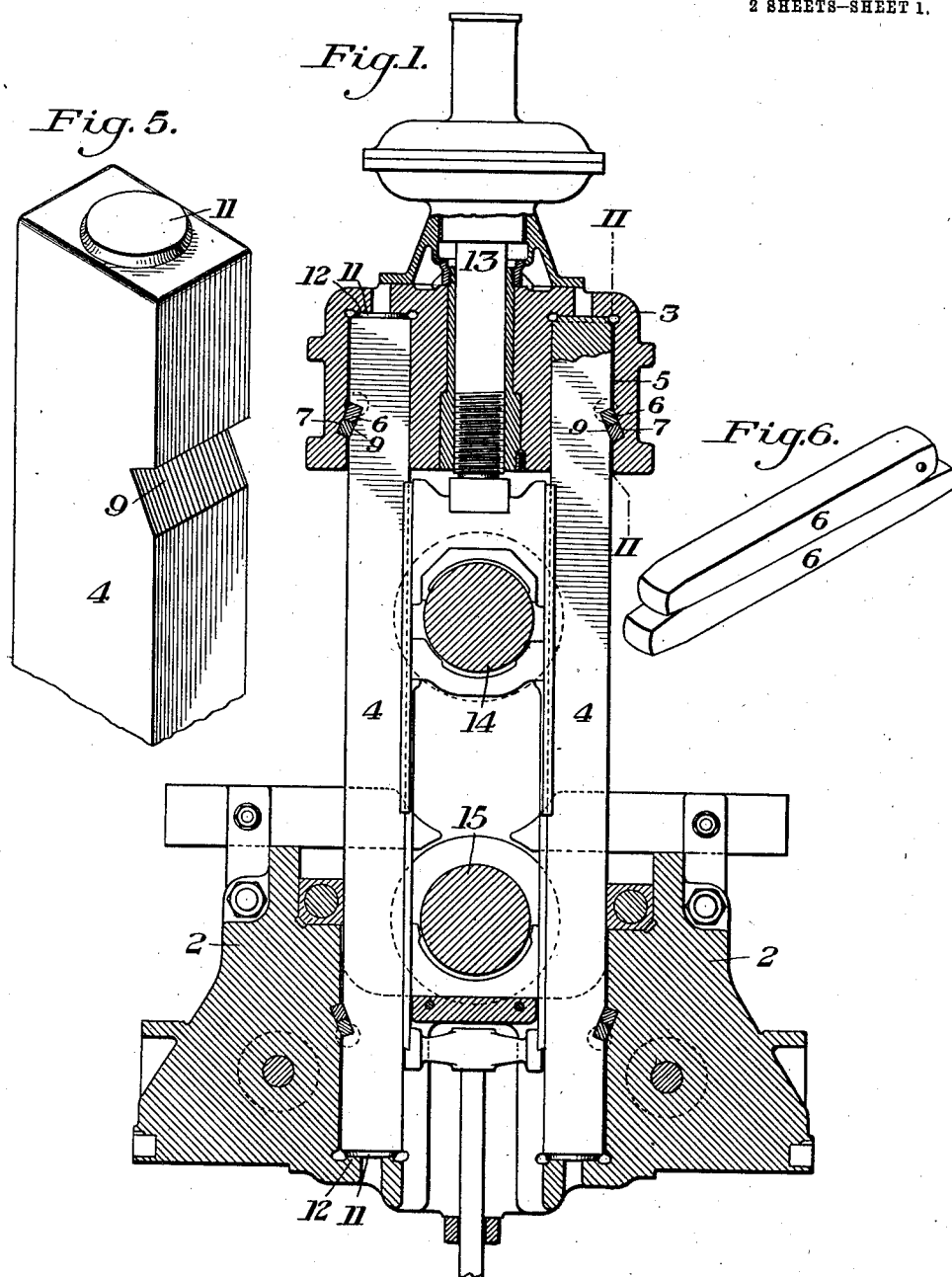


J. KENNEDY.
ROLLING MILL.
APPLICATION FILED MAR. 7, 1913.

1,094,218.

Patented Apr. 21, 1914.

2 SHEETS-SHEET 1.



WITNESSES

R. H. Balderson
G. B. Blumling

INVENTOR

Julian Kennedy
by R. H. Balderson, Dymus R. R. R. R. R.
Attys.

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Fig. 2.

