

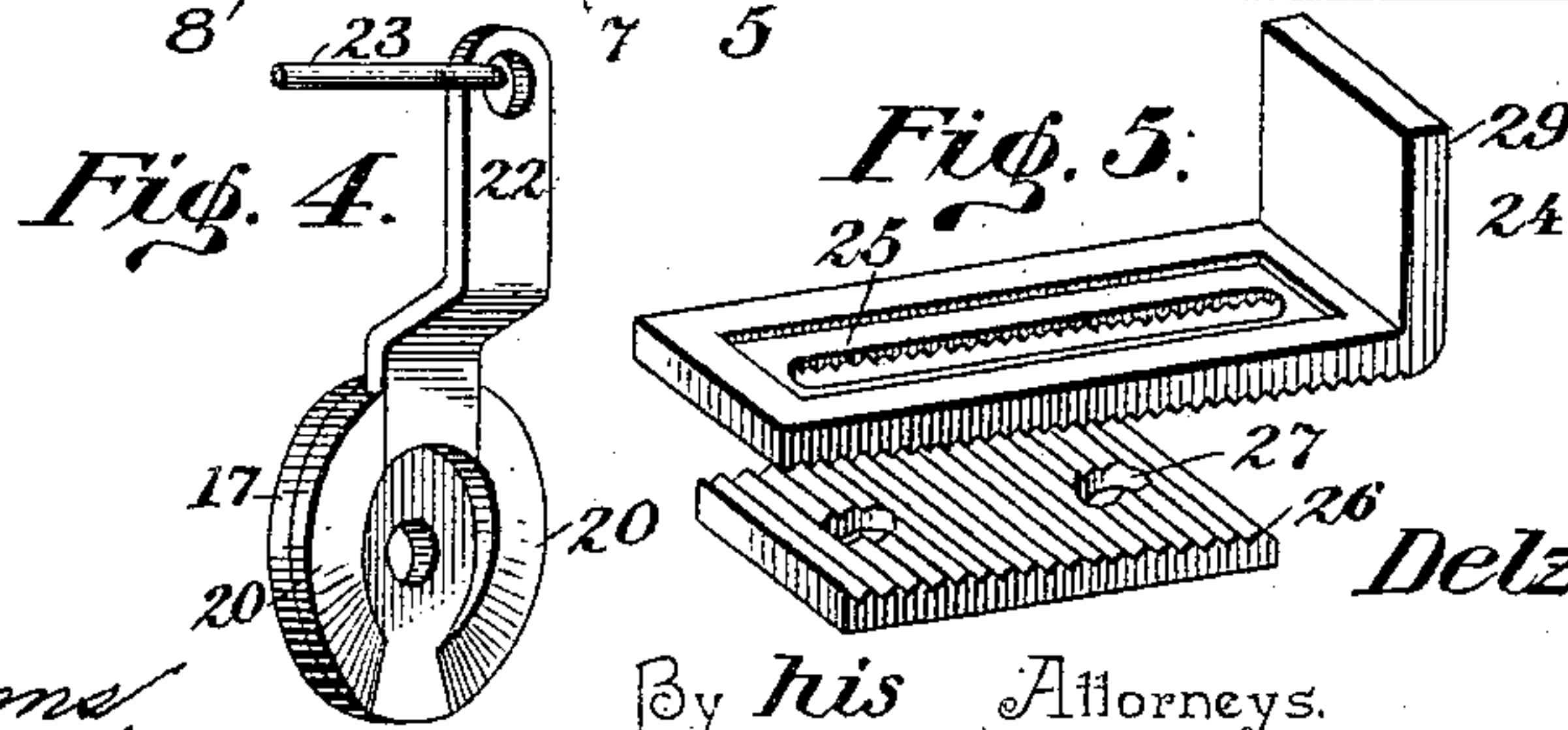
