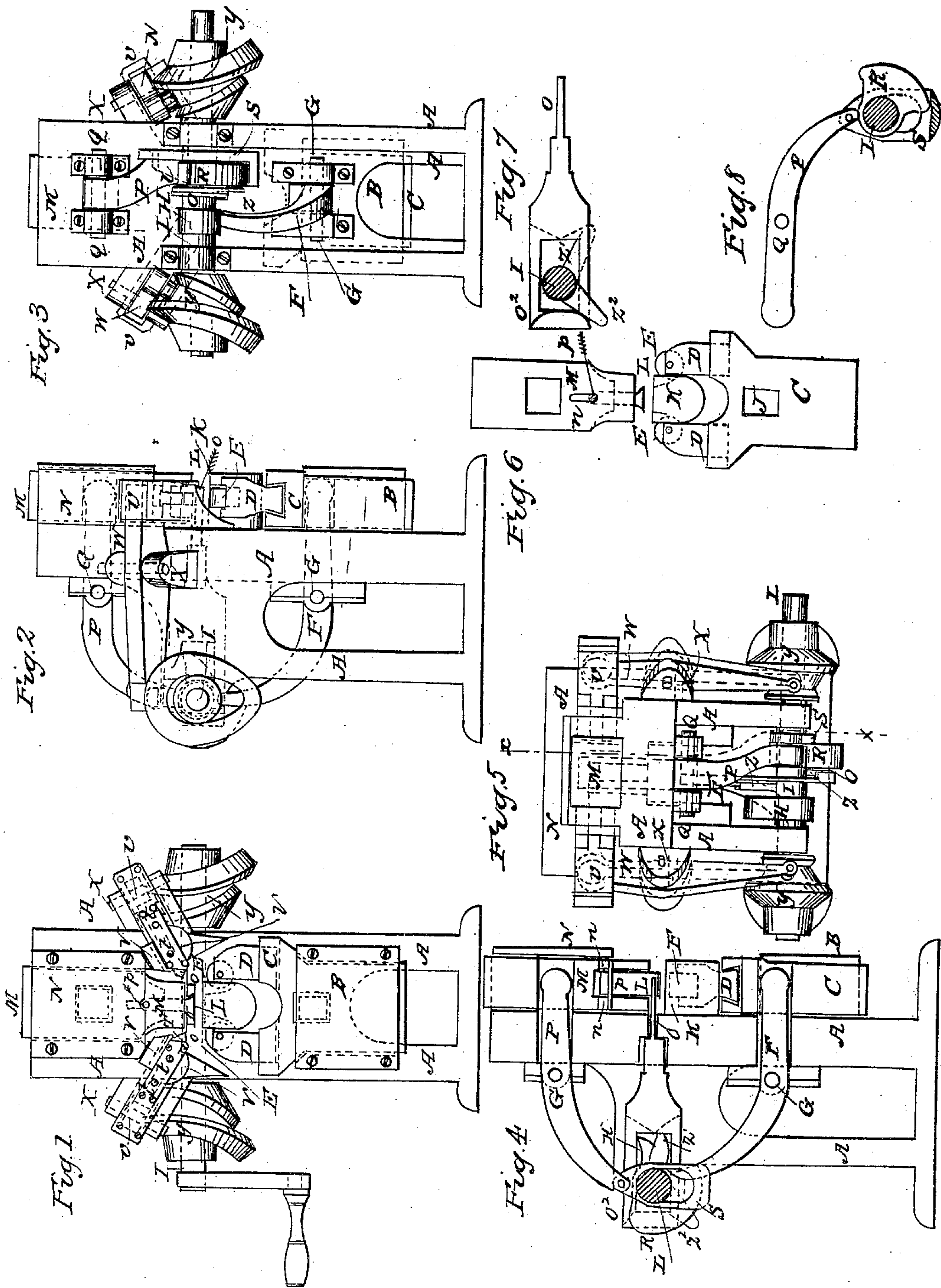


W. VAN ANDEN.
Making Railroad Chairs.

No. 9,906.

Patented Aug. 2, 1853.



UNITED STATES PATENT OFFICE.

WILLIAM VAN ANDEN, OF POUGHKEEPSIE, NEW YORK.

MACHINERY FOR MAKING RAILROAD-CHAIRS.

Specification of Letters Patent No. 9,906, dated August 2, 1853.

To all whom it may concern:

Be it known that I, WILLIAM VAN ANDEN, of Poughkeepsie, Dutchess county, State of New York, have invented certain new and useful Improvements in Machinery for Making Railroad-Chairs; and I do hereby declare the following to be a full description of the same.

The nature of my invention consists in arranging and combining with a suitable frame a shaft propelled by any convenient power, on which is secured a cam for operating a lever for depressing the die for holding the metal while being cut by a pair of roller shears, which are forced upward by a second lever, operated by a second cam also on the driving shaft, the operation of the rollers being to cut the grain of the metal more perfectly than by a fixed or punching cutting arrangement, also in combination with the said roller shears, two adjustable binders, secured at each side of the machine on the ends of levers, operated by cams on the ends of the driving shafts, for the purpose of binding over the lips of the chair as they are cut and raised by the action of the roller shears, so as to give them the form of the die, from which the chair is discharged by a forked rod on the end of a connecting rod working on the main or driving shaft and projected out by a cam on the driving shaft as the shears, binders and die are restored to their original to push the chair off the head of the die, and projected back again by a second cam on the opposite side of the driving shaft for that purpose. But to describe my invention more particularly I will refer to the accompanying drawings forming a part of this schedule, the same letters wherever they occur referring to the same parts.

