

(No Model.)

E. BARRATH.
DIE FOR COAL HODS.

No. 378,755.

Patented Feb. 28, 1888.

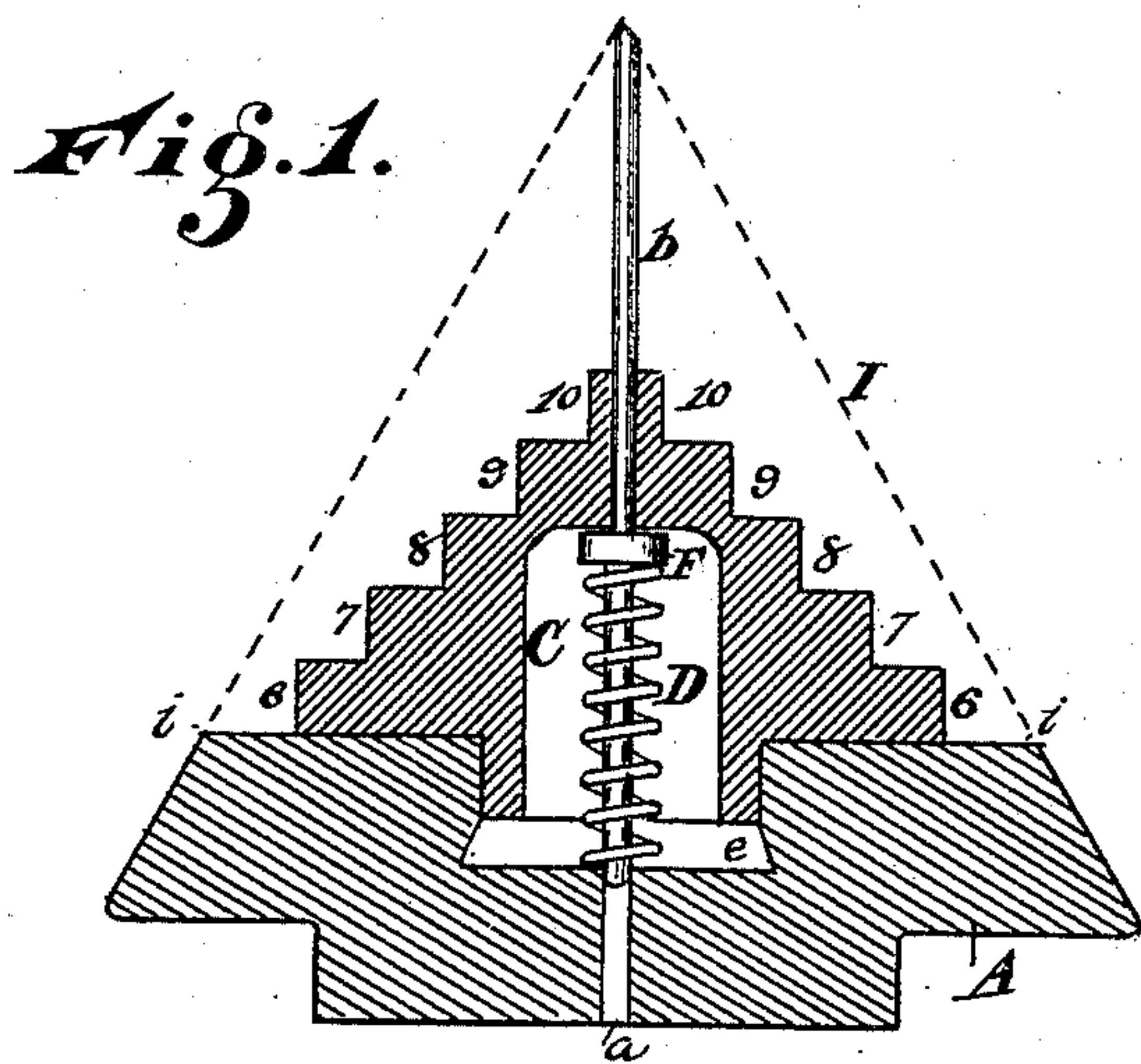


Fig. 2.

