

H. W. PATTON.

MACHINE FOR FORMING AND SECURING SHEET METAL ROLLERS TO MAPS.

APPLICATION FILED NOV. 29, 1907.

905,451.

Patented Dec. 1, 1908.

3 SHEETS—SHEET 1.

Fig - 1 -

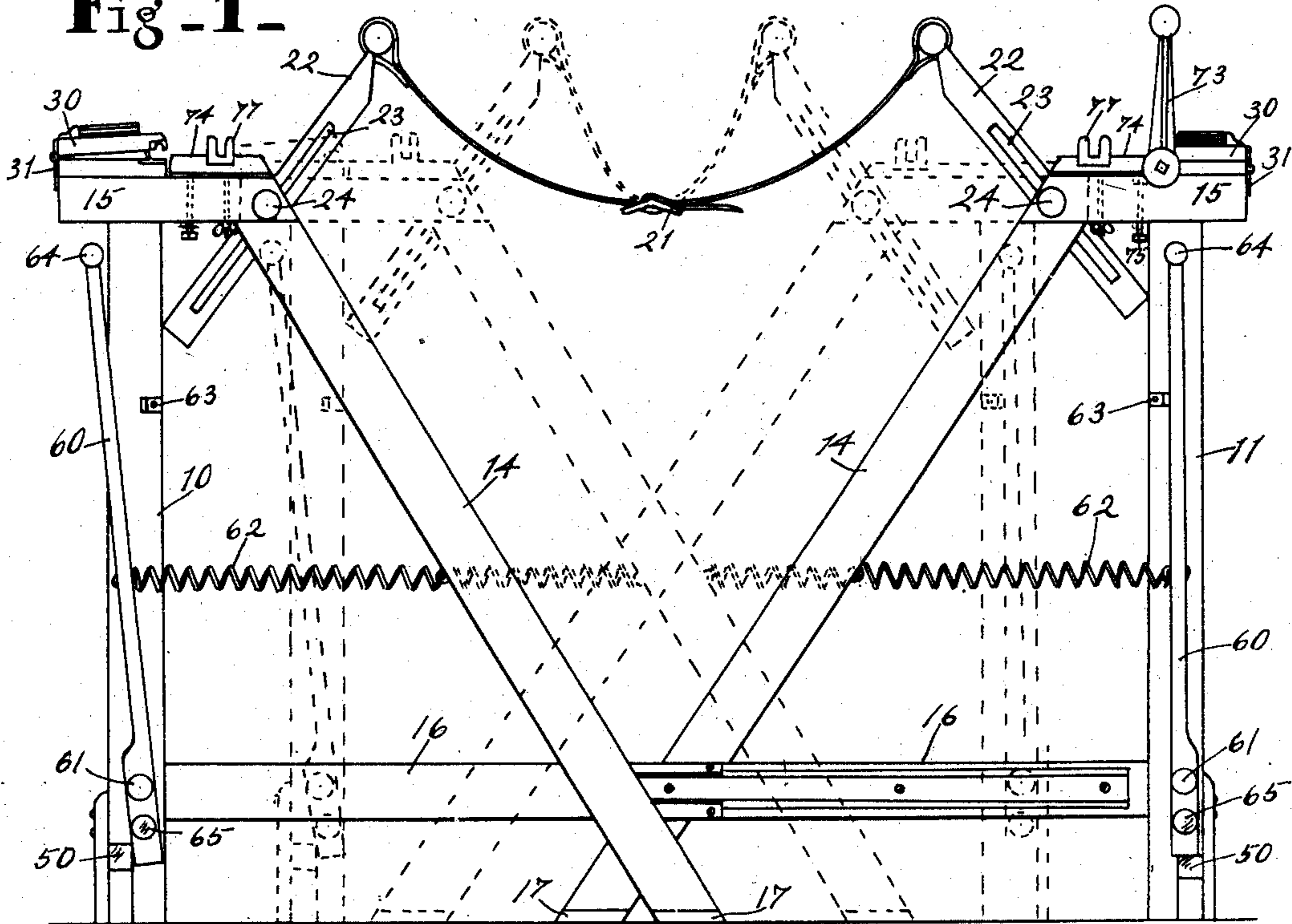
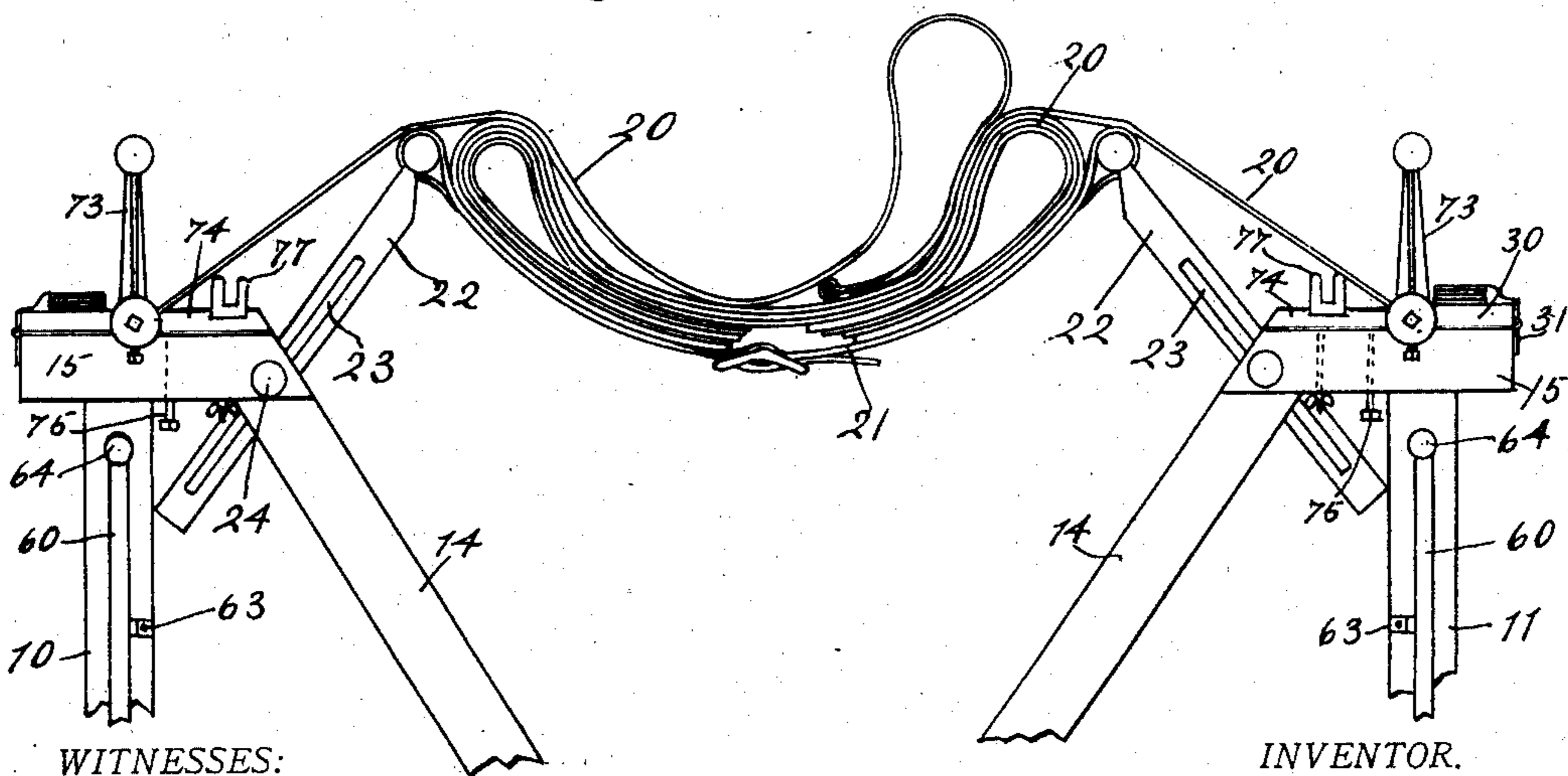


