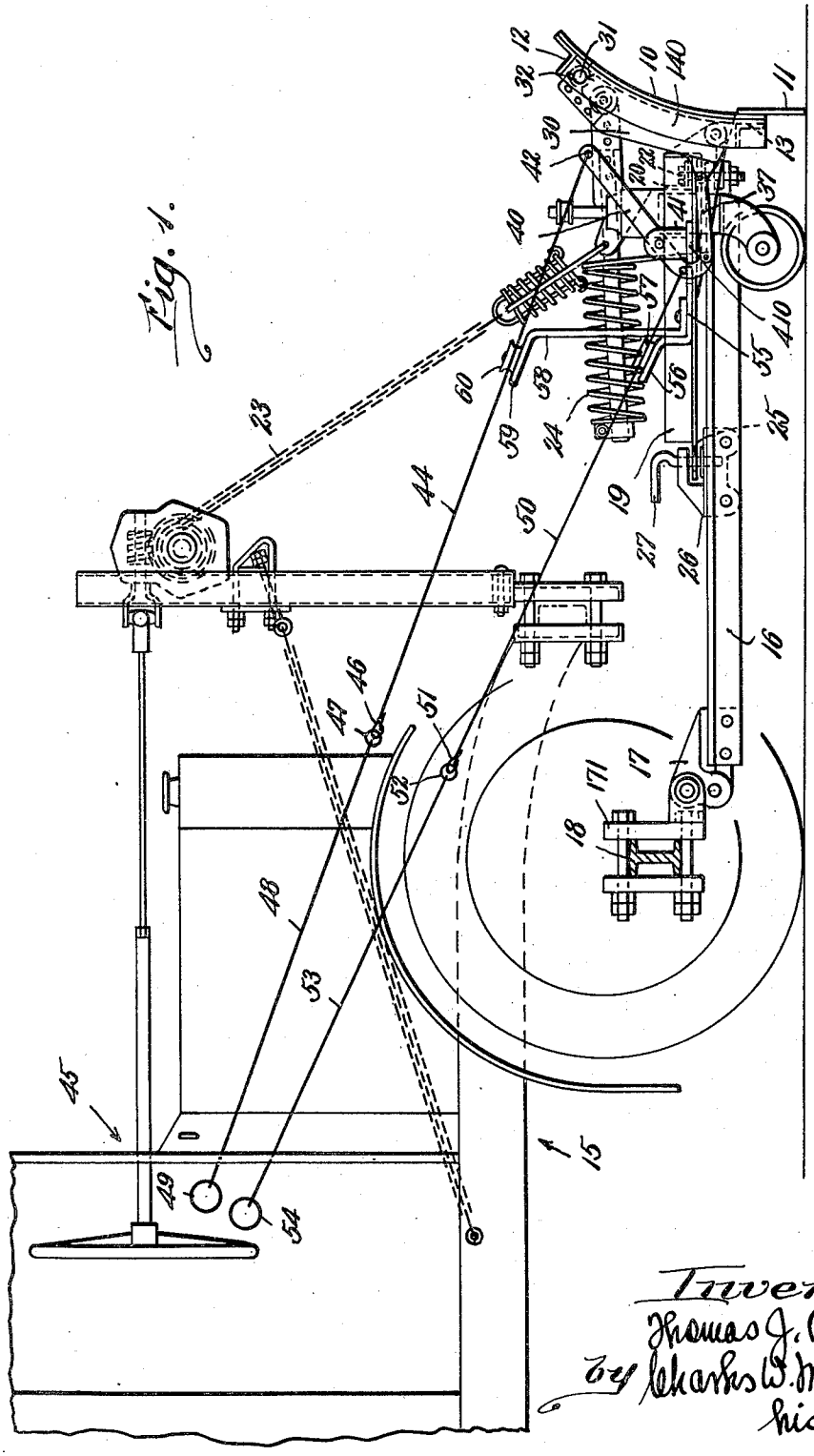
Dec. 24, 1940. T. J. BALL 2,225,614

APPARATUS FOR DISLODGING MATERIAL

Original Filed Dec. 17, 1935 4 Sheets-Sheet 1

Fig. 1.



