Jan. 1, 1935. T. B. DOWNEY 1,986,716

DRYING FRAME FOR DRYING GELATIN AND OTHER MATERIAL

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Fig. 1.

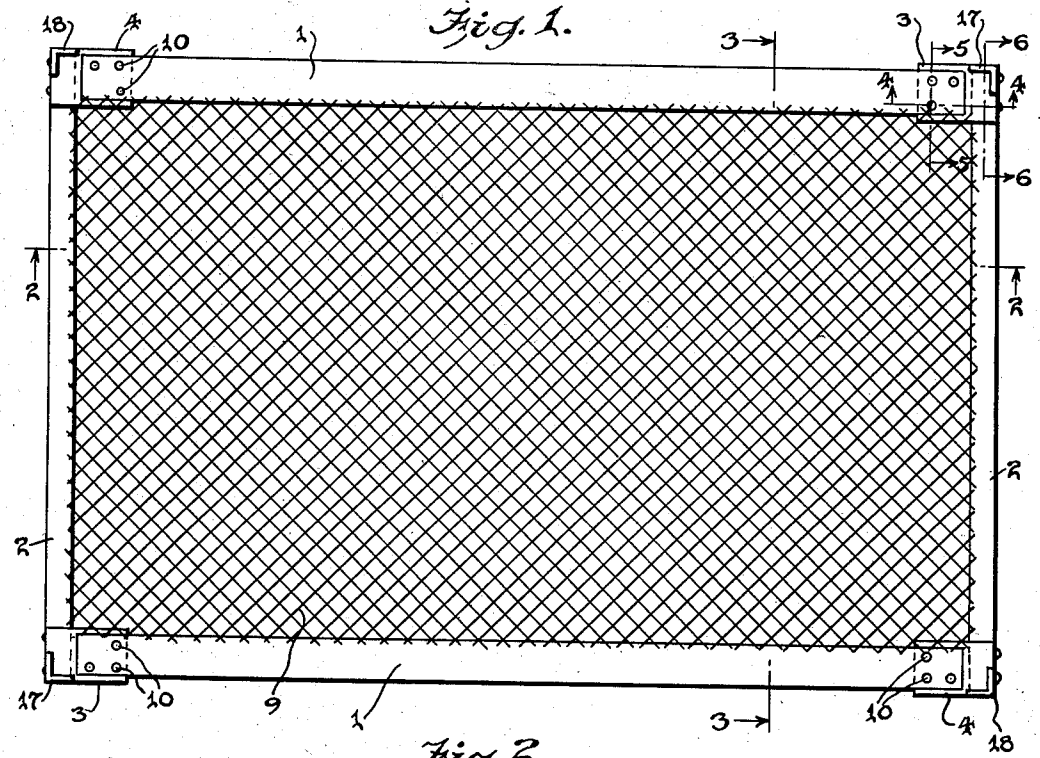


Fig. 2.

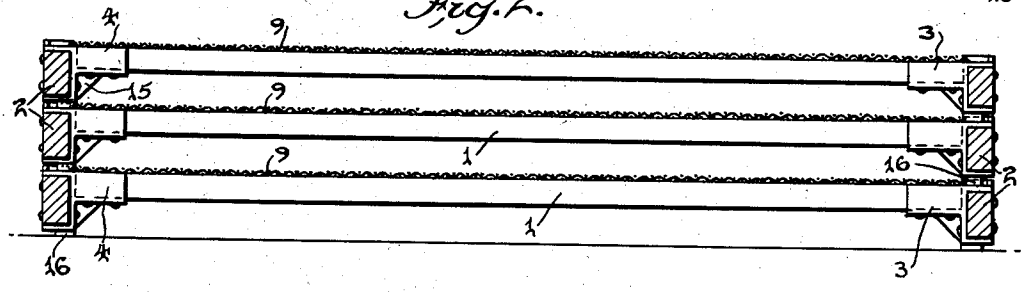


Fig. 3.