Fig - 2 -



WITNESSES:
W. M. Gentile.
N. Allemong.

INVENTOR.
Herbert W. Patton
BY
V. H. Lockwood
ATTORNEY.

Fig - 3 -

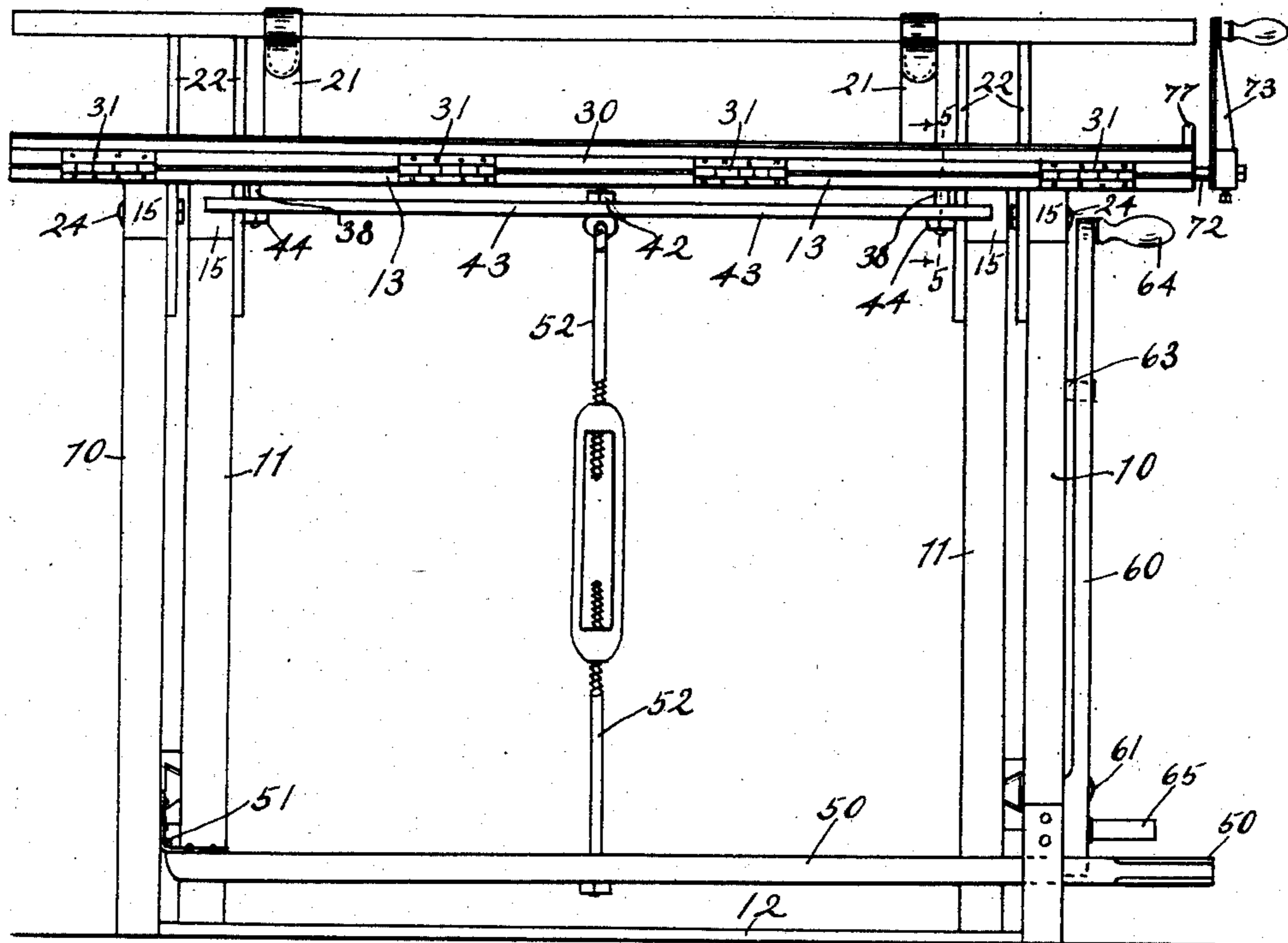