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APPARATUS FOR DISLODGING MATERIAL

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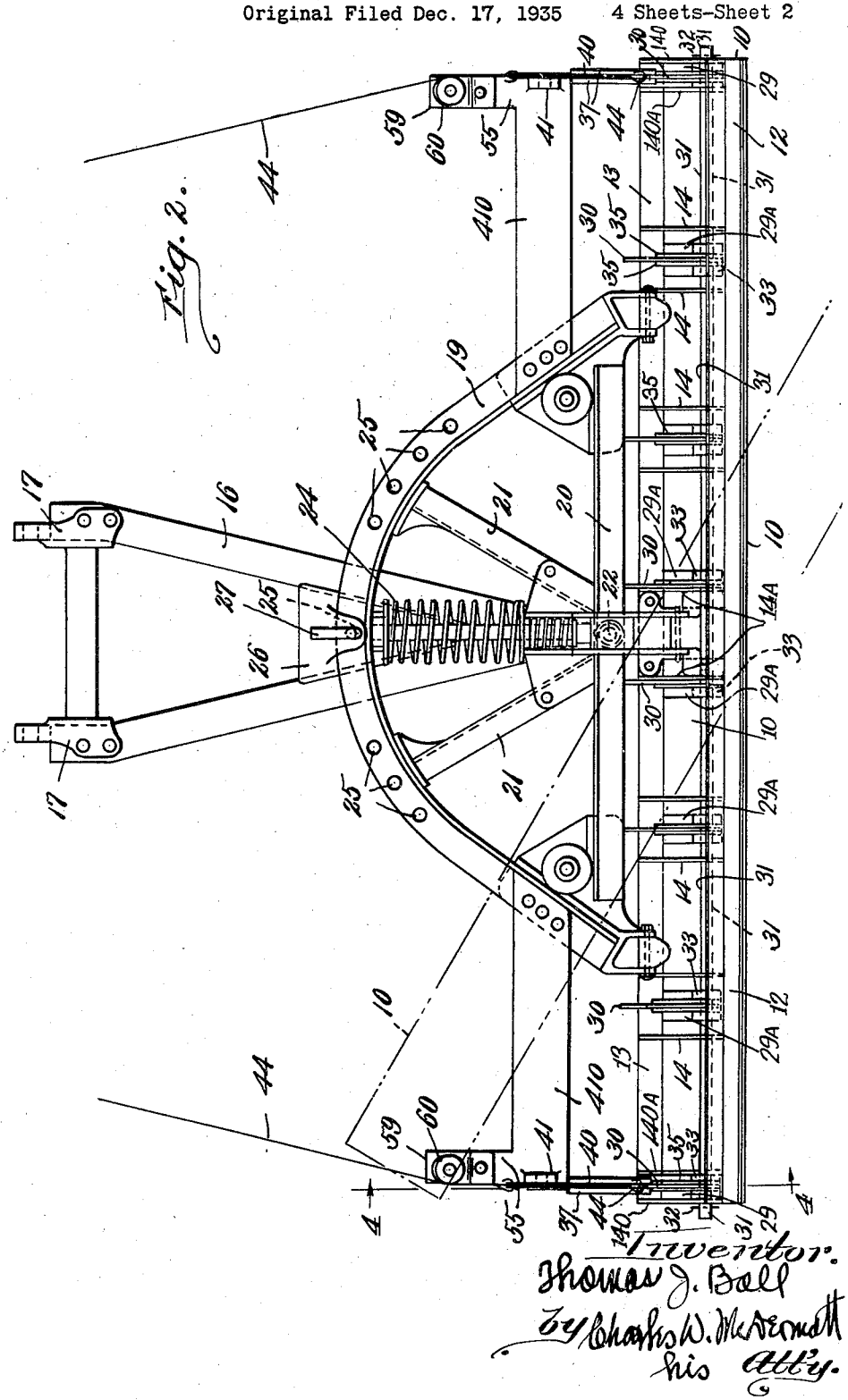


Fig. 2.

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Dec. 24, 1940. T. J. BALL 2,225,614

APPARATUS FOR DISLODGING MATERIAL

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Fig. 3.

