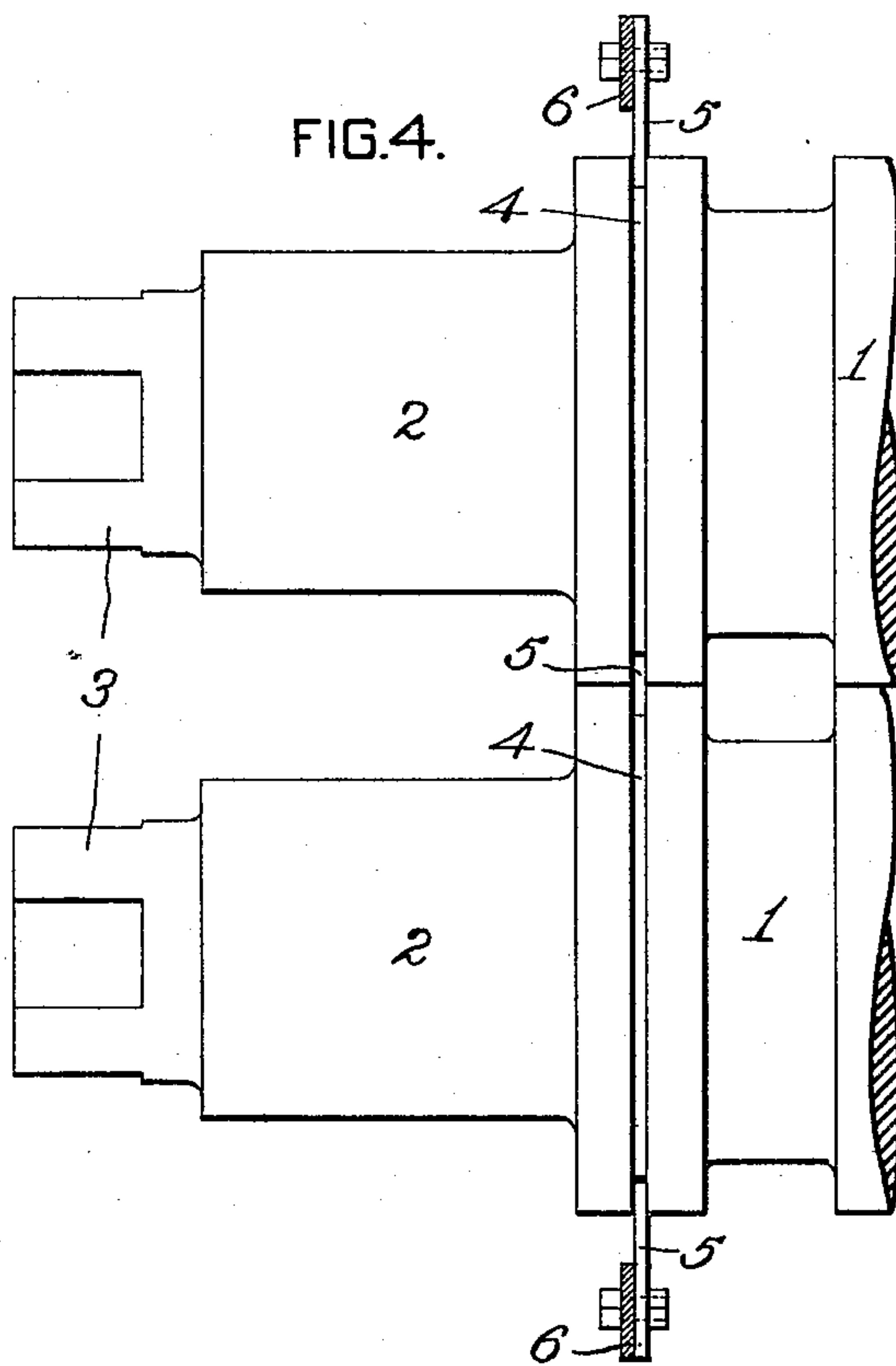
