

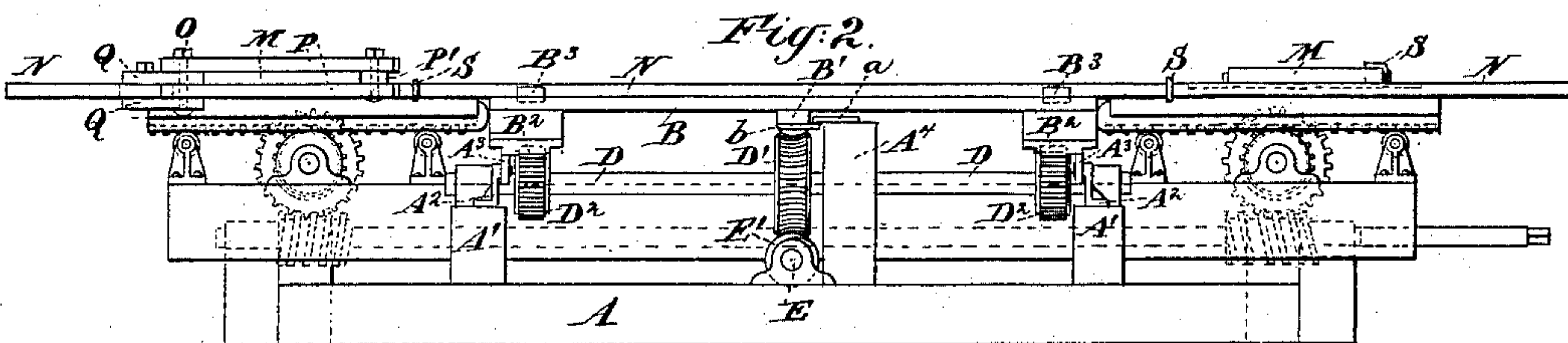
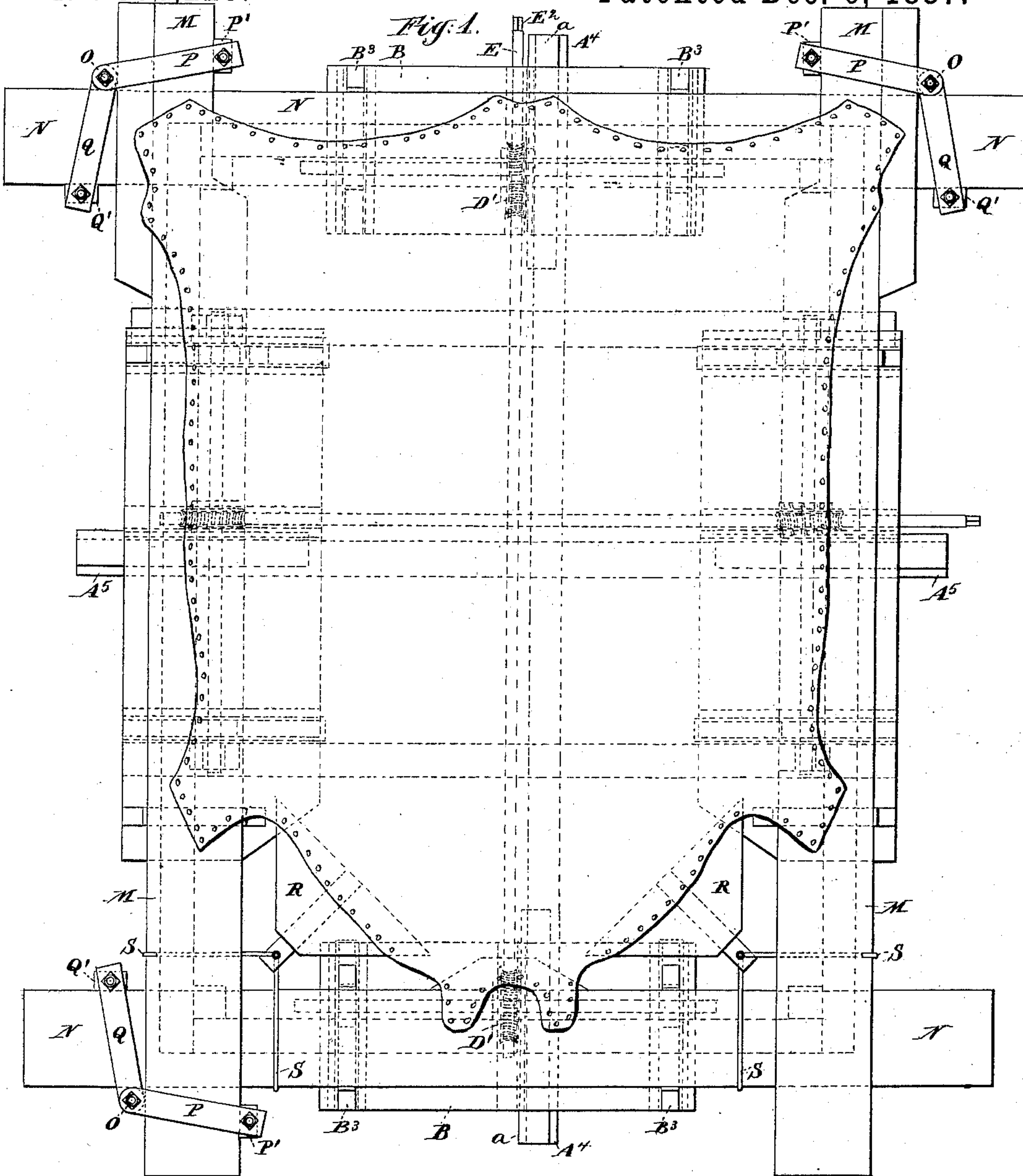
(No Model.)

