

Public (1896) Department.

ORDINARY MS.

G.O., No. 20

Dated 7th Jan. 1896.

[Despatch Abstract.]

INVENTIONS.

Gazetting specifications of certain---

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

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FIG. 1.

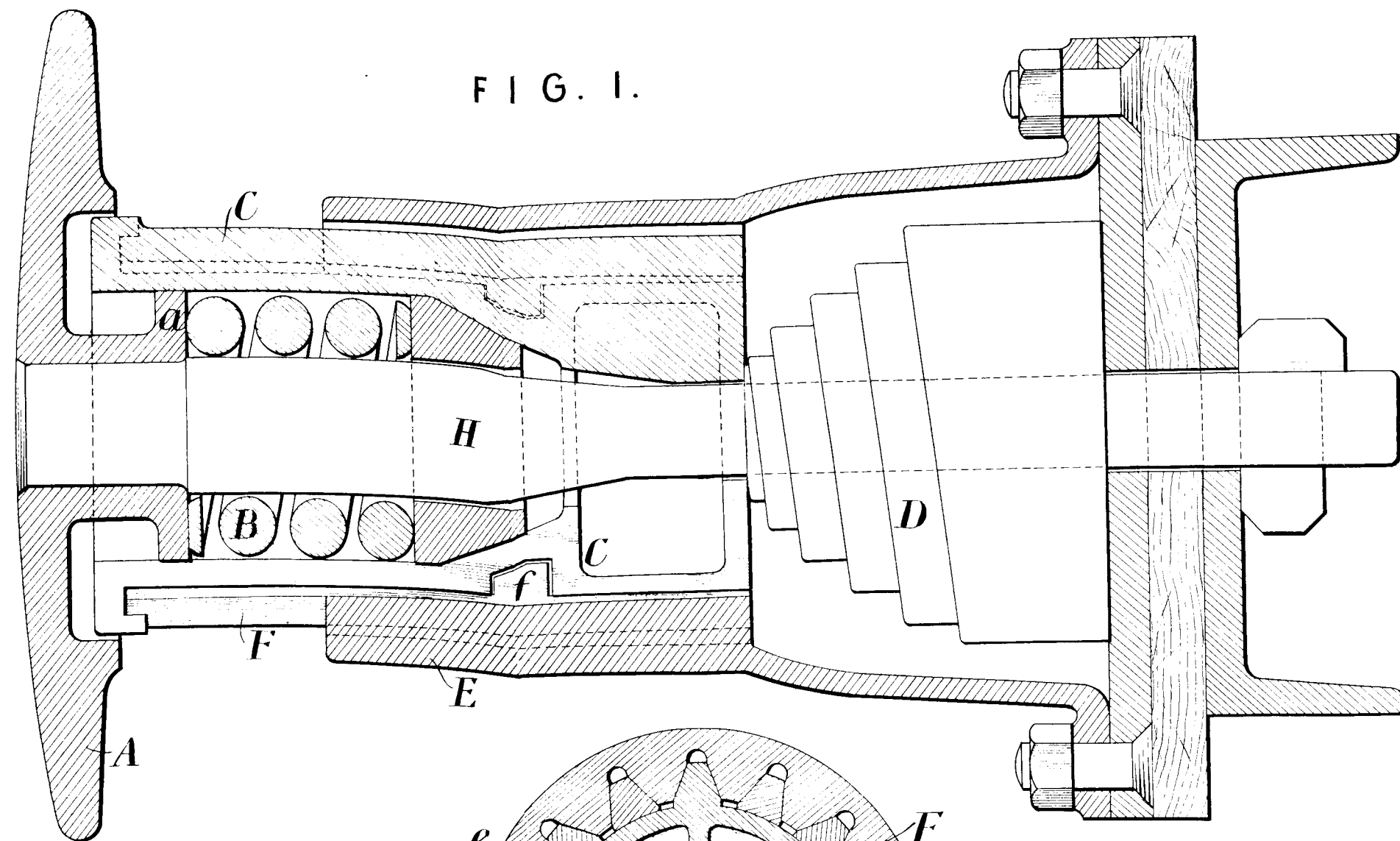


FIG. 2.