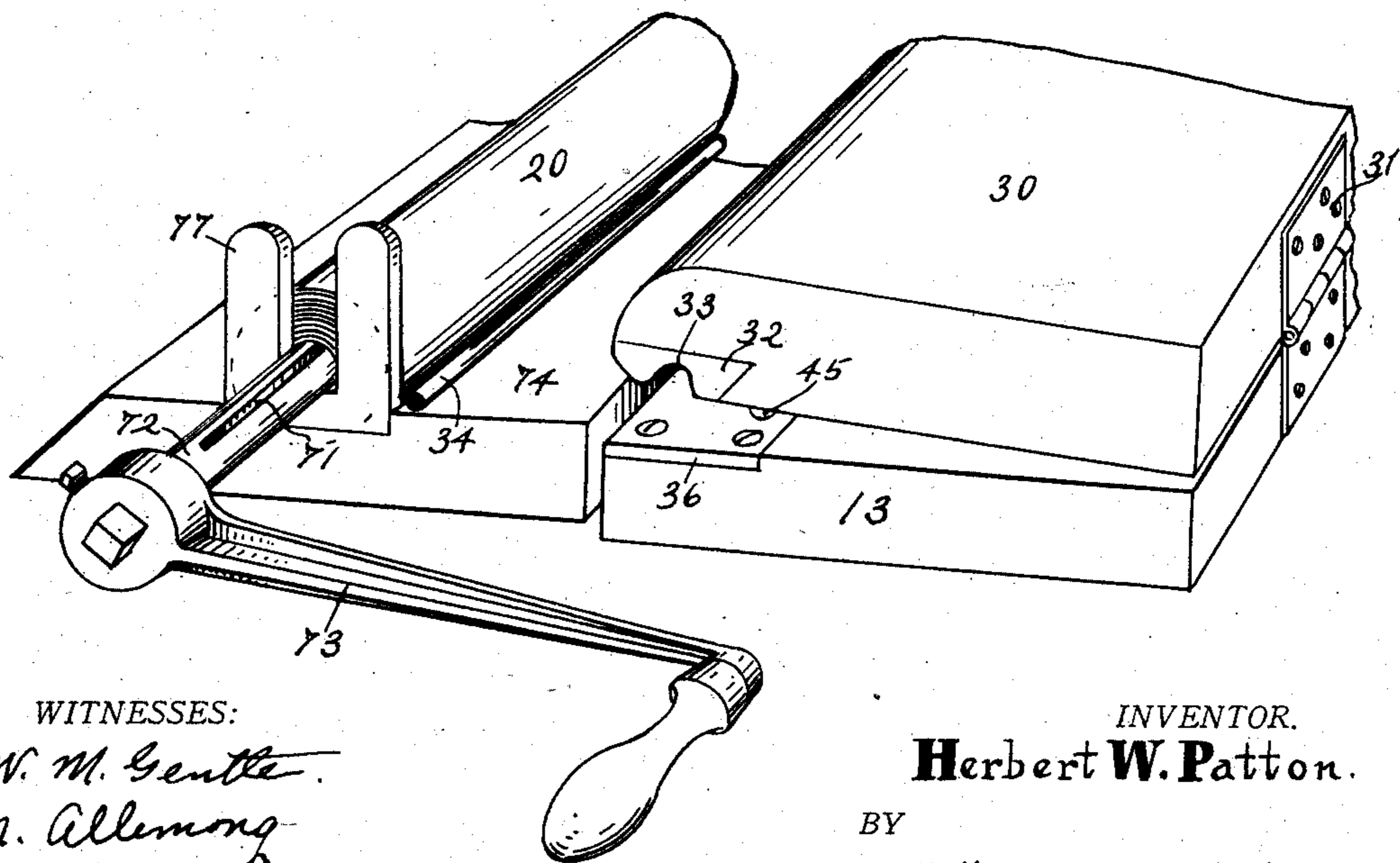


Fig - 4 -



WITNESSES:
W. M. Gentile
N. Allemon

INVENTOR.
Herbert W. Patton.
BY
V. H. Lockwood
ATTORNEY.

