

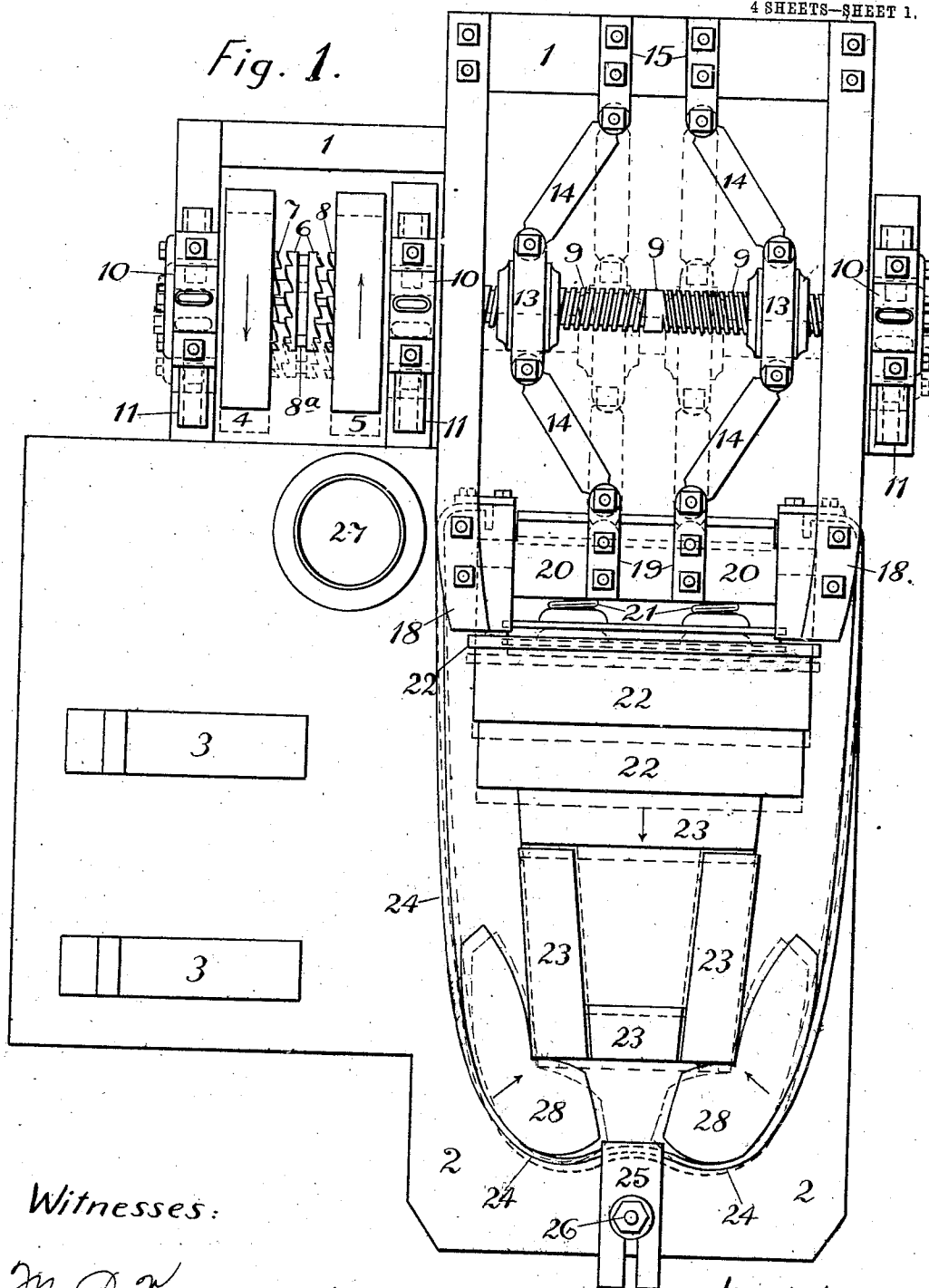
No. 874,406.

PATENTED DEC. 24, 1907.

A. L. JOHNSON.
CLAMPING MACHINE.
APPLICATION FILED JUNE 26, 1907.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

M. P. Kinsman
Geo. E. Tew

Inventor:
Arthur L. Johnson
By M. B. Clemons
Attorneys.

No. 874,406.

PATENTED DEC. 24, 1907.

