

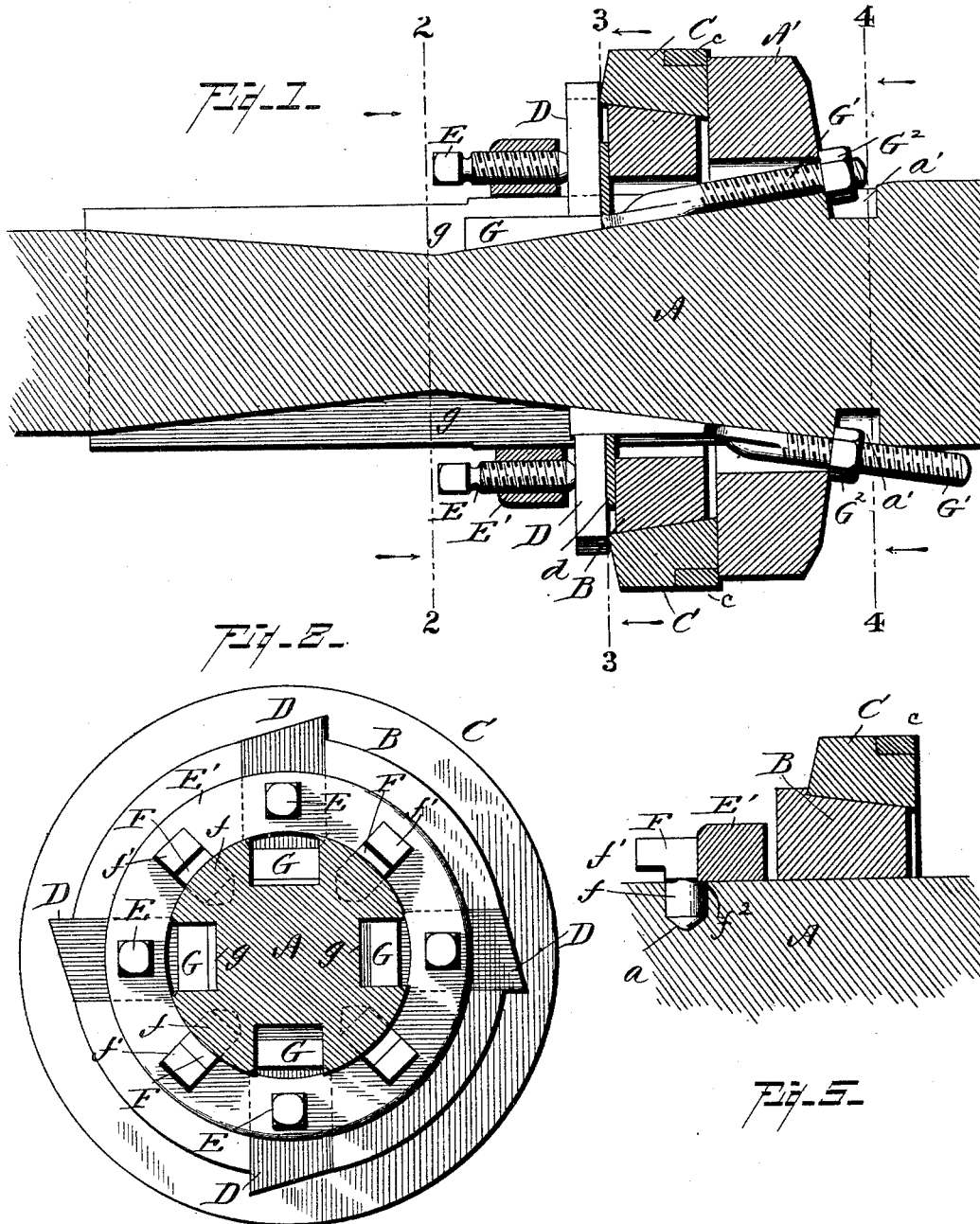
(No Model.)

2 Sheets—Sheet 1.

G. A. BROWN.
SPIKE MACHINE.

No. 454,455.

Patented June 23, 1891.