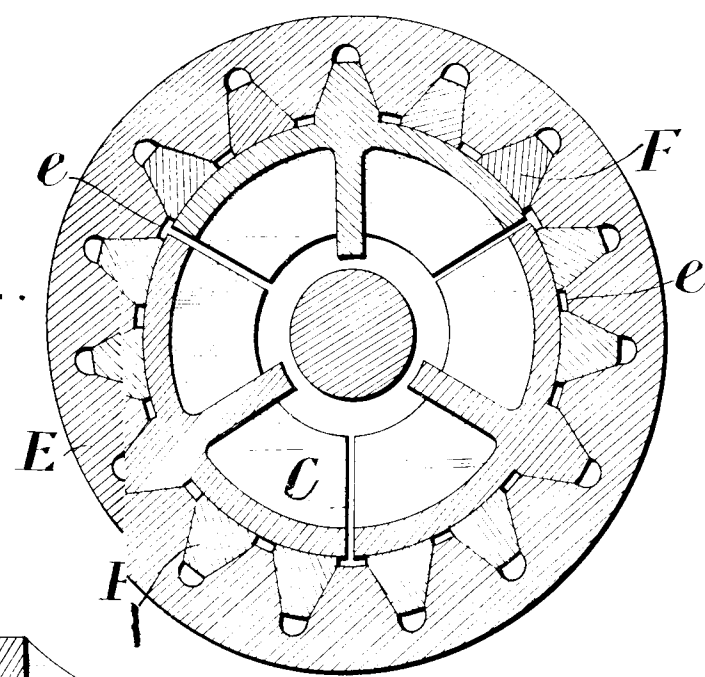


FIG. 3.

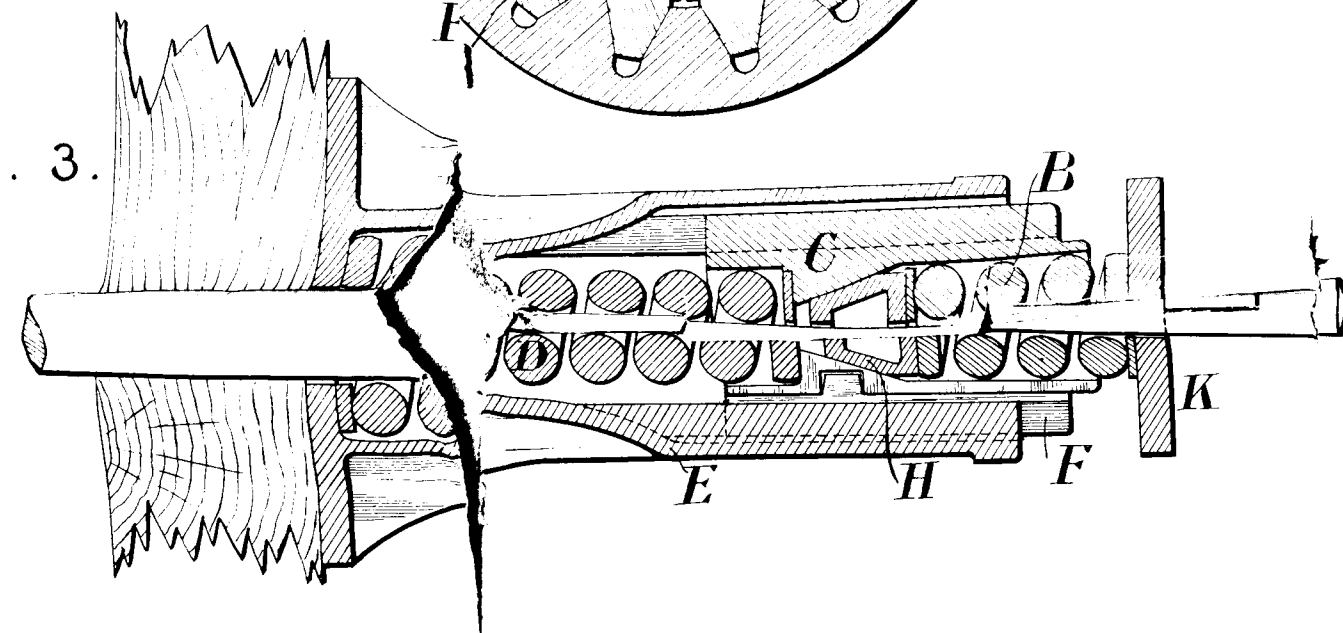


FIG. 4.