A. L. JOHNSON.
CLAMPING MACHINE.
APPLICATION FILED JUNE 28, 1907.

4 SHEETS—SHEET 2.

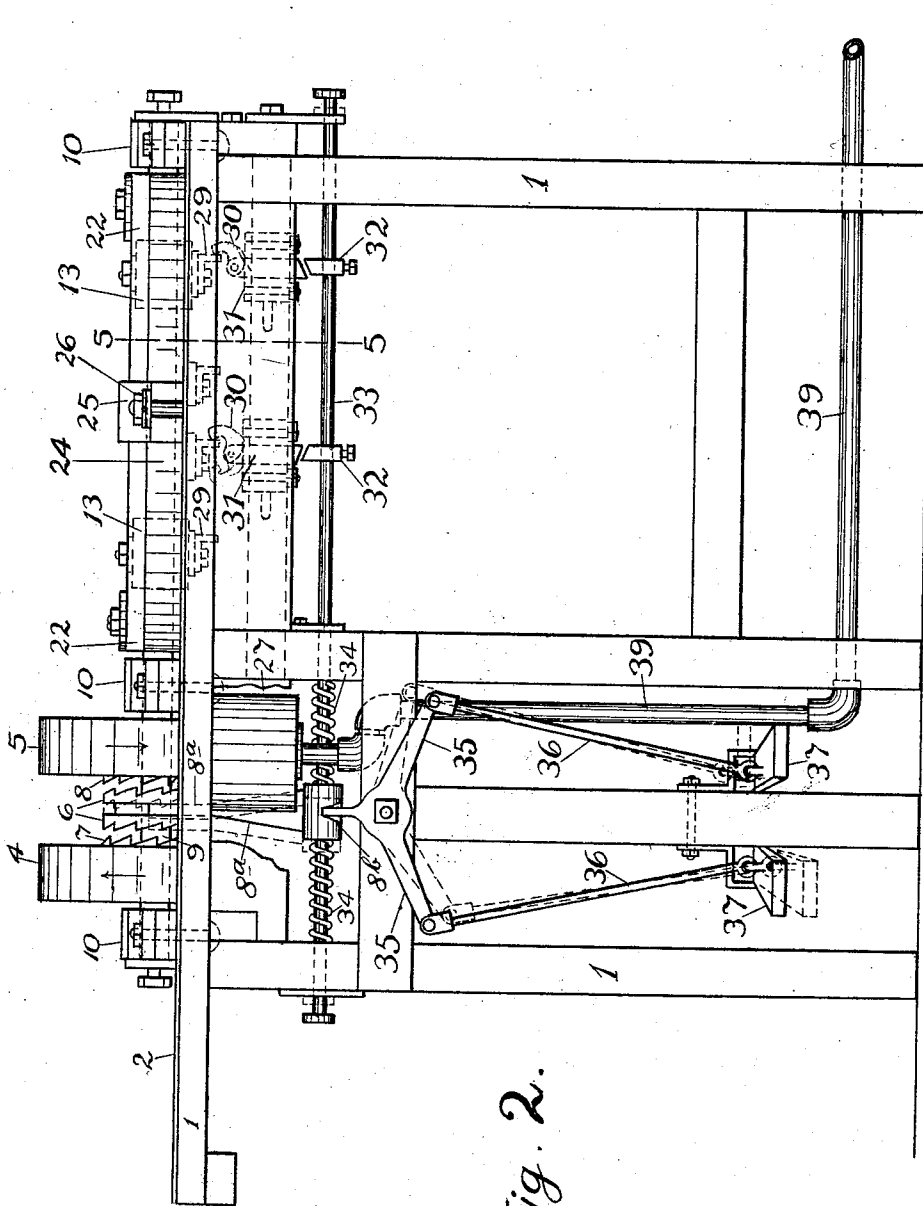


Fig. 2.

Arthur L. Johnson.
Inventor.

