

March 27, 1928.

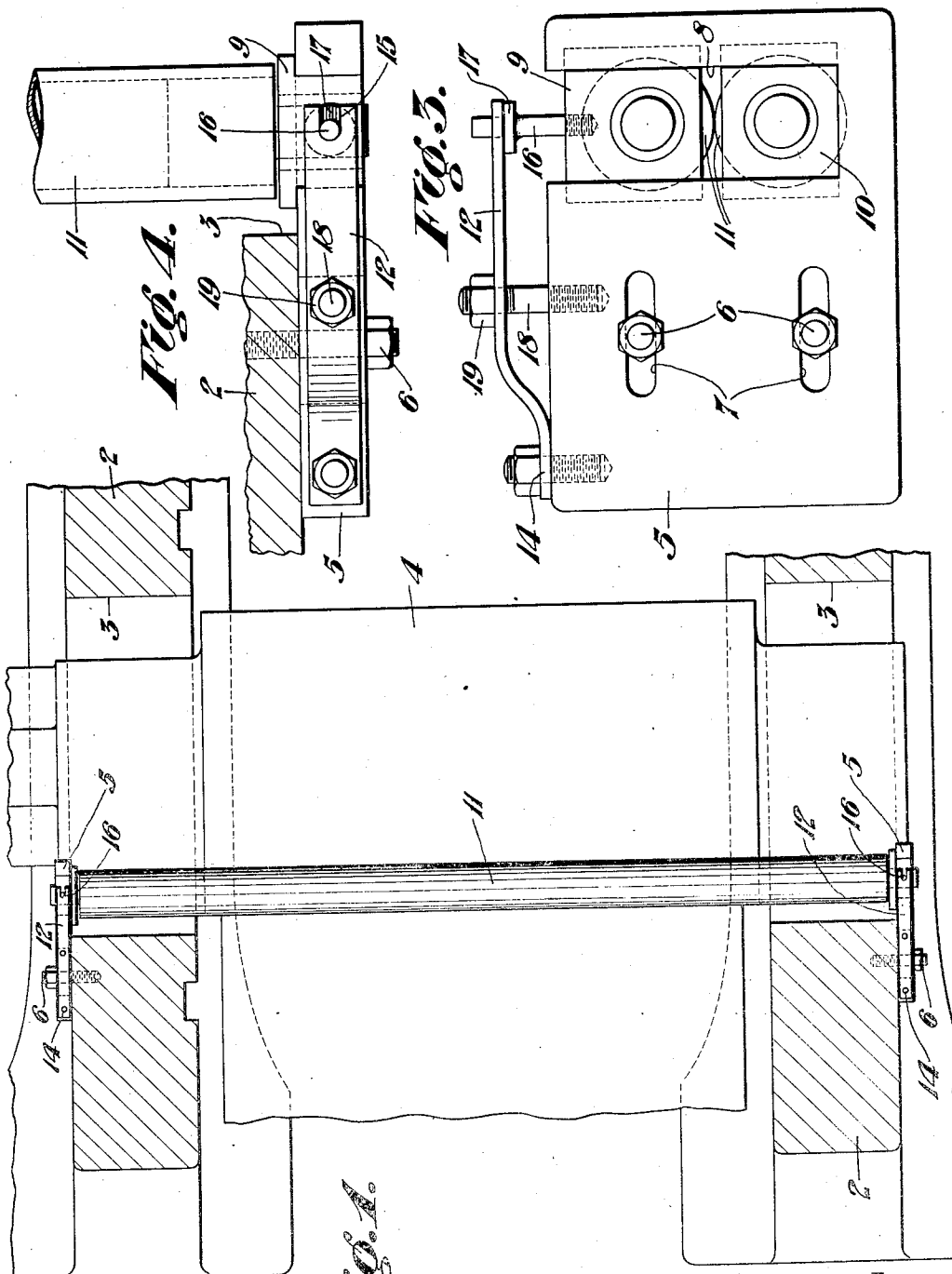
1,663,844

W. A. IRVIN

ROLLING MILL APPLIANCE

Filed Sept. 23, 1925

2 Sheets-Sheet 1



Witnesses:

Edwin Truett

FIG. 1

Inventor:
WILLIAM A. IRVIN,

By:

Anthony De Rosa
his Attorney.