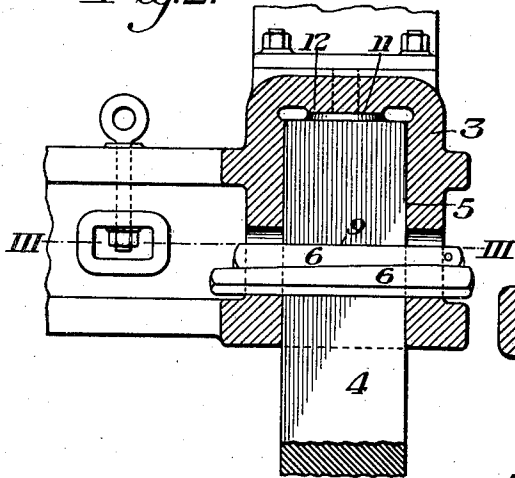


Fig. 4.

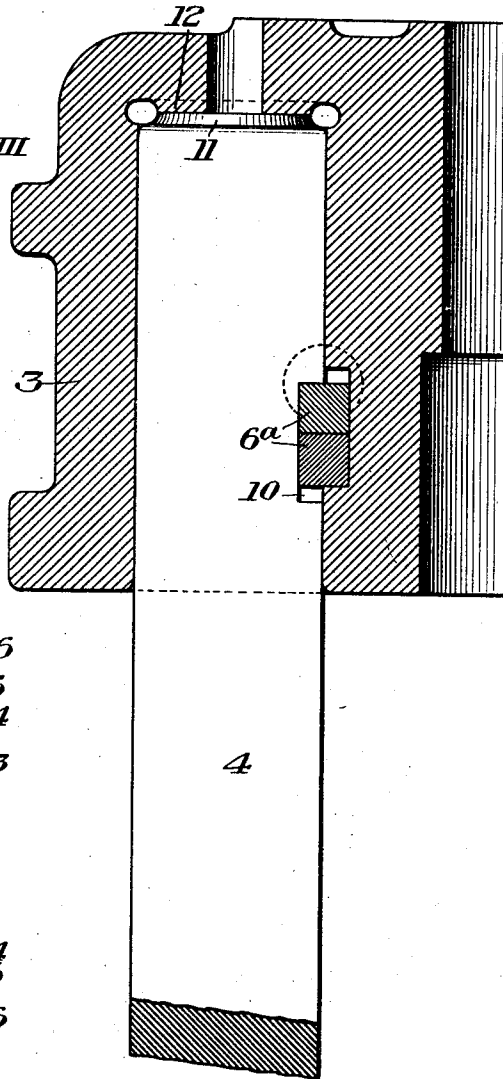
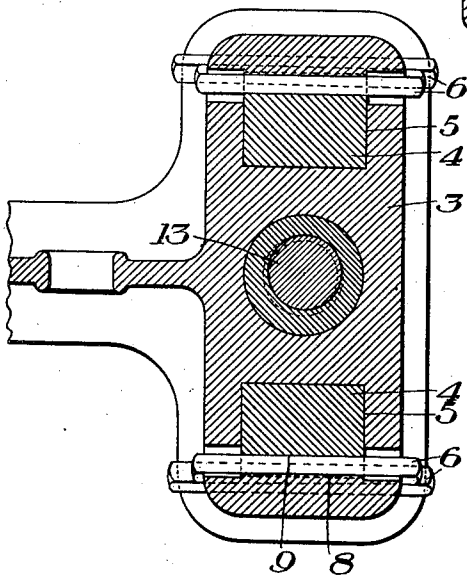


Fig. 3.



WITNESSES

R. A. Balderson
S. B. Blumling

INVENTOR

Julian Kennedy.
by Bohrer, Payne & Parmelee,
Attys.

UNITED STATES PATENT OFFICE.

JULIAN KENNEDY, OF PITTSBURGH, PENNSYLVANIA.

ROLLING-MILL.

1,094,218.

Specification of Letters Patent.

Patented Apr. 21, 1914.

Application filed March 7, 1913. Serial No. 752,807.

To all whom it may concern:

Be it known that I, JULIAN KENNEDY, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Rolling-Mills, 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—

Figure 1 is a vertical section of a portion of a rolling mill embodying my invention, the section being taken at right angles to the axes of the rolls; Fig. 2 is a section on the line II—II of Fig. 1; Fig. 3 is a section on the line III—III of Fig. 2; Fig. 4 is a sectional view illustrating a modification; Fig. 5 is a perspective view of a portion of one of the columns; and Fig. 6 is a detail perspective view of one of the divided keys.