Witnesses:

M. Q. Kinsman
Geo. E. Tew

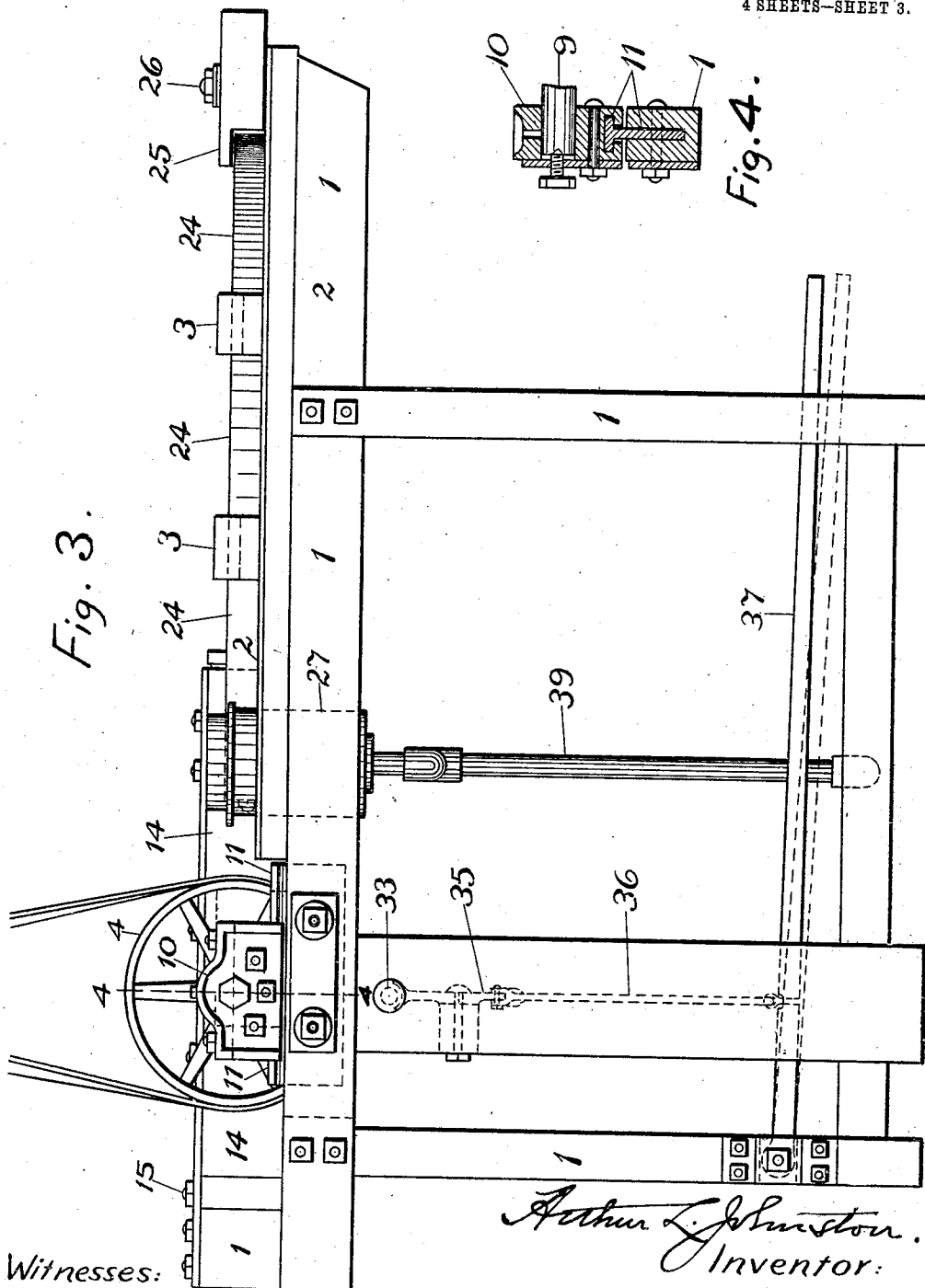
M. W. Stearns.
Attorneys.

No. 874,406.

PATENTED DEC. 24, 1907.

A. L. JOHNSON.
CLAMPING MACHINE.
APPLICATION FILED JUNE 26, 1907.

4 SHEETS—SHEET 3.



Witnesses:

M. R. Kinsman
Geo. E. Jew

Arthur L. Johnson.
Inventor:

By M. B. Swanson.
Attorneys.

