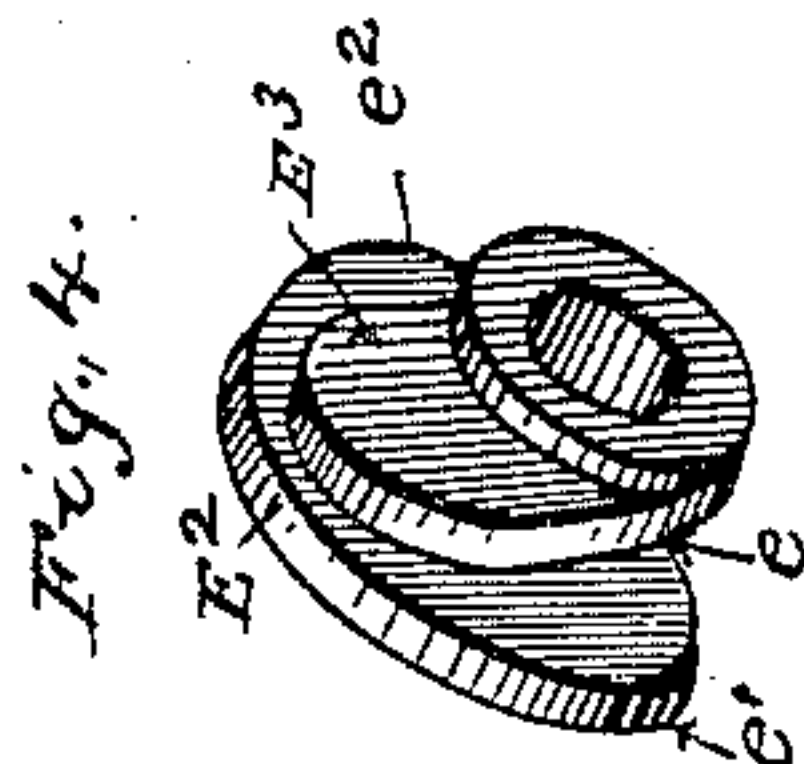