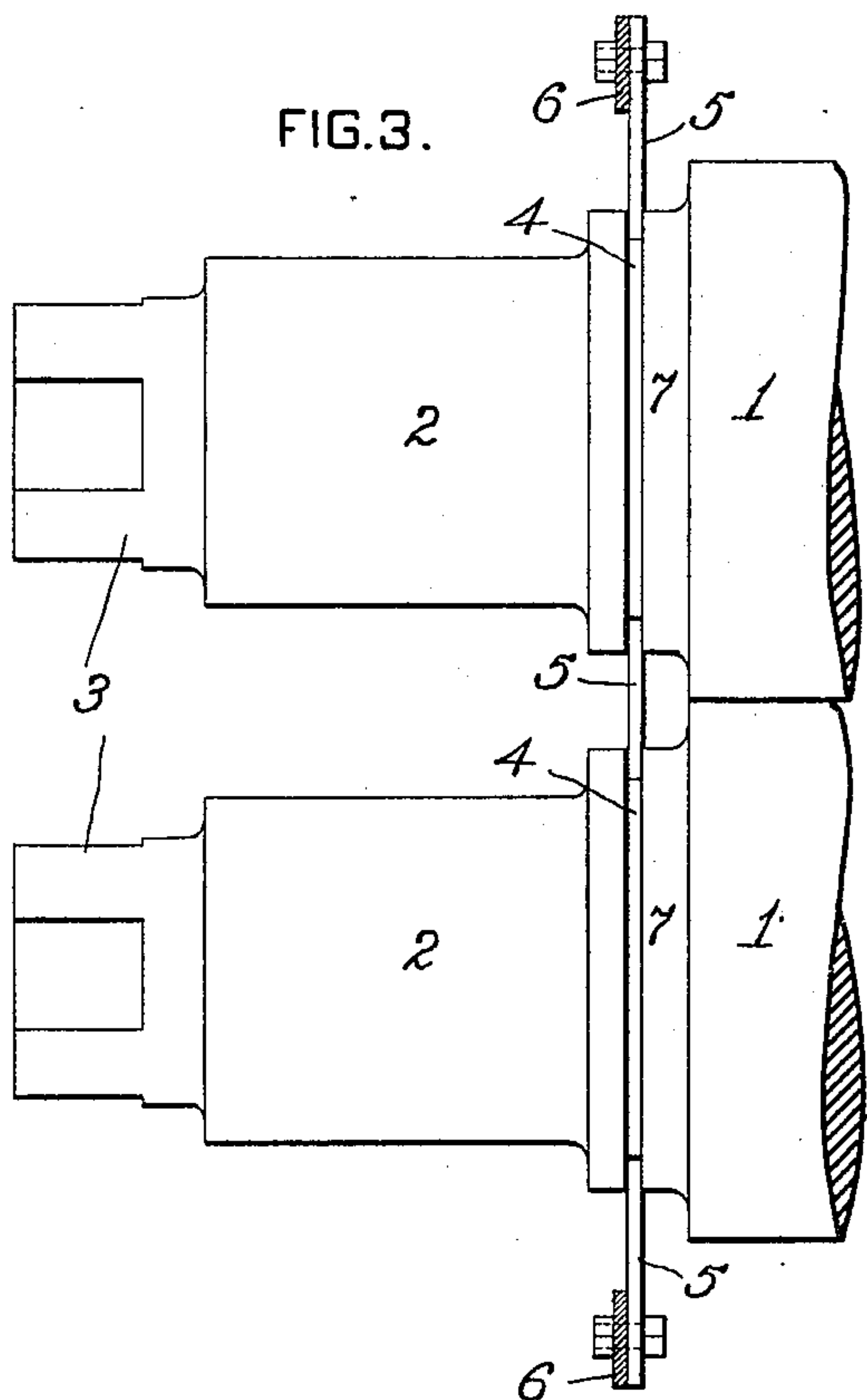
