

No. 680,141.

Patented Aug. 6, 1901.

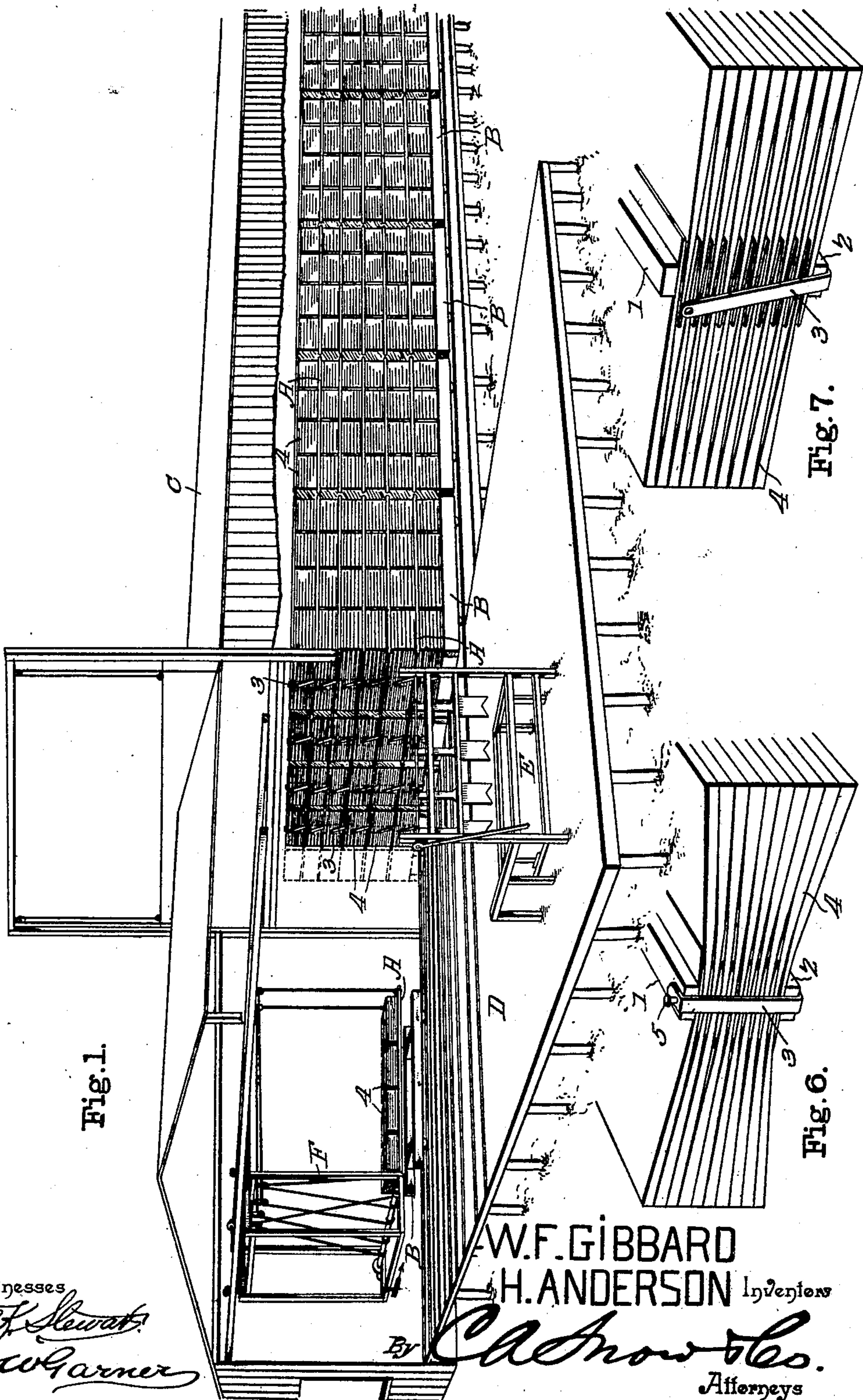
W. F. GIBBARD & H. ANDERSON.