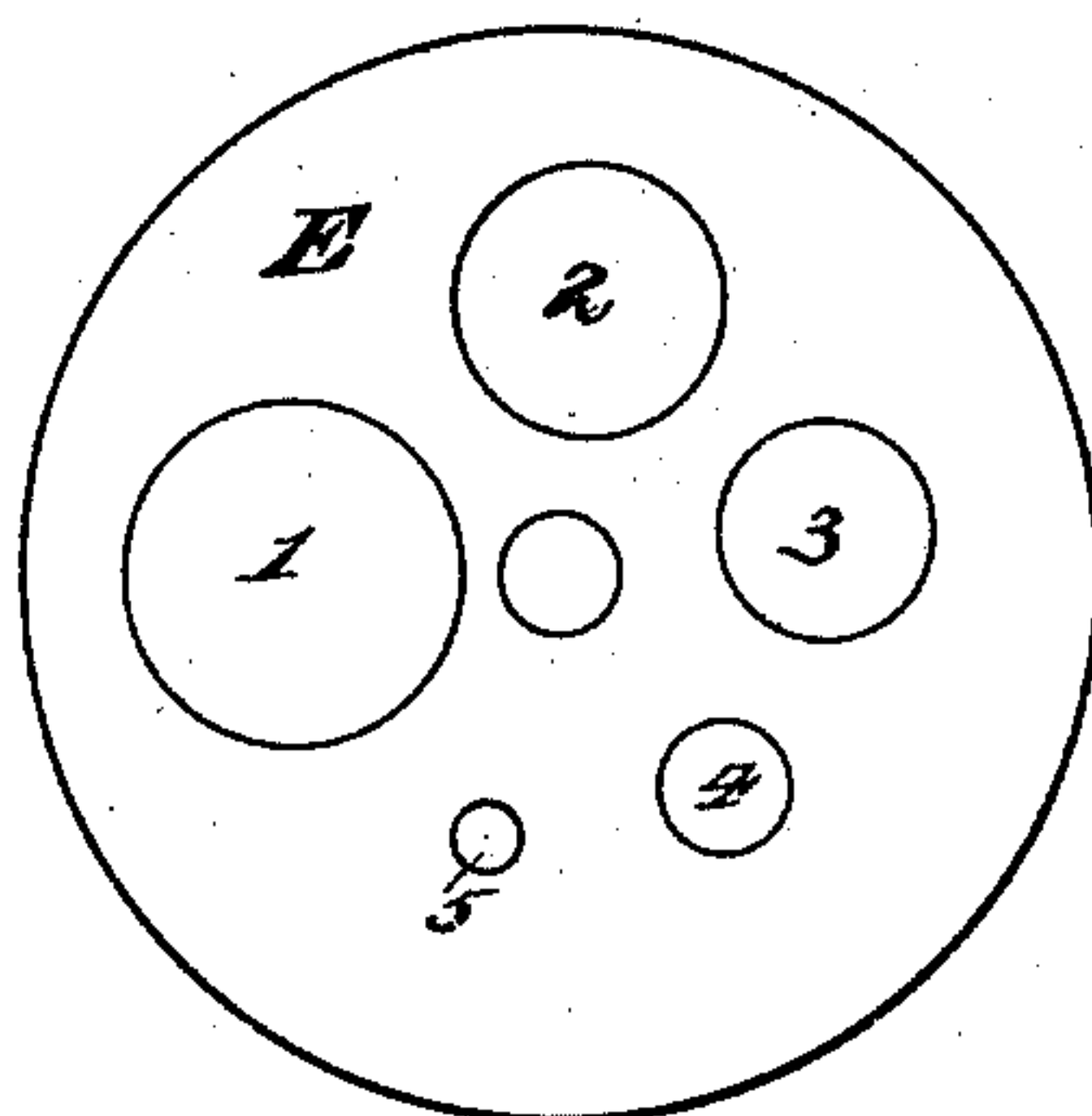


Fig. 3.