J. YOUNG.

APPARATUS FOR STRETCHING HIDES.

No. 374,228.

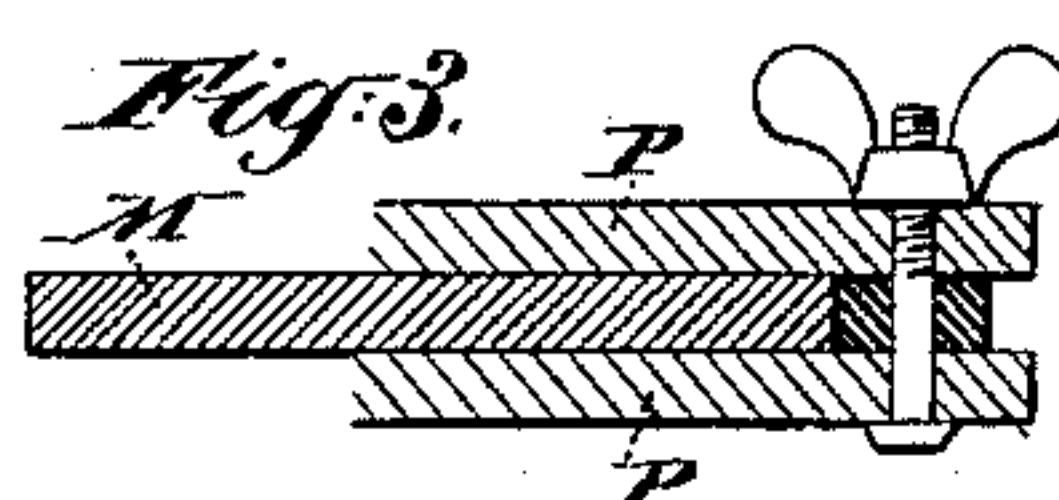
Patented Dec. 6, 1887.



Witnesses:

Charles R. Searle.

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Inventor:

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UNITED STATES PATENT OFFICE.

JOHN YOUNG, OF NEWARK, NEW JERSEY.

APPARATUS FOR STRETCHING HIDES.

SPECIFICATION forming part of Letters Patent No. 374,228, dated December 6, 1887.

Application filed October 1, 1887. Serial No. 251,170. (No model.)

To all whom it may concern:

Be it known that I, JOHN YOUNG, of Newark, in the county of Essex, in the State of New Jersey, have invented a certain new and
5 useful Improvement in Apparatus for Stretching or Drying Hides, of which the following is a specification.

The advantages of extending the green or freshly-tanned hide in a wet condition and
10 holding it extended and plane until dried have been long appreciated. There are several forms of extensible frames with means for holding them extended and machines for operating such frames, each receiving the frame with a
15 freshly-fastened hide in a contracted condition and expanding it to the proper tension and confining the stretching-bars, after which the machine, being again contracted, allows the frame with its stretched hide to be removed
20 and placed on edge or otherwise favorably conditioned for drying. Then another contracted frame with its freshly-attached hide is introduced, and the operation is repeated.

As heretofore known, the machines have
25 been bulky and inconvenient to work. The frames have required slotting or other elaborate preparation or costly clamping-screws. I have devised cramps which hold firmly all that can be gained in the machine and allow of being driven outward by percussion to retain the
30 last increment of motion. I use plain boards without any necessary preparation. I hold the angular stretching-pieces at the neck by directly and strongly taking hold on the adjacent boards, and I operate the parts of the machine by worms and worm-wheels connected
35 with small pinions and racks. The action is powerful and reliable, and allows of operating rapidly, and will hold itself by friction in any
40 position in which it may be left. This portion of the apparatus is especially important in its facility for relaxing the pressure to remove the frames. The relaxing is done by simple backward turning of the worm-shafts, without
45 necessitating any preparation other than a previous tightly adjusting of the cramps to hold in the frames all the stretch which has been effected by the machine. I lock down the portions of the machine through which the force is
50 communicated to the frames. These parts are free to slide in the proper direction to stretch

the hide or to relax the stretching force; but they are held down reliably against displacement from any motion in other directions.