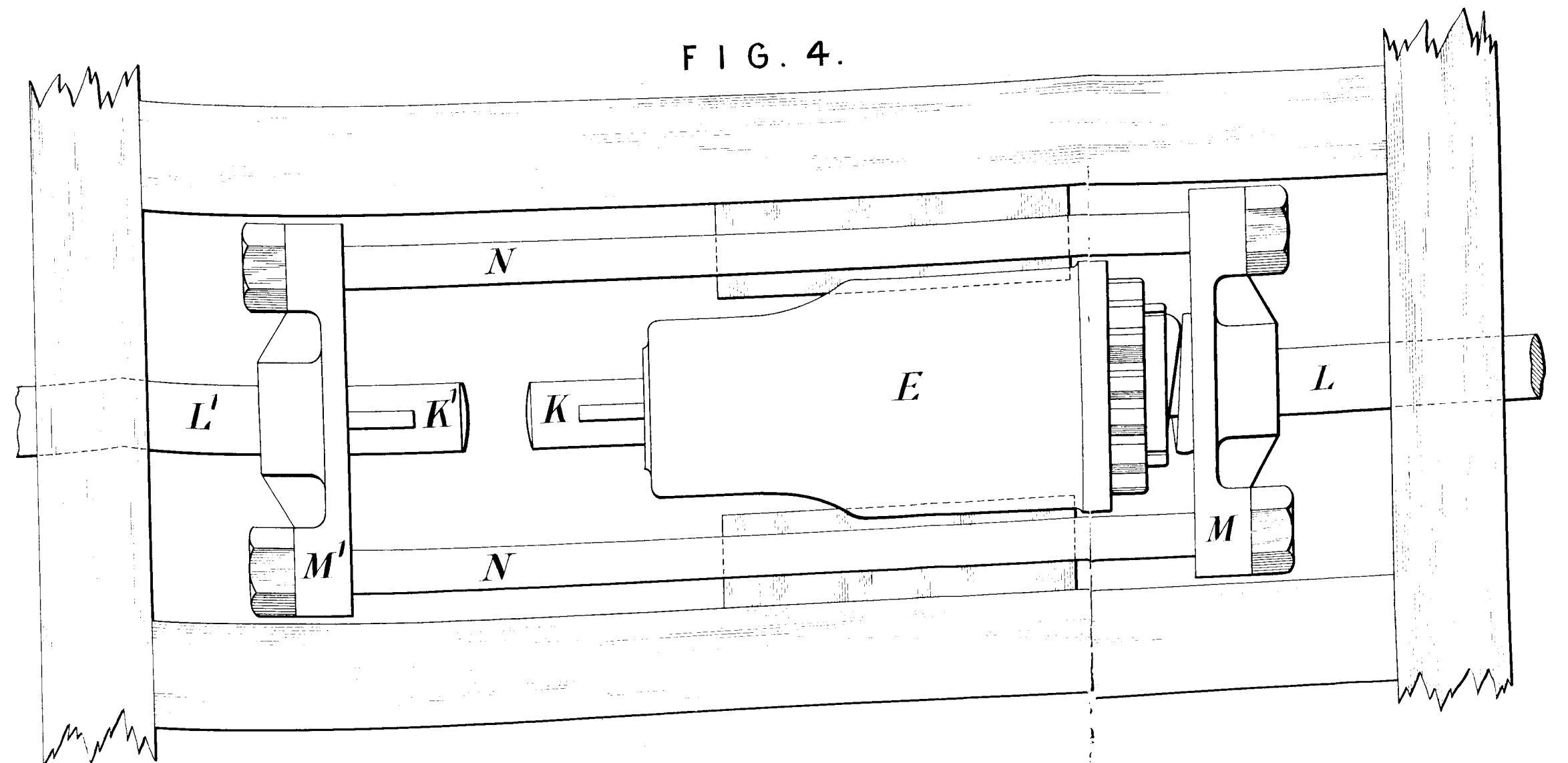
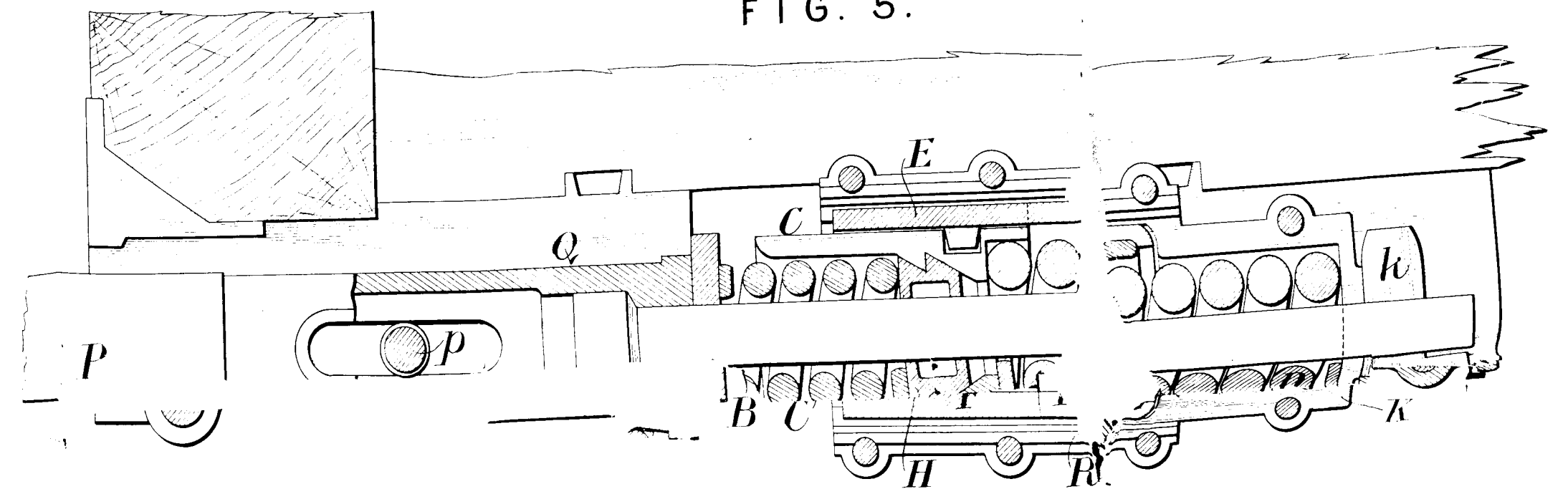
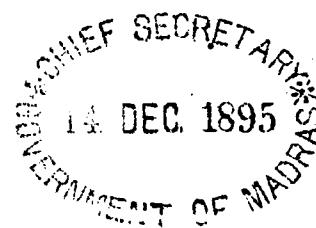


