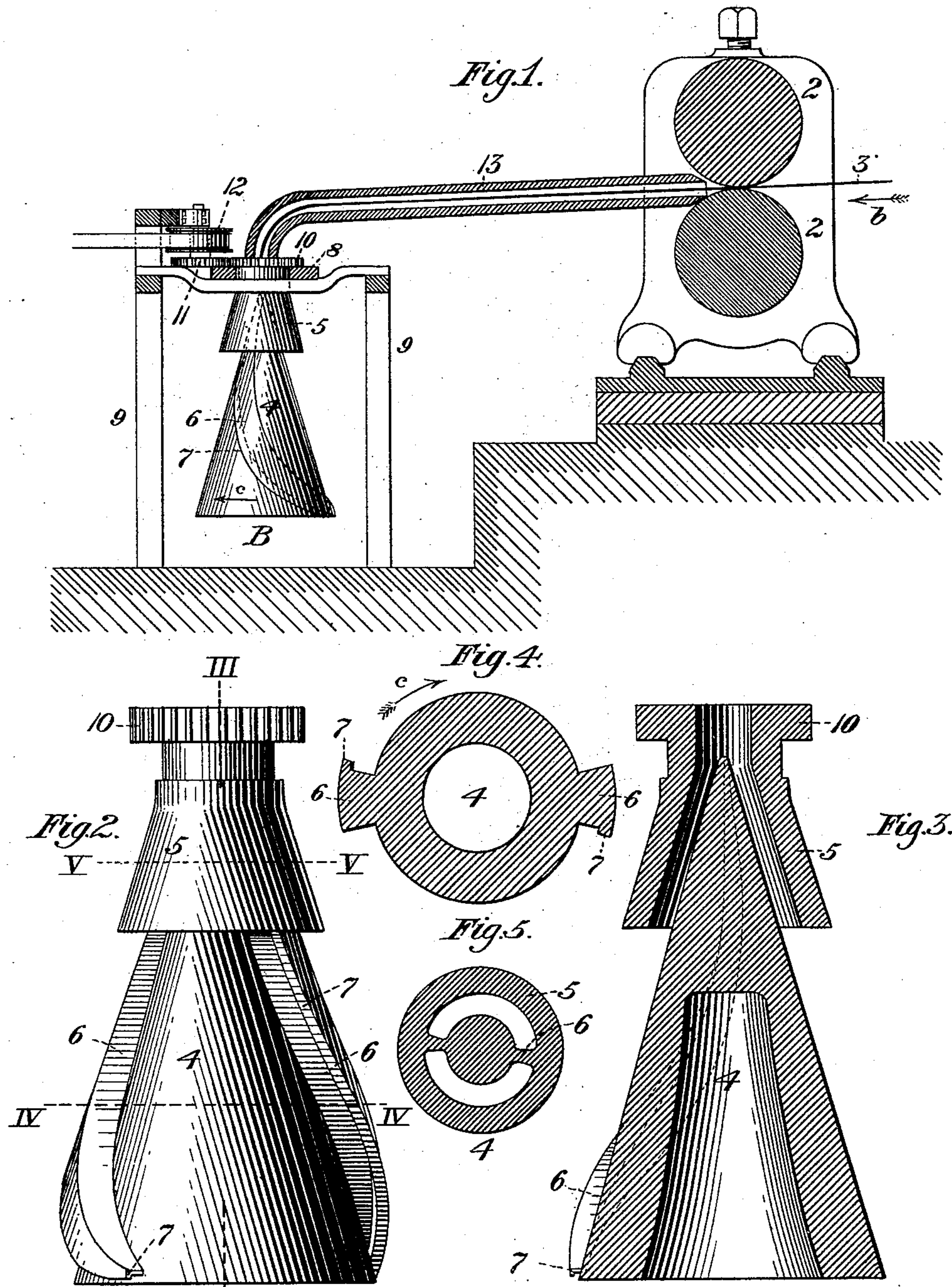


(No Model.)

H. ROBERTS.
APPARATUS FOR COILING METAL RODS.

No. 444,652.

Patented Jan. 13, 1891.



WITNESSES: III
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C. M. Clarke

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by W. D. Drexell
his Att'ys.



UNITED STATES PATENT OFFICE.

HENRY ROBERTS, OF PITTSBURG, PENNSYLVANIA.

APPARATUS FOR COILING METAL RODS.

SPECIFICATION forming part of Letters Patent No. 444,652, dated January 13, 1891.

Application filed September 3, 1890. Serial No. 363,874. (No model.)

To all whom it may concern.

