

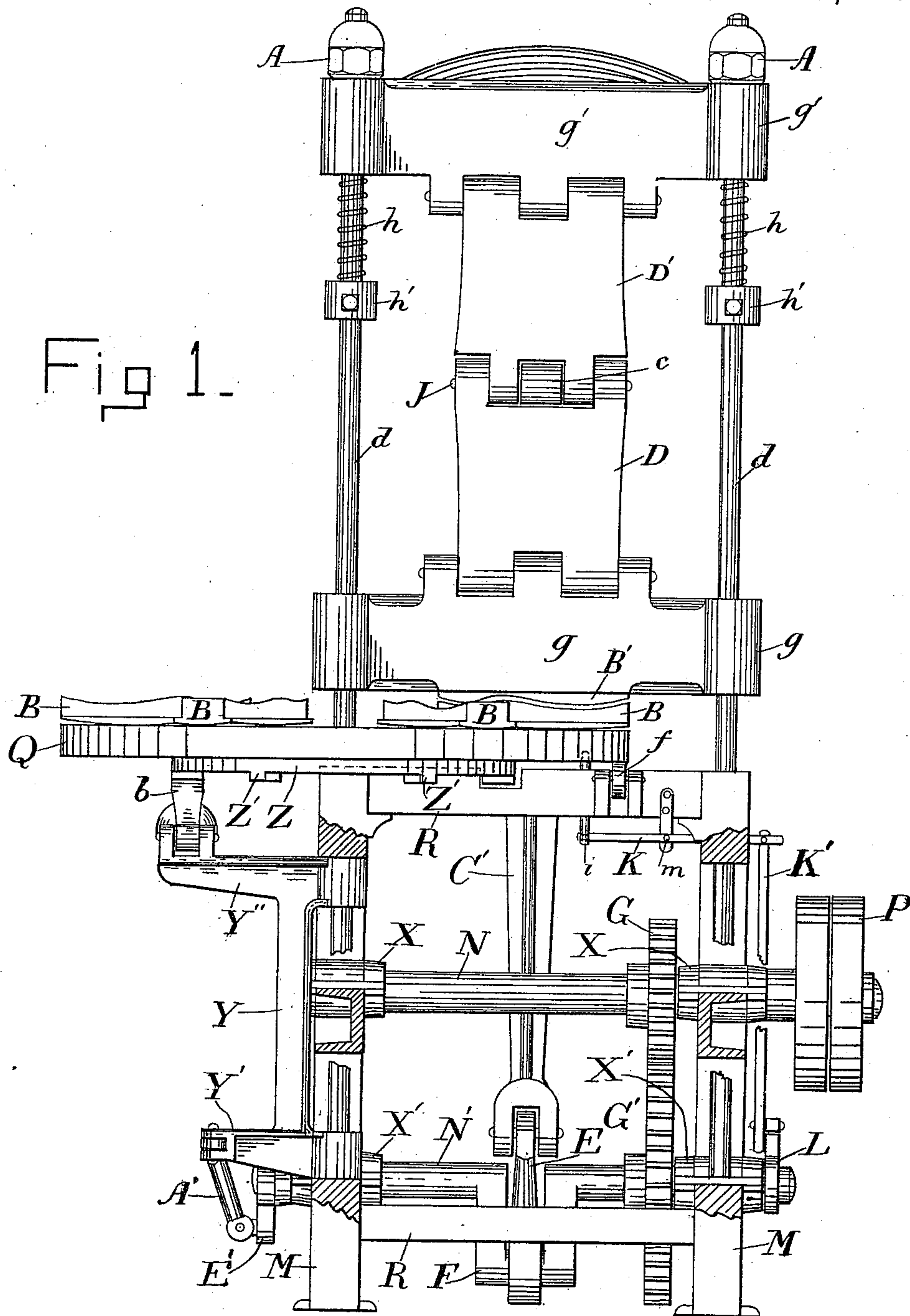
(No Model.)

2 Sheets—Sheet 1.

B. W. HILL.
BEATING OUT MACHINE.

No. 438,810.

Patented Oct. 21, 1890.