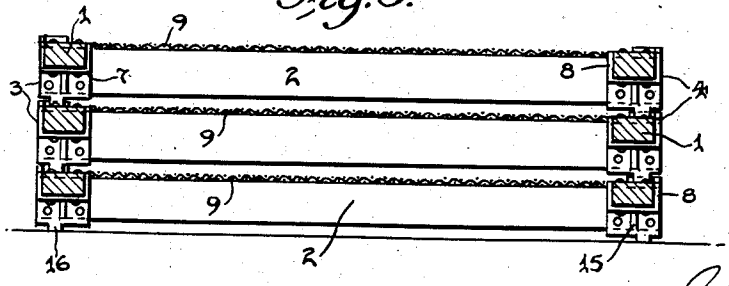


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Fig. 4.

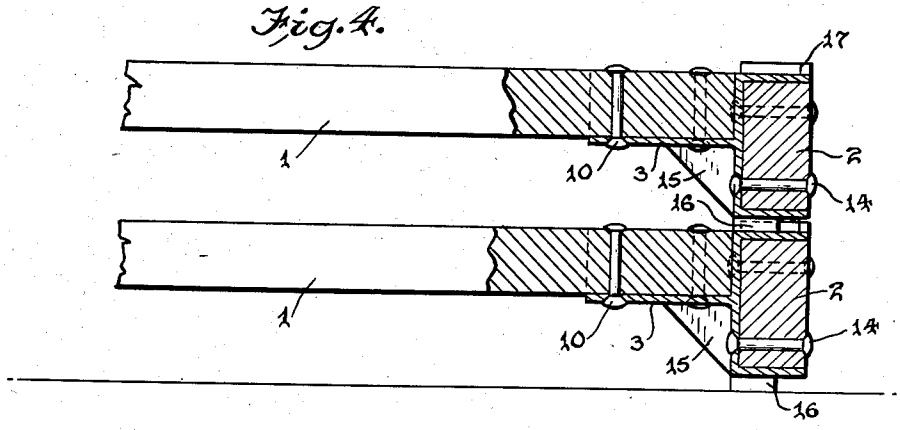



Fig. 5.

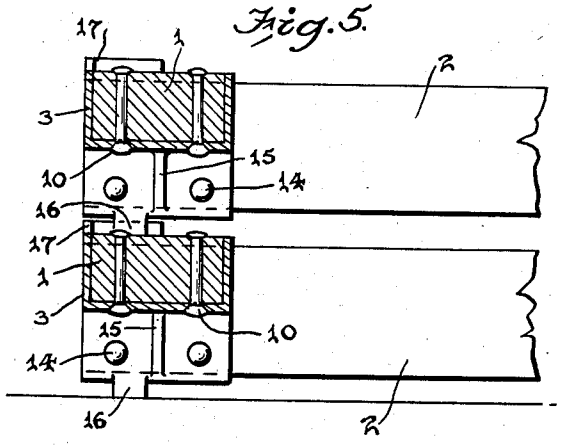



Fig. 6.

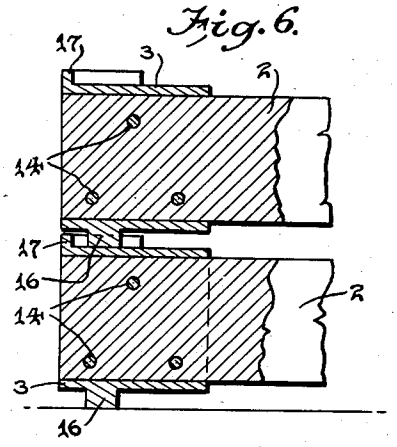



Fig. 7.

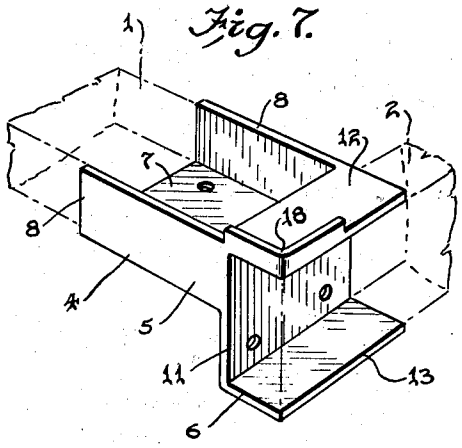
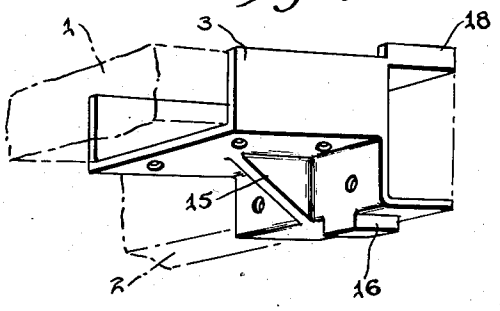



Fig. 8.