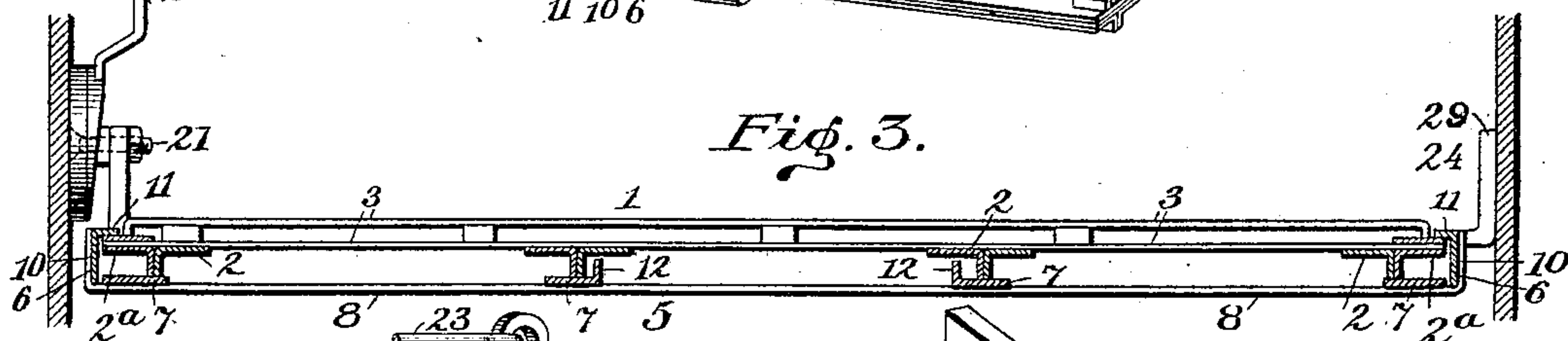
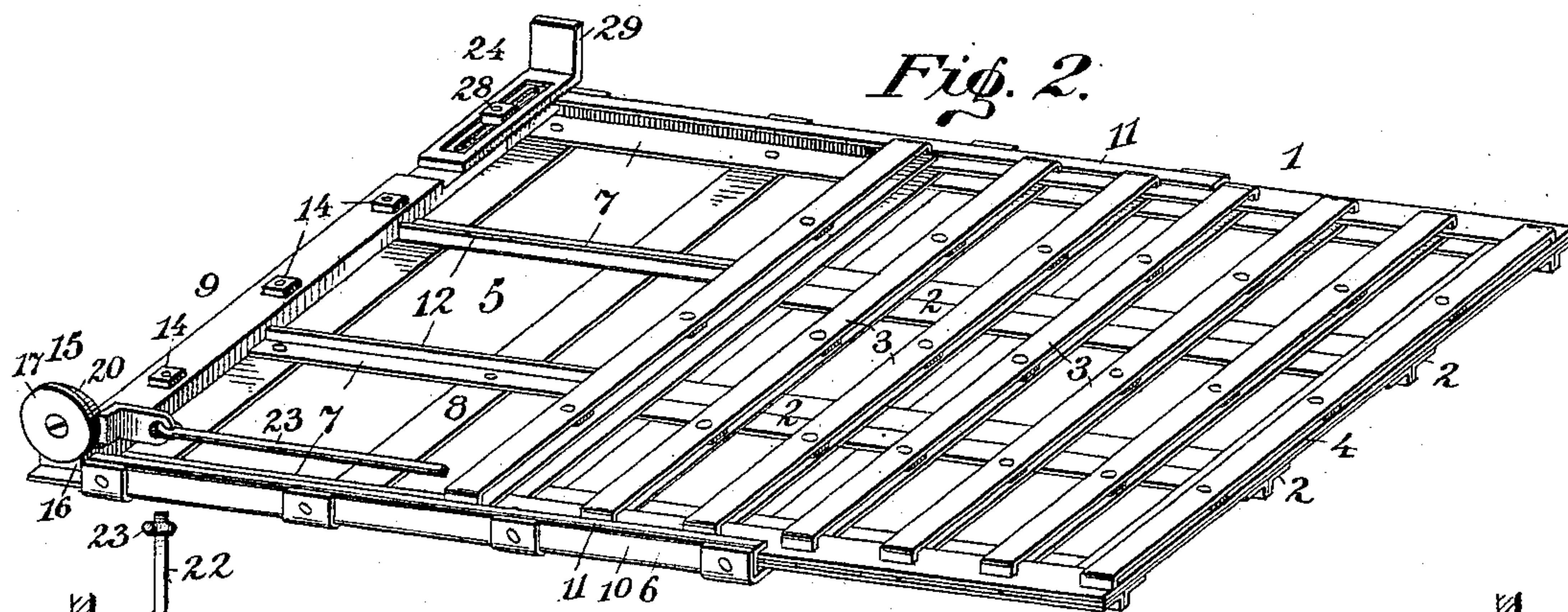