My invention has relation to rolling mills, and particularly to the construction of the housings.

The object of my invention is to provide a novel construction and mode of securing the housing columns to the top and bottom housing members. Heretofore, it has been customary to form the columns with reduced cylindrical ends fitting in cylindrical sockets in the top and bottom housing members and being secured therein by means of nuts. This construction not only requires a considerable amount of machine work in finishing the fitting portions of the columns and housing sockets, but in practice, it has been found that the continued and severe vibrations to which the housing parts are subjected results in the crystallization of the metal of the columns adjacent to the shoulders thereof and consequent breakage.

My invention is designed to overcome these difficulties and to provide a construction in which the machine work is reduced to a minimum and the columns are firmly secured in the housing members.

In the accompanying drawings, in which I have illustrated my invention, the numeral 2 designates the lower or base member of a rolling mill housing, and 3 the top member. 4 designates the vertical columns or guides. These columns or guides are illustrated as of rectangular form in cross section and of the same dimensions throughout their length. They extend into sockets 5 of corresponding form in the housing members 2

and 3, and are secured therein by means of the divided wedges or keys 6. In the form of my invention shown in Figs. 1, 2, 3, and 5, these keys are oblique to the vertical axis of the columns, being seated partly in recesses 7, formed in the walls of the sockets 5 and partly in similar but reverse recesses 9 formed in the columns. Preferably, the recesses 7 and 9 are so shaped as to have a combined rectangular cross section, the wedging action of the keys being between the two parts thereof.

In the modification shown in Fig. 4, the keys 6^a instead of being seated obliquely, are driven through an opening formed by angular recesses 10 in the column and housing member, the opposite walls of these recesses being substantially parallel to the vertical axis of the column. I prefer, however, the arrangement first described, inasmuch as the oblique seating of the keys causes them, when driven, to exert an oblique lateral thrust on the columns without any shearing tendency.

Preferably, the ends of the columns are formed with the bearing and centering stops or projections 11, which seat against corresponding bearing surfaces 12, at the bottom of the sockets 5.

13 designates a part of the usual screw-down mechanism of the mill. 14 designates an upper mill roll, and 15 a lower mill roll. These parts, however, do not form part of my present invention.

The advantages of my invention will be apparent to those skilled in the art, since it provides a housing construction in which the parts may be readily assembled with a minimum amount of machine work, and in which the columns are not in any way materially weakened; and in which the parts are so secured that they will not jar loose when in use. A further advantage is that the keys have a continuous bearing throughout their length against both housing members and the columns.

I do not wish to limit myself to the particular detail construction and arrangement of the parts which I have herein shown and described, as for instance, the cross sectional form of the columns may be changed, and variations may be made in the form and manner of seating the keys, as well as other changes and variations within the scope of the appended claims.

I claim:

1. In a rolling mill, a housing member having a column socket therein, a column extending into said socket with its end seated
5 against the base thereof, and wedging key means for securing the column, said key means being driven between a wall of the socket and a side of the column and acting to force the end of the column against the base
10 of the socket, substantially as described.

2. A rolling mill having a housing member formed with an angular socket therein, a column member having an angular cross section and fitting within the socket with its
15 end seated against the base thereof, and a wedging key member driven between a wall of the socket and the side bearing of the column and acting to force the end of the column against the base of the socket, sub-
20 stantially as described.

3. A rolling mill having a housing member formed with a socket therein, a column member extending into said socket with its end seated against the base thereof, said col-
25 umn member and socket having opposing key seats, and a driven wedging key in said seats, said seats having bearing walls which are oblique to the vertical axis of the column and acting to force the end of the column

against the base of the socket, substantially 30 as described.

4. A rolling mill having a housing member formed with a vertical socket therein, a column member extending into said socket with its end seated against the base thereof, 35 said column member and socket having opposing key seats with bearing walls which are oblique to the vertical axis of the column, and a divided wedging key driven in said seats, substantially as described. 40

5. A rolling mill having a housing member formed with a vertical socket therein, a column member extending into said socket, said column member and socket having op-
45 posing key seats with bearing walls which are oblique to the vertical axis of the column, said column seating on the bottom of the socket, and wedging means driven in said seats arranged to force the end of the column against the bottom of the socket; sub- 50 stantially as described.

In testimony whereof, I have hereunto set my hand.

JULIAN KENNEDY.

Witnesses:

GEO. H. PARMELEE,
A. F. TIBBETTS.