H. W. PATTON.

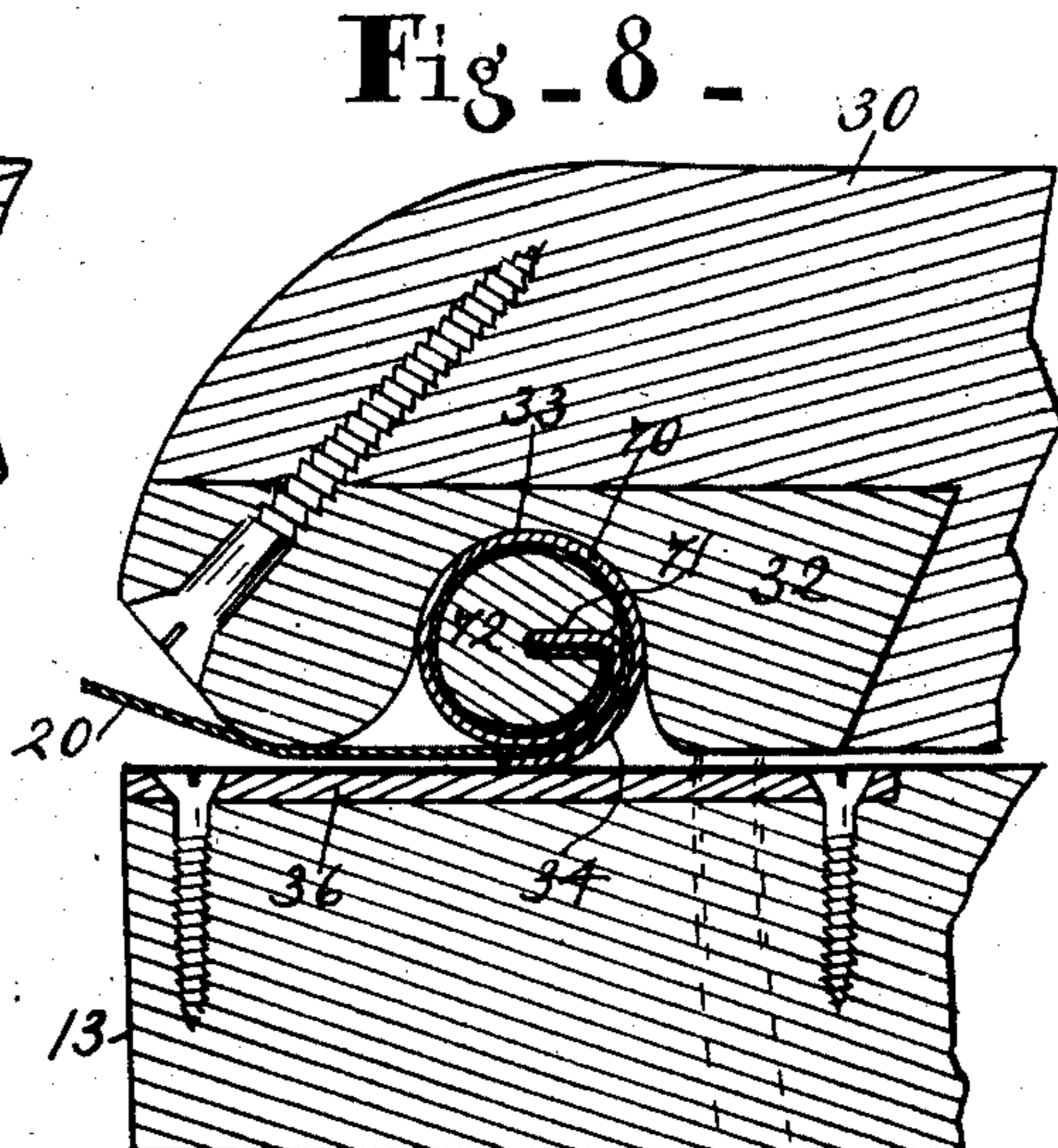
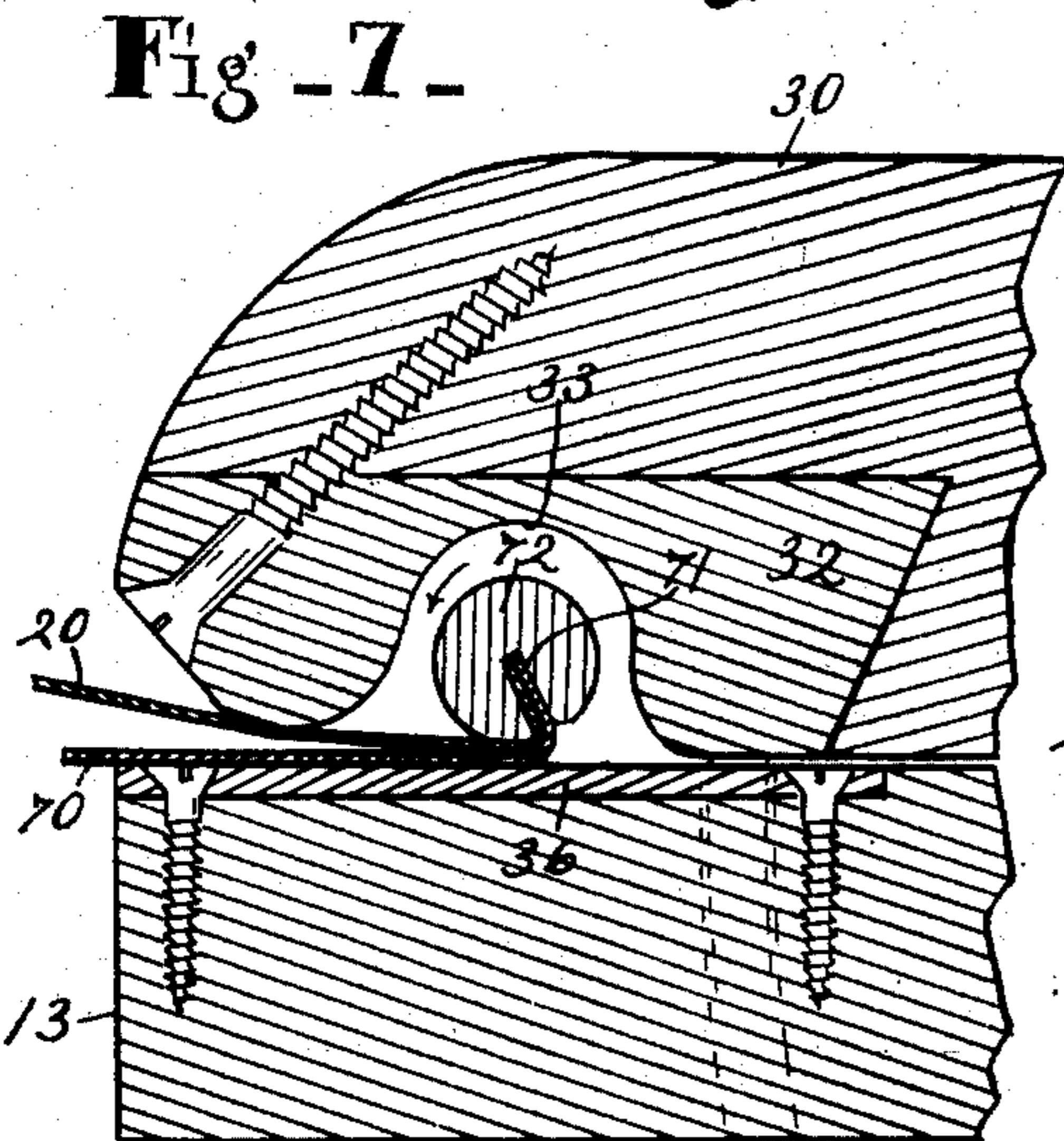