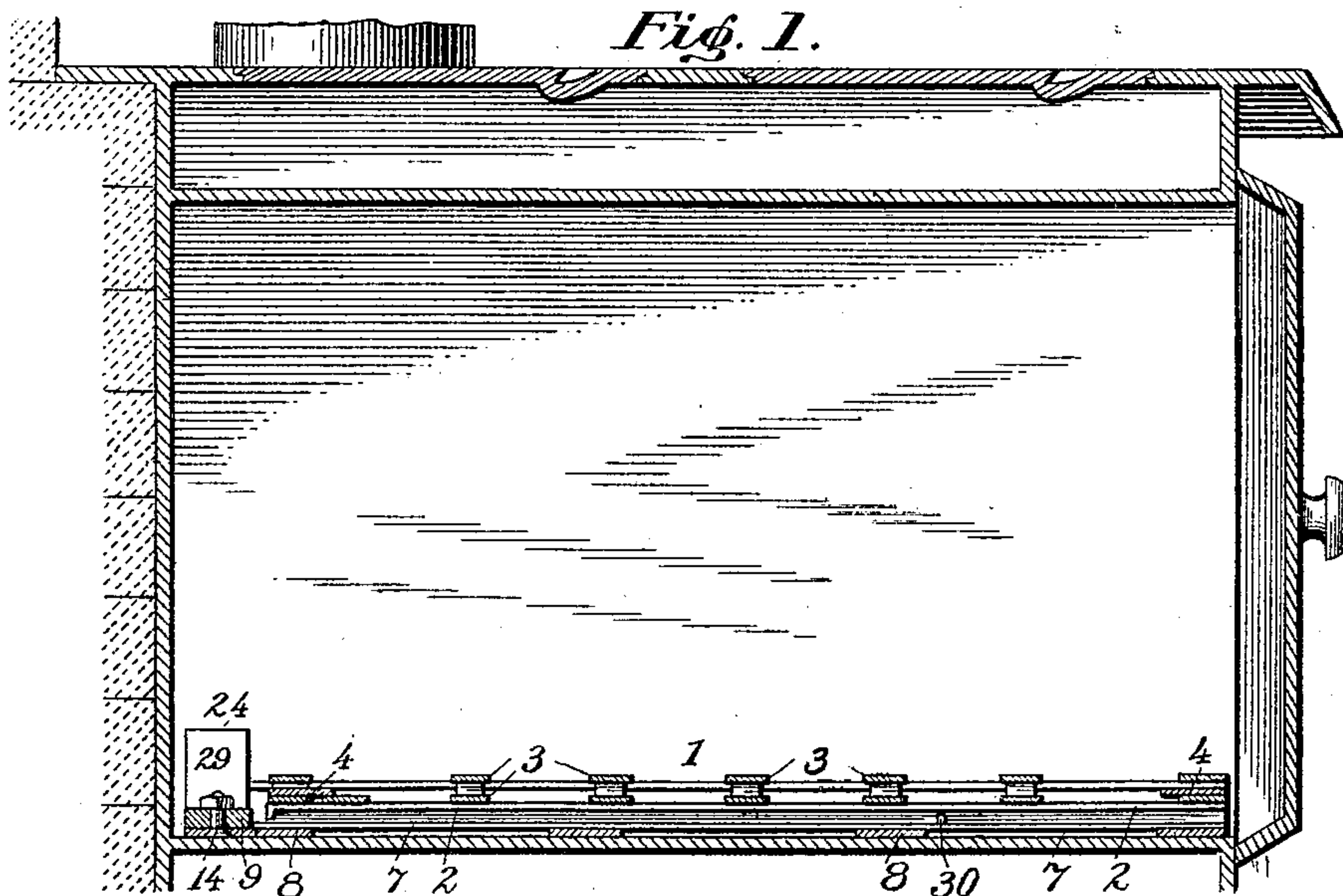
No. 620,927.