METHOD OF DRYING SHINGLES.

(Application filed Feb. 1, 1901.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses  
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Fig. 3.

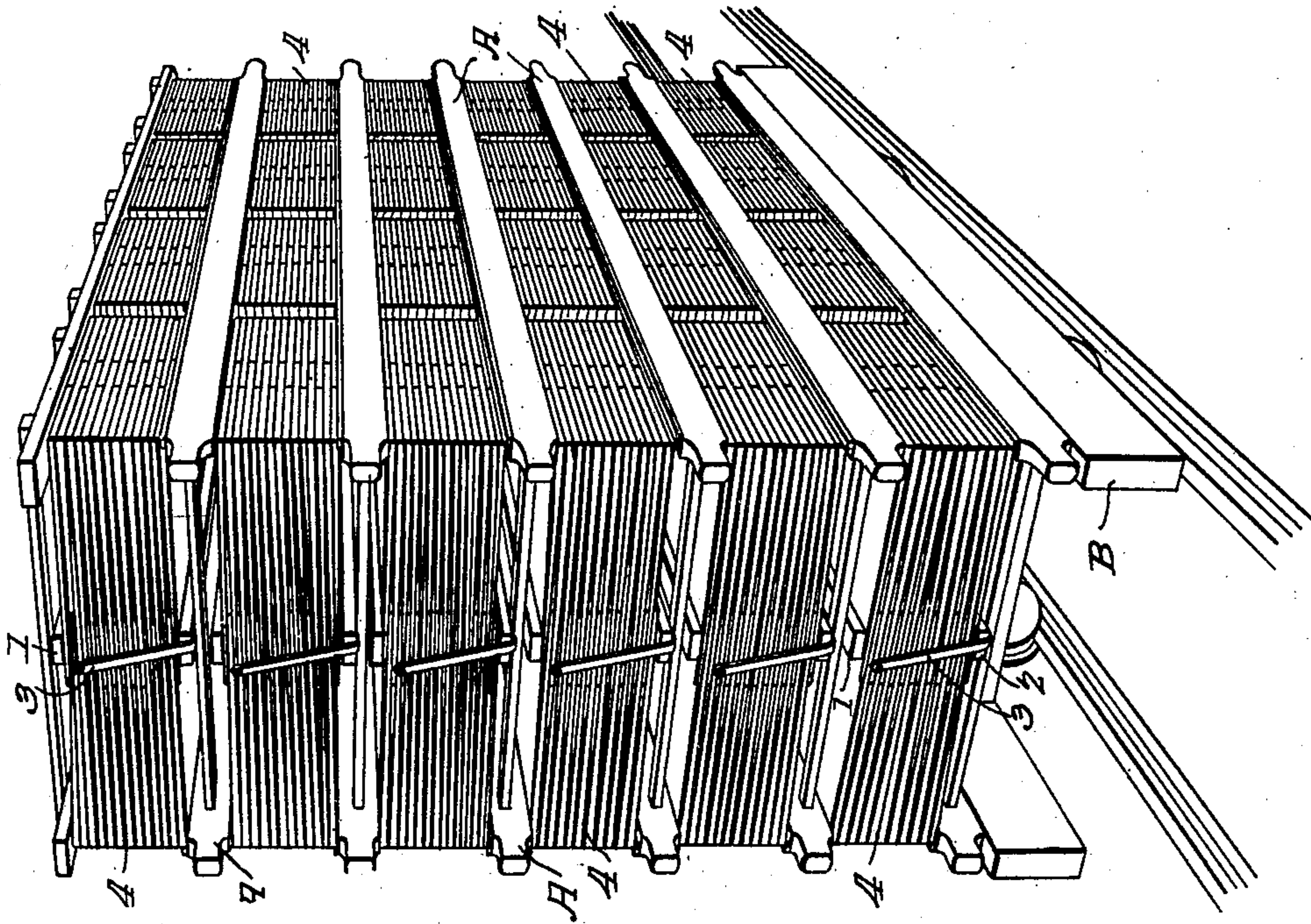
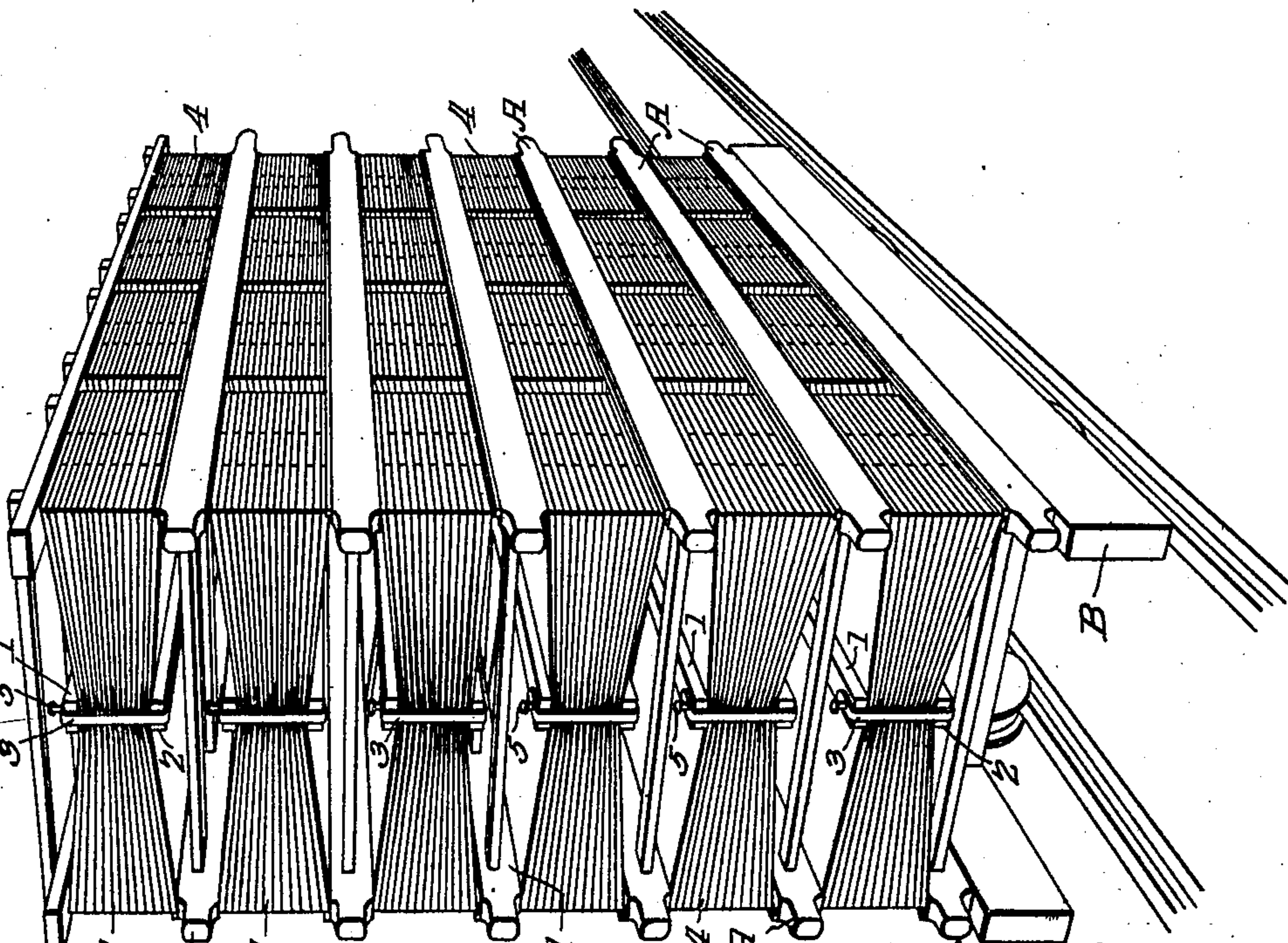


Fig. 2.