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Patented Jan. 1, 1935 1,986,716

# UNITED STATES PATENT OFFICE

1,986,716

## DRYING FRAME FOR DRYING GELATIN AND OTHER MATERIAL

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Application July 11, 1934, Serial No. 734,674

7 Claims. (Cl. 34—17)

The invention relates to a drying frame for drying gelatin and other material.

In drying gelatin, sheets of gelatin are deposited on metal nets which go into drying tunnels where the sheets of gelatin are dried from a semi-solid state into a hard brittle cake preparatory to grinding. The metal nets are stretched upon wooden frames which are piled on top of one another for a height of about six feet from the ground to form a stack. This piling or stacking takes place upon a metal truck equipped with roller bearing casters and the stacks of frames are then rolled into drying alleys where they remain until the gelatin is finished and the frames are then used over again.

Heretofore a great deal of difficulty has been experienced with the frames which shift during the period of transportation from the cutting machines to the drying alleys and very often the wooden legs which space the frames from one another come into contact with sheets of wet gelatin causing a loss of the gelatin contaminated by contact with the wooden legs as well as creating an unsightly and unsanitary condition. Furthermore, the friction of the wooden legs upon the metal nets underneath develops splinters which often chip off when the gelatin is being removed from the frames, the chipped pieces or splinters contaminating the gelatin with insoluble wooden fiber material.

The object of the present invention is to provide for wooden drying frames a simple, practical and efficient corner bracket of strong, durable and comparatively inexpensive construction adapted to prevent shifting of the drying frames while they are being rolled around or transported to and from the drying tunnels and capable also of effectually preventing contamination of the gelatin with wooden particles and at the same time form a firm support for the drying frames and greatly increase the life and usefulness of the same.

Another object of the invention is to provide for drying frames of this character a corner bracket consisting of a single piece casting adapted to receive and be secured to squared ends of transverse and longitudinal wood rails of the drier frame, thereby eliminating jointing of the rails and facilitating rapid assembly of the rails and brackets without the employment of skilled labor.

Another object of the invention is to provide for drying frames a metal corner bracket provided at the bottom with spacing and supporting means adapted to properly space the drying frames when the same are arranged in a vertical stack and adapted to cooperate with means located at the top of a similar bracket for preventing any lateral or longitudinal shifting of the frames and capable also of allowing a limited side play of the frames horizontally on one another to facilitate easy stacking and to provide for any warping of the wood of the rails of the frames.

Another object of the invention is to provide a thoroughly sanitary drying frame in which the weight will be supported by corner castings whereby the strain on the fastening devices for securing the wood rails to the corner castings will be eliminated.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—

Fig. 1 is a plan view of a drying frame constructed in accordance with this invention.

Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 1 showing a portion of a stack of drying frames.

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is an enlarged longitudinal sectional view through two of the drying frames taken substantially on the line 4—4 of Fig. 1, illustrating the manner of stacking the same.

Fig. 5 is a detail transverse sectional view through two of the drying frames, taken substantially on the line 5—5 of Fig. 1.

Fig. 6 is a similar view on the line 6—6 of Fig. 1.

Fig. 7 is a detail perspective view of one of the corner brackets looking from a point above the same.

Fig. 8 is a similar view looking from a point below the same.

In the accompanying drawings in which is illustrated the preferred embodiment of the invention the drying frame comprises in its construction longitudinal and transverse rails 1 and 2 constructed of wood or other suitable material and connected together at their ends by right and left corner brackets 3 and 4, the corner bracket at the right hand side when looking at

either end in Fig. 1 being termed the right and the one at the left hand being termed the left. Each corner bracket consists of a single piece casting of malleable iron, the iron being employed for economy and made malleable for strength but castings of other material may, of course, be employed.

