J. W. Nesmith.

Machine for Punching Metal Screens.

No. 94,333. Patented Aug. 31. 1869.

Fig: 2.

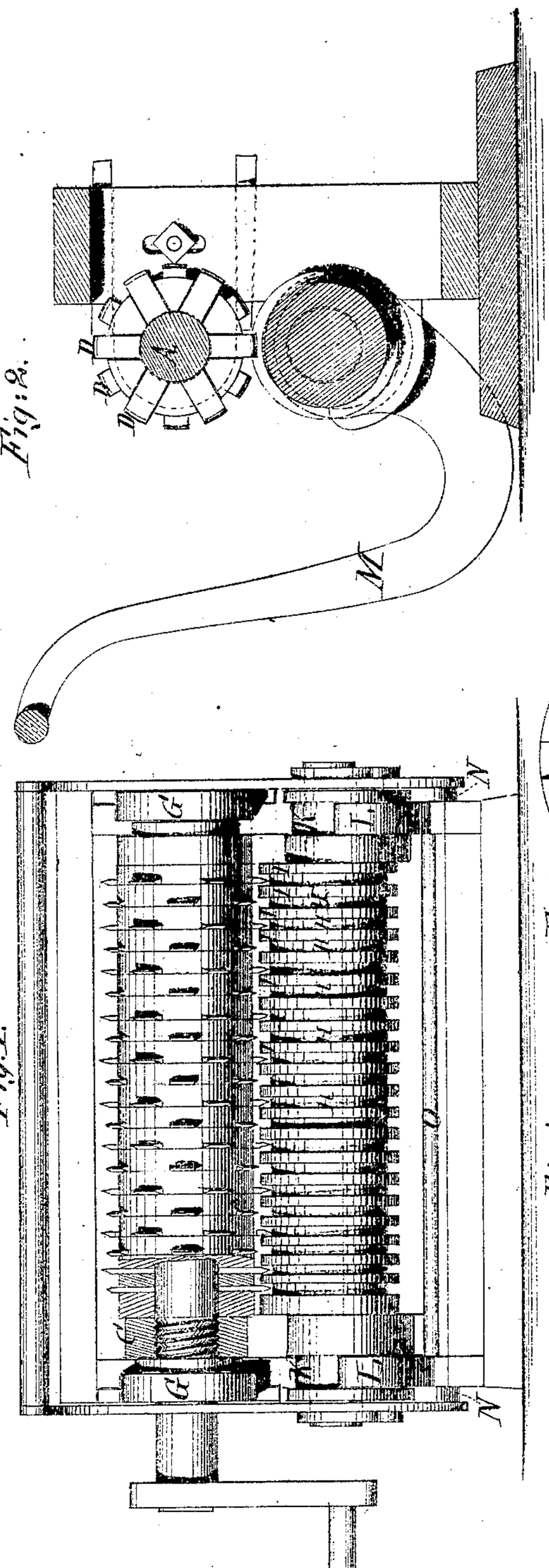


Fig: 3.

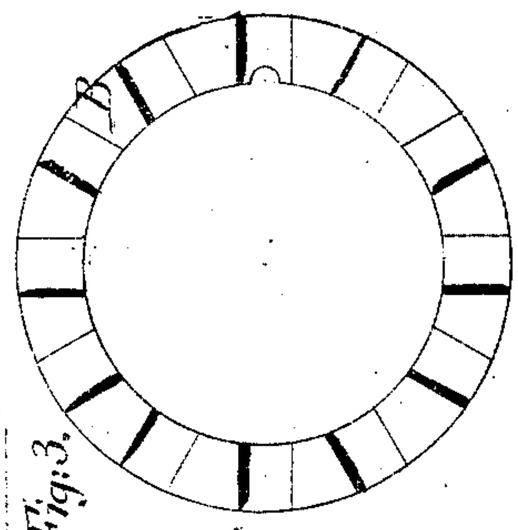
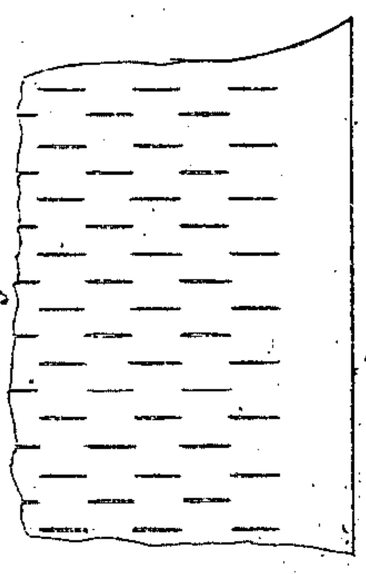