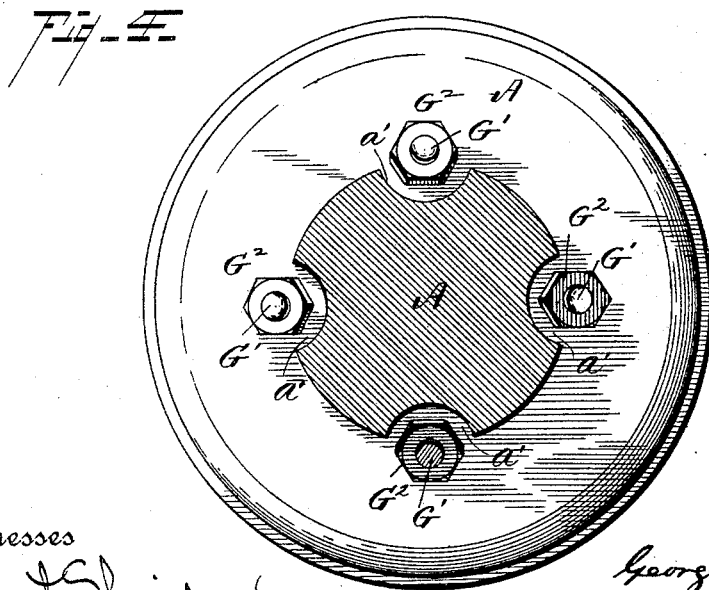
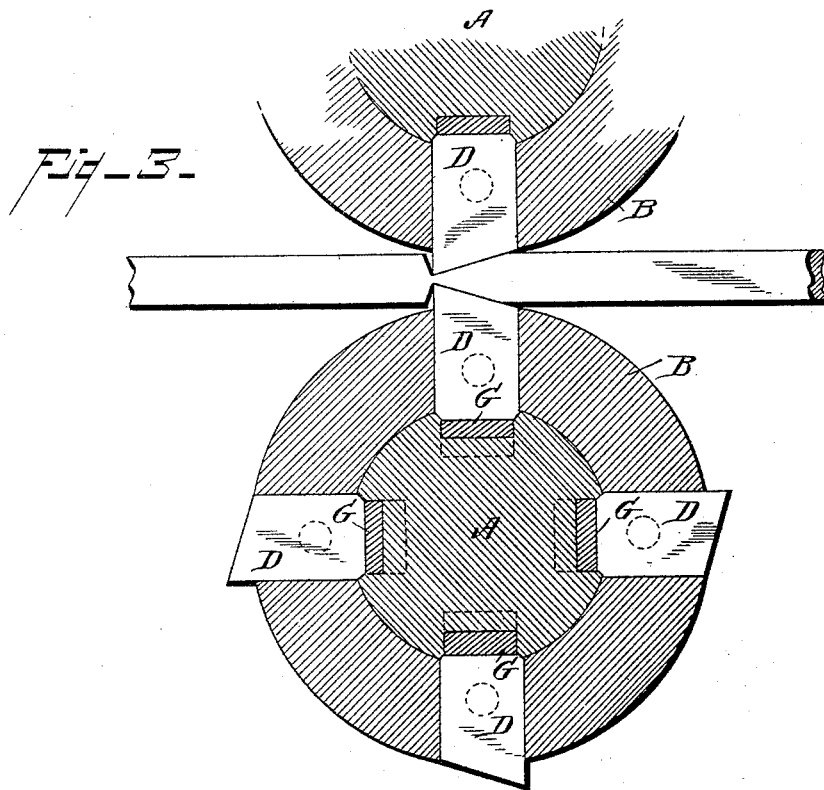
Witnesses
Albert Spiden.
B. W. Miller.

Inventor
George A. Brown,
By his Attorneys
Baldwin Davidson & Light.

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UNITED STATES PATENT OFFICE.

GEORGE A. BROWN, OF RICHMOND, VIRGINIA, ASSIGNOR TO THE TREDEGAR COMPANY, OF SAME PLACE.

SPIKE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 454,455, dated June 23, 1891.

Application filed March 26, 1891. Serial No. 386,511. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. BROWN, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Spike-Machines, of which the following is a specification.

My invention relates especially to machines of the class in which spike-blanks are cut from rods or bars by dies carried by revolving shafts or rolls.

The object of my invention is to provide improved means for securely attaching the dies to the shafts and adjusting them to compensate for wear.

While my improvements are especially applicable to spike-machines, they may be used in other machines involving the use of cutting-dies which require adjustment.

In the accompanying drawings, Figure 1 is a longitudinal section through a shaft or roll, with dies secured thereto in accordance with my invention; Fig. 2, a transverse section on the line 2 2 of Fig. 1; Fig. 3, a section on the line 3 3 of Fig. 1, but showing also part of an upper roll; Fig. 4, a section on line 4 4 of Fig. 1, and Fig. 5 a detail view showing particularly the way of bracing or supporting the set-screw ring.