My invention avoids the usual necessity for
55 bringing any iron parts in contact with the hide. All risk of staining the hide by iron is thus avoided.

My invention allows the work to be done
60 very rapidly.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a top view showing the hide
65 stretched on one of the frames and the frame in the act of being extended by the machine. Fig. 2 is an end view of the same. Fig. 3 is a section of a portion on a larger scale. This figure shows a modification in the form of the
70 nut.

The cramp which holds the parts of the frame together is omitted on one corner in
75 Figs. 1 and 2. It will be understood that there is a cramp on each corner.

Similar letters of reference indicate corresponding parts in all the figures where they occur.

A is the frame of the machine, certain parts of which will be distinguished, when necessary,
80 by additional marks, as A'. It may be of hard wood.

B B are parts of the machine, mounted one near each end, and arranged to move longitudinally. They are held up by traversing on
85 anti-friction rollers A³, mounted in castings A², bolted on the longitudinal timbers A'. Each resists any force received through the stretching-frame or other source tending to lift them from the machine, by virtue of a metal plate,
90 b, screwed or otherwise firmly fixed upon the longitudinal strip B', one edge projecting laterally and engaging under the strip of metal a, which is bolted on the central longitudinal timber, A⁴, of the frame A. These endwise-
95 stretching pieces B, thus supported and held in contact, are each traversed forcibly lengthwise of the machine by the aid of a shaft, D, which is carried in bearings on the frame A, and to which is affixed a worm-wheel, D', and
100 two gear-wheels, D². These wheels D² engage with racks B², fixed in the parts B. These parts

are adjusted to serve both to forcibly actuate the stretching-pieces B and to guide them against lateral displacement.

E is a worm-shaft extended longitudinally of the framing and mounted in bearings thereon. Each of its worms E' engages with one of the worm-wheels D', and an overhanging end, E², is squared to receive an operating-crank. (Not shown.)

The sides of the machine are correspondingly equipped with side-stretching pieces, each of which runs upon anti-friction rollers mounted in castings, and is held down by a metal strip, not fully shown, but which engages under an adjacent strip mounted on the cross-timber A⁵, as will be readily recognized by the figures. This prevents the side-stretching pieces from being lifted out of position. Both the sides and end sets or pieces are held down and guided on the rollers by the locking-strips, so as to be held in the proper plane notwithstanding the distorting strain received in separating the removable frames with their tightly-strained hides above.

M M are the longitudinal boards, and N N the transverse boards, of my removable frames, to which the hides are nailed or otherwise attached, which are stretched on the machine.

P P and Q Q are links, of hard wood or metal, bolted together at O. The ends of links P P are bolted loosely together and through a bearing-block, P'. The ends of Q Q are also bolted loosely together and through a bearing-block, Q'. These parts can be made rapidly and cheaply by machinery, and being applied a little obliquely, as shown, constitute cramps to hold the boards M and N firmly in any position in which they are left. When the frames M and N are strained outward on the machine to the proper extent, the attendant urges the cramps P Q out into their proper oblique positions by a few gentle blows. This insures their tight holding in a position to retain the boards fully in position after the support due to the machine is relaxed.

My cramps will stand adjustment to any extent required. When the frames are out of use, they may be instantly brought together into as small a compass as the corner-pieces will allow. The bolts may be tightened by means of nuts thereon, if preferred.

R R are corner-pieces adapted to stretch the neck of the hides. Each is secured to each of the boards M and N by a swivel-hook bolt, S, one for each board. These hooks can be set at right angles to their respective boards, as shown, or can be shifted obliquely at various inclinations, correspondingly changing the tension with which the corner-pieces are strained outward when the frame is expanded in the machine. This arrangement gives great strength without involving expensive preparation of the parts, and also gives facility of adjusting to vary the amount of stretch of the neck—the important portion of the hide—which is thus effected.

B³ B³ are irons fixed on the parts B, adapted to receive the boards N of the removable frames.

I claim as my invention—

1. The stretching-pieces B, guided and held in the proper plane, as shown, in combination with the worm-shafts E, worm-wheels D', shafts D, gear-wheels D², and racks B², arranged to serve relatively to each other and to the stretching-frames M N, and suitable fastening means, O P Q, substantially as herein specified.

2. In a frame for stretching hides, in combination with the longitudinal boards M and transverse boards N, the corner-cramps composed of the links P Q, jointed at O and provided with bearing-pieces P' and Q', arranged to serve substantially as herein specified.

3. In a frame for stretching and drying hides, the boards M N, in combination with the corner-piece R and the two hooks S, pivotally secured at their inner ends to said corner-piece, the outer hooked ends thereof respectively engaging each of said boards M N, as herein specified.

In testimony whereof I have hereunto set my hand, at New York city, this 23d day of September, 1887, in the presence of two subscribing witnesses.

JOHN YOUNG.

Witnesses:

CHARLES R. SEARLE,
H. A. JOHNSTONE.