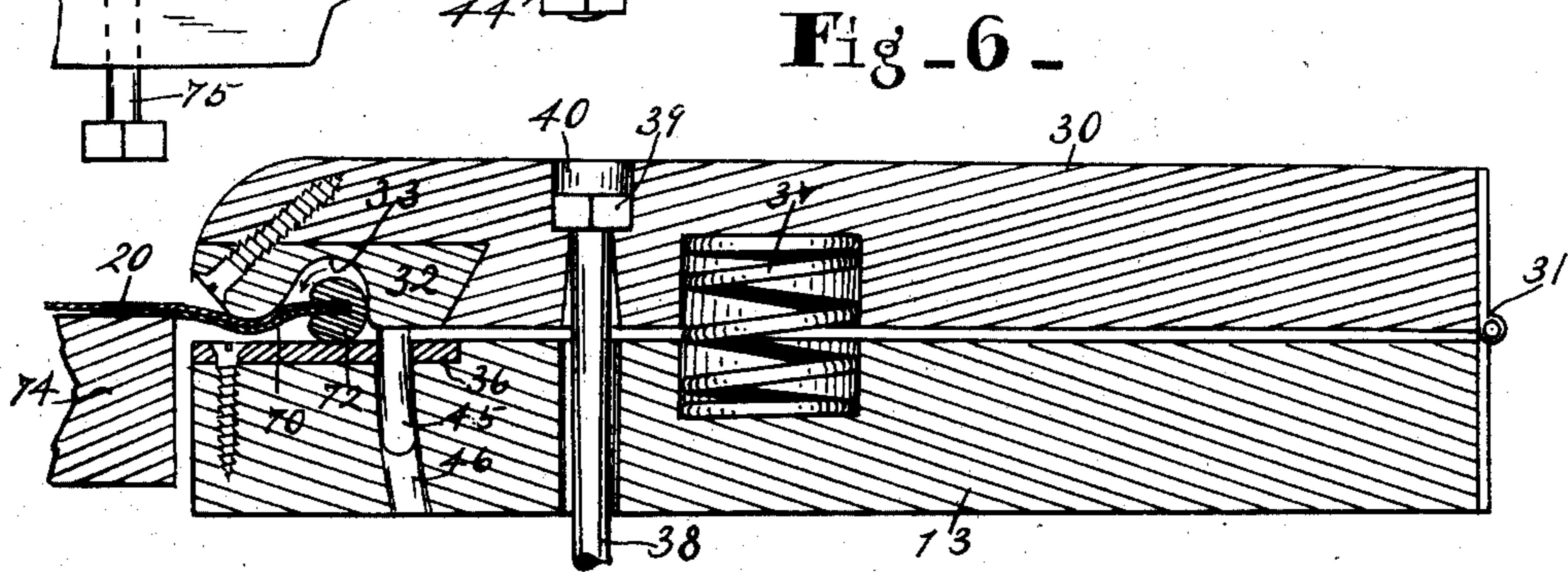
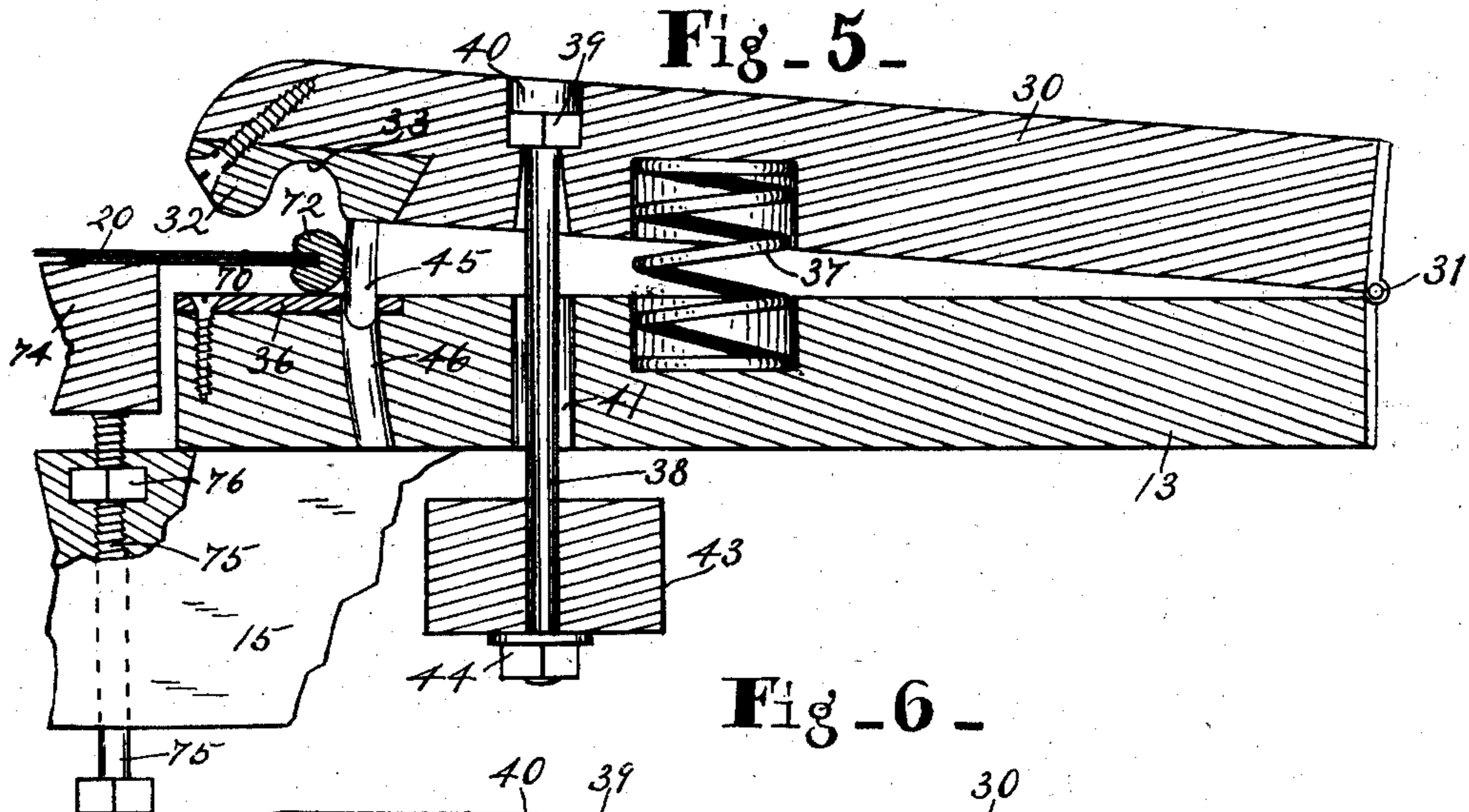
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3 SHEETS—SHEET 3.