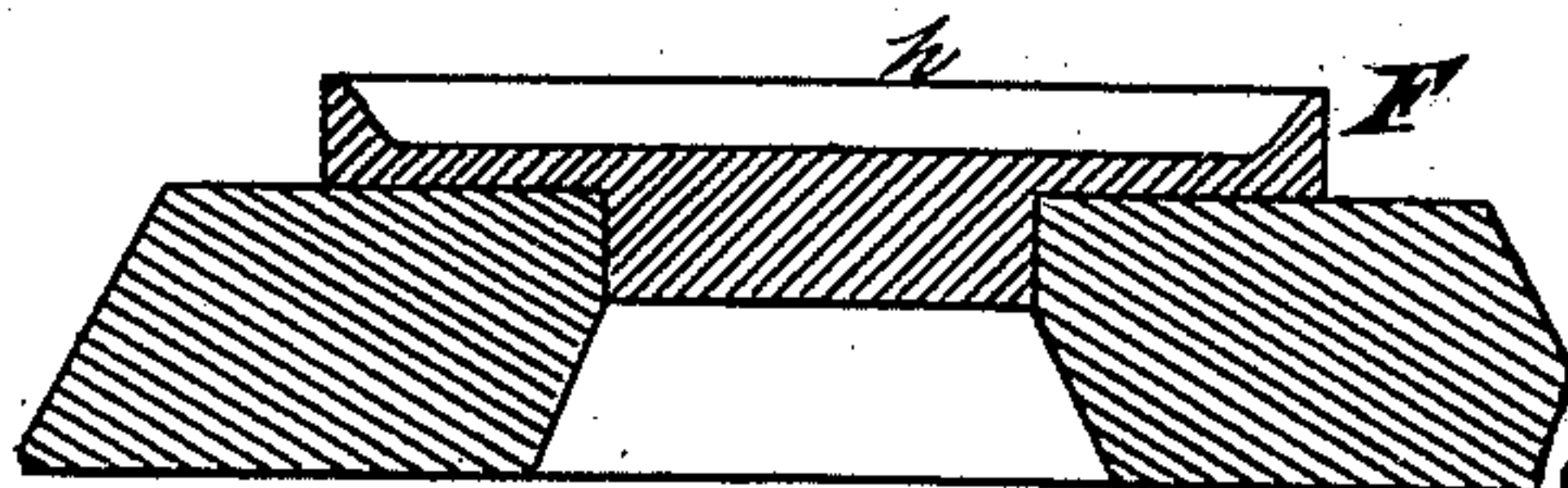


Fig. 4.