Each of the said corner castings comprises a longitudinally extending approximately U-shaped rail receiving leg 5 and a transversely disposed approximately U-shaped leg 6 formed integral with the leg 5 and connected at its upper portion with the same and having its lower portion extending below the longitudinal leg, as clearly illustrated in Figs. 7 and 8 of the drawings. The longitudinal leg 5 which receives one end of one of the longitudinal rails consists of a horizontal plate 7 and vertical side flanges 8 extending upwardly from the horizontal plate 7. The horizontal plate 7 supports one end of the longitudinal rail 1 which is arranged between and embraced by the vertical side flanges 8.

Each of the wood rails 1 and 2 is oblong in cross section and the longitudinal rail 1 has its greatest width in a plane parallel with the plane of a metal net 9 attached to the wood rails for supporting the gelatin or other material to be dried. The end of the longitudinal rail is square and fitted against the transverse leg of the corner bracket and is secured to the longitudinal leg by fastening devices 10, preferably three in number, and consisting of rivets, but bolts or any other suitable fastening devices may be employed and the number of fastening devices for securing the ends of the wood rails to the corner brackets may be varied.

The transverse leg 6 consists of a vertical plate 11 and upper and lower horizontal flanges 12 and 13 extending outwardly from the vertical plate, the upper horizontal flange 12 being arranged in flush relation with the upper edges of the vertical side flanges 8 of the longitudinal leg. The transverse leg 6 of the corner bracket receives one end of the transverse rail 2 and the latter has its ends squared and is fitted against the plate 11 and is arranged between and is embraced by the upper and lower horizontal flanges 12 and 13. The transverse rail which is oblong in cross section has its greatest width perpendicular to the plane of the metal net 9. The transverse rail is secured in the bracket 6 by rivets 14 or other suitable fastening devices which pierce the transverse rail and the plate 11.

Three of the fastening devices 14 are preferably employed but the number may be varied. The longitudinal U-shaped leg 5 is open at one end and at the top and the transverse U-shaped leg 6 is open at both ends and at the outer side. This will enable the squared ends of the longitudinal and transverse rails to be readily assembled in recesses formed by the plates and flanges of the legs 5 and 6 and the parts of the drying frame may be quickly assembled without the employment of skilled labor as it is not necessary to joint or overlap the adjacent ends of the longitudinal and transverse rails. Also the wood rails are maintained out of contact with each other and are rigidly connected and firmly supported so that a drying frame of long life is provided. Also as there is no jointing of the ends of the rails the drying frame may be maintained in a thoroughly sanitary condition.

The metal net which preferably consists of wire mesh may be stapled or otherwise secured to the wood rails 1 and 2 and the selvage edge of the wire mesh or netting may be carried practically to the ends of the frame where the material is preferably turned under, but it may be reinforced and secured at its ends in any manner.

Each corner bracket is preferably strengthened and reinforced at the angle formed by the legs by an integral web 15 and it is provided at its bottom with a substantially rectangular supporting and spacing lug 16 which in each of the frames except the bottom one rests upon the upper flange 12 of a similar corner bracket. The lowermost frame is designed to be arranged upon a truck for transporting a stack of the frames to and from a drying tunnel. The supporting and spacing lugs extend longitudinally in an outward direction from the plates 11, as clearly illustrated in Fig. 8 of the drawings, and they are retained on the top flanges 12 by corner marginal flanges 17 and 18 formed integral with the top flanges 12 and extending upwardly therefrom at the outer corners thereof, as clearly illustrated in Fig. 1 of the drawings. The marginal flanges 17 are substantially L-shaped and extend along the marginal edges of the upper flanges 12 at the sides and outer ends thereof. Because of the marginal upstanding L-shaped flanges the brackets are made rights and lefts and a right and a left are arranged at each end of each of the drying frames so that at each end of the drying frame the marginal lug retaining flanges are located at the outer corners of the upper horizontal flanges 12. When the frames are arranged upon one another in a stack there is sufficient space between the lugs and the corner marginal flanges to permit limited side play to allow for easy and rapid stacking of the frames and to take care of any warping of the side and end rails which are enclosed on three sides or faces by the legs of the brackets.

While metal nets are employed for drying gelatin nets of fiber or other material may be employed when the drying frames are used for drying materials other than gelatin.