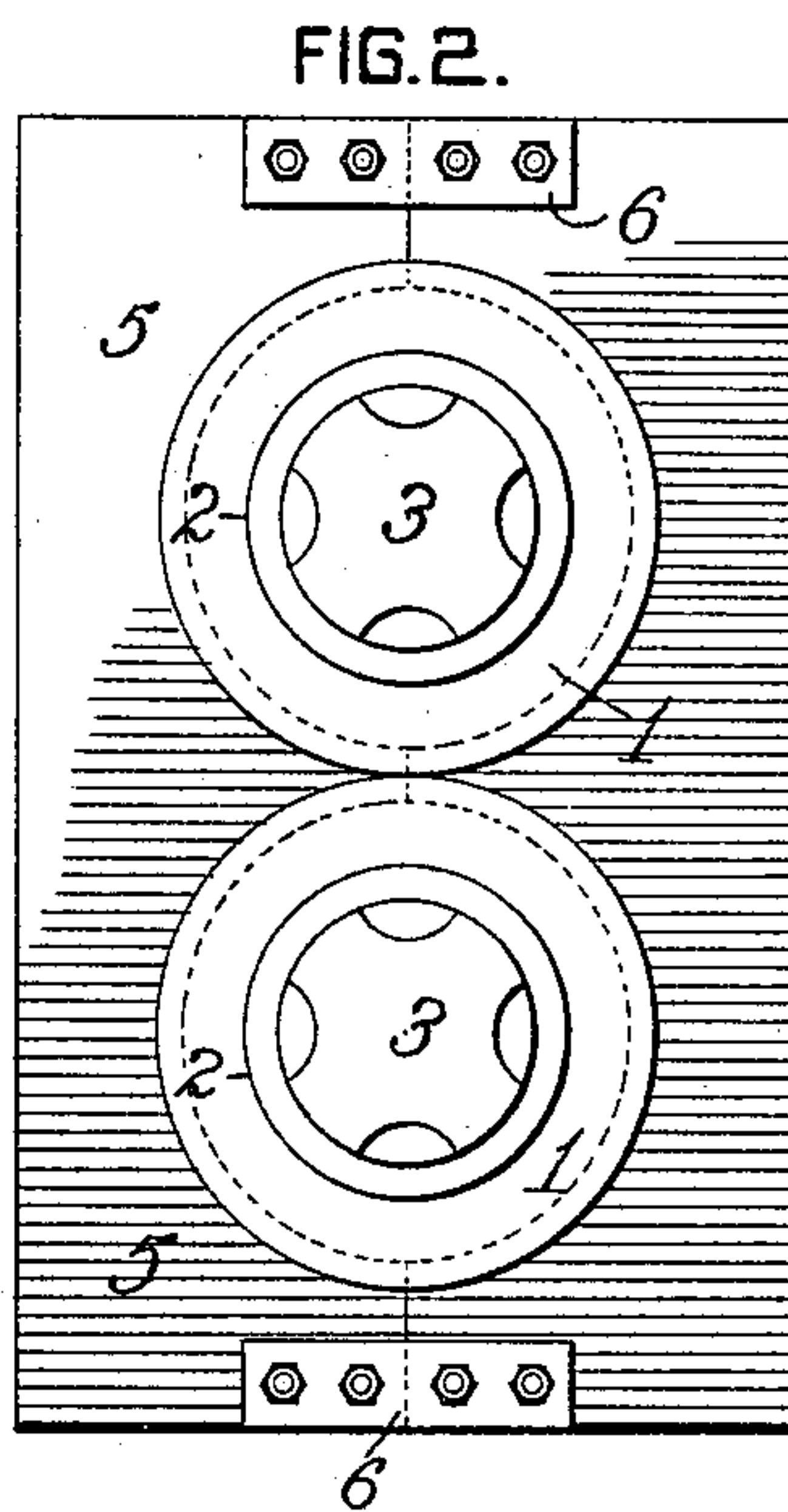