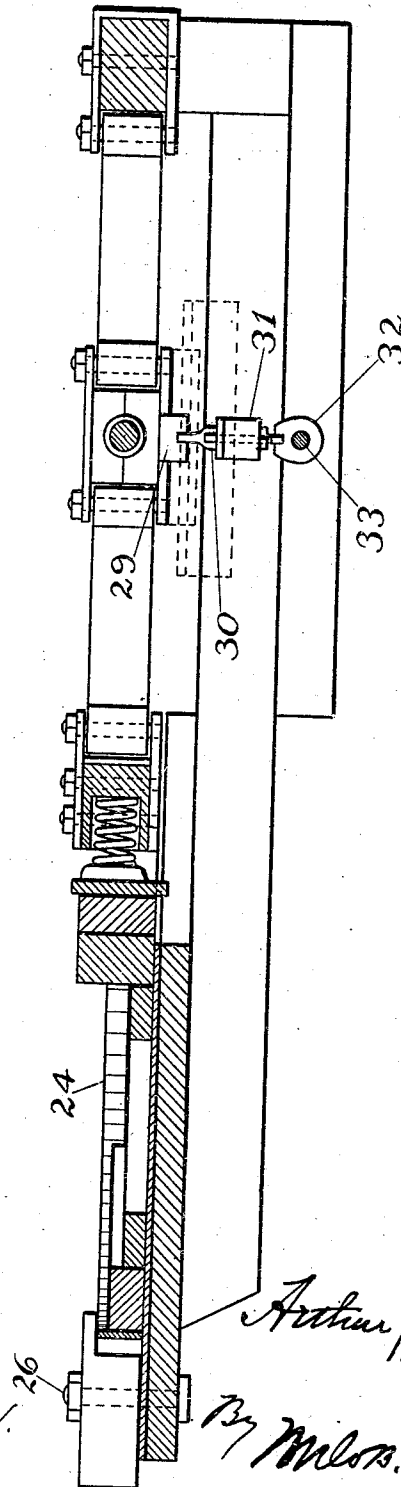
No. 874,406.

PATENTED DEC. 24, 1907.

A. L. JOHNSON.
CLAMPING MACHINE.
APPLICATION FILED JUNE 26, 1907.

4 SHEETS—SHEET 4.

Fig. 5.



Witnesses:
M. P. Kunsman.
Geo. E. Tew

Arthur L. Johnson
Inventor:

By Milos. Stoumles.
Attorneys.

UNITED STATES PATENT OFFICE.

ARTHUR LOUIS JOHNSON, OF CHICAGO, ILLINOIS.

CLAMPING-MACHINE.

No. 874,406.

Specification of Letters Patent.

Patented Dec. 24, 1907.

Application filed June 26, 1907. Serial No. 380,941.

To all whom it may concern:

Be it known that I, ARTHUR LOUIS JOHNSON, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Clamping-Machines, of which the following is a specification.

This invention is a machine or press for pressing or clamping chair bottoms after gluing and joining, and has for its object to provide an automatic power-operated press which will clamp and press the bottom from various directions and force the parts thereof together into proper and permanent position. The invention is illustrated in the accompanying drawings, in which

Figure 1 is a plan view of the machine. Fig. 2 is a front elevation thereof. Fig. 3 is a side elevation thereof. Fig. 4 is a detail in section on the line 4—4 of Fig. 3. Fig. 5 is a section on the line 5—5 of Fig. 2.

The machine has a table 1 with a metal top 2 having blocks 3 on which the pieces of the chair bottom can be conveniently set up and joined by the workman, preparatory to pressing, and after the glue is applied to the joints. A glue pot is indicated at 27, kept warm by steam supplied through a pipe 39.

At 4 and 5 are indicated a pair of pulleys loose upon the shaft 9, which extends across the frame at the rear thereof, and one end of which has right and left threads. The shaft is mounted in laterally sliding bearing boxes 10 which slide on ways 11 supported by the frame. The pulleys 4 and 5 are driven in opposite directions by any suitable power. They have opposite clutch members 7 and 8, which coöperate with a double-faced clutch ring 6 keyed to the shaft and shiftable thereon to clutch either pulley and thus drive the shaft 9 in either direction.

Located upon the threaded portions of the shaft 9 are the traveling nuts 13 of a pair of toggles the arms of which are indicated at 14, pivotally connected on one side to fixtures 15 on the frame and on the other side to fixtures 19 on a cross bar 20 which is slidable on the table top, to apply pressure to the chair bottom, the pieces of which are indicated at 23. Chocks 22 and springs 21 are located between the cross bar and the chair bottom.