WITNESSES:

W. M. Gentle.

N. Allmoning

INVENTOR.

Herbert W. Patton.

BY

V. H. Lockwood.

ATTORNEY

UNITED STATES PATENT OFFICE.

HERBERT W. PATTON, OF INDIANAPOLIS, INDIANA.

MACHINE FOR FORMING AND SECURING SHEET-METAL ROLLERS TO MAPS.

No. 905,451.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed November 29, 1907. Serial No. 404,259.

To all whom it may concern:

Be it known that I, HERBERT W. PATTON, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Machine for Forming and Securing Sheet-Metal Rollers to Maps and the Like; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

The object of this invention is to provide a practical and satisfactory mechanism for attaching sheet metal rollers to the ends of maps and the like. The sheet of metal which is thus coiled upon and in connection with the end of the map or the like is preferably non-resilient so that it will remain in the position in which it may be coiled.

One feature of the invention consists in providing a rotatable slotted rod and means for guiding the sheet of metal and the map or the like, so that their edges will enter the slot in said rod, whereby, when the rod is rotated, the map and sheet of metal will be coiled together; and the sheet of metal is of such width that when coiled it will form practically a cylinder secured to the end of the map. Along with the foregoing there is provided means for adjusting the feeding mechanism to suit different work and different coiling rods.

Another feature of the invention consists in providing a hinged or pivoted forming plate that is moved downwardly upon the coiling rod and is provided with a forming groove on its under side that envelops the upper part of said rod and coöperates therewith in securing the roller to the map or curtain.

Another feature of the invention consists in combining two of said means for securing rollers to maps and the like with an intermediate means for holding the map, the parts being so arranged that two operators can work simultaneously on a group of maps. They can work either simultaneously on the same map or on separate maps in a group without interfering with each other. This feature of the invention is a very valuable one for it more than doubles the capacity of the machine. This is employed where rollers are placed on both ends of maps and the like. Means are provided for contracting or otherwise adjusting the relative positions of the two sides of the mechanism to

suit the work in hand, it being expanded for large maps and contracted for smaller ones.

The foregoing and the other features of this invention will be understood from the accompanying drawings and the following description and claims:

In the drawings Figure 1 is a side elevation of the device, showing it expanded in full lines and contracted in dotted lines. Fig. 2 shows the upper part of what appears in Fig. 1 with a number of maps in place. Fig. 3 is an end elevation of the machine. Fig. 4 is a perspective view of what appears in the upper right hand corner of Fig. 1, the map and forming rod being removed for the purpose of withdrawing the forming rod from the map. Fig. 5 is a transverse section of Fig. 4, a part being broken away showing the forming plate in position. Fig. 6 is the same showing the forming plate actuated. Fig. 7 shows a part of what appears in Fig. 6 on a larger scale, with the coiling rod partially actuated. Fig. 8 is the same with the metal completely coiled on the map.

The mechanism consists of two similarly formed end frames having vertical bars 10 and 11, lower cross bars 12, upper cross bars 13, side inclined bars 14, side top bars 15 and side lower bars 16. The lower bars 16 have dovetailed sliding connections with each other, as shown in Figs. 1 and 3, whereby the two ends of the machine may be moved toward or away from each other to a limited extent. The lower ends of the inclined bars 14 forming the opposite pairs have secured to them a cross bar 17 that is adapted to slide on the floor as the machine is contracted or extended.

A support for the maps 20 is provided between the two ends of the device and consists of the leather strips 21 suspended from the ends of the inclined bars 22 that are slotted at 23 and held in place by a clamping bolt 24. Those clamping bolts permit the bars 22 to be placed and held in any desired position.

As seen in Fig. 4 there is a forming plate 30 that extends transversely of the machine at each end and is pivotally connected with the cross bar 13 by hinges 31 at the outer edge thereof. The forming plate 30 is preferably made wide and is reinforced by a metal bar 32 that is provided longitudinally with a forming groove 33 that is substantially semicircular in cross section and has a diameter substantially the same as the map

20 after the metal roller 34 has been coiled as shown in Fig. 8. There is also a metal plate 36 on the cross-bar 13 and opposite the bar 32. The forming plate 30 is normally
 5 held in the upper position shown in Fig. 5, by the spring 37 acting between said plate 30 and the bar 13.

The forming plate 30 is actuated downwardly from the position shown in Fig. 5
 10 to that shown in Fig. 6 by the pedal bar 50 extending transversely of the machine and fulcrumed at 51 to an upright 10. There is a connection 52 between the middle portion of said bar 50 and the cross-bar 43 above
 15 through which a pair of rods 38 extend from the forming plate 30, as shown in Fig. 5. Said rods 38 have heads 39 countersunk in the holes 40 in the plate 30, and said rods 38 extend through holes 41 passing through the
 20 bar 13, and have nuts 44 on their lower ends. The free end of the forming plate 30 is guided in its oscillatory movements by a pin 45 extending down from the bar 32 and operating through a hole 46 in the bar 32; said
 25 hole and pin are curved concentrically with the pivot point of the hinge 31.

When the pedal 50 is actuated by being pressed downwardly, it is locked by the locking lever 60 fulcrumed at 61, see Fig. 1. The
 30 bar 50 engages the lower end of the lever 60 when drawn to its vertical position by a spring 62 that runs from said lever 60 to the frame bar 14. Such inward movement of the lever 60 is stopped by a stop 63 on the
 35 upright 10. When it is desired to release the pedal 50, the lever 60 is drawn from the position shown at the right-hand end of Fig. 1 to that shown at the left-hand end of Fig. 1, and then the springs 37 act to draw the
 40 pedal upwardly into the position shown in Fig. 1. Therefore, a handle 64 is placed on the upper end of the lever 60; but it may also be actuated by the foot through means of the pedal bar 65 near the lower end of
 45 the lever 60, whereby said lower end of the lever 60 may be pushed inward, as shown at the left-hand end of Fig. 1.