WITNESSES:

A. J. Hammon
C. E. Baileys

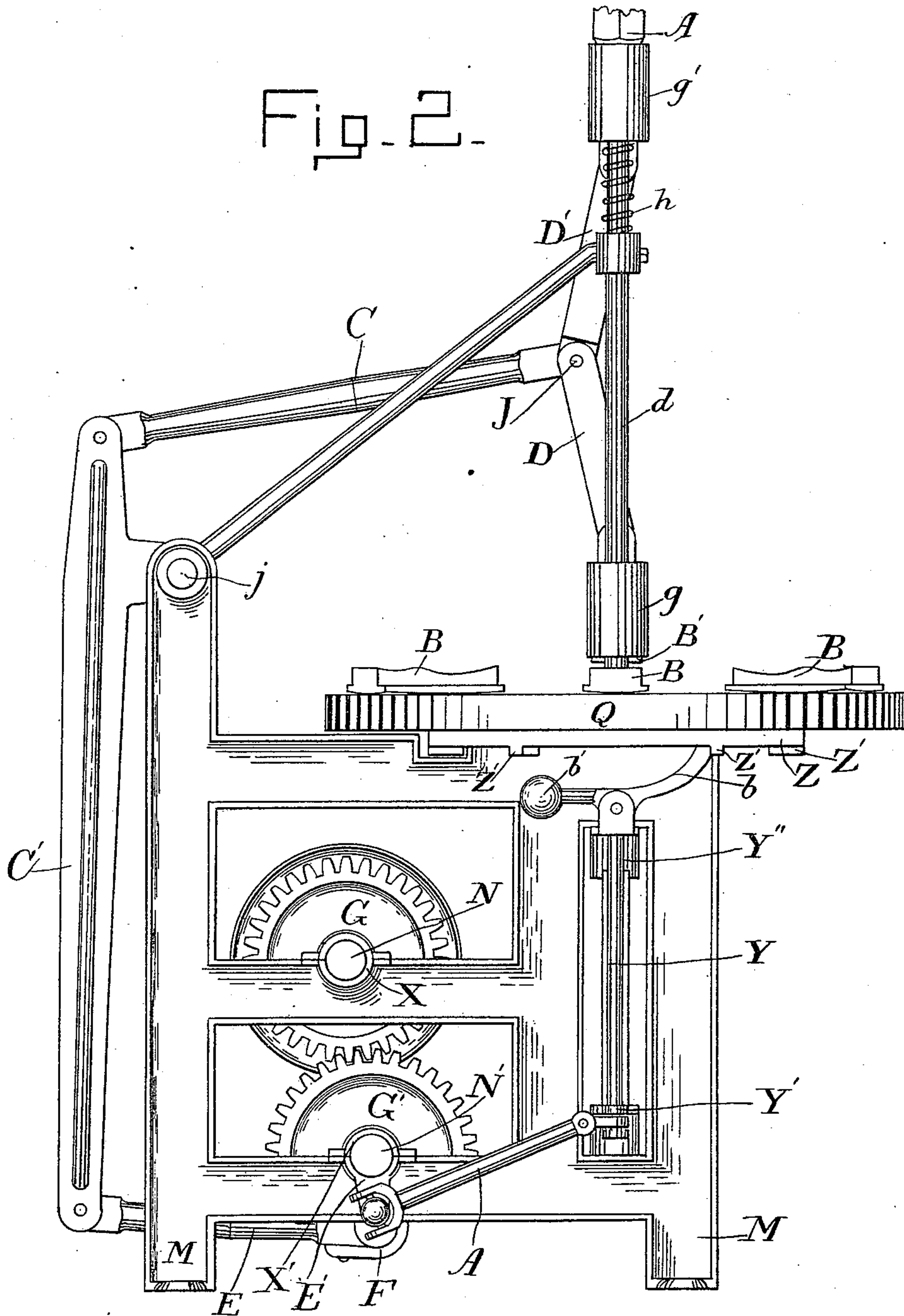
INVENTOR:

Burt W. Hill
by Wright & Brown Conkey
Attys.

B. W. HILL.
BEATING OUT MACHINE.

No. 438,810.

Patented Oct. 21, 1890.



WITNESSES:

A. D. Harrison
C. E. Bartlett

INVENTOR:

Burton W. Hill
Wright & Brown Company
Attys.