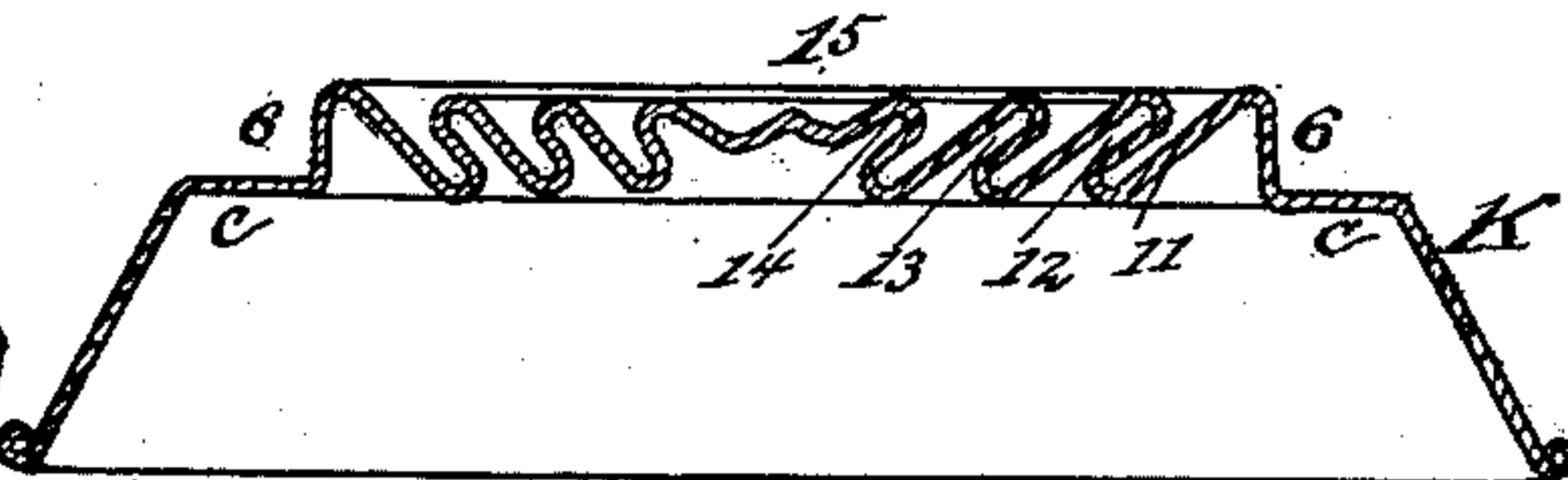
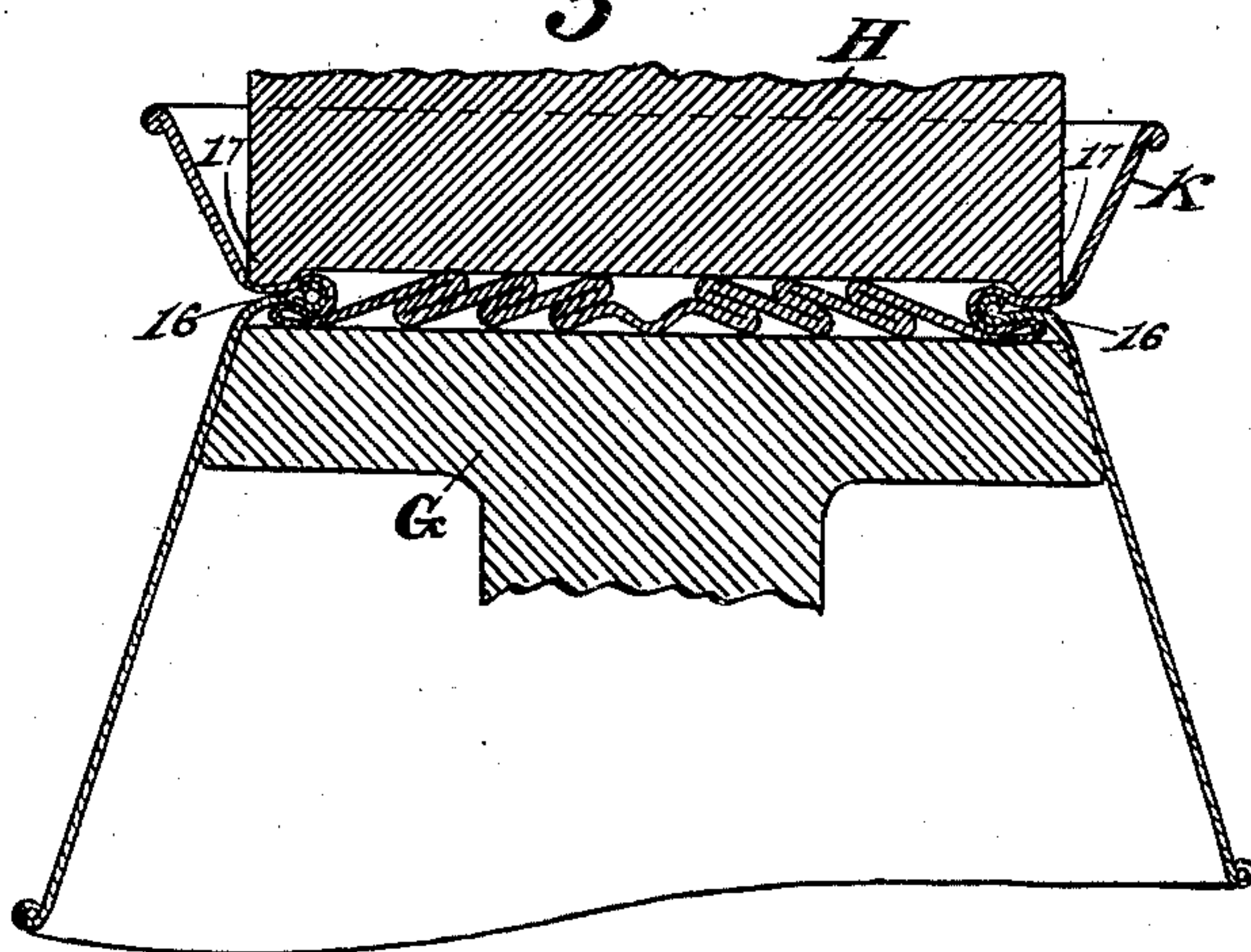


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD BARRATH, OF CINCINNATI, OHIO, ASSIGNOR TO VICTOR E. KNECHT, OF SAME PLACE.

DIE FOR COAL-HODS.

SPECIFICATION forming part of Letters Patent No. 378,755, dated February 28, 1888.

Application filed December 27, 1887. Serial No. 259,155. (No model.)

To all whom it may concern:

Be it known that I, EDWARD BARRATH, a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Dies for Coal-Hods, of which the following is a specification.