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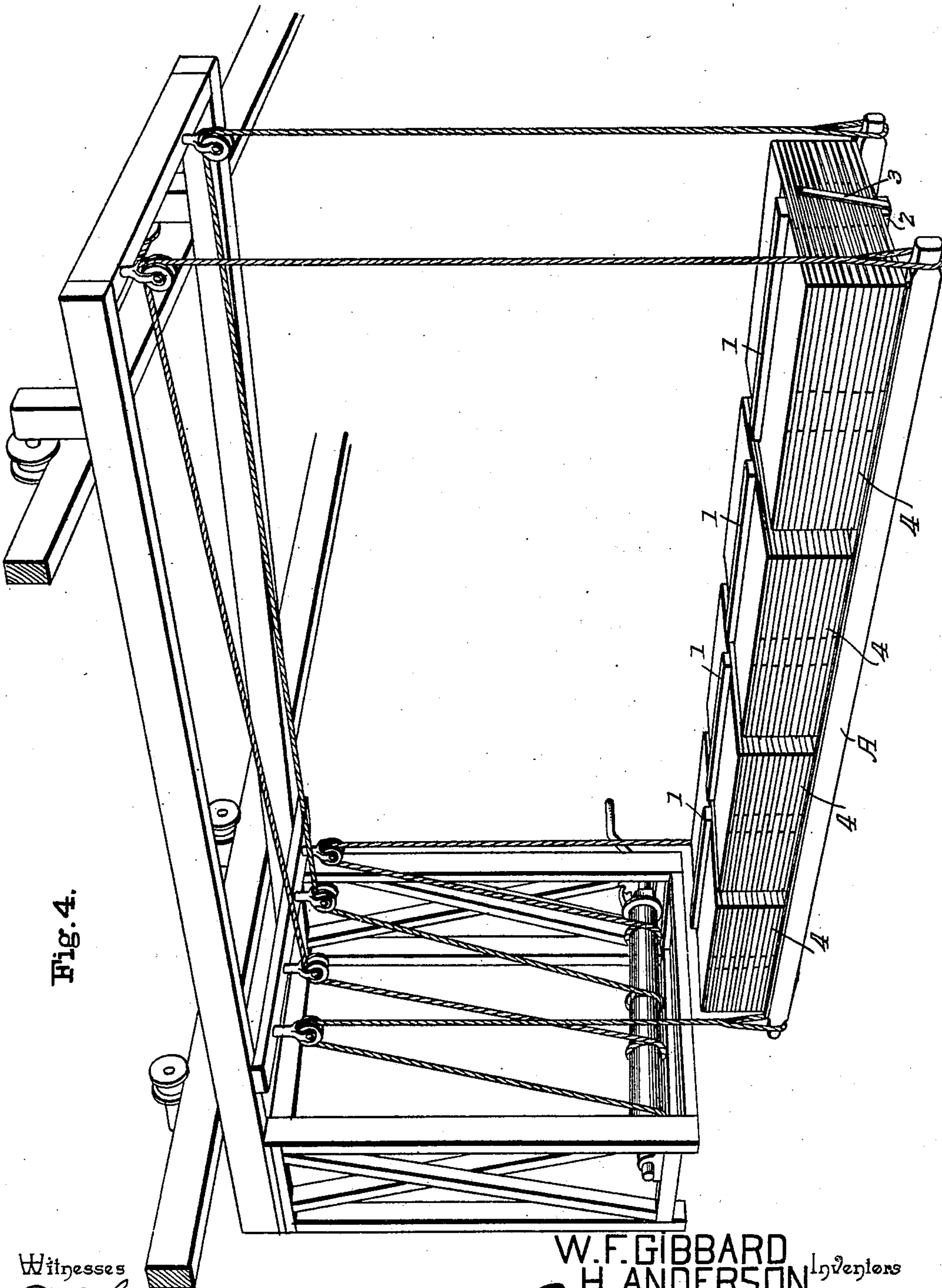


Fig. 4.