March 27, 1928.

1,663,844

W. A. IRVIN

ROLLING MILL APPLIANCE

Filed Sept. 28, 1925

2 Sheets-Sheet 2

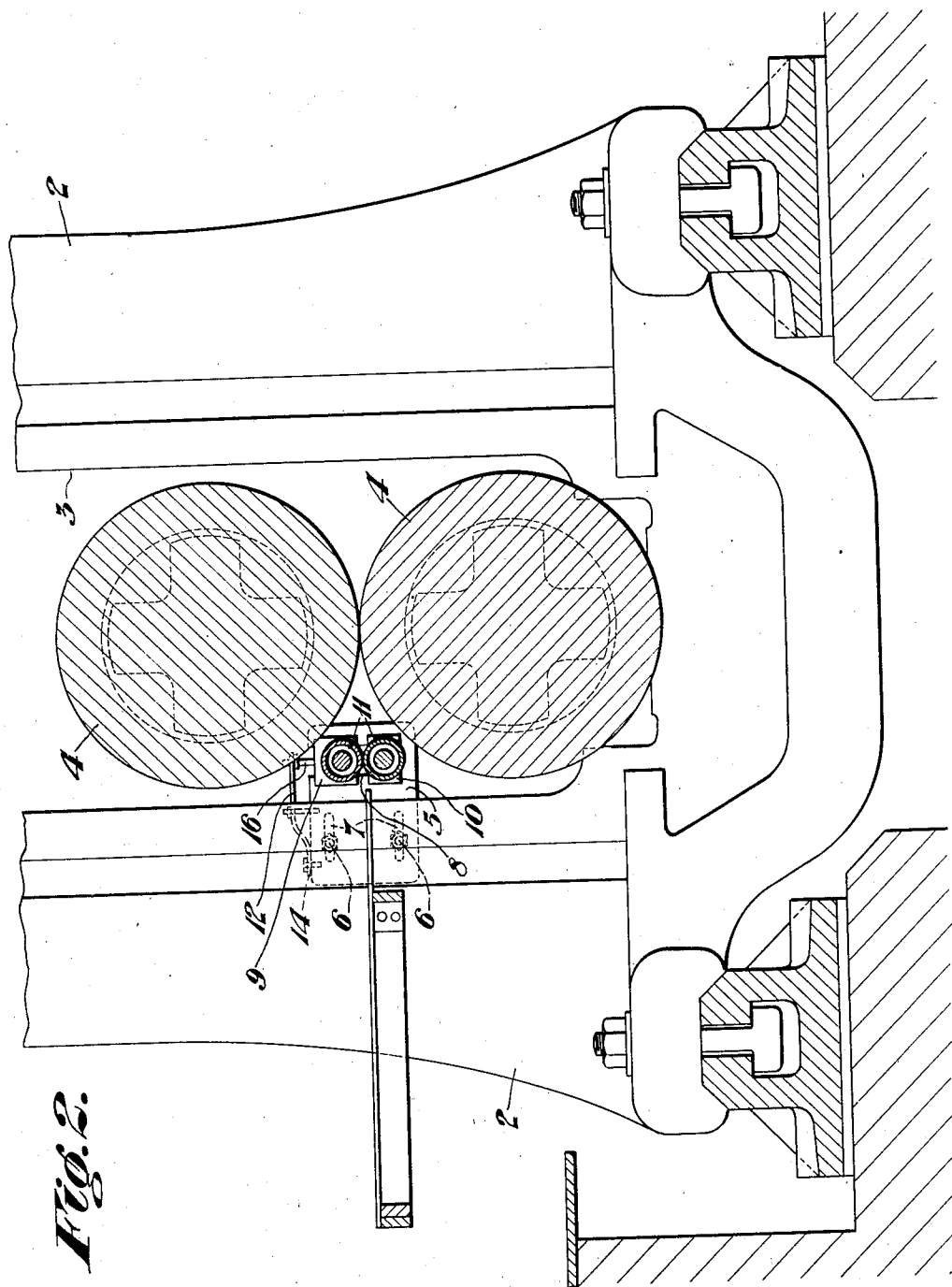


Fig. 2.