The object of my invention is the production of dies for forming a coal-hod from a shell and a cone-shaped piece of metal, which are preferably connected together, as shown in my application, Serial No. 237,107, filed May 4, 1887, wherein I have described and claimed the process for using the dies herein shown and described. In the present application I have, however, added a new feature—to wit, a guide working in the preliminary die for keeping the cone perpendicular as it is progressively formed in offsets, the operation of the dies being the same in other respects as that shown and described in my said former application.

The features of my invention are illustrated in the accompanying drawings, making a part of this specification, in which—

Figure 1 is a central vertical section of my preliminary shaping-die. Fig. 2 is a plan view of the outside shaping-die. Fig. 3 is a central vertical section of the secondary bottom die. Fig. 4 is a vertical section of the base as formed by the secondary die. Fig. 5 is a central vertical section illustrating the use of the finishing-dies.

A represents the base for the preliminary die, recessed to receive the stem of the shaping-die C. The base of the die A is pierced with the orifice *a*, which serves as a guide for the stem *b*. The top of the die is likewise pierced and serves as a top guide for said stem *b*.

D represents a spiral spring which seats on the bottom of the recess *c* of the die A.

F represents the collar, secured to the stem *b*, which forms the top seat of the coiled spring D. As pressure is applied to the cone I, the stem *b* is forced downward, compressing the spring D. The stem *d* is guided by the top and bottom dies to cause it to descend perpendicularly, and as the top of the stem rests in the top of the cone I it holds it in a vertical position, preventing any tendency of the cone

to turn over sidewise while being compressed into the irregular shapes or offsets which are formed by means of the dies E and C.

Die E is what I term an "outside die," and is shown on a smaller scale than the die C. The opening 1 is used to form the offset in the cone I, and is sufficiently large to engage over said cone down to the point 6 of the vertical ledge. Pressure is employed then to depress die E, which stretches and draws the metal into the shapes or offsets 6 *i*. The pressure is then removed and the die E lifted off, and the opening 2 is placed upon the cone and brought down to form the offset 7. Opening 3 forms a similar offset against the offset 8 of the die. Opening 4 forms a similar offset against the offset 9 of the die C. The opening 5 of die E forms a similar offset, 10. Thus by means of the dies C E the cone is formed into the same shape as the offsets of die C, except it projects to the cone-point above the offset 10. This forming of the cone into the series of offsets 6 7 8 9 10 completes the first preliminary step of making the crimped base. This shell is then placed upon the secondary bottom die, F, which is shown as being hollowed out at *h*, so as to receive the crimps. The die E is then placed with the opening 2 upon the offset 7 and forced down, forming the first preliminary crimp, 11. (Shown in Fig. 4.) The opening 3 of die E is then placed upon the offset corresponding to 8, to form the second crimp, 12. The opening 4 is then employed to form the crimp 13, and the opening 5 to form the crimp 14, 15 representing the cone-tip.

Die G has a base sufficiently long to allow the shell I of the bucket to engage over it, so that it will hang upon the die G, its lower ends being formed into a hooked edge, 16. (Shown in said Fig. 5.) The base of the shell K (shown in Fig. 4) is then inverted and placed upon the shell resting on die G, the hook of the shell resting in the offset 6 in said shell.

The die H is then introduced through the opening of base K, and its annular flange is brought down upon the ledge *c* of the offset 6, and pressure is applied to the die H, forcing it down, which operation forms the joint, as shown in Fig. 5. The corrugations of the base are compressed by the central portion of the

die H. This operation is more fully explained in my said former application, to which reference is herein made.

I have not shown any device for applying pressure to the dies E H, as any well-known means may be employed.

I claim—

1. The combination of the die C, having a series of annular ledges, with the die E, having a series of different-sized orifices for compressing a cone into the shape of the die C, substantially as specified.

2. In combination with the die F, the die E, having a series of annular openings for completing preliminary crimps formed by means of dies C and E, substantially as specified.

3. In combination with the supporting-die G, the die H, having an annular opening to

receive the crimps of the shell, and the annular flange *b*, for finishing the joint of a coal-bucket, substantially as specified.

4. In combination with the dies A C, the stem *b* and spiral spring D, substantially as herein specified.

5. In combination with the dies A C E and cone I, the guiding-stem *b*, projecting up through the die C, supported upon a yielding spring, and its point engaging with the inner point of the cone I, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand.

EDWARD BARRATH.

Witnesses:

F. C. GAYMON,
M. E. MILLIKAN.