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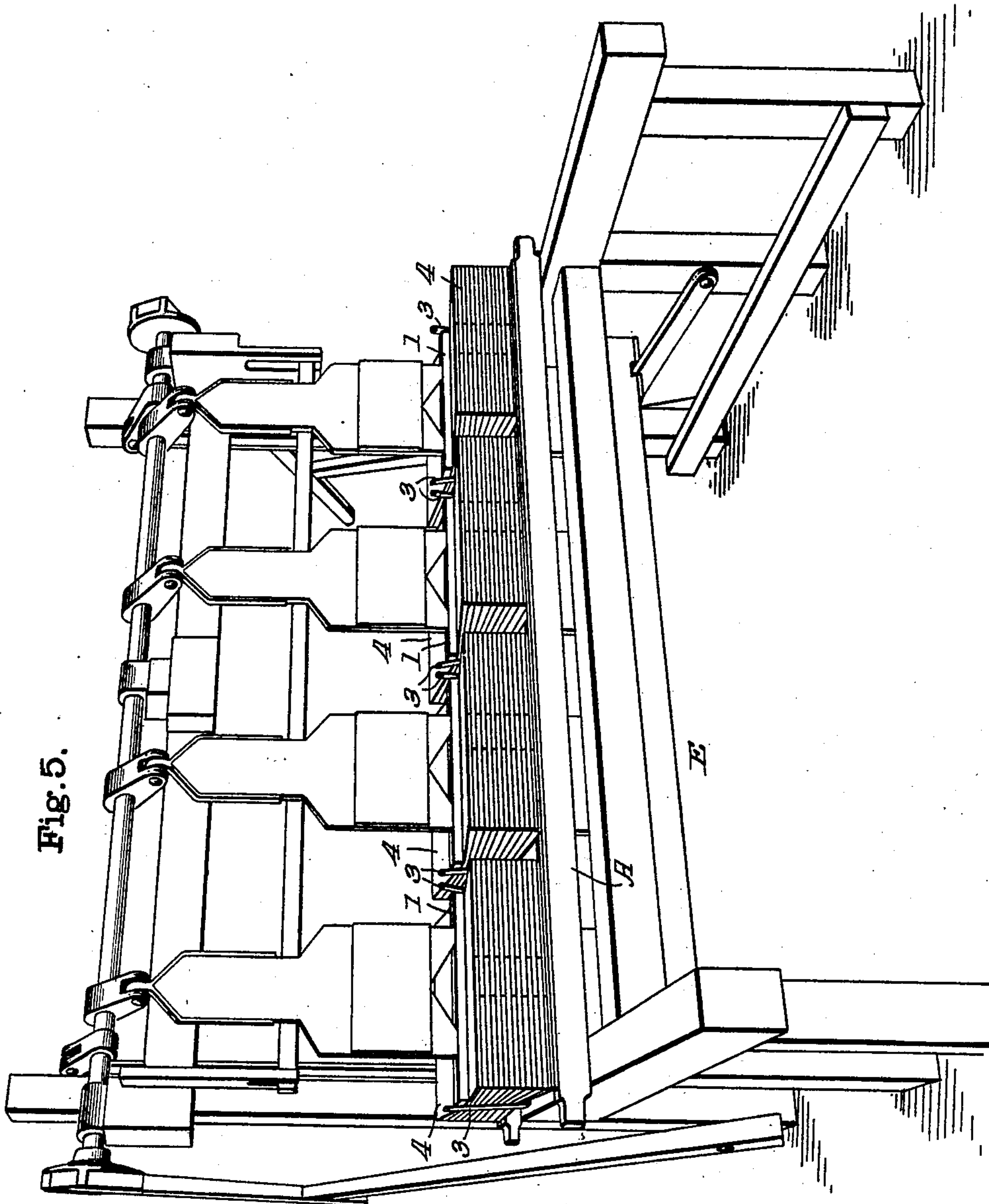
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4 Sheets—Sheet 4.