UNITED STATES PATENT OFFICE.

BURTON W. HILL, OF MILFORD, NEW HAMPSHIRE, ASSIGNOR OF ONE-HALF
TO ASA B. LYFORD AND FRED J. KENDALL, BOTH OF SAME PLACE.

BEATING-OUT MACHINE.

SPECIFICATION forming part of Letters Patent No. 438,810, dated October 21, 1890.

Application filed April 24, 1890. Serial No. 349,278. (No model.)

To all whom it may concern:

Be it known that I, BURTON W. HILL, of Milford, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Beating-Out Machines, of which the following is a specification.

My invention relates to beating-out machines in which a vertically-reciprocating former works in conjunction with a plurality of formers attached to the upper surface of a rotating table, mechanism being provided whereby said table is rotated to bring each of the formers thereto attached in turn under the reciprocating former.

The invention has for its object, first, the accomplishment of a greater amount of work than has heretofore been done by machines for the same purpose; second, to provide a machine which will work continuously or without a break, and, third, to obviate the liability of the operator to have hands crushed between the formers, all of which objects I believe to be accomplished by my invention, which I will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a front elevation of a machine embodying my invention, portions of the frame of the machine being cut away. Fig. 2 represents a side elevation of the same.

The same letters of reference indicate the same parts in both the figures.

In the drawings, M M represent side frames, R R cross-beams, and \bar{d} \bar{d} vertical rods, all of which constitute the fixed frame of the machine.

N represents a driving-shaft journaled in bearings X X in the frame of the machine, to which power is transmitted by belt running on pulley P. Power is transmitted from shaft N to a crank-shaft N', journaled in bearings X' X' in the frame of the machine by means of gears G G', affixed to said shafts and meshing with each other. The crank F on said crank-shaft N' is connected by rod E with the lower end of a lever C', pivoted at j to the fixed frame of the machine. The other end of said lever C' is connected with one end of connecting-rod C, the other end of

which is affixed to the reciprocating links D D' at J, forming a toggle-joint. The link D' is affixed at its upper end by a hinge-joint to a cross-head g' , and its lower end forms part of the toggle-joint with the end of the connecting-rod C and the upper end of the link D. The lower end of the link D is affixed by a hinge-joint to a cross-head g , on the under surface of which is fixed a former B'. The cross-head g' is held at the upper end of the rods \bar{d} by spiral springs h bearing against collars h' , which are adapted to move on the rods \bar{d} and to be fixed by a screw at any part of the same. The cross-head is held against said spiral springs by nuts A A screwed onto the ends of the rods \bar{d} , the upper ends of which are screw-threaded. The cross-head g is adapted to slide freely up and down on the rods \bar{d} .

It will be seen that when the crank-shaft N' is rotating each revolution thereof will, through the connections above mentioned, cause the cross-head g , carrying the former B', to rise and fall once.

Q represents a rotating table, having its center at the base of one of the rods \bar{d} , and having on its upper surface a plurality of formers B. I prefer to use six of said formers, but three or any other suitable number may be used. Said formers B are affixed to the table Q by means of taper dowel-pins fastened in the bottom of the formers and fitting loosely in holes in the top of the table Q, the bottom of said formers being slightly convexed, so as to admit of their tipping to a certain extent, thereby enabling leather of uneven thickness to be shaped without undue strain upon the machine.

The means whereby the table Q is rotated are as follows: On one end of the crank-shaft N' is a crank E', to which is attached by a universal joint one end of the connecting-rod A'. The other end of said connecting-rod A' is attached by a universal joint to the lower arm Y' of the rocking frame Y, which has a vertical pivot in the fixed frame of the machine. The pawl b , pivoted to the upper arm Y'' of said rocking frame Y and having the weight b' , engages the projections Z' on the annular ring Z on the under surface of the

table Q. The said projections Z' correspond in number to the formers upon the upper surface of the table Q. The throw of the crank E' on the crank-shaft N' is regulated by the number of projections Z' on the annular ring Z on the table Q. It is obvious that if only three of such projections are used the throw of said crank E' will require to be longer than is necessary when six projections are used. In the former case a movement of one-third of its circumference has to be given to the table Q, while in the latter case the movement is only one-sixth of said circumference.