Patented Mar. 14, 1899.

D. G. HOBBY.
OVEN GRATE.

(Application filed May 5, 1898.)

(No Model.)



Witnesses
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By his Attorneys.

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UNITED STATES PATENT OFFICE.

DELZON G. HOBBY, OF ALBION, NEW YORK, ASSIGNOR OF ONE-HALF TO
FRED L. FERRIS, OF SAME PLACE.

OVEN-GRATE.

SPECIFICATION forming part of Letters Patent No. 620,927, dated March 14, 1899.

Application filed May 5, 1898. Serial No. 679,793. (No model.)

To all whom it may concern:

Be it known that I, DELZON G. HOBBY, a citizen of the United States, residing at Albion, in the county of Orleans and State of New York, have invented a new and useful Oven-Grate, of which the following is a specification.

My invention relates to improvements in grates for domestic ovens; and one object that I have in view is to provide means by which the grate proper may be readily withdrawn from the oven for the purpose of inspecting the food thereon without subjecting the operator to inconvenient exposure to the heat from the oven.

A further object of the invention is to provide means by which the grate-supporting frame may be securely clamped in the oven of any ordinary stove or cooking-range without alteration of the oven and easily released from the oven and withdrawn therefrom for the purpose of cleaning the oven.

A further object of the invention is to provide supporting and clamping devices which are adjustable and reversible to support the grate in ovens of different widths.

A further object of the invention is to simplify the construction of the grate and its supporting devices, with a view to obtaining strength, lightness, and durability and to effect economy in the manufacture of the structure.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a sectional elevation of part of an ordinary cooking-stove with my improved grate applied thereto. Fig. 2 is a perspective view of the grate removed from the oven and partially withdrawn from its supporting-frame. Fig. 3 is a cross-sectional elevation on a plane at right angles to the plane of the section through the grate shown by Fig. 1, and Fig. 4 is a detail perspective view of the

clamp and its bracket. Fig. 5 is a similar view of the adjustable hanger.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

1 designates the grate proper, which consists of a series of longitudinal rails 2, a series of cross-bars 3, and the end bars 4, all of which are rigidly united together in any suitable way to provide a light and substantial construction. The longitudinal rails 2 are T-shaped in cross-section, and the longitudinal rails at the sides of the grate have their head-flanges 2^a extended beyond the ends of the cross-bars 3, as clearly shown by the drawings, for the purpose of making the rails at the sides of the grate fit properly in the guide-bars of the supporting-frame 5. This supporting-frame consists of the side bars 6, a series of longitudinal rails 7, the cross-bars 8 at the ends of the frame 5, and a reinforcing-bar 9. The rails and cross-bars 7 and 8, respectively, are arranged at suitable intervals to cross one another and are joined rigidly together by rivets, and the side bars 6 are rigidly joined to the cross-bars and peculiarly constructed to serve as guides for the grate 1, which is slidably fitted to the supporting-frame 5 for the purpose of easy and quick withdrawal therefrom or insertion into the same. The side rails 6 of the supporting-frame are formed with vertical flanges 10 and overhanging flanges 11, and this construction of the rail 6 provides guideways or tracks for the T-shaped side bars 2 of the grate, whereby the grate is slidably fitted to the rails 6 of the supporting-frame to slide therein and to be held by said rails 6 against edgewise displacement on the supporting-frame.

From the foregoing description, taken in connection with the drawings, it will be seen that I have provided a skeleton construction of the supporting-frame which permits the heat to readily pass through the frame and circulate around the cooking vessels supported by the grate, and the grate is also of a skeleton construction to enable the heat to circulate freely through the same. The employment of the T-shaped rails 2 in the construction of the grate adds materially to the strength and stability thereof, and the vertical webs of these T-

shaped rails are adapted to slidably fit on the longitudinal rails 7 of the grate-frame 5, whereby the grate is supported at points intermediate of its width by the rails of the frame 5, and said grate is slidably fitted on said rails 7 and in the flanged guide-rail 6 of said frame 5. The longitudinal rails 7 of the grate 5 are provided with the upturned flanges 12, against which are adapted to ride the webs of the T-shaped rails 2 of the grate 1, and the flanged rails of the grate and its supporting-frame also assist in holding the grate against lateral or edge-wise displacement in adjusting the grate to or removing it from the supporting-frame 5. The grate and its supporting-frame are each made of metal, preferably of steel strips of the proper form, and the parts of the grate and the frame are united rigidly together to provide simple, strong, and durable structures.