Witnesses:

Edwin Truett

Inventor:

WILLIAM A. IRVIN,

by:

D. Anthony Weiss

his Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM A. IRVIN, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO AMERICAN SHEET AND TIN PLATE COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

ROLLING-MILL APPLIANCE.

Application filed September 28, 1925. Serial No. 59,111.

This invention relates to a rolling mill and more particularly to a cold rolling mill for finishing highly finished plates and sheets, and has for its object an improved form of such mill having means for preventing the plates from pinching, or buckling in the rolls, and also prevents the rear ends of the plates from flipping when entering the rolls, all of which produce damaged plates.

Heretofore a single roll known in the art as a "feather roll" has been arranged parallel with the metal working rolls of the mill at a point slightly above the pass between the metal working rolls and in contact with the upper one of the metal working rolls, and the plates were fed between this feather roll and the upper one of the metal working rolls and then passed between the metal working rolls. This single feather roll prevented the pinching and buckling of the plates being rolled to a certain extent, but the rear ends of the plates would "flip" or snap down when leaving the pass between the feather roll and the upper metal working roll, resulting in the making of transverse marks or scars on the plates or sheets.

The present invention provides a new form of feather rolls which prevent all pinching or buckling of the plates and also eliminate the flipping or snapping of the rear end of the plates or sheets as they leave the feather rolls and thus provide for a more perfectly finished plate free from blemishes or scars.

In the drawings:

Figure 1 is a plan view of a stand of rolls having my invention applied thereto.

Figure 2 is a partial sectional elevation thereof.

Figure 3 is an enlarged side elevation of the bearing bracket and pinch rolls.

Figure 4 is an enlarged plan thereof.

Referring more particularly to the drawings, the numeral 2 designates the roll housings which are of well known construction and provided with the usual windows 3 in which the metal working rolls 4 are mounted.

A bearing bracket 5 is adjustably secured to the outside face of each of the roll housings by bolts 6 passing through the slots 7. The brackets project toward the metal

working rolls 4, and are provided with openings 8 for the reception of upper and lower bearing blocks 9 and 10, respectively, in which the pinch rolls 11 are mounted. The upper blocks 9 are spring pressed toward the lower blocks 10, so that the rolls 11 will be normally forced together, by a leaf spring 12.

The springs 12 are secured to the bearing brackets 5 at one end as at 14 and have their other ends slotted at 15 and fitted around a threaded pin 16 and bearing against a shoulder 17 on said pin. Tension bolts 18 are secured in each of the brackets 5 and pass up through the springs 12 intermediate their ends and are provided with nuts 19 which when screwed down on the springs increase the tension thereof.

The rolls 11 extend parallel with the metal working rolls 4 and due to the position of the brackets 5 are positioned within the confines of the roll housings and in close proximity to the bite or pass of the working rolls.

The feather or pinch rolls 11 serve to hold the plates or sheets as they are being drawn through the working rolls and thereby prevent pinching or buckling of the plates or sheets, and due to the bite or pass of both the pinch rolls and working rolls being in alinement there is no snap or flip of the plate as it leaves the pinch rolls and, therefore, the transverse marks produced by the feather rolls heretofore used are eliminated.

While I have shown and described only one preferred embodiment of my invention, it will be understood that I do not wish to be limited thereto, since various modifications may be made without departing from the scope of my invention as defined in the appended claim.

I claim:

The combination with a roll housing having the usual windows, and a pair of metal working rolls mounted in said housing, of a pair of bearing brackets removably and adjustably mounted one on each of the outer side faces of said housing, said brackets extending inwardly beyond the windows of said housing, the portions of said brackets extending beyond said windows being pro-

vided with vertically disposed openings, bearing blocks mounted in said openings, a pair of idler pinch rollers of equal length with said metal working rolls and arranged
5 parallel with said working rolls and journaled in said bearing blocks, said pinch rollers being positioned within the confines of said roll housing and in close proximity to the bite of said metal working rolls, leaf springs secured to said brackets and having 10 one end arranged to exert a tension on one of said pinch rolls to force said roll toward the other roll, and means for adjusting the tension of said springs.

In testimony whereof, I have hereunto set 15 my hand.

WILLIAM A. IRVIN.