By the above-described means it will be seen that during that part of the rotation of the crank-shaft N' that moves the cross-head *g* upwardly the arm Y'' will, through the pawl *b*, rotate the table Q the distance between any two of the formers thereon, and that during that part of the revolution of said crank-shaft which brings the cross-head *g* down the arm Y'' carries the pawl *b* back to engage the next projection Z' on the annular ring Z of the table Q.

To hold the table Q fast while the pawl *b* is being moved back, and while the cross-head *g*, with the former B', is being brought down, I provide holes in the under side of the table Q to receive stop-pin *i*. Said holes correspond in number to the formers B, carried by the table Q, and are arranged so that when the stop-pin *i* is in one of said holes the table Q will be held fast with one of the formers B directly under the former B' on the cross-head *g*. The pin *i* is operated by lever K, pivoted at *m* to the frame of the machine, said lever being connected by rod K' with a cam L on the crank-shaft N'.

The edge of the table Q is supported against the downward pressure of the former B' on the cross-head *g* by a roll *f*, journaled in bearings in the fixed frame of the machine, the periphery of said roll bearing against the under surface of the table Q.

I claim—

1. In a beating-out machine, the combination of the supporting-frame having the up-rights or guide-rods *d d*, the horizontal table Q, having an orifice in its center, through which passes one of said rods *d*, the said table rotating about said rod and extending partly across the space between the two rods *d* and being supported near its periphery at a point between said rods, a plurality of sole-formers B on said table, a cross-head *g*, vertically movable on the guide-rods, a sole-former B' on said cross-head, arranged to co-operate with the formers B, means for rotating the table Q step by step, automatic locking devices arranged to positively hold the table after each partial rotation with one of its formers under the former B', and means for vertically reciprocating the cross-head *g*, and thereby alternately pressing the former B' against and raising it from a sole on the co-operating former B, as set forth.

2. In a beating-out machine, the combination of the supporting-frame having the vertical guide-rods, the horizontal table rotatable on said frame and provided with a plurality of sole-formers, means for rotating said table step by step, locking devices for holding the table, the toggle-links D D', connected to the movable cross-head and to a fixed support, the lever C', pivoted to the frame and having a longer and a shorter arm, connections between the longer arm of said lever and the driving-shaft of the machine, whereby the lever is oscillated, and a rod C, connecting the shorter arm of said lever with the meeting ends of the toggle-links, as set forth.

3. In a beating-out machine, the combination of the supporting-frame, the horizontal table rotatable thereon and provided with a plurality of sole-formers, the reciprocating cross-head carrying the former B', means for rotating said table step by step, and the locking-pin *i* and cam L, whereby said pin is operated through the connecting-rod K' and lever K to lock the table at the end of each partial rotation thereof, as set forth.

4. In a beating-out machine, the combination of the supporting-frame, the horizontal table rotatable thereon and provided with a plurality of sole-formers, the reciprocating cross-head carrying the former B', the crank F on the crank-shaft N', connecting-rod E, lever C', connecting-rod C, and toggle-links D D', whereby said cross-head is reciprocated once by each rotation of the crank-shaft N', with the crank E' on said crank-shaft N', connecting-rod A', rocking frame Y and its arms Y' Y'', and pawl *b*, whereby the table is caused to make a partial rotation by each revolution of the crank-shaft N' and bring one of its sole-formers under the former B' on the reciprocating cross-head, as set forth.

5. In a beating-out machine, the combination of the supporting-frame, the horizontal table rotatable thereon and provided with a plurality of sole-formers, the reciprocating cross-head carrying the former B', the crank F on the crank-shaft N', connecting-rod E, lever C', connecting-rod C, and toggle-links D D', whereby said cross-head is reciprocated once by each rotation of the crank-shaft N', with the crank E' on said crank-shaft N', connecting-rod A', rocking frame Y and its arms Y' Y'', and pawl *b*, whereby the table is caused to make a partial rotation by each revolution of the crank-shaft N' and bring one of its sole-formers under the former B' on the reciprocating cross-head, and means for locking the table in said position, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 28th day of October, A. D. 1889.

BURTON W. HILL.

Witnesses:

RICHARD P. ELLIOTT,
CARL E. KNIGHT.