The shaft A is provided with a flange A', and a die-carrying ring B, within a frame-ring C, is located on the shaft on the inner side of the flange. The dies D are carried by the ring B in suitable recesses therein. In the drawings I have shown four dies carried by the ring, and between the dies and the inner wall of the recesses are interposed liners d, to hold the dies in proper working position and to compensate for wear on the ring C. The dies are held in the recesses in the ring B by set-screws E, carried by a set-screw ring E', encircling the shaft. Steel pins F have their shanks f seated in sockets a in the shaft, and the upper ends of these pins form braces or abutments for the ring E', which carries the set-screws. When the set-screws E are adjusted in the ring, they bear against the faces of the dies and hold them in position in their recesses in the die-carrying ring, the pins F taking the back-thrust caused by the adjustment of the screws. As shown in the

drawings, the pins F are formed with rearward extensions f' above the surface of the rolls, whereby they may be readily taken hold of and removed from the sockets a. When in use, however, the pins are held in the recesses by the ring E', which fits over the shoulders f' above the shanks f.

Fig. 2 clearly shows how the bracing-pins and the adjusting-screw are arranged relative to each other. It will be seen that there are four adjusting-screws and four bracing-pins arranged symmetrically around the shaft.

Fig. 3 indicates how a spike-blank is pointed and severed from a bar. As is well known, the wear on the dies is very rapid, and it is necessary to grind and adjust them frequently. Heretofore it has been usual to adjust the dies by placing metallic strips or liners between their inner ends and the inner walls of the recesses or sockets in which they are placed; but this way of adjusting the dies is troublesome, and it is not reliable or secure, as by the use of a number of strips it is impossible to get a compact abutment for the dies, so that in operation they gradually flatten out or force in the liners, and it results that the working ends of the dies do not come in such close proximity as they should in order to sever the spike-blank from the metallic rod or bar and produce a clean-cut sharp point. In accordance with my invention I employ adjustable wedge-shaped supports for the inner ends of the cutting-dies.

In order to carry out my invention in the way illustrated in the drawings, I form a series of longitudinal recesses g in the shaft A and corresponding openings in the die-carrying ring B and the flange A'. The inner walls of these recesses and openings are inclined from the outer side of the flange A' downwardly, and preferably the openings are made wide, so that the wedges G may be made correspondingly wide to extend from one side of the die to the other, as illustrated in Fig. 3. I have shown four wedges G, one for each of the dies, and each is provided with a screw-threaded shank G', which extends through the opening in the flange A' and carries an adjusting-nut G'. Recesses a' are formed in the shaft A to accommodate the nuts, so that they may be adjusted read-

ily, and at the same time permit the shanks
G' to lie flat against the inner walls of the re-
cesses g. The wedges G are so formed that
their outer faces or the faces which bear
5 against the inner ends of the dies are straight
and parallel with the axis of the shaft, while
their under sides have the same inclination
as the inclined inner walls of the recesses.
By this arrangement the outer sides of the
10 wedges are always parallel with the axis of
the shaft no matter what be the extent of
their longitudinal adjustment. In Fig. 1 I
have shown the upper die resting against
the inner end of the wedge G and the lower
15 die resting against the outer end. It will
be seen that the upper die is in this case
longer than the lower one. Therefore the
lower one needs more adjustment, and the
wedge compensates this deficiency and holds
20 the lower die in the same position at its outer
or cutting edge as the upper one. The dies
may therefore be adjusted to any desired
extent by adjusting the nuts G² and the set-
screws E, and the arrangement is such that
25 the dies may be readily removed and quickly
replaced. I will state, further, that while
the wedges are designed to take the place of
liners, liners may be used in connection with
them, if desired. The flange A' is preferably
30 made of wrought-iron and attached to the
shaft in any suitable way. The ring C is of
cast-iron strengthened by a band c, shrunk
around it. Unless otherwise specified, the
parts are of usual construction.

I claim as my invention—

1. The combination, substantially as here- 35
inbefore set forth, of radially-adjustable cut-
ting-dies, a flanged shaft or roller to which
they are attached, wedges forming supports
for the inner ends of the dies and arranged 40
in inclined recesses in the shaft, and means
for adjusting the wedges toward the flange of
the shaft to move the dies outwardly rela-
tively to the axis thereof.
2. The combination, substantially as here- 45
inbefore set forth, of the flanged shaft, the
die-carrying ring attached thereto, radially-
adjustable cutting-dies mounted therein, ad-
justing-screws for holding the dies in said
recesses, the screw-carrying ring, and the 50
brace-pieces removably connected to the shaft
and forming abutments for the screw-carry-
ing ring.
3. The combination, substantially as here- 55
inbefore set forth, of a shaft or roll, a die-
carrying ring, adjusting-screws bearing
against the dies, the ring in which these
screws are mounted, and the steel abutment-
pieces removably seated in recesses in the
shaft and having their upper ends in contact 60
with the screw-carrying ring.

In testimony whereof I have hereunto sub-
scribed my name.

GEO. A. BROWN.

Witnesses:

E. R. ARCHER,

J. R. A. HOLSON.