed in the process of exposing; means being provided for feeding the tracing and paper onto the surface and delivering it therefrom in a continuous strip if desired, so that prints of any desired length may be produced.

My improvement relates more particularly to the construction of the supporting surface and the method of feeding the tracing cloth and blue print paper along it.

It has heretofore been common in machines of this class to pass tracing cloth and sensitized paper around a stationary glass cylinder or other curved surface of glass, the tracing cloth sliding upon the glass surface. A light has commonly been provided within such glass cylinder. It has been found in practice, however, that overheating of the glass cylinder may occur, causing it to crack; also after long continued use the glass, by reason of the continual rubbing action of the tracing cloth, becomes partially opaque so that longer time and more electric current is required to produce the same result. Overheating the lamps is detrimental to them, and it has been customary heretofore to provide electric fans to maintain air circulation around the lamps. It is also necessary to frequently clean the surface of the glass cylinder.

My improvement dispenses with the glass cylinder and in its place employs a cylindrical or other suitably formed cage or grill composed of wires, rods, or their equivalents made of metal or other suitable material, around or over which the tracing cloth and the sensitized paper may be slid in the usual

manner by means of a belt. This cage or grill does away with the danger of breakage and the deterioration of the glass tubes above referred to, and obviates the necessity of employing a cooling fan and of frequently cleaning the glass. The grill surface also insures a circulation of air around the electric bulb to prevent over-heating, since a part at least of the cage surface may be left uncovered by the belt, leaving an opening of adequate size. The grill may be made of heat-conducting material, adapted to dissipate the heat to the atmosphere.

With these and certain other objects in view which will appear later in the specifications, my invention consists in the devices described and claimed and the equivalents thereof.

In the drawings, Figure 1 is an end view of a blue printing machine embodying my improvement; Fig. 2 is a vertical transverse section through the machine; Fig. 3 is a preferred form of the cylindrical wire cage; Figs. 4 and 5 are modified forms; Figs. 6, 7 and 8 are diagrammatic end views of the cylinders shown respectively in Figs. 3, 4 and 5, to show the positions of the longitudinal wires and the shape of the cylinders; and Fig. 9 is a front elevation with the belt removed.

I have illustrated the preferred cylindrical form of cage.

1 represents the frame of the machine, in which is mounted a wire cylinder 2. This wire cylinder is preferably composed of a number of longitudinal wires or bars 3 and a plurality of diagonally disposed circumferential wires 4 and 5. It may, however, be made in numerous other forms, such as a curved surface, or in some cases even a flat surface. It is only necessary for the purpose of my invention that the surface be composed of wires, bars, or other supporting elements with spaces for transmission of light between them. When the grill surface is made in the form of a cylindrical cage, I prefer, however, to surround the bars 3 with wires 4, and to wind the wires 4, say from right to left, as far as the mid length of the cylinder, and to wind the wires 5 from the other end of the cylinder to the middle in the reverse direction, to better spread and smooth the tracing. In this embodiment of my invention the wire cylinder is stationary in the frame 1 and around it passes a wide belt 6 of canvas or other suitable material.

As shown in Fig. 2, the belt is propelled by a pair of live rolls 7 and 8 driven by any suitable means as gears 9 and 10, these gears being in turn driven by worms 11 mounted upon a drive shaft 12 provided with a pulley 13 or any other suitable device for receiving power from a motor or other mechanism. I also provide a third live roller 14 driven by a gear 15 and worm 16, the latter being mounted on the shaft 12.

Above and to the rear of the cylinder 2 may extend a frame 17 carrying an idle roller 18. The belt 6 passes over the idle roller 18 and roller 7; slides around the cylinder 2, passes over roller 8, around a lower idler roller 19 which is vertically adjustable by means of a screw 20 and serves as a take-up. From roller 19 the belt passes over live roller 14 to roller 18. Above rollers 7 and 8 is a pressure roller 21 loosely mounted in guides 22 carried by the frame of the machine. Roller 21 is preferably corrugated or has a portion of its surface cut away to facilitate ventilation. The direction of motion of the various rollers and belts is indicated by arrows in Fig. 2. Blue print paper is first laid, sensitized side up, on the belt 6 and upon this is placed the tracing cloth. Both are fed under roller 21 and are guided by means of curved deflecting plates 23 around roller 7 and on the inside of the belt around the periphery of the wire cylinder 2. An electric light 24, preferably of the mercury vapor or equivalent type, is mounted in the center of the cylinder 2, and as the tracing cloth and sensitized paper are slid around the cylinder, the paper is exposed. After passing around cylinder 2 the tracing cloth and sensitized paper emerge between rollers 21 and 8, thus

completing the operation of the machine. The upper part of the periphery of the cylinder is not covered by the belt, and being open to the atmosphere permits circulation of air around the electric globe. The cool belt also assists in dissipating the radiated heat.

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

1. In a printing machine, a source of light, a curved supporting surface for sensitized material in proximity thereto, said surface comprising a grill formed of suitably disposed supporting rods spaced apart, a belt carrying said sensitized material, and means for propelling said belt over said grill to expose said material to the action of said light.

2. In a printing machine, a cylindrical grill formed of a plurality of longitudinally disposed rods, and helically wound wires surrounding said rods, a source of light within said cylindrical grill, a belt embracing part of the periphery of said grill, and means for propelling said belt.

3. In a printing machine, a supporting surface comprising a cylindrical grill formed of a plurality of longitudinally disposed rods, and helically wound wires surrounding said rods, said wires at each side of the mid-length of the cylinder being wound in opposite directions.

In testimony whereof, I affix my signature in presence of two witnesses.

FREDERICK S. FLOETER.

Witnesses:

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