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# UNITED STATES PATENT OFFICE.

WILLIAM F. GIBBARD AND HANS ANDERSON, OF EUREKA, CALIFORNIA.

## METHOD OF DRYING SHINGLES.

SPECIFICATION forming part of Letters Patent No. 680,141, dated August 6, 1901.

Application filed February 1, 1901. Serial No. 45,641. (No specimens.)

*To all whom it may concern:*

Be it known that we, WILLIAM F. GIBBARD and HANS ANDERSON, citizens of the United States, residing at Eureka, in the county of Humboldt and State of California, have invented a new and useful Method of Drying Shingles, of which the following is a specification.

Our invention is an improved method of drying shingles, one object of our invention being to effect the separation of the individual shingles in the bunches to expose them more thoroughly to the action of the heated air while being dried, and thereby facilitate the escape of moisture from the shingles and promote the drying thereof without breaking the bunches or disturbing the arrangement of the shingles therein, and a further object of our invention being to prevent the shingles from warping while being dried.

Our invention consists in unbinding bunches of shingles while green, thereby causing the inner ends of the shingles to separate, and drying the shingles while in this condition without disturbing the arrangement thereof in the bundles.

Our invention further consists in unbinding the bunches of shingles, applying pressure to the ends of said bunches, thereby preventing the shingles from warping, and separating the inner portions thereof and drying the said shingles while in this condition without disturbing their arrangement in the bunches.

Our invention further consists in assembling green shingles in bunches, temporarily binding the same, disposing said bunches in superincumbent layers, thereby subjecting the ends of the said bunches to pressure, unbinding the bunches, thereby causing the inner ends of the shingles to separate, drying the shingles while in this condition without disturbing their arrangement in the bunches, and subsequently rebinding the bunches after the shingles are dried.

In the accompanying drawings, Figure 1 is a sectional perspective view of a kiln for drying shingles equipped with a plant for handling the shingles in accordance with the requirements of our improved method. Fig. 2 is a perspective view of a car loaded with

bunches of shingles disposed in superincumbent layers in accordance with the requirements of our method, the bunches being shown as temporarily bound. Fig. 3 is a similar view showing the bunches of shingles unbound and the shingles separated in the positions assumed by them during the drying process. Fig. 4 is a detail perspective view of a crane for conveying the loaded trays from the cars to the clamping-machine after the shingles have been dried and to enable the bunches of shingles to be rebound. Fig. 5 is a similar view of the clamping-machine. Fig. 6 is a detail sectional view of a single bunch of shingles in its initial condition, temporarily bound before being placed in the kiln. Fig. 7 is a similar view of the same, showing the bunch unbound while being dried.

Heretofore shingles while green have been disposed in bunches and tightly bound together at the mill, the bunches being subsequently passed into a drying-kiln and the shingles dried therein while thus tightly bound together. This process is defective, for the reason that the shingles are dried unevenly, it being obvious that the heat has better access to those shingles which are at or near the outer sides of the bunches than to those which are at the centers thereof and that the moisture can escape more readily from the outer shingles than from the inner ones. This uneven drying of course causes the shingles to warp. We obviate these defects by our improved method, which we will now describe.