FIG. 5.





To all whom it may concern.

Be it Known, that I, George Westinghouse Junior of Pittsburgh, Pennsylvania, in the United States of America, Engineer am in possession of an invention for "Improvements in buffers and draw bars" and I the said George Westinghouse Junior, do hereby declare the nature of the said invention and in what manner the same is to be performed, to be particularly described and ascertained, in and by the following statement thereof, that is to say:—

This invention relates to the construction of buffer and draw bar apparatus in combination with frictional appliances so arranged as to check and deaden the movements and relieve the strain upon the springs.

Fig: 1 of the accompanying drawings is a longitudinal section and Fig: 2 is a transverse section of buffer apparatus according to this invention. Fig: 3 is a longitudinal section showing the apparatus applied to a draw bar. Fig: 4 is a plan showing it applied to draw bars extending in both directions. Fig: 5 is a longitudinal section of combined draw bar and

buffer apparatus.

Referring first to Figs 1 and 2, the buffer block A has a boss *a* which bears against a front spring B, and slides in a casing C. This casing abuts at its rear against a back spring D, which may be of volute form as shown or of other suitable form. The casing C can slide freely within an outer casing E which is fixed to the carriage frame. The interior of the casing E presents a number of ridges *e* of triangular section with intervening hollows occupied by triangular bars F ^(except three which are attached to the shell C) each of which has a projection *f* entering a corresponding recess in the cylindrical shell C which is made in three parts, and encloses in its front portion a conical boss H against which abuts the front spring B. When the buffer A is forced inwards, the spring B is partly compressed and urges back the conical boss H which expands the shell C forcing the triangular bars F as wedges into the hollows between the ridges *e*, thus causing great friction so that the casing C is made to move backwards against the back spring D. Thus by the sliding of shell C and its bars F under the frictional resistance and the resulting movement of the casing C shocks on the buffer are transmitted to the carriage frame not as blows, but simply as pressures.

Obviously buffers of similar construction may be employed as stops at terminal stations, sidings and dead ends. For such purposes they should have considerable length of stroke and very strong springs or equivalent checks, which aided by the friction resistance of the triangular bars would serve to

stop rolling stock without serious shocks.

As shown in Fig. 3 the washer K on the draw bar I, bears against the spring B which abuts against the conical boss H; the shell C has a shoulder bearing against one end of the spring D, the other end of which abuts against the end of the casing E. This casing is provided with the triangular internal ridges and with the intermediate hollows to receive the triangular bars F. When the draw bar is subjected to a sudden strain the spring B is partly compressed and pushes forward the conical boss H which expands the shell C forcing the bars F into the hollows between the ridges of the casing E. As the boss H shell C and bars F are thus made to advance compressing the spring D the movement is retarded and deadened by the friction of the bars F travelling in the furrows of E into which they are wedged by the action of the conical boss H.