The object of the mechanism is to coil a non-resilient sheet of metal 70 on the end of
 50 a map or the like, and that is done by inserting the edge of the metal sheet, and preferably the edge of the map, into a radial slot 71 in the coiling rod 72. This coiling rod is a plain rod with a handle or crank 73 on one
 55 end and with a slot 71 extending entirely to the other end.

There is no particular bearing for the coiling rod 72, but it is laid upon the plate 36 against pins 45 with the handle upward, as
 60 shown in Fig. 1, which presents the slot 71 outwardly, as shown in Fig. 5, in such position that the sheet of metal and the map can be readily inserted into the slot by reason of the feeding plate 74. This feeding plate is
 65 carried upon the side bars 15 by screws 75,

see Fig. 5, that operate through nuts 76 held stationary in the bar 15 so that the plate 74 may be elevated and lowered. It should be elevated so that its upper surface will be in line with the slot in the coiling rod 72. That
 70 enables the operator to lay the sheet of metal 70 upon the plate 74 and the end of the map upon said sheet of metal, and to shove them both into the slot 71 in the rod 72, in the position shown in Figs. 5 and 6. The operation
 75 is further continued by actuating the pedal 50 and bringing the forming plate down upon the work, as shown in Fig. 6, then turning the rod 72 by the handle 73 to the position shown in Fig. 8, which completes the coil of the metal on the map.
 80 Then the pedal is released and, therefore, the forming plate 30 and the rod with the metal coil thereon drawn outwardly from the plate 30 upon the plate 74, as shown in Fig. 85 4, and one end of the rod 72 inserted in the slot in the drawing plate 77, and then the rod turned until the map is entirely wound upon it, as there shown; whereupon the coiling rod 72 is drawn longitudinally out of
 90 the map, the plate 77 holding the map as the rod 72 is withdrawn from it. From the other end of the map the rod is immediately withdrawn without coiling the whole map thereon.

As stated before, by folding the maps 21, as shown in Fig. 2, with the ends thereof turned under, an operator can work at each end of the machine and place a roller on both
 100 ends of the map simultaneously, the two ends of the machine being brought together close enough so that there will be ample length of map to enable the operators to work on the same map without interfering with each other. However, they need not
 105 work on the same map simultaneously, but they may work independently on the same group of maps, and when one has put a roller on one end of a map, he inserts that end of the map upon the remaining maps, as
 110 shown in Fig. 2. When the other operator puts a roller on his end of the map, he then can also coil the map entirely, as shown in Fig. 4. Therefore, this mechanism not only puts the rollers on the map but coils the map
 115 ready for shipment. When two operators work together on the machine, one of them coils every map while the other operator is putting the maps in place or otherwise doing things necessary for the operation of the
 120 machine, so that both will be kept busy and yet work upon the same group of maps. This renders the operation of the device very rapid and greatly increases the capacity of the machine.

What I claim as my invention and desire to secure by Letters Patent is:

1. A machine for forming and securing sheet metal rollers to maps and the like including a rod adapted to be rotated that is
 130

provided with a longitudinal slot into which the edges of the sheet of metal and map or the like may be inserted, a vertically adjustable plate in alinement with said slot in said rod upon which the sheet of metal and map or the like may be placed and moved for guiding the same while inserting the edges thereof in the slot, a flat bearing plate upon which said rod rests, a forming plate movable into position to engage the sheet of metal and map or the like as they are being coiled, and means for rotating said rod.

2. A machine for forming and securing sheet metal rollers to maps and the like including a rod adapted to be rotated that is provided with a longitudinal slot into which an edge of the sheet of metal may be inserted, a plate upon which said rod rests while rotated, a forming plate movable downwardly upon said bearing plate and provided with a groove adapted to extend over and about said rod to cooperate with said bearing plate in coiling the sheet of metal upon the map or the like, means for moving said forming plate downwardly, a spring for normally holding it upward away from said bearing plate, a pedal bar fulcrumed at one end, a connection between said pedal bar and said forming plate whereby the latter may be moved downwardly when said pedal bar is depressed, a locking lever fulcrumed to the side of the machine between its ends so that when in one position its lower end will hold the pedal downwardly, a handle on the upper end of said lever, and a foot-piece on

the lower part of said lever for disengaging said lever from the pedal bar.

3. A machine for forming and securing sheet metal rollers to maps and the like including a rod adapted to be rotated that is provided with a longitudinal slot into which an edge of the sheet of metal may be inserted for coiling the same on a map or the like, said slot extending to one end of said rod, a handle on the other end thereof whereby the rod may be longitudinally withdrawn from place after the metal roller has been secured to a map or the like, and a slotted plate in which said rod is adapted to be placed after the roller has been secured to the map or the like, whereby the entire map may be rolled up.

4. A machine of the kind described including a pair of mechanisms for securing metal sheets on the ends of maps or the like, flexible means intermediate said mechanisms for holding the maps while the ends thereof are being operated upon, and means for adjusting the distance between said separated roller-coiling mechanisms to adapt the device for use in connection with maps or the like of different lengths.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

HERBERT W. PATTON.

Witnesses:

N. ALLEMONG,
OLIVE BREEDEN.