The end of the frame 5 to which the reinforcing-bar 9 is attached is adapted to form the inner end of the grate-frame when the latter is adjusted and secured in the oven, and to this end of the frame is applied the means for clamping the frame within the oven. As the clamping and suspending means impose considerable strain on the inner end of the frame when the weight or load is placed on the grate, it is desirable to strengthen and reinforce the inner end of said frame, and these conditions are met in my improvement by the employment of the strengthening-bar, which is applied laterally to the top side of the inner end bar of the frame. This strengthening-bar is shorter than the width of the grate, so that its ends terminate within the side rails 6 of the frame 5, and said bar is secured rigidly to the end bar of the frame by the vertical bolts 14, whereby the bar is removably secured to the frame, so that it may be reversed end for end thereon.

To suspend the inner end of the grate within the oven, I employ a clamping device 15 at one corner of the frame 5 and a hanger 24 at the opposite corner and inner end of the frame 5, said clamp and hanger being detachably secured to the end bar of the frame 5, to which the reinforcing-bar 9 is bolted for the purpose of permitting the clamp and hanger to be removed and to be interchanged, thus adapting the frame 5 to be readily secured in ovens of different constructions.

The clamping device 15 consists of an angular plate or bracket 16 and a cam-locking disk 17. The bracket 16 is made in a single piece of metal of the angular form shown by Fig. 4, and the foot 18 of said bracket is removably secured to one corner of the frame 5 by a vertical bolt or bolts 19. The cam-locking disk 17 is made in a single piece of metal, preferably of the disk shape shown by the drawings, and on one face of this disk are provided the cams 20, which are adapted to bind against the vertical stem of the angular bracket 16. The cam-formed disk has a central perforation, through which passes a bolt

21, that is secured to the angular plate or bracket, and this bolt serves to pivotally attach the locking-disk to the bracket. The locking-disk is furthermore provided with an offstanding lever-arm 22, which is rigid or integral with said disk, and to the extremity of this lever-arm is connected a rod 23 or its equivalent, by which the operator is enabled to turn the locking-disk in position to clamp the frame 5 without thrusting his hand and arm through the oven in order to gain access to the locking device for the purpose of fastening the grate-frame 5 in the oven or removing said frame from the oven.

The hanger 24 is of angular form, (shown by Fig. 5,) and in the horizontal arm of said hanger is provided a longitudinal slot 25. The lower face of the long horizontal arm of this hanger is serrated to enable it to interlock with a similar face on a plate 26, which is removably fastened, as at 27, to the end bar of the frame 5 at one corner thereof. Through the slotted serrated arm of the hanger and through an opening in the serrated plate 26, which is fixed to the frame 5, is passed a clamping-bolt 28, and the hanger is thus adjustably attached to the frame 5, so that it may be projected more or less beyond the edge of said frame. The vertical arm 29 of the hanger is fitted against one side of the oven, and said hanger coacts within the cam-locking device, which is adapted to impinge against the opposite side of the oven to clamp the grate-frame in place.

In applying my grate to the oven of an ordinary range or cook-stove the frame 5 is adjusted in the oven close to or upon the bottom thereof, and the hanger 24 is adjusted to have its vertical arm bear against one side or wall of the oven, and the cam-locking disk 16 lies adjacent to and in contact with the opposite wall of the oven to which the hanger is fastened. The bolt 28 is inserted through the slot in the horizontal arm of the hanger, so as to draw the serrated plate 26 into firm engagement with the serrated arm of said hanger. The rod 23 is now adjusted to turn the cam-locking disk on its pivotal bolt and cause the cam-faces thereof to ride against the angular bracket, whereby the locking-disk is forced into tight engagement with the side of the oven. The supporting-frame 5 is thus firmly attached and clamped to opposite walls of the oven at the inner side thereof, and the outer end of the frame adjacent to the oven-door may be supported in a slightly-raised position by suitable ledges, or the grate-frame may rest on the bottom of the oven. The grate-frame may be moved horizontally upon the supporting-frame 5, and the flanged rails of said grate are adapted to slide on the corresponding rails of the frame and in the guide-rail 6 at the side thereof.

It is evident that the hanger 24 may be extended more or less beyond one side of the frame for the purpose of attaching the frame to ovens of different widths, and the security

of the attachment of the frame 5 to the oven is increased by the adjustment of the cam-locking disk. The locking device and the hanger are removably fitted to the inner end bar of the supporting-frame, and the reinforcing-bar 9 is detachably secured to said frame, thus permitting of the ready reversal of the position of the reinforcing-bar and enabling the operator to change or shift the positions of the clamp and hanger to adapt the supporting devices of the frame to different constructions of ovens.