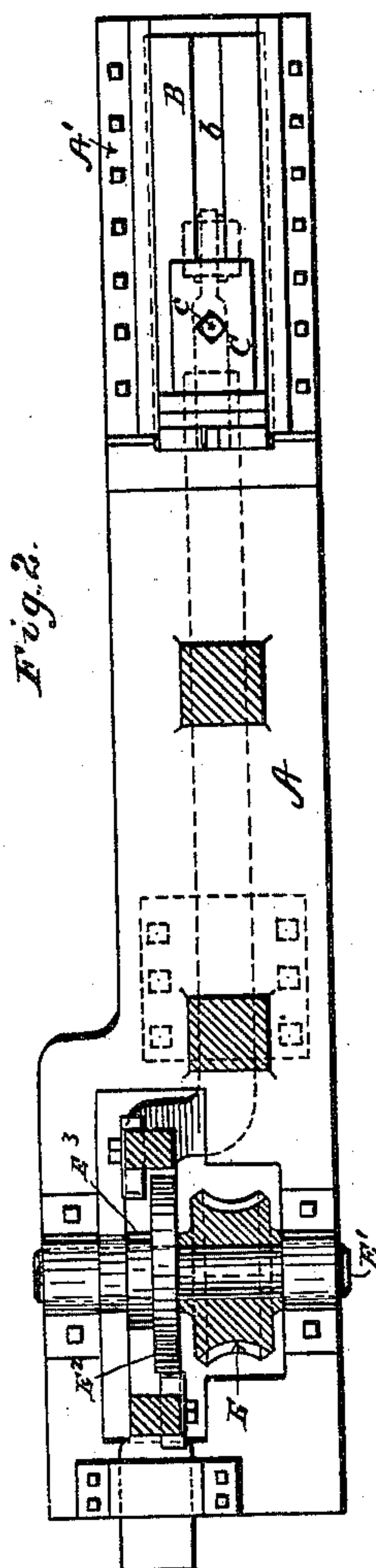
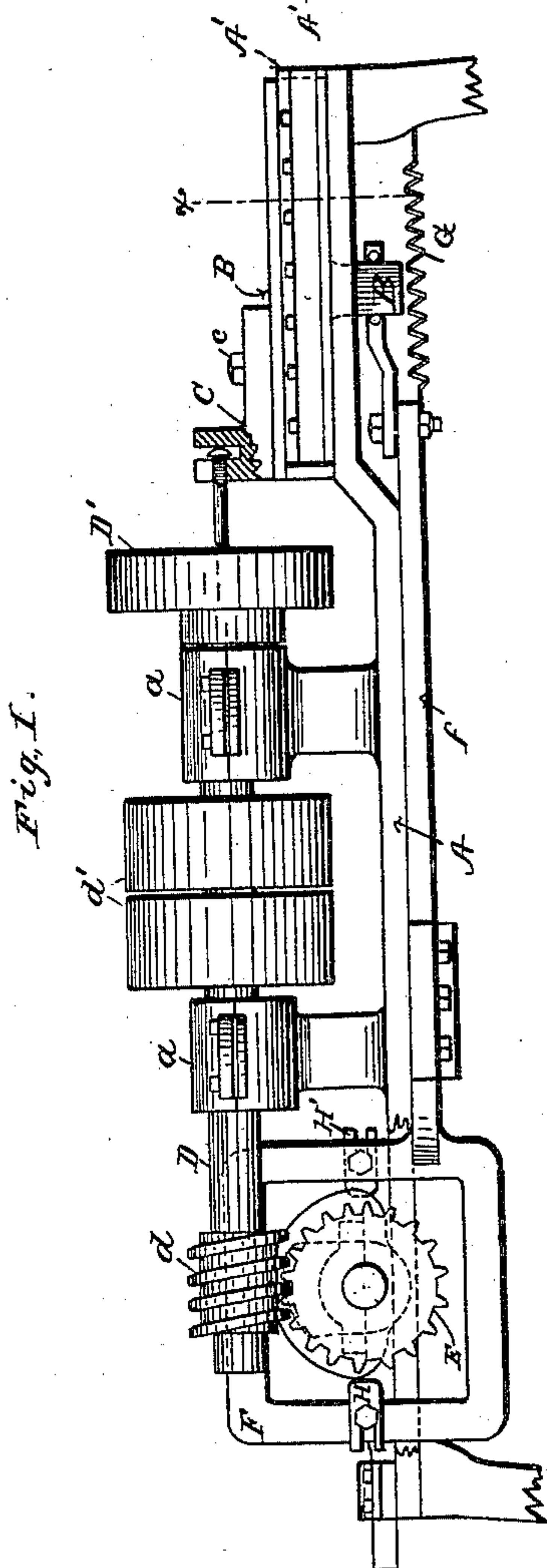