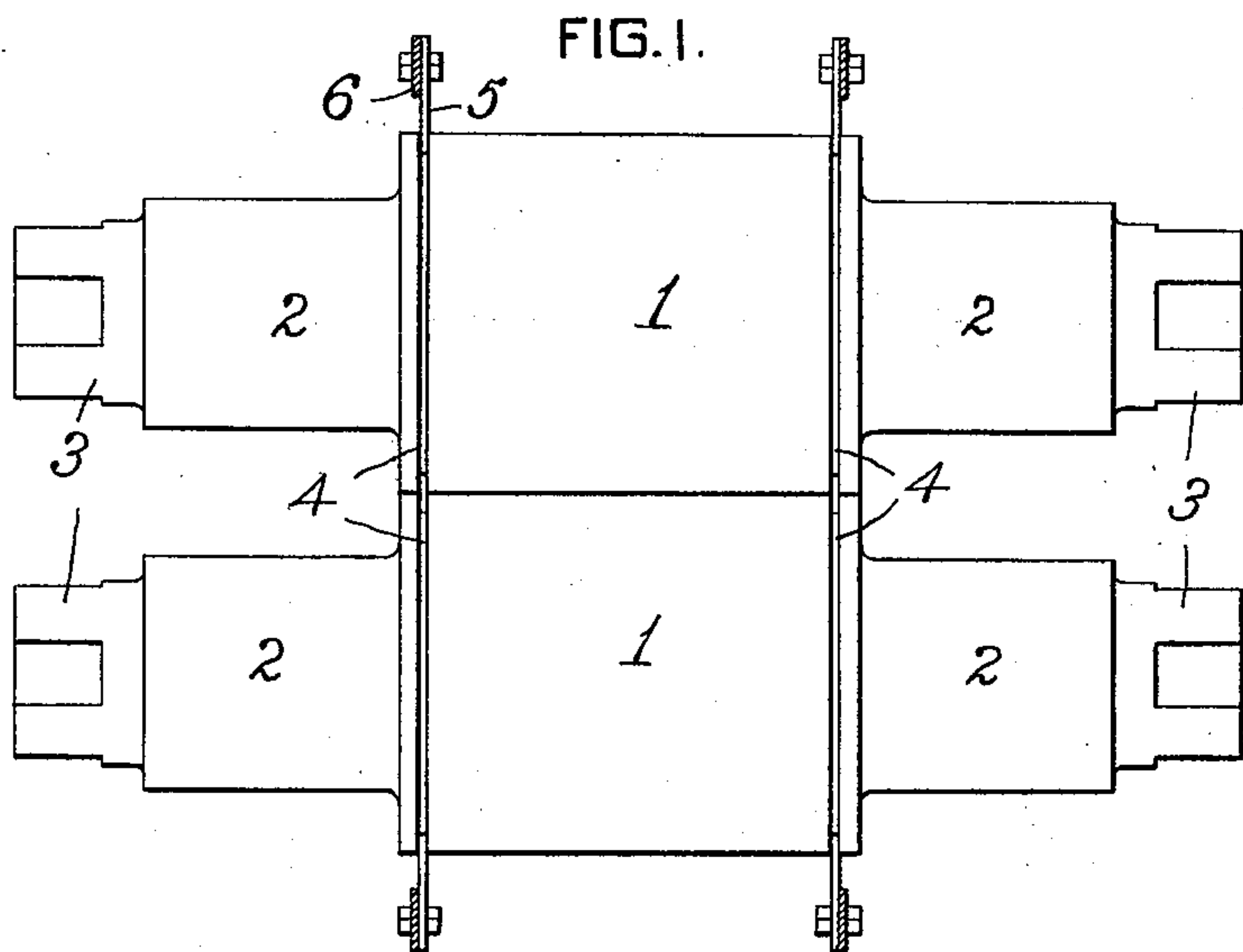