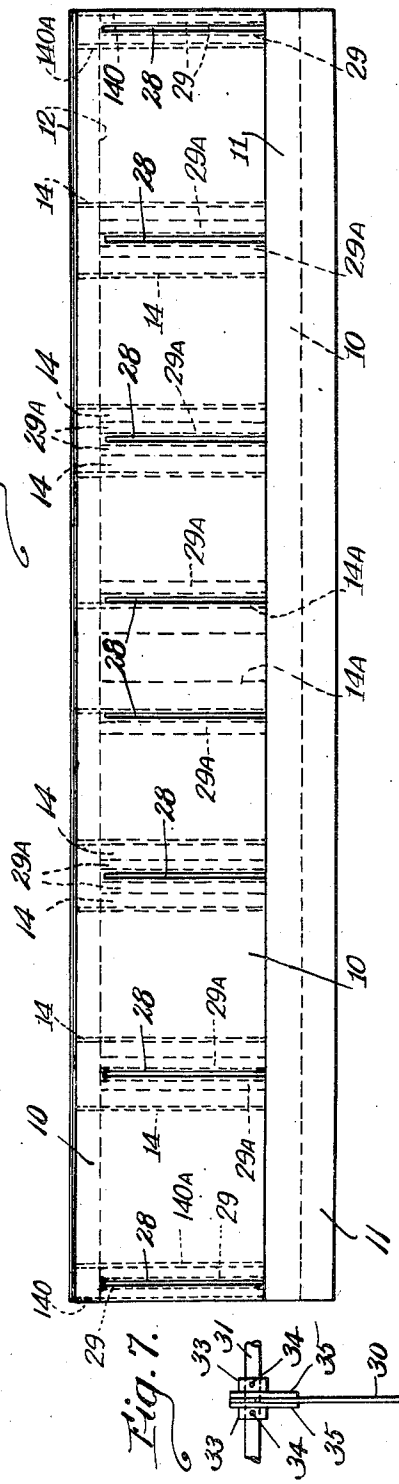


Fig. 6.

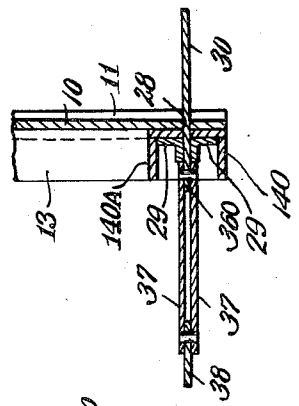


Fig. 5.

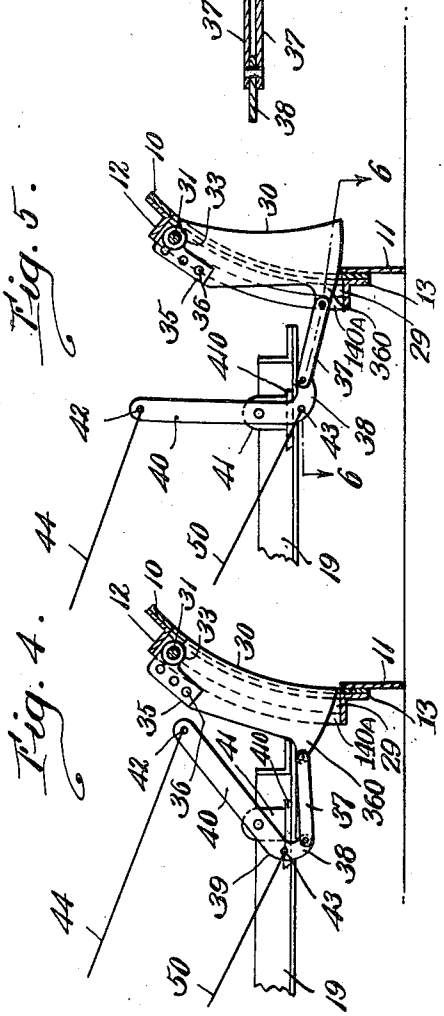


Fig. 4.

Fig. 7.

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Dec. 24, 1940. T. J. BALL 2,225,614