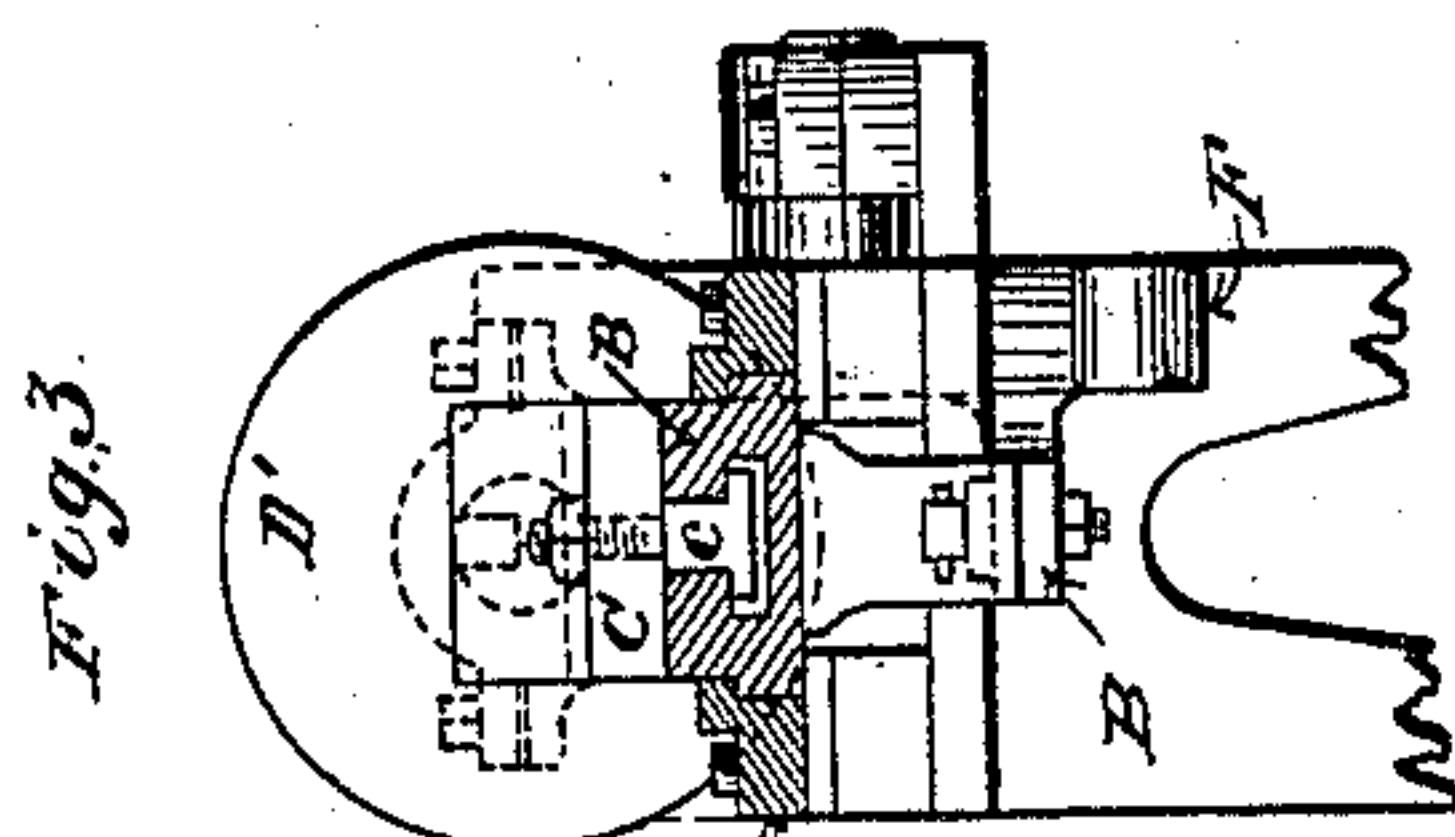