What is claimed is:

1. In a drying frame having side and end rails, a single piece corner bracket comprising longitudinal and transverse rail receiving legs open at the top and outer side respectively, and receiving the ends of the rails at a corner of the frame, the transverse leg being connected at its upper portion to the longitudinal leg and having its lower portion extending downwardly below the longitudinal leg, said longitudinal leg positioning its longitudinal rail edgewise horizontally, and the transverse leg positioning its rail edgewise vertically.

2. In a drying frame having side and end rails, a single piece corner bracket comprising longitudinal and transverse rail receiving legs open at the top and outer side respectively, and receiving the ends of the rails at a corner of the frame, the transverse leg being connected at its upper portion to the longitudinal leg and having its lower portion extending downwardly below the longitudinal leg, said longitudinal leg positioning its longitudinal rail edgewise horizontally and the transverse leg positioning its rail edgewise vertically, and means located at the top and bottom of the bracket and adapted to cooperate with similar means of similar brackets for spacing a plurality of drying frames from one another and for preventing displacement of the frames.

3. In a drying frame having side and end rails,

a single piece corner bracket comprising longitudinal and transverse approximately U-shaped rail receiving legs open at the top and outer side respectively, the transverse leg being also open at its ends, said leg forming rail receiving recesses for the reception of the adjacent ends of the longitudinal and transverse rails at one corner of the drying frame and spacing the rails from each other, and means located at the top and bottom of the bracket and adapted to cooperate with similar means of similar brackets for spacing a plurality of drying frames and for preventing displacement of the same when the drying frames are arranged in a stack.

4. In a drying frame having side and end rails, a single piece corner bracket comprising longitudinal and transverse rail receiving legs open at the top and outer side respectively, and receiving the ends of the rails at a corner of the frame, the transverse leg being connected at its upper portion to the longitudinal leg and having its lower portion extending downwardly below the longitudinal leg, said longitudinal leg positioning its longitudinal rail edgewise horizontally and the transverse leg positioning its rail edgewise vertically, said bracket being provided at the outer corner of the transverse leg at the top thereof with an upstanding approximately L-shaped marginal flange and having a depending lug at the bottom arranged to rest upon the top flange of a similar bracket and be confined thereon by the upstanding marginal flange thereof to space a plurality of drying frames and prevent displacement of the same when the said drying frames are arranged in a stack.

5. In a drying frame having side and end rails, a single piece corner bracket comprising longitudinal and transverse approximately U-shaped rail receiving legs open at the top and outer side respectively, the transverse leg being also open at its ends, said leg forming rail receiving recesses for the reception of the adjacent ends of the longitudinal and transverse rails at one corner of the drying frame and spacing the rails from each other, said bracket being provided at the outer corner of the transverse leg at the top thereof with an upstanding approximately L-shaped marginal flange and having a depending lug at the bottom arranged to rest upon the top flange of a similar bracket and be confined thereon by the upstanding marginal flange thereof to space a plurality of drying frames and prevent displacement of the same when the said drying frames are arranged in a stack.

6. In a drying frame having side and end rails, right and left single piece corner brackets each comprising longitudinal and transverse approximately U-shaped rail receiving legs open at the top and outer side respectively, said legs forming recesses for the reception of the adjacent ends of the longitudinal and transverse rails and spacing the rails from each other, the transverse leg of each bracket being connected at its upper portion with the longitudinal leg thereof and having its lower portion extending downwardly below the said longitudinal leg, each bracket being provided at the outer corner of the transverse leg at the top thereof with an upstanding approximately L-shaped marginal flange and each bracket being provided at the bottom with a depending lug to cooperate with marginal flanges of a similar bracket to prevent lateral and longitudinal slippage of the frame and provide for a proper stacking of the same.

7. In a drying frame having side and end rails, a single piece corner bracket connecting the adjacent ends of the rails of the frame at a corner thereof and comprising a horizontal leg composed of a horizontal plate and upwardly extending vertical side flanges and a transverse leg composed of a vertical plate and horizontal upper and lower flanges, the vertical plate being connected at its upper portion to the longitudinal leg and having its lower portion extending downwardly below the same, a spacing and supporting lug extending downwardly from the bottom flange of the transverse leg, and a marginal approximately L-shaped flange extending upwardly from the outer corner of the upper flange of the transverse leg.

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