A flexible or spring metal band 24 is connected at its ends to blocks 18 fixed to the frame of the machine, and extends over the top of the table to form a loop within which the chair bottom is clamped. The band is

held down or in place at the middle or end of the loop by an overhanging block 25 and bolt 26, the block being adjustable to accommodate various positions of the band. Located within the band, between the bend of the loop and the chair bottom, are a pair of bent knuckles or clamping blocks 28 which rest upon the table top and receive therebetween the ends and sides of the chair bottom. These knuckles are supported on the back by the band 24, and owing to their curved shape the action is such that when the pressure is applied the knuckles will bind inwardly against opposite sides of the frame, and so give the transverse pressure which forces the side pieces of the chair bottom into place, and at the same time the endwise or longitudinal pressure forces the end pieces into proper position, and so pressure is applied on all sides to close all the joints in the chair bottom and press the pieces thereof firmly together.

It is obvious that when the clutch 6 is engaged with one pulley, say 4, the toggles will be straightened and the pressure applied, and when the clutch is shifted to the other pulley the toggles will be flexed and the pressure bar 20 retracted. It is also obvious that the shaft 9 will have a slight lateral motion incident to operating the toggles. This motion is permitted by the sliding bearings 10.

It is desirable or essential that means be provided to engage the clutch with the pulley, and also that means be provided to disengage said clutch when or just before the nuts reach the end of the screw on the shaft 9. To this end, a shifting arm 8^a extends into the groove in the clutch member 6, and this arm projects from a sleeve 8^b fixed on a rod 33, which is slidable lengthwise in bearings under the table top. Springs 34, between the sleeve and the adjacent sides of the frame, normally hold the sleeve and arm in middle position with the clutch member 6 disengaged from both the members 7 and 8, or in stopped position. The sleeve 8^a is connected to a rocking lever 35 the arms of which are connected by rods 36 to treadles 37. By pressure on one treadle or the other the lever 35 is rocked and the clutch member 6 is shifted to engagement with one or the other of the clutch members 7 and 8, and so the toggles are either straightened or flexed. When so engaged the clutch is held in engagement, temporarily, by means of a collar 32, on the rod 33, which, when said rod is

shifted, engages a latch 31 which is supported by a cross beam extending under the table top and is connected at its upper end to a trigger 30 adapted to be struck by a projection 29 depending from the nut 13. There are two of these collars, latches, triggers and projections, and one set engage when the rod 33 is shifted in one direction, and the other engage when the rod is shifted in the other direction, and whichever latch is engaged remains in engagement until the projection 29 strikes the trigger 30, which lifts said trigger and allows the spring 34 to act to shift the clutch to middle position and thus stop the shaft. The stop is automatic, in either operation.

By the means shown, the seat pieces 23 are pressed together and may be held under pressure as long as desired, closing all the joints securely and holding the same until the glue sets, after which the pressure may be released and the bottom removed, for the next operation.

I claim:

1. In a clamp, the combination of a cross bar, or head and means to advance and retract the same, a flexible loop opposite said head, and a pair of angular blocks located within the loop, the work being clamped between the said head and blocks.

2. In a clamp, the combination of a cross bar or head, a loop opposite said head and consisting of a strip of flexible material secured at its ends on opposite sides of the head, a pair of angular knuckles or blocks located opposite to each other within the loop, the work being received between said knuckles which clamp the same at the end and sides thereof, when the head is advanced, and means to advance and retract the head.

3. In a clamp, the combination of a table, a head slidable thereover, a loop of flexible material fastened at its ends to the table on opposite sides of the head and extending around in front of the same, clamping blocks located on opposite sides of and within the loop and means to advance or retract the head.

4. In a clamp, the combination of a table, a head slidable thereon, a flexible band fixed at its ends to the table on opposite sides of the head and extending around in front of the head and upon the table, and angular blocks resting upon the table within the band, the work to be clamped being held upon the table between the blocks and the head.

5. The combination of a clamping head, a shaft having right hand and left hand threads, toggles connected to the head, to advance and retract the same and having nuts at the joint which travel on said threads, oppositely driven pulleys on the shaft, a clutch between the pulleys and the shaft, a shifter for the clutch, springs bearing oppositely on the shifter and normally holding the clutch in disengaged position, latches connected to the shifter and arranged to hold the same with the clutch in engagement with either pulley, and means actuated by the movement of the nuts to release either latch.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR LOUIS JOHNSON.

Witnesses:

NELLIE FELTSKOG,
H. G. BATCHELOR.