

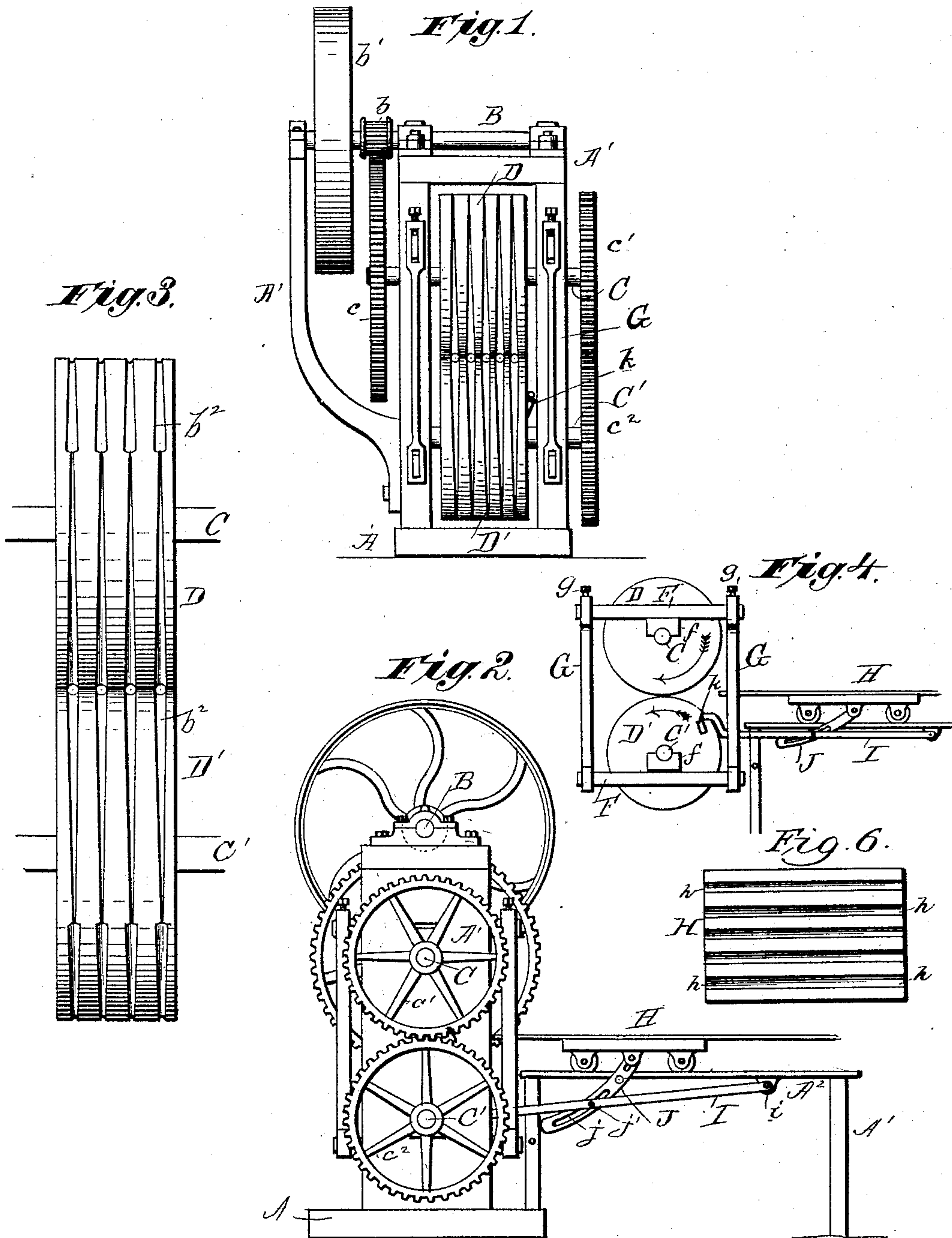
(No Model.)

H. C. BURK.

MACHINE FOR MAKING MINERS' NEEDLES.

No. 328,107.

Patented Oct. 13, 1885.



Witnesses.
Robert Everett.
R. Rathrop.

Fig. 5.

Inventor.
Hiram C. Burk

By *O. Cluett* Atty.

UNITED STATES PATENT OFFICE.

HIRAM C. BURK, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO JAMES W. CHESNUT, OF SAME PLACE.

MACHINE FOR MAKING MINERS' NEEDLES.

SPECIFICATION forming part of Letters Patent No. 328,107, dated October 13, 1885.

Application filed July 25, 1885. Serial No. 172,638. (No model.)

To all whom it may concern:

Be it known that I, HIRAM C. BURK, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have
5 invented certain new and useful Improvements in Machines for Making Miners' Needles; and I do 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
10 it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

5 This invention relates to machines for making miners' needles; and the novelty consists in the construction, arrangement, and adaptation of parts, as will be more fully hereinafter set forth, and specifically pointed out in the
20 claims.

In order to operate properly and efficiently a miner's needle must be a perfect taper throughout its operating length. These articles have heretofore been made by hand, and in
25 order to give the necessary true outlines the needles have been expensive, costing from three to six dollars each. I provide for the ready and cheap manufacture of these articles by machinery.