The shingles are bunched in the mill as usual and fastened together by bars or binders 1 2, located above and below each bunch, respectively, and connected together by metallic bands 3, which engage the edges of the bunches 4. Owing to the pressure thus exerted by the binders the bunches are contracted at their centers. So far we proceed in the usual manner, excepting that the nails 5, which connect the bands 3 with the upper binders 1, are not driven home, but are allowed to project somewhat, as shown in Fig. 6, so that they may be drawn out readily, the bunches being hence only temporarily bound. The temporarily-bound bunches of green shingles are disposed on trays A of



suitable size and construction, and the loaded trays are placed one upon another on cars B in the loading-room of the kiln C, the shingles being thus disposed in superincumbent layers of temporarily-bound bunches on the cars; the trays being interposed between the layers of bunches and in engagement therewith on their upper and lower sides flatwise at their ends, so that the bunches of shingles are subjected to pressure at their ends. When a car has been thus loaded with temporarily-bound bunches of shingles, the nails are withdrawn, thereby unbinding the bunches. The latter are placed at a suitable distance apart on their respective trays to admit of the insertion of a tool between the bunches for thus withdrawing the nails and unbinding the bunches. Owing to the superincumbent disposition of the bunches the arrangement of the shingles in the bunches is not disturbed by thus unbinding the bunches, excepting that the inner overlapped ends of the shingles separate, this separation thereof being promoted by the pressure applied at the ends of the bunches, as will be understood. It will be furthermore understood that this separation of the shingles in the bunches causes them to be more thoroughly disposed to the action of the heated air when the car is run into the kiln, the heated air being free to circulate between the individual shingles in the bunches and the moisture in the shingles being permitted to readily escape therefrom.

The loaded cars of unbound bunches of shingles while in the kiln are subjected to only a moderate degree of heat, owing to the fact that the heated air has ready access to the individual shingles in the bunches; and in this particular also we obtain an important advantage over the method commonly employed of drying shingles when bound tightly together in bunches, which method requires that the bunches of shingles be subjected to such a high temperature in order to dry the interior shingles that the outer shingles of the bunches are injured by the excessive heat.

The pressure to which our shingles are subjected by disposing the bunches in superincumbent layers not only causes the separation of the shingles of the unbound bunches, but also prevents the shingles from warping while being dried, as will be readily understood. Hence shingles dried by our improved process are of superior quality as compared with those dried by the customary process in the particulars that they are all subjected to a uniform comparatively low temperature while dried and do not become warped during the drying process. The weight of a rack placed on the upper layer of bunches of shingles, as shown in Figs. 2 and 3, will suffice to

separate the overlapped inner ends of the shingles in said upper layer of bunches.

From the drying-room of the kiln the loaded cars when the drying process is complete are run into a pressing and binding room D, where each of the loaded trays is lifted without disturbing the unbound bunches of shingles thereon and placed upon a clamping-machine or press E, by means of which the bunches are compressed at their centers and then rebound in condition for the market.

To facilitate the unloading of the loaded trays from the cars and the placing thereof on the clamping-machine or press, we employ in practice a suitable crane F, such as is shown in Figs. 1 and 4. It will be understood, however, that our method is entirely independent of any means whatever for carrying out the same, and we do not limit ourselves in this particular.

Having thus described our invention, we claim—

1. The method of drying shingles which have been previously bunched, consisting in unbinding the bunches, applying pressure to the ends of said unbound bunches, to prevent the shingles from warping and to separate their inner ends from one another, and exposing them while in this condition to a drying agent, substantially as described.

2. The method of drying shingles, consisting in assembling green shingles in bunches, with the inner ends of the shingles overlapped, temporarily binding the same, disposing said bunches in superincumbent layers, thereby subjecting the ends of said bunches to pressure, unbinding the bunches thereby causing the inner ends of the shingles to separate, and exposing them while in this condition to a drying agent, substantially as described.

3. The method of drying shingles and preparing them for handling consisting in assembling green shingles in bunches with the inner ends of the shingles overlapped, temporarily binding the same, disposing said temporarily-bound bunches in superincumbent layers, thereby subjecting the ends of said bunches to pressure, unbinding the bunches, thereby causing the inner ends of the shingles to separate, exposing them while in this condition to a drying agent; and subsequently rebinding the bunches, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

WILLIAM F. GIBBARD.  
HANS ANDERSON.

Witnesses:

D. J. FOLEY,  
FRED ROBINSON.