(No Model.)

F. R. SCOFIELD.
BOLT POINTING MACHINE.

No. 409,244.

Patented Aug. 20, 1889.



WITNESSES.
Mr. R. Edelen.
Geo. W. King

INVENTOR.
Frank R. Scofield.

By Leggett & Leggett
ATTORNEYS

UNITED STATES PATENT OFFICE.

FRANK R. SCOFIELD, OF CLEVELAND, OHIO.

BOLT-POINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 409,244, dated August 20, 1889.

Application filed February 7, 1889. Serial No. 299,061. (No model.)

To all whom it may concern:

Be it known that I, FRANK R. SCOFIELD, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and
5 useful Improvements in Bolt-Pointing 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 pertains to make and
10 use the same.

My invention relates to improvements in bolt-pointing machines in which the carriage bearing the bolt-holder is reciprocated toward and from the cutter-head by means of cams
15 of peculiar construction, with a spring acting rearward on the carriage to take up the lost motion of the parts, the cam mechanism being intergeared with the spindle bearing the cutter-head, the object being by such auto-
20 matic feed to increase the capacity of the machine and to lessen the manual labor necessary in attending such machine.

In the accompanying drawings, Figure 1 is a side elevation. Fig. 2 is a plan, partly in
25 section, the cutter-head, spindle, and attachments being removed. Fig. 3 is an end elevation, partly in section. Fig. 4 is a view in perspective, being a detail of the cams.

A represents the bed-plate, having attached
30 ways A', on which latter the carriage B reciprocates. The carriage has a longitudinal recess b, the same having undercut walls for engaging the head of bolt c, by means of which the bolt-holder C is adjustably secured
35 to the carriage, and may therefore be adjusted lengthwise the carriage, according to length of bolt.

D is a spindle, on which the cutter-head D' is mounted. The spindle is journaled in boxes
40 a of the bed-plate, the spindle having attached worm d, for engaging worm-gear E. The spindle has also driving and loose pulley d'. Gear E is mounted on the lateral shaft E', and on this shaft are mounted side by side
45 cams E² and E³, the two cams being usually cast integral.

F is the cam-yoke, the latter being integral or connected with sliding bar f, this in turn being connected, as shown, with carriage B,
50 for reciprocating the latter.

H and H' are contact-points for engaging,

respectively, cams E² and E³ in the order named, these contact-points being connected with opposite ends and sides of the yoke to
bring the respective contact-points in the de- 55 sired position and respectively in line with the engaging cams. Cam E² from e to e' is quite abrupt, by means of which the carriage is quickly moved toward the cutter-head to bring the end of the bolt to engagement with
60 the cutter. From e' to e the throw of the cam is gradual to feed the bolt slowly while the metal is being cut away, and in producing the conical or chamfered end required on the bolt preparatory to the subsequent screw-thread- 65 ing of the bolt.

As cam E² is disengaged from contact-point H cam E³ engages contact-point H'. This latter cam has a sharp pitch, whereby the carriage is quickly reversed, after which the carriage remains stationary for a moment, during which time the operator removes the pointed bolt from the bolt-holder and inserts another bolt for pointing, after which the same movements hereinbefore described are
75 repeated. With this construction there is no lost time, the carriage being instantly reversed. The spring G, attached the one end to bar f or to the carriage and the other end to a stationary part of the machine, helps to
80 draw the carriage away from the cutter-head. This spring has considerable tension, and takes up the lost motion of the parts, whereby the contact-point is held firmly to its engagement with cam E², resulting in a steady feed
85 of the bolt during the pointing operation, and whatever lost motion there may be only causes the carriage to remain longer at rest while the bolts are being changed. There is considerable wear on the cams and contact-points, 90 and hence the latter are adjustably secured to the yoke, so that such wear may be taken up from time to time. The cams are quite inexpensive, requiring no nice fitting, and as these become worn they may be replaced with
95 new ones.

In pointing large bolts there is of course much more metal to be cut away than there is in small bolts, and consequently the feed for large bolts must be proportionately slow
100 in movement.

In a bolt-cutting establishment there are

usually several bolt-pointing machines, adjusted, respectively, for large, medium, and smaller bolts, the same pattern of cams being used on each; but the worms used in cutting
5 small bolts have greater pitch and the worm-gear has correspondingly less teeth, whereby the carriage is actuated with less revolutions of the spindle, worms of less pitch being used for intermediate size, and worms of still less
10 pitch being used for cutting large bolts, the worm-gear of course being made to correspond with the worms. The bolt-holder and the cutter for pointing the bolts are of ordinary construction, and therefore need not be
15 described in detail.

What I claim is—

1. In a bolt-pointing machine, the combination of reciprocating carriage bearing bolt-

holder and cams for reciprocating the carriage, and a sliding bar and cam-yoke connecting the carriage and cams, substantially as set forth. 20

2. In a bolt-pointing machine, the combination, with a reciprocating carriage and cams for reciprocating the carriage, of a sliding bar 25 and cam-yoke connecting the carriage and cams, and a spring for assisting the carriage in its movements away from the cutter-head, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 24th
30 day of December, 1888.

FRANK R. SCOFIELD.

Witnesses:

S. G. NOTTINGHAM,
ALBERT E. LYNCH.