Figure 1 is a view of the front elevation of the machine. Fig. 2 is a view of the side elevation of the machine. Fig. 3 is a view of the back elevation of the machine. Fig. 4 is a cut section of the machine through the red line x, x , Fig. 5. Fig. 5 is a plan view of the machine. Fig. 6 is a detached view of the roller shears and dies. Fig. 7 is a detached view of the discharging rod and cams as arranged on the main shaft for operating it. Fig. 8 is a detached view of the lever for operating the upper die and cam on the main shaft for working the same.

Letter A, is the frame of the machine and is made of iron or other material, as

may be desired. On the front of the frame is a box or slide way B, in which the shear stock C, works. In the head of the shear stock is secured at each side shear holders D, D. These shear holders work in dovetails cut in the shear stock, so as to admit of the shears being adjusted out or in, as may be required for various kinds of work. Between ear pieces in these shear holders are arranged roller shears E, E. The use of these rollers in the operation of cutting railroad chairs from wrought iron is very important and constitute a very essential part of my invention. By the use of rollers in cutting the lips of the chair the grain of the metal is not drawn, as would be the case in using a device analogous to punching, and at the same time less power is required in the operation.

Letter F, is a lever for operating the shear stock and shears. This lever has a fulcrum G, at the back side of the front of the frame, and is bent or curved up at the back end, so as to be operated upon by a cam H, on the driving shaft I, so that as the toe of the cam depresses the back end of the lever the front end, working in a slot J, in the shear stock, raises it to cut the metal held by the dies K, and L.

Letter K is the lower half of the die, and is stationary, being firmly secured to the face of the frame, so as to resist the pressure of the upper and movable half of the die L, which is secured in a stock M, working in a case or box N, secured to the front of the machine, at the upper side, similar to the case for holding the shear stock at the lower side of the front of the frame. The movable half of the die L, is made so as to have a certain amount of motion in the stock vertically, and for that purpose slots n, n , are cut in the die stock, to sustain the movable die by means of a pin p , passing through the die L. The object of this motion is to allow the head of the die to drop down, as the stock is being lifted, after the chair has been bent on it, for the discharger O, to be projected out to discharge the chair preparatory to the next revolution of the machine. This die and the stock in which it is secured is operated by a lever P, having a fulcrum Q, at the upper and back side of the front of the machine, and is curved or bent down at the back end, so as to be operated by a quadrant shaped cam R, on the driving shaft I, which by means of a collar s , attached to the

end of the lever P, and working on the driving shaft I, also operates to lift the die stock after the chair has been formed.

Letters T, T, are the benders, which are
5 arranged by means of adjusting screws *t*, *t*
and *t*, *t*, in stocks U, U, working in slides
V, V, secured to the front of the machine at
an oblique angle, so as to press from above
10 downward to bend the lip of the chair per-
fectly down upon the die. These benders
are operated by means of levers W, W, se-
cured by fulcra X, X, to the sides of the
machine frame and having their back ends
15 working in channel ways in cams *y*, *y*, on
the ends of the driving shaft I. The opera-
tion of these cams is to give an outward and
lifting motion to the back ends of the bender
levers, so as to operate the benders in the
right direction for the purposes required, and
20 withdraw them in time for the action of the
discharger rod O. This discharger at the
front end is forked and shaped so as to fit
the sides of the movable die as it is projected
out to discharge the chair. The back end of
25 the discharger is attached to a collar piece
O², surrounding the driving shaft I, on which
are two cams *z*¹, *z*², which alternately act on
the collar to project the discharger out to
remove the chair from the die and with-
30 draw it again before the down stroke of the
die takes place again.

The operation of my machine is that when
the piece of iron is prepared for forming the
chair it is placed upon the fixed half of the
35 die, (to facilitate which guides will be used
in a working machine,) when the rotation
of the driving shaft by means of the quad-
rant shaped cam R, and lever P, forces down
the upper half of the die L, upon the plate
40 of iron. While this is being done the cam H,
on the driving shaft depresses the end of
the lever F, and raises at the front end the
shear stock and roller shears to cut and bend
up the lip of the chair, which having been
45 done the cam H, having passed its greatest

diameter lets the shears drop in time to
allow the cams *y*, *y*, on the ends of the driv-
ing shaft, through the levers W, W, to force
in the benders to complete the operation of
cutting and bending the wrought iron chair. 50
When this is done the cams *y*, *y*, draw back
the benders, and the quadrant shaped cam
R, acting upon the lower side of the collar
on the end of the lever P, lifts the stock of
the upper half of the die, which dropping 55
down in the slot in the stock allows the cam
Z¹, on the driving shaft to project the dis-
charging rod O, forward to discharge the
chair off the die, when the cam Z², comes into
action and withdraws the discharger again 60
and the machine is then ready for a repeti-
tion of the operation.

Having now described my invention and
its operation I will proceed to state what I
claim and desire to secure by Letters Patent 65
of the United States.

What I claim is—

1. The combination of rollers with ad-
justable shear stocks for cutting and shaping
the lips of wrought iron rail road chairs, 70
substantially as hereinbefore set forth, and
their combination with the dies for that
purpose.

2. I also claim the use of a movable drop
upper half, or female die, in combination 75
with a stock substantially set forth, and
their combination with the discharging ap-
paratus operated substantially as hereinbe-
fore set forth.

3. I also claim the use of adjustable and 80
removable benders, in bender stocks, in com-
bination with the levers and cams on the
main shaft for operating the same in an
oblique and downward direction, and their
combination with the dies and cutters for 85
making wrought iron rail road chairs.

WM. VAN ANDEN.

Witnesses:

LIBESTY HYDE,
JACOB FITCHET.