APPARATUS FOR DISLODGING MATERIAL

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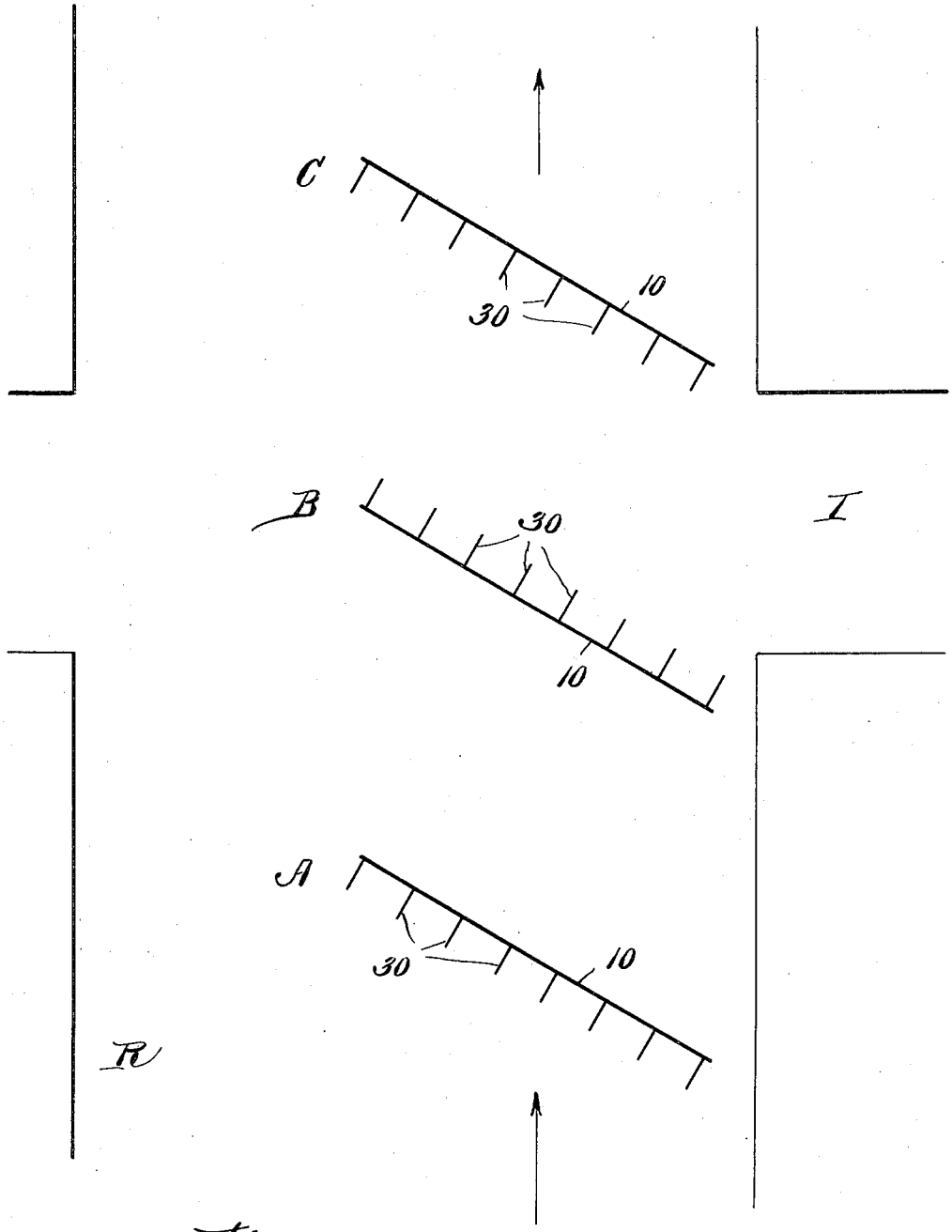


Fig. 8.

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Patented Dec. 24, 1940 2,225,614

UNITED STATES PATENT OFFICE

2,225,614

APPARATUS FOR DISLODGING MATERIAL

Thomas J. Ball, Boston, Mass.

Application December 17, 1935, Serial No. 54,877
Renewed October 31, 1939

15 Claims. (Cl. 37—42)

The present invention relates to apparatus for dislodging surface material. For convenience of disclosure the material referred to will be considered as being snow.

The speedy restoration of the road-beds of urban communities to traffic use after a snowstorm presents a difficult problem. It is customary first to use a scraper to dislodge the snow from the road-beds to restore them to traffic use, the dislodged snow being piled by the scraper in a bank adjacent the gutters from which removal is effected by workmen who shovel the banked snow into trucks for disposal elsewhere. Experience has demonstrated that the best scraper to use in dislodging the snow from the road-beds is provided with a leading edge, a trailing edge, and a smooth surface therebetween so that as the scraper is driven progressively by a motor vehicle into the snow the dislodged portion thereof flows along said smooth surface to and over its trailing edge. In some constructions the ideal scraper constitutes at least one outside face of a forwardly converging V. In other constructions the ideal scraper is a single blade located diagonally of the path of movement. But in urban communities a road-bed intersects or meets numerous road-beds, cross-walks, and driveways which have been previously cleared of snow. In consequence, when the snow is dislodged by the scraper from the road-bed and piled in a bank extending parallel to the path of movement of the scraper, the previously cleared road-beds, cross-walks and driveways are dammed by the bank, necessitating in the aggregate an enormous amount of hand-shovelling to clear them again. This extra hand-shovelling is expensive and delays the restoration of urban communities to normal traffic conditions after a snowstorm.