30 I provide continuously-revolving rolls, their faces being prepared with tapering registering grooves, of proper form. The space between the two rolls, which comprises two corresponding grooves, is equal to the area of one finished
35 needle. The process being the old one of rolling metal, and the grooves being made of true taper, it follows that the resulting needle will be absolutely perfect and true. I provide a feed-table having grooves upon its upper surface, which correspond in number and arrangement
40 with the grooves in the rollers. The table is movable, and the grooves receive the blanks from which the needles are to be formed. The table is moved forward automatically to feed the blanks to the rolls and backward to receive other blanks by connections operated from the rolls. The roll-shafts are hung in half-boxes, which may be adjusted with relation to each other at will. These and other features of novelty are fully illustrated in the ac-

companying drawings, which form a part of this specification, and in which—

Figure 1 is an end elevation, and Fig. 2 a side elevation, of the machine. Fig. 3 is an enlarged view of the two rolls. Fig. 4 is a detail. Fig. 5 is a view of one of the finished
55 needles, and Fig. 6 a top plan view of the table.

Referring to the drawings, A designates the base, and A' the uprights, of the main frame, in which at *a* is journaled the power-shaft B, having pinion *b* and pulley-connections *b'*. The pinion *b* meshes with a gear, *c*, rigid upon the shaft C of the upper roller, D, while a gear, *c'*, upon the opposite end of this shaft C, meshes with a gear, *c''*, rigid with the shaft
65 C' of the lower roll, D'. These shafts C and C' project through apertures *a'*, formed in the main frame, and are supported in half-boxes *f*, held on horizontal bars F. The bars F are connected by vertical stirrups G, and set-screws *g* allow them to be adjusted to throw their carried rolls D and D' in different relations to each other. The range of adjustment thus given to the rolls is necessarily limited, as the gears *c'* *c''* must be kept in mesh; but it
75 is nevertheless important in this particular art, allowing the operator to readily accommodate the machine to different materials and to compensate for loss by strain or wear.

A² designates a guideway on which reciprocates the movable feed-table H. I have illustrated the table as a car; but this is not important, the only requisite being that it move freely back and forth. In its upper surface I provide grooves *h*, corresponding in number and position to the die-grooves in the rollers. The feed-table is operated automatically by means of a lever, I, which, pivoted to the stationary frame at *i* and extending in the direction of the rolls, has an adjustable slotted lever-connection with the car or movable feed-table. This connection comprises the link J, having a slot, *j*, which is adjustably held to the lever I, by a set-screw, *j'*. The end of the lever I, farthest from its pivot *i*, lies in the path
95 of a lug or lugs, *k*, formed or secured on the roll D'. As this lug comes in contact with the lever I, the same is oscillated on its pivot to throw the car or table back for the purpose of having a proper number of suitable blanks
100

placed in its grooves *h*. As soon as the lug has passed the end of the lever *I*, the lever drops either by its gravity or by reason of an added weight, and this action serves, through
 5 the link *J*, to throw the feed-table forward and to throw each of the blanks properly into its appropriate die-groove.

The parts are so proportioned relatively to each other that the blanks will be prop-
 10 erly caught in the widest part of the die-groove of the rolls, and the blanks are of such size that when rolled out each will approximately fill its pair of half-grooves to form a finished needle at a single operation.

15 Of course it will be understood that there are as many lugs *k* properly arranged as there are sets of die-grooves, and that the table is fed forward and back in proper time to allow the desired placement of the blanks and their
 20 prompt deposit in the die-grooves.

This invention must not be confounded with the well-known process of rolling metal, except so far as the employment of the rolls are concerned, and I wish to recognize the fact that
 25 die-faced rolls are old in this art, as in nail-machines.

The machine described is the result of practical experiment, and is designed for a specific purpose—viz., the manufacture of miners' needles. These articles must, in order to be useful and efficient, be of a true taper. To this
 30 end the means for adjustment of the rolls is important. It is desirable to make them cheaply, and to this end the automatic feed is
 35 important.

I have described and shown what I consider the best means for carrying out the invention; but it will be understood that modifications in details of construction may be made within
 40 wide limits without departing from the principle or sacrificing the advantages of the invention, the essential elements of which will be apparent from the foregoing description, taken in connection with the drawings.

Having thus described the invention, what I 45 claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a machine for making miners' needles, the combination, with two continuously-revolving die-rolls, as *D D'*, having tapering die-
 50 grooves *b²* to correspond, of a power connection and gears for revolving both rolls at the same rate of speed, a table, as *H*, and connections with the power mechanism for auto-
 55 matically moving said table to agree with the motion of the dies, as set forth.

2. In a machine for making miners' needles, the combination, with die-faced rolls, as *D D'*, journaled in half-boxes arranged reversely, of set-screws, as *g*, and connections arranged to
 60 adjust the rolls with relation to each other, as set forth.

3. In a machine as described, the die-faced rolls *D D'*, in combination with a grooved feed-table and connections for moving said
 65 table automatically to deposit the blanks into the dies, as set forth.

4. In a machine as described, the combination with the rolls *D D'*, having tapering die-grooves *b²*, of a feed-table, as *H*, having grooves
 70 *h*, to correspond with the grooves in the rolls, and connections actuated by a lug upon the roll *D*, as described, for automatically moving the feed-table, as and for the purposes set forth.

5. The combination, with the grooved rolls
 75 *D D'* and power-connections, of the bars *F*, half-boxes *f*, stirrups *G*, and set or adjusting screws *g*, as set forth.

6. The combination, with the grooved rolls *D D'*, the latter having lug *k*, of the grooved
 80 feed-table *H*, lever *I*, and slotted link *J*, as set forth.

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

HIRAM C. BURK.

Witnesses:

FRANK C. FRIEND,
 A. D. BURK.