(No Model)

J. FAWELL.
ROLLS.

No. 583,738.

Patented June 1, 1897.



WITNESSES:

Chas. F. Miller.
J. E. Galt.

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Att'y.

UNITED STATES PATENT OFFICE.

JOSEPH FAWELL, OF PITTSBURG, PENNSYLVANIA.

ROLLS.

SPECIFICATION forming part of Letters Patent No. 583,738, dated June 1, 1897.

Application filed August 1, 1896. Serial No. 601,296. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH FAWELL, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Rolls, of which improvements the following is a specification.

The invention herein described relates to certain improvements in rolls, more especially such as are employed in the manufacture of tin-plate.

The invention has for its object the protection of the surface of the rolls from injury by grease or other lubricant applied to the journals thereof, and also the protection of the journals from scale, &c. As is well known in the art, if the rolls become greasy the sheets are spotted in the same manner and will not thereafter take a bright, smooth polished appearance; and, further, it has been found that when pieces of grease or other lubricant drop onto the rolls and are carried with the sheet between the rolls the sheet becomes crinkled up and the rolls are thereby scratched or grooved to such an extent as to require their re-turning.

The object of the present invention is to interpose a shield between the journals of the rolls and their reducing-surfaces which will prevent the grease from coming in contact with the latter; and in general terms the invention consists in the construction and combination substantially as hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a pair of sheet rolls having my improvement applied thereto. Fig. 2 is an end elevation of the same. Fig. 3 is an elevation of one end of a pair of rolls, showing a certain modification in my improvement; and Fig. 4 is an elevation of one end of a pair of blooming-rolls having my improvement applied thereto.

In the practice of my invention the rolls are constructed in the usual or any suitable manner, having the journals with necks.

In the body of the rolls, near the ends of the reducing or operative portions thereof, are cut grooves at right angles to the axis

of the rolls for the reception of the edges of the shield. This shield is made in two parts or sections vertically and provided with openings, so as to fit around the rolls, the edges of the openings in the shield projecting into the grooves. The two parts or sections of the shield are held together by clips, bolted to shield, as shown in Figs. 1 and 2.

When the grease is applied to the journals of the rolls, the centrifugal action will cause it to move out toward the periphery of the rolls and gradually to work in between the meeting faces thereof. As it encounters the shield it will be prevented by the part of the shield projecting in between, and there will be no tendency whatsoever for the grease to creep down into the groove, as such tendency will be entirely prevented by centrifugal action.

In lieu of forming the grooves in the body of the rolls, a shoulder may be turned at the ends of the bodies and the grooves cut therein, as shown in Fig. 3.

My improvement is also applicable to blooming-rolls to prevent scale and portions of the metal from being thrown as the billet or bloom is being reduced onto the necks of the rolls. In applying the shield to blooming-rolls the groove for the reception of the shield is formed in the shoulder or collar adjacent to the journals of the rolls, as shown in Fig. 4.

It is characteristic of my improvement that the groove and shield are so arranged that the centrifugal action of the rolls will prevent any tendency of the grease to creep down into the grooves and under the edges of the shield.

I am aware that it is old to close the inner ends of car-axle boxes by plates adapted to surround the axle inside the journals, so as to prevent the entrance of dust, &c., into the box. It is also old to place an annular gutter around the inner ends of journals of an ironing-roller for the purpose of preventing clothes from coming into contact with the greasy journals, said gutter being provided with a drainage-tube for conducting away any oil that may collect in the gutter; but so far as I am aware it is not old to form grooves in metal-reducing rolls inside of the

journals for the reception of the inner edges of a shield entirely surrounding each roll and projecting beyond their peripheries.

I claim herein as my invention—

- 5 The combination of a pair of metal-reducing rolls having grooves in their body portions adjacent to their journals, a shield at each end of the rolls entirely surrounding the same and projecting beyond their periph-

eries, the inner edges of the shields fitting into the grooves in the rolls, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOSEPH FAWELL.

Witnesses:

F. E. GAITHER,

DARWIN S. WOLCOTT.