The grate may be readily applied to or removed from the oven of any cook-stove or range of ordinary construction without alteration thereof. In the practical use of the grate it may be easily and quickly withdrawn from the frame and oven without requiring the operator to reach into the oven at the back part thereof, whereby the liability of burning the hands and arms and exposing the operator to heat from the oven is avoided. The parts may be readily withdrawn from the oven for the purpose of cleaning the latter, and the grate and frame permit the heat to circulate freely around the cooking utensils on the grate.

I am aware that changes in the form and proportion of parts and in the details of construction may be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of the invention, and I therefore reserve the right to make such modifications as clearly fall within the scope of the invention.

In the practical service of the grate means may be provided by which the sliding movement of the grate on the supporting-frame is limited, and in the embodiment of the invention represented by the drawings a stop-flange 30 is attached to the frame, so as to project into the space between two of the bars or rails thereof. This stop-flange lies in the path of the inner end bar of the slidable grate, and it is adapted to abut against said bar when the grate is drawn outwardly a certain distance, thus preventing the disengagement under normal conditions of the grate from the frame. It is to be understood, however, that this stop-flange may be thrown out of the path of the grate, so that the grate may be withdrawn, as described.

Having thus described the invention, what I claim is—

1. The combination with an oven, of a supporting-frame arranged longitudinally within said oven and provided at its sides with the overhanging guide-rails, a grate slidably resting on the supporting-frame and confined at its side edges within the overhanging guide-flanges, and clamping devices mounted on the supporting-frame out of the path of the slidable grate and engaging with the oven-walls to hold said supporting-frame firmly in place, substantially as described.

2. The combination with an oven, of a sup-

porting-frame having the overhanging guide-rails at the sides thereof and the flanged supporting-rails between the guide-rails, a slidable grate confined at its side edges loosely within said overhanging guide-rails and provided with the depending flanged rails which rest upon and ride sidewise against the flanged supporting-rails of said supporting-frame, and holding devices attached to the oven and the supporting-frame and arranged out of the path of the slidable grate, substantially as described.

3. The combination with a supporting-frame, of a hanger connected to one side of the frame, a clamp connected to the opposite side of the frame, and a slidable grate, substantially as described.

4. The combination with a supporting-frame and a slidable grate, of a clamp consisting of a bracket and a cam-disk pivoted to said bracket and adapted to have frictional engagement with an oven, substantially as described.

5. The combination with a supporting-frame, of an angular bracket clamped thereto and a locking-disk provided with cam-faces and pivoted to said bracket to bind against the same, substantially as described.

6. The combination with a supporting-frame, of a bracket attached thereto, a cam-locking disk pivoted to said bracket, and means connected to said disk for operating the same, substantially as described.

7. The combination with a supporting-frame, of a bracket attached thereto, a cam-formed disk provided with an angular arm, a pivotal bolt which connects the disk and bracket, and an operating-stem connected with said arm of the disk, substantially as described.

8. The combination with a supporting-frame and a clamp attached thereto, of an extensible hanger also attached to said frame, substantially as described.

9. The combination with a supporting-frame and a clamp connected to one side thereof, of an extensible hanger attached to the opposite side of the frame and adapted to be fastened to one of the oven-walls, substantially as described.

10. The combination with a supporting-frame and a clamp attached to one side thereof, of a serrated face on the frame near the other side thereof, an extensible hanger having a serrated face to interlock with the face on the frame, and a bolt to secure said hanger at different positions on the frame, substantially as described.

11. The combination with a supporting-frame, of a clamp removably attached to one side of the frame, and a hanger also attached to the frame removably but on the opposite side thereof from the clamp; said hanger and clamp being interchangeable, substantially as described.

12. The combination with a supporting-

frame, of a strengthening-bar removably at-
tached to one end of said frame, and the in-
terchangeable clamp and hanger removably
attached to the end of the frame at the re-
5 spective ends of the strengthening-bar there-
on, substantially as described.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in
the presence of two witnesses.

DELZON G. HOBBY.

Witnesses:

SANFORD C. BESSAC,

WM. N. DEAN.