The principal object of the present invention is to produce an apparatus whereby the choking or damming of previously cleared road-beds, cross-walks, driveways, etc., may be obviated.

To the accomplishment of these objects, and such others as may appear hereinafter, the features of the present invention reside in certain devices, combinations, and arrangements of parts hereinafter described and then set forth broadly and in detail in the appended claims, which possess advantages readily apparent to those skilled in the art.

The various features of the present invention will be understood readily by those skilled in the art from an inspection of the accompanying drawings illustrating the best form of apparatus for dislodging surface material in accordance with the invention at present known to the inventor, in which

Figure 1 is a view in right side elevation of a snow plow attached to a motor-truck and embodying the present invention;

Fig. 2 is a view in plan of the snow plow of Fig. 1 and its mounting mechanism;

Fig. 3 is a view in front elevation of the mold board;

Fig. 4 is a detail view, partially in section, taken along the line 4—4 of Fig. 2 and showing the mold board and an auxiliary blade in retracted position;

Fig. 5 is a detail view, partially in section, also taken along the line 4—4 of Fig. 2 but showing the mold board and an auxiliary blade in forward position;

Fig. 6 is a detail view in sectional plan taken along the line 6—6 of Fig. 5;

Fig. 7 is a detail view in front elevation of an auxiliary blade and the rod on which it is mounted; and

Fig. 8 is a diagrammatic view showing the snow plow in use on a highway having an intersection.

The various features of the present invention may be embodied in snow plows of present known construction, and for this reason it is deemed advisable to preface the disclosure of the present invention with a brief description of one well known and old type of snow plow. With reference to the accompanying drawings, the plowing or dislodging surface comprises a blade or mold board 10 (Figs. 1–6 and 8) provided at its bottom with a depending scraper plate 11. The mold board 10 presents a concave front face, and to brace the mold board against the strains to which it is subjected in use, its rear face is provided with a number of angle iron braces, such as the transverse brace 12 (Figs. 1–5) adjacent the top of the mold board, the transverse brace 13 (Figs. 1, 2, 4, and 5) adjacent the bottom of the mold board, and spaced vertical braces 14, 14A, 140, and 140A which are arranged along the mold board from one end thereof to the other. These vertical braces will be considered in more detail later, but it may be said here, with reference to Figs. 1, 2, 4, and 5 as the case may be, that while the outstanding wings of the braces 140 extend downwardly to the level of the bottom of the mold board 10, the braces 14, 14A, and 140A extend downwardly into abutment with the top of the transverse brace 13.

The mechanism for mounting the mold board 10 on a power vehicle such as a motor-truck 15 (Fig. 1) comprises a push frame 16 (Figs. 1 and 2) the rear ends of the legs of which are suitably connected by members 17, 17' to the front axle 18 (Fig. 1) of the truck 15, and a piece 19 (Figs. 1, 2, 4, and 5) generally called a "semi-circle." The ends of the arms of the semi-circle 19 are illustrated as connected to certain of the angle iron braces 14, as shown in Figs. 1 and 2, and the arms of the semi-circle are also linked by an angle iron brace 20 (Fig. 2). The semi-circle 19 is also provided with conveying braces 21 which meet at a point centrally beneath the brace 20 and over the apex of the push frame 16. A vertical pin 22 (Figs. 1 and 2) connects together the push frame 16, the brace 20, the braces 21 and the usual casting carried by the mold board, and functions as a pivot on which the mold board 10 and the semi-circle 19 may be turned. Means is generally provided for elevating and lowering the mold board 10, as indicated by the worm and gear controlled chain 23 (Fig. 1). A spring and plunger construction 24 (Figs. 1 and 2) is frequently provided to take up the shock of impact of the mold board 10 with the snow. The semi-circle 19 is provided with a number of apertures 25 (Figs. 1 and 2) each of which is adapted to register with an opening formed in a plate 26 (Figs. 1 and 2) secured to the push frame, and a pin 27 passing through the registering apertures locks the semi-circle in place with respect to the push frame. With this construction, referring to Fig. 2, the mold board 10 may be maintained extending in a direction normal to the path of travel of the truck 15, as shown in full lines in Fig. 2, or by temporarily removing the pin 27, the semi-circule 19 may be swung to dispose the mold-board diagonally, either right or left, with respect to the path of travel of the truck, after which the pin 