Fig: 1.

Fig: 4.



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UNITED STATES PATENT OFFICE.

J. WELLINGTON NESMITH, OF BLACK HAWK, COLORADO TERRITORY.

IMPROVED MACHINE FOR PUNCHING METAL SCREENS.

Specification forming part of Letters Patent No. **94,333**, dated August 31, 1869.

To all whom it may concern:

Be it known that I, J. WELLINGTON NESMITH, of Black Hawk, in the county of Gilpin and Territory of Colorado, have invented a new and Improved Screen-Punching Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The object of this invention is to provide a simple and efficient machine for punching sheet metal to make screens, such as are used for screening ores and other substances.

The invention consists of improved arrangements of a punching-roller and grooved roller, between which the sheet is passed to be punched, whereby they may be varied to punch finer or coarser holes, also whereby the sheet may be readily inserted and removed, so as not to punch the border.

The said invention also consists in an improved construction of the punching-roller.

Figure 1 represents a side elevation of my improved machine. Fig. 2 represents a transverse section of the same. Fig. 3 represents an elevation of one of the punch-holding rings of the punching-roller, and Fig. 4 represents a part of a sheet of metal as it appears after punching.

Similar letters of reference indicate corresponding parts.

The punch-carrying roller is composed of a shaft, A, and any preferred number of punch-holding rings or disks, B, fitted to the said shaft, and clamped thereon against a collar at one end by a screw, C, or by other means at the other end. These rings have radial slots or grooves in one side, for the reception of the punches D, which are short flat plates sharpened at the ends, which project from the roller. The said ends project only sufficient to penetrate the sheets to be punched. They are enough thicker than the depth of the radial slots in the rings to be firmly clamped by the rings when screwed up. The journals of this roller are placed in bearings G, arranged in the housings for adjustment laterally, for the purpose of adjusting it exactly to the vertical line of the roller H. They are also adjustable vertically. This roller H is provided with annular grooves, into which the punches project after passing through the sheet metal. The lower roller, H, is journaled in eccentric bearings K, which are arranged to oscillate in their supports L, and they are provided with arms M, preferably forged to them, for turning them when required. These arms are connected at their outer ends by a bar, N, to insure a uniform action of both the said arms, and so bent and connected to the bearings that they may be turned farther between the limits of the floor and the projections of the upper roller than they could be if they were straight, as is clearly shown. They are raised to move the grooved roller away from the other, and vice versa.

N represents eccentric stops placed on a shaft, P, running through the housings, against which the levers strike when moving the grooved roller up to the other, and whereby they are arrested in the said movement. By turning these stops one way or the other, as may be done by a wrench or other means, the distance of the rollers apart may be varied, and thereby the punching will be finer or coarser.

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

1. The combination of the punching-roller, grooved roller, eccentric bearings K, and operating-levers M, when arranged substantially as specified.

2. The combination of the punching-roller, grooved roller, eccentric bearings, levers, and eccentric stops, when arranged substantially as specified.

3. The combination, with the shaft A, having a fixed collar and clamping-nut, of the radially-slotted rings B and punches D, when all arranged substantially as specified.

4. The combination of the punching-roller, grooved roller, and laterally and vertically adjustable bearings G, when all arranged as specified.

The above specification of my invention signed by me this 16th day of June, 1869.

J. WELLINGTON NESMITH.

Witnesses:
G. B. BACKUS,
H. M. OVERHOOD.