When the draw bar has to extend in both directions the arrangement shown in Fig. 4 is adopted. Here the casing E containing the springs B, D the conical boss H and the triangular bars F as in Fig. 3 is situated between a key K on the draw bar I and a cross-head M which can slide on the draw bar.

This cross-head is connected by a pair of bolts N to another cross-head M' fitted beyond a key K' on the other draw bar I'. It will be seen that whether the one draw bar I, or the other I' be subjected to a sudden strain, the apparatus in the casing E serves to deaden the shock.

In the arrangement shown in Fig. 5 which is

applicable particularly, where a central buffer is used, the rod P serves both as buffer rod and as draw bar - Its stroke is limited by a cross pin p passing through a slot of P - A shoulder of a casing Q which encloses part of P bears against the spring B, and a key k passes through the rear part of P behind a casing R enclosing the spring D - The parts corresponding to those already described are, H the conical boss, C the shell which is expanded either by the back movement of H when P acts as a buffer rod or by the forward movement of C when P acts as a draw bar; E are the triangular bars wedged into and sliding between the internal ridges of the casing E enclosed by the casing R, made in halves bolted together and fixed to the framing of the carriage - Thus the shock, whether from the sudden push or pull of P is deadened by being transmitted to the framing through the springs and the triangular bars sliding with frictional resistance within the casing which is attached to the framing.

Having thus described the nature of this invention and in what manner the same is to be performed I claim: -

1. In combination with a buffer or

draw bar and the forced casing through which it slides, a conical boss free to slide on the bar between two springs, one of which abuts against a collar on the bar and the other against a shoulder in the casing, around the conical boss a divided shell carrying a number of bars of triangular section arranged around the shell like a star, and fitted to slide in triangular recesses of the casing, so that, when by the movement of the bar the conical boss is also moved, the shell is expanded and its triangular bars are wedged in the recesses of the casing producing as they move longitudinally such friction as to check and deaden the movements of the bar substantially as described.

2. The buffer apparatus substantially as described with reference to Figs 1 and 2.
3. Draw bar apparatus substantially as described with reference to Fig: 3.
4. Double draw bar apparatus substantially as described with reference to Fig: 4.
5. Combined buffer and draw bar

apparatus substantially as described
with reference to Fig. 5.

(sd) George Westinghouse Jr.

Witness

(sgd) W.D. Uptegraff
Clerk

820 Penn Ave, Pittsburgh, Pa, U.S.A

CURRENT No. 4231. ^{Public}

No. 3150 P.

Dated. 6.12 }
Recd. 14.12 } 1895.
Regd. 17.12 }

Encl. 2.

The accompanying copy of a ^{Specification}~~Design~~, of which the original (bearing register number 247 of 1895) was ^{filed}~~registered~~ on the 14th of November 1895 in the Office of the Secretary to the Government of India in the Department of Revenue and Agriculture, is forwarded to the ^{Government}~~Chief Commissioner~~ of Madras in conformity with the provisions of Section 11 of the Inventions and Designs Act, 1888.

M. J. Singh
offg. Secretary under the Inventions
and Designs Act.

CM

DEPARTMENT OF REVENUE & AGRICULTURE,

(PATENTS),

Calcutta, the 6th December 1895.

[Pub.]
[11.]

100-14-0-03.

Specification
~~DESIGN.~~

C. N° 4231

PUBLIC DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following endorsement of the Assistant
Secretary to the Government of India, Revenue and Agricultural Department,
dated 6th December 1895, No. 3158 P.

ORDER—*N^o 20*
dy 7 Jan 96

THE following Notification will be published in the *Gazette* once.

specification of an invention has been filed
The following ~~design~~ *has been registered* in accordance with Section ~~61~~ *11* of
Act V of 1888 (the "Inventions and Designs Act"), and is open to inspection
at the office of the Chief Secretary to Government, Fort St. George, on the payment
of a fee of one rupee:—

"Improvements in buffers and draw bars"
(By George Westinghouse junior of Pittsburgh,
Pennsylvania, in the United States of America,
Engineer.)

6/11
10-6-5.
6/11.

Specification.

Public

7-1-6

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189.

AS AGAIN G.O. No. _____
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