Be it known that I, HENRY ROBERTS, of
Pittsburg, in the county of Allegheny and
State of Pennsylvania, have invented a new
5 and useful Improvement in Apparatus for
Coiling Metal Rods, of which the following is
a full, clear, and exact description, reference
being had to the accompanying drawings,
forming part of this specification, in which—
10 Figure 1 is a vertical longitudinal section
of apparatus embodying my invention. Fig.
2 is an enlarged side elevation of the coiling
apparatus. Fig. 3 is a vertical section on the
line III III of Fig. 2. Figs. 4 and 5 are hori-
15 zontal sections on the lines IV IV and V V of
Fig. 2, respectively.

Like symbols of reference indicate like
parts in each.

My invention relates to an improvement on
20 the apparatus for coiling metal rods described
and claimed in a patent, No. 426,067, granted
to me on April 22, 1890, in which is claimed
a rotary receiving and coiling cone having a
channel which receives the metal at its apex
25 or smaller end and delivers it at its base and
mechanism for rotating the cone. The appa-
ratus herein described embodies the invention
claimed in that patent, but is an improve-
ment thereon.

30 The device shown in the patent comprises
a coiler consisting of two concentrically-ar-
ranged conical shells connected by an inter-
vening spiral or inclined rib.

In my present apparatus I do not use the
35 outer cone, or at least I make it only rudi-
mentary in size, and I shape the rib on the
inner cone in such manner that it shall serve
the function of the outer cone in confining
and controlling the rod. The advantage of
40 this improved construction is that I obtain a
lighter coiling apparatus and one in which
the coiling-channel is easily accessible.

Referring now to the drawings, 2 represents
the final set or pair of rolls of the rod-rolling
45 mill, and 3 is the rod which passes through
the rolls in the direction of the arrow *b*. The
coiler B comprises a rotary cone 4, provided
at its upper end with a hollow collar 5, which
may be conical in form and may encircle the
50 upper part of the cone, as shown in the draw-
ings, though this is not essential, since it may

be above the level of the cone. In some re-
spects it is an advantage that the collar should
extend around the upper part of the cone,
since it thus serves not only as means for re- 55
ceiving the rod, as hereinafter described, but
it also guides it partially down the surface of
the cone. The collar and cone are connected
by a rib or ribs 6, preferably two or more in
number, which extend downwardly from the 60
apex of the cone in spiral lines and are pro-
vided with lateral flanges 7, projecting in the
direction in which the cone rotates. These
ribs may be cast integrally with the cone and
the collar, as shown in Fig. 5. The cone is 65
rotary on its vertical axis, the collar being
journaled in bearings 8 in a frame or housing
9, and provided with encircling gear-teeth 10
in gear with a pinion 11, which may be driven
by a belt-pulley 12 or otherwise. The open 70
upper end of the collar 5 is situate at the ex-
tremity of a guide trough or tube 13, which
leads from the rolls.

The operation is as follows: The rod as it
comes from the rolls passes through the guide 75
trough or tube and enters the open upper end
of the collar 5, and thence passes down along
the outer surface of the cone 4, where it is
engaged by one of the ribs 6. The cone and
collar rotate in the direction of the arrow *c*, 80
and as the rod is fed from the rolls the rib
will distribute it in a regular coil upon the
receiving-surface or around the usual drum
below the cone, and the flange on the rib will
prevent the rod from escaping from the cone 85
and tangling. The advantage of using two
ribs on the cone is that the rod is engaged
more quickly than if one only were used; but,
if desired, there may be but one rib and the
rib may extend in a straight line, instead of a 90
spiral line.

The advantages of my invention will be ap-
preciated by those skilled in the art.

The apparatus is simple in construction, is
durable, and is very efficient in performing 95
the work for which it is intended.

In this specification I do not use the word
"cone" in its strict mathematical sense, but
use it generically, meaning thereby a taper-
ing body, whether it be truly conical or not. 100

I claim—

1. In metal-coiling apparatus, a rotary coil-

ing-cone having a longitudinal rib with a lateral flange, substantially as and for the purposes described.

2. In metal-coiling apparatus, a rotary coil-
5 ing-cone having two longitudinal ribs with lateral flanges, substantially as and for the purposes described.

3. In metal-coiling apparatus, a rotary coil-
ing-cone having an exposed outer surface

along which the rod travels, a hollow collar, 10
and driving-gear, substantially as and for the purposes described.

In testimony whereof I have hereunto set
my hand this 29th day of August, A. D. 1890.

HENRY ROBERTS.

Witnesses:

W. B. CORWIN,

THOMAS W. BAKEWELL.