

No. 751,035.

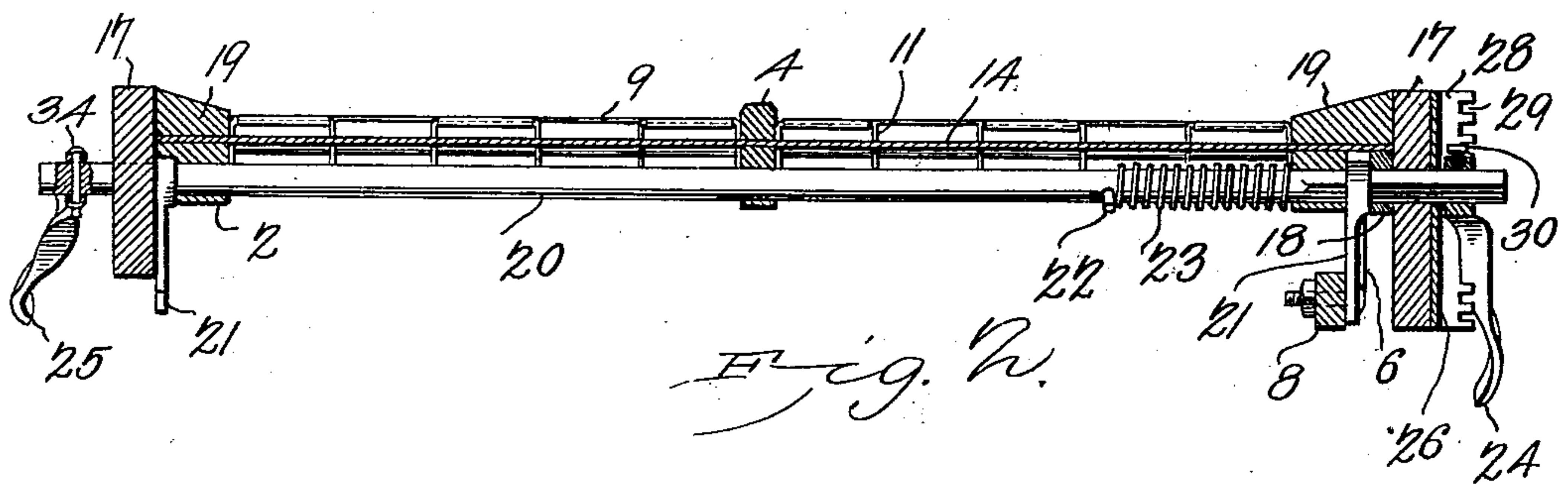
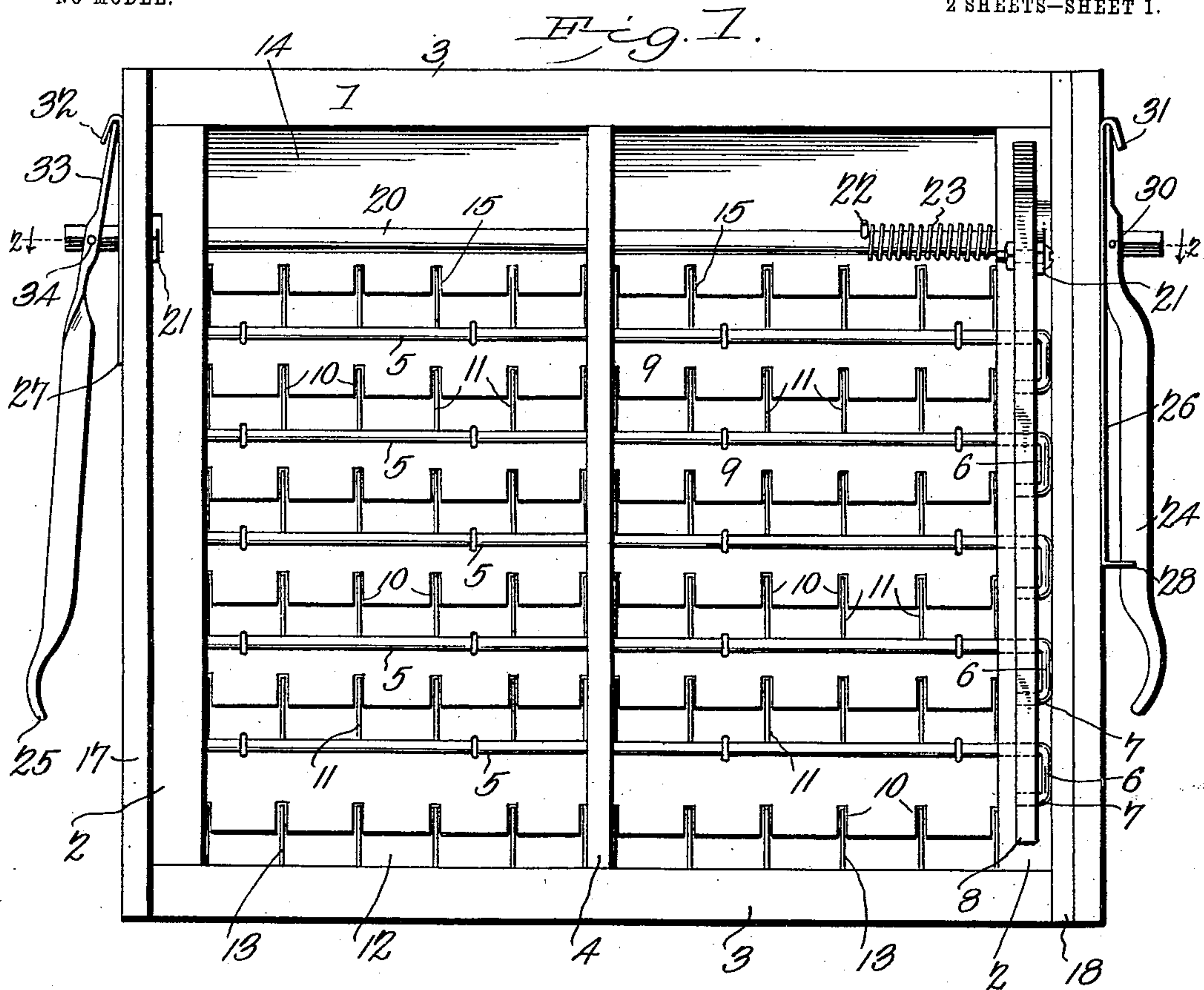
PATENTED FEB. 2, 1904.

B. WHELAN.
SIEVE FOR THRESHING MACHINES.

APPLICATION FILED MAY 22, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
E. J. Stewart
Wm. Baggett

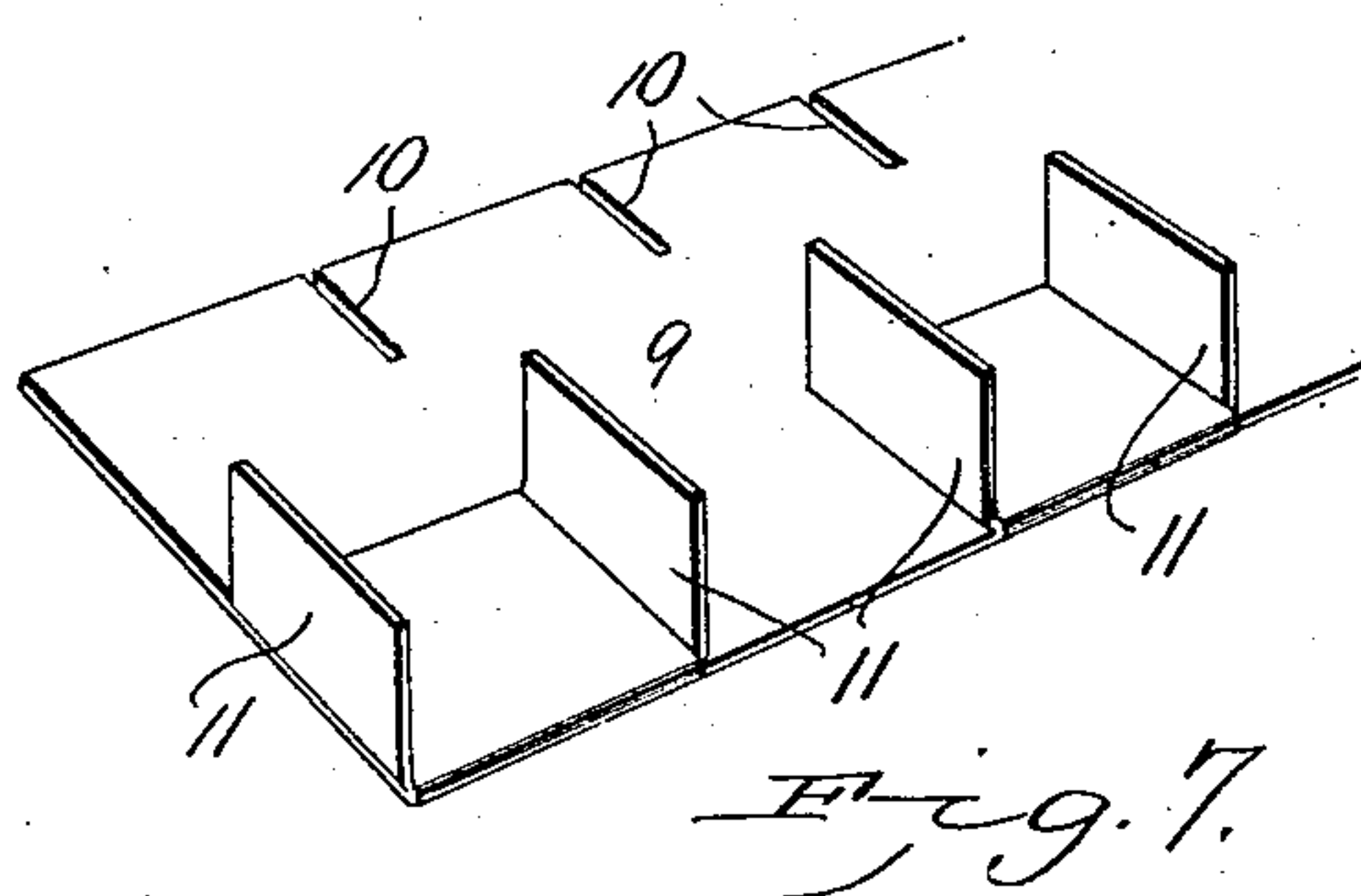
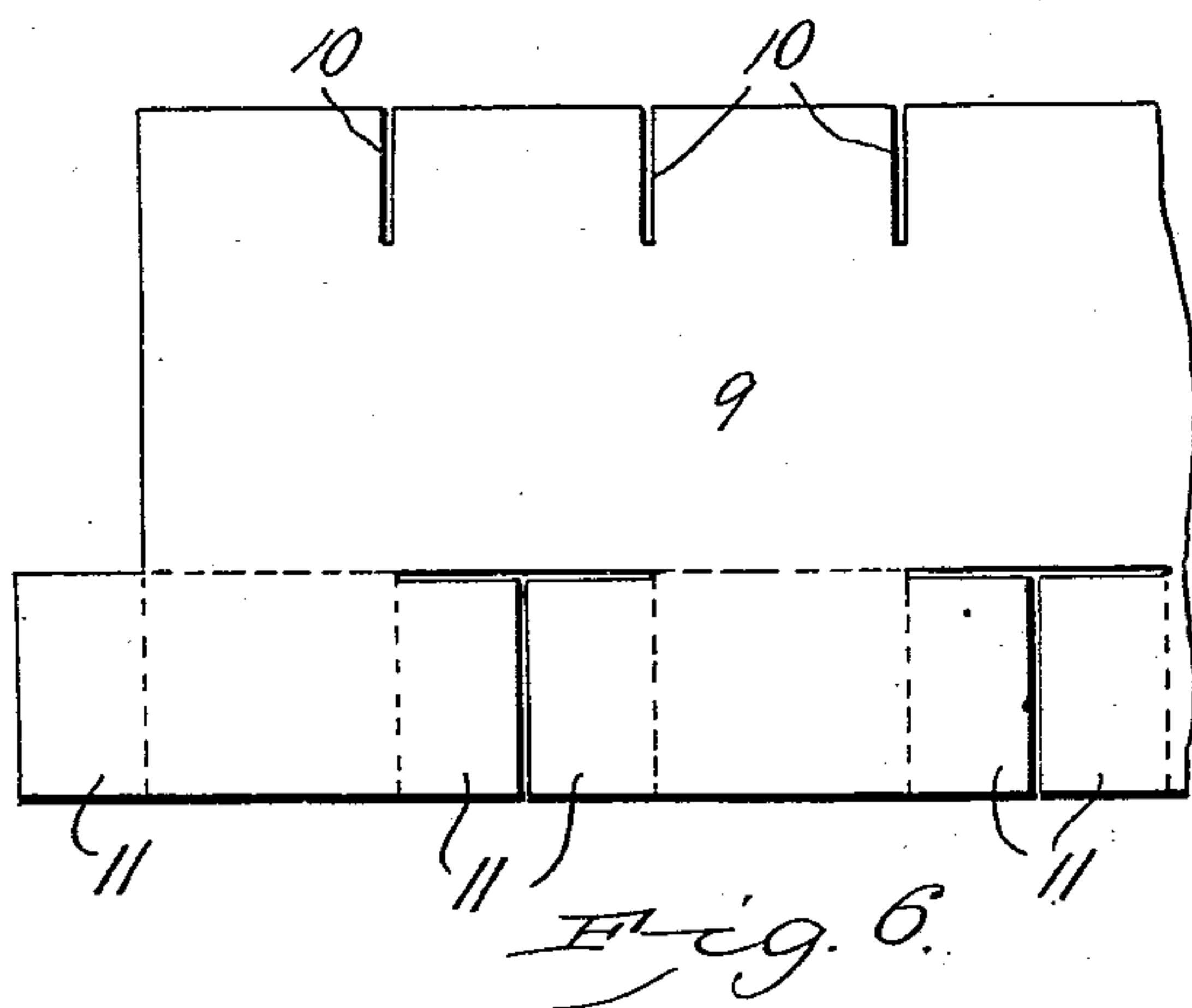
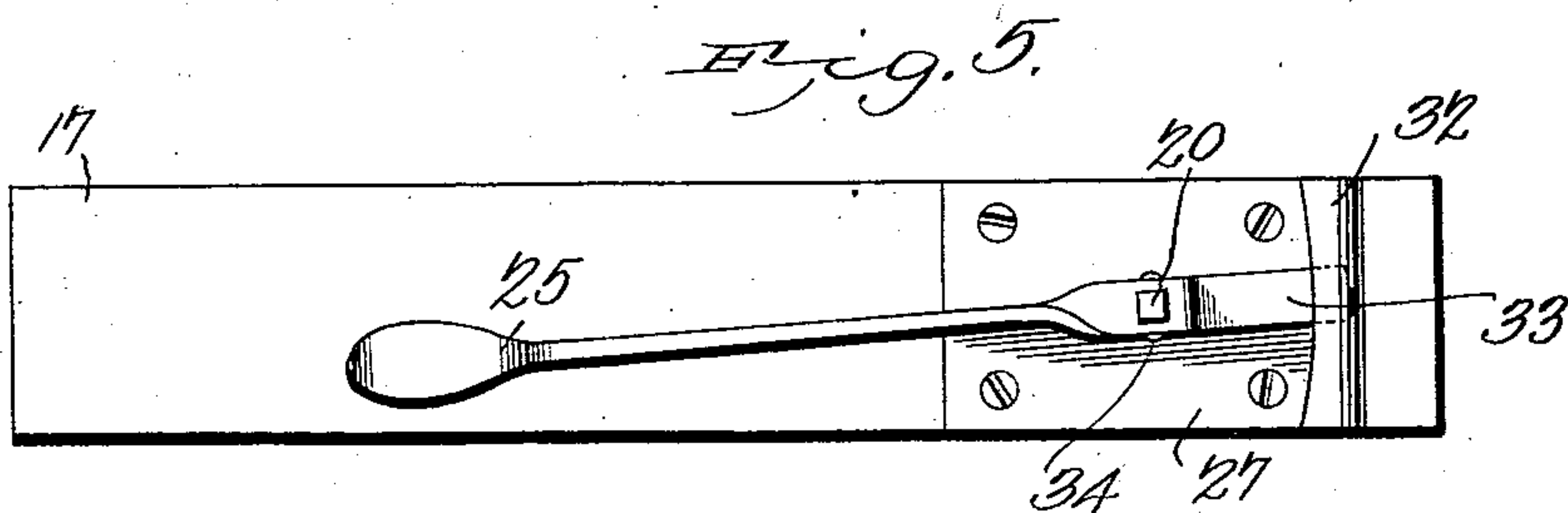
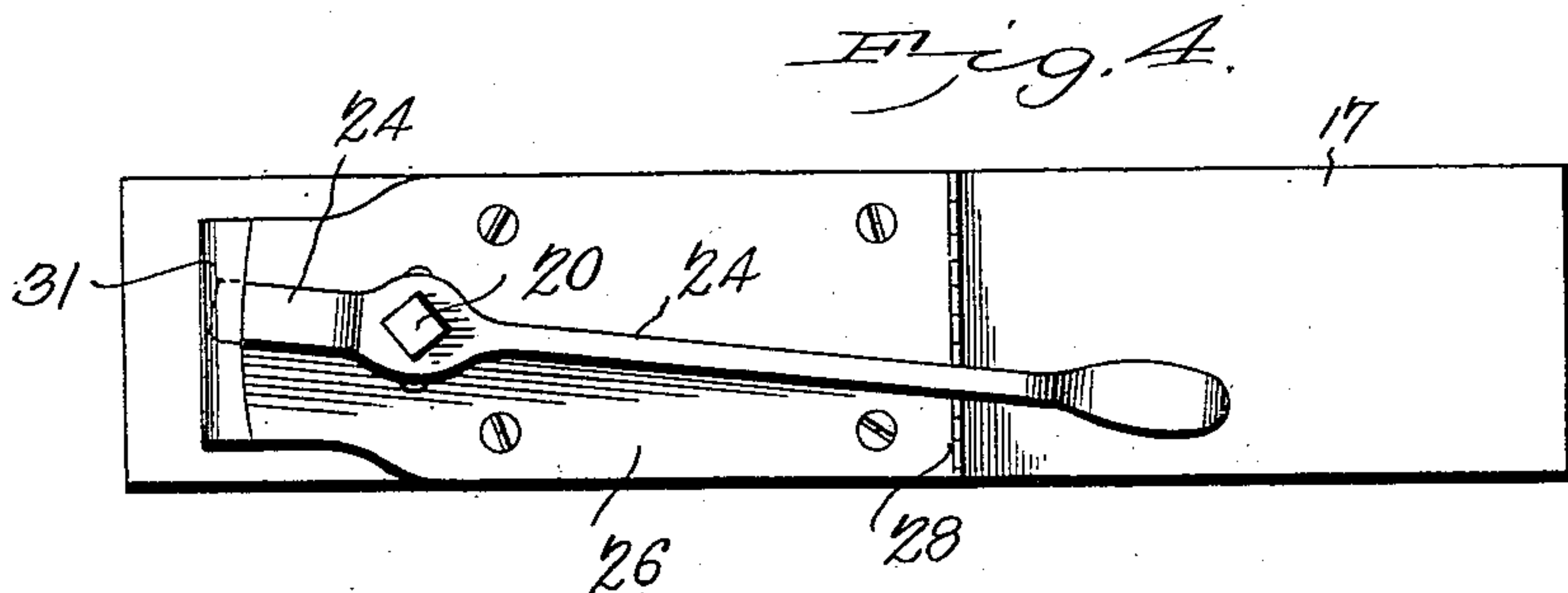
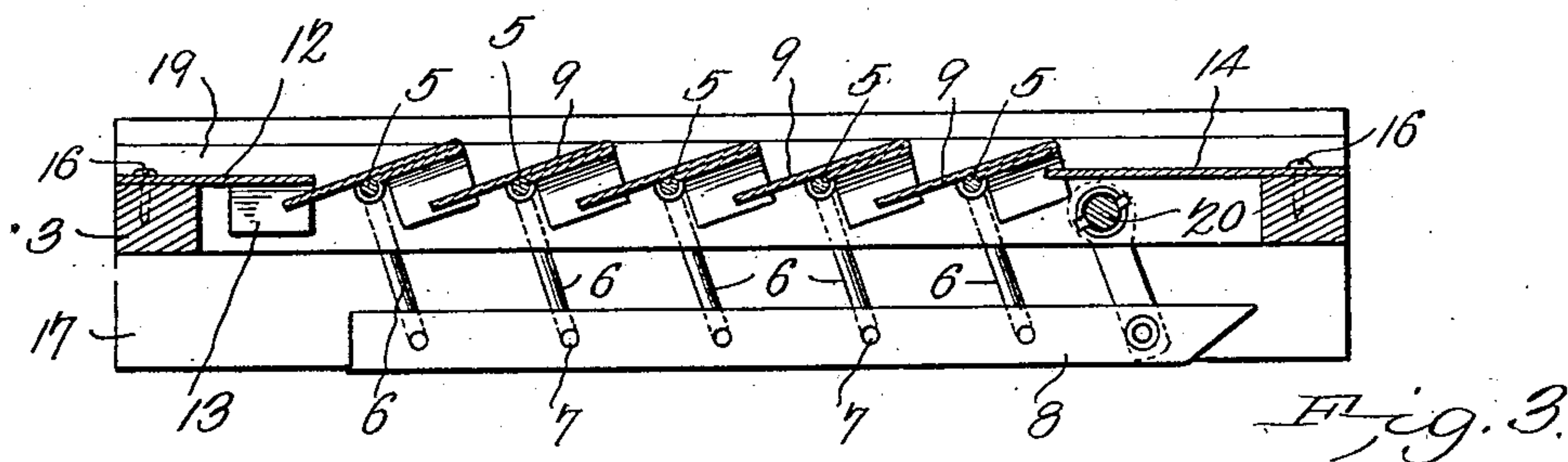
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B. H. Stewart
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UNITED STATES PATENT OFFICE.

BERT WHELAN, OF ROSELAND, NEBRASKA.

SIEVE FOR THRESHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 751,035, dated February 2, 1904.

Application filed May 22, 1903. Serial No. 158,345. (No model.)

To all whom it may concern:

Be it known that I, BERT WHELAN, a citizen of the United States, residing at Roseland, in the county of Adams and State of Nebraska, have invented a new and useful Sieve for Threshing-Machines, of which the following is a specification.

This invention relates to sieves for threshing-machines; and it has for its object to provide a device of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency.

A further object of my invention is to provide a screen equipped with a plurality of pivotally-mounted slats or ribs of peculiar construction, said slats or ribs being adjustable, so as to regulate the size of the openings for the passage of grain, thus enabling said sieve to be used equally well and successfully for various kinds of grains for the purpose of separating therefrom straw, sticks, and the like.

With these and other objects in view my invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a bottom plan view of a sieve constructed in accordance with the principles of my invention. Fig. 2 is a transverse sectional view taken on the line 2 2 in Fig. 1. Fig. 3 is a longitudinal sectional view. Fig. 4 is a side elevation. Fig. 5 is a side elevation taken from the opposite side of the device. Fig. 6 is a plan view showing a portion of a blank from which the slats of my improved sieve are constructed. Fig. 7 is a perspective view showing the under side of one of said slats.

Corresponding parts in the several figures are indicated by similar numerals of reference.

The frame of my improved sieve, which is here designated 1, is composed of side pieces 2 2 and end pieces 3 3. In the accompanying drawings one longitudinal dividing-bar 4 has been shown; but I desire it to be understood that any desired number of such dividing-bars may be used, according to the size of the machine to which the invention is to be applied, the purpose of said dividing-bars being to so

divide the screen or sieve longitudinally that the material passing over the surface thereof shall not be diverted or deflected out of its proper path, the efficiency of the device being thereby increased.

The sides 2 2 of the frame afford bearings for a plurality of rock-shafts 5, which are extended through and have additional bearings on the dividing bar or bars 4, (when a plurality of the latter are used.) These rock-shafts have been shown in the drawings as being provided with depending cranks 6 at one end thereof, said cranks being bent to form wrists 7, which pivotally engage a connecting-bar 8. It will of course be understood that any desired number of these rock-shafts may be used in a single sieve, according to the length of the latter, and I also desire it to be understood that cranks 6, having wrists engaging a connecting-bar, may be formed at each side of the sieve and not at one side only, as shown in the accompanying drawings. In a small sieve the arrangement herein shown will be sufficient. In a large one the arrangement is preferably duplicated.

Suitably and permanently connected to the rock-shafts 5 are the ribs or slats 9, which are preferably constructed of sheet metal and which are of a length equal to the distance between the longitudinal dividing-bars or between the latter and the adjacent side bars of the frame, said distances being by preference equal. The slats 9 are provided at their front edges with slots 10 to accommodate ears or flanges 11, depending from the under sides of the slats next behind, as will be readily understood by reference to the drawings. These flanges 11 may be secured to the under sides of the slats in any desired manner; but it is preferred that in the process of manufacture the pieces of sheet metal from which said slats are constructed be provided at their rear edges with T-shaped slots, as outlined in Fig. 6 of the drawings, said slotted portions being bent or doubled upon the under side of the sheet of metal and the flanges formed by bending said slotted portions in a downward direction, as will be readily understood by reference to Fig. 7. By this mode of construction it will be seen that the flanges will be parallel to

each other and longitudinally disposed with relation to the screen, so that they will conveniently engage the slits in the opposing edges of the adjacent slats. Other methods of construction may, however, be adopted and be found equally efficient, although probably not as inexpensive as the method of construction just referred to.

Upon the upper side of the front piece 3 of the frame is secured strap 12, having depending flanges 13 to engage the slots 10 in the front slats 9. Similarly I secure upon the upper side of the rear bar 3 of the frame sheets of metal 14, having slots 15 to accommodate the flanges 11 of the rear slat. By this construction there will be no break in the construction of the device, and the line of slats will be continued uninterruptedly from one end of the screen to the other. The sheets 14 are preferably secured in position detachably, as by means of screws 16, in order that they may be removed and access had to sub-jacent parts of the device.

My improved sieve is mounted in a shoe, a portion of the frame of which is represented at 17. Spacing-slats 18 may be interposed between the sides of the shoe and the sides of the frame at which the cranks 6 of the rock-shafts 5 are located in order that said cranks may operate freely between the side of the sieve-frame and that of the shoe. Only one of said spacing-slats has been shown in the drawings, for the reason that, as above set forth, the cranks have been shown at one end of the rock-shafts only. Deflecting-boards 19 are secured upon the upper sides of the side bars 2 of the sieve-frame, said boards serving to deflect the material that is to be operated upon onto the screening-slats of the device.

20 designates a rock-shaft which is journaled in the sides and dividing-bars of the sieve-frame near one end of the latter, the ends of said shaft being squared to receive crank-arms 21, which are in longitudinal alinement with the cranks 6 and which are to be connected pivotally with the connecting-bars 8. The crank-arms 21 are mounted slidably upon the rock-shaft, which latter is thus permitted to have a limited sliding movement in its bearings. Said rock-shaft is provided with a transverse pin or stop 22, between which and the adjacent side of the frame is mounted a coiled spring 23, which normally forces the said shaft in the direction of the arrow. The ends of the rock-shaft 20 are extended through the sides of the frame and of the shoe and are squared to receive the operating-levers 24 and 25. Upon the outer sides of the side bars of the shoe are mounted a pair of plates 26 and 27. The former of these plates is provided at its front edge with an upturned flange 28, having a plurality of notches 29, adapted to be engaged by the lever 24, which may thus be retained in any position to which it may be adjusted, the connection of said lever

with the rock-shaft being effected by a single transverse bolt or pin 30, upon which it has a limited pivotal movement. The rear end of the plate 26 is bent or doubled upon itself, forming a U-shaped flange 31, which receives the rearwardly-projecting end of the lever 24. The plate 27 upon the opposite side of the shoe-frame has a bent or U-shaped portion 32, corresponding with the bent portion of the plate 26 and adapted to receive the rear end of a lever 33, which is mounted upon and pivotally connected with the squared portion of the rock-shaft 20 by means of a pin 34. The longitudinal dividing bar or bars 4 of the device will be provided on their upper sides with cap-strips, of which in the drawings one has been shown and there designated 36. By removing the said cap-strip access may be had to the subjacent rock-shafts when desired.

The operation and advantages of this device will be readily understood by reference to the foregoing description, taken in connection with the drawings hereto annexed, by those skilled in the art to which it appertains. It will be seen that by manipulating the rock-shafts 20 the ribs or slats of the sieve may be so adjusted as to lie flat against each other, leaving absolutely no openings for the passage of grain. By manipulating the rock-shaft 20 so as to slightly tilt the position of the slats narrow openings between the rear edge of each slat and the overlapping front edge of the slat in front thereof will be produced, thus enabling grain of small size to pass through the openings. By further adjustment the size of the openings may be increased, according to the kind and quality of grain to be operated upon and to the condition of the same. It will be seen that under all circumstances the flanges 11 of each slat engaging the slots 10 of the adjacent slats will form an obstacle to the passage of short pieces of straw and like objectionable material, thereby causing the separation of the grain to be performed quickly and effectively. The adjustment of the slats may be effected from either side of the device. If the adjustment is effected through the medium of the lever 24, the latter is disengaged from the notches of the flange 28, the rock-shaft 20 being moved slightly outward in the act of disengagement, the fulcrum of the lever being temporarily formed by its rear end, which projects into the U-shaped part of the base-plate 26. The lever having thus been released, it is obvious that it may be utilized for turning the rock-shaft 20 in its bearings to any desired extent which may be considered necessary for the proper adjustment of the sieve-slats. By releasing the lever the pressure of the spring 23 will cause the rock-shaft to recede, and the lever will once more engage one of the notches in the flange 28. To operate the device from the opposite side, pressure is exerted from the handle end of the lever 33, which being ful-

crummed in the U-shaped portion of the base-plate, will force the rock-shaft 20 against the pressure of the spring, carrying with it the lever 24, which is thus disengaged from the notches in the flange 28. While pressure is thus being exerted upon the lever 22, the rock-shaft may be turned to the desired position, and when it has been attained the lever 33 is released, when the pressure of the spring 23 will once more restore the rock-shaft to its normal position and the lever 24 to engagement with the proper notch in the flange 28.

Having thus described my invention, I claim—

1. In a device of the class described, a frame, a plurality of rock-shafts in said frame, slats mounted upon said rock-shafts, said slats being provided with notches at one of their edges and with depending flanges at their opposite edges, said flanges being disposed parallel to each other, longitudinally with relation to the frame and engaging the notches of the next adjacent slat.

2. In a device of the class described, a plurality of pivotally-mounted cooperating slats, each slat being provided at one edge with a plurality of notches and at its opposite edge with a plurality of depending flanges, the latter being disposed parallel to each other.

3. In a device of the class described, slats having notches in one edge thereof and having their opposite edges inbent or doubled under themselves, said inbent portions being provided with downturned flanges disposed parallel to each other.

4. In a device of the class described, a frame, a plurality of rock-shafts in said frame, separating-slats upon said rock-shafts, cranks at the ends of the latter, wrists upon said cranks, a bar pivotally connecting said wrists, an auxiliary rock-shaft at one end of the frame, said rock-shaft having squared ends, a crank mounted slidably upon a squared portion of said rock-shaft and connecting the same with the connecting-bar, spring means for forcing said rock-shaft in one direction, a lever having pivotal connection with a squared portion of the rock-shaft and having an extended end fulcrummed in a U-shaped flange, and a notched flange disposed to engage the opposite, handle end of said lever.

5. In a device of the class described, a limited slidable spring-actuated rock-shaft, a plurality of adjustably-mounted separating-slats, connecting means between the latter and the rock-shaft, a pair of levers mounted pivotally upon squared ends of said rock-shaft, said levers having extended ends, a base-plate having bent, U-shaped portions in which the extended ends of the lever are fulcrummed, and a notched upturned flange upon one of said base-plates adapted to engage the handle end of the operating-lever associated therewith.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BERT WHELAN.

Witnesses:

F. F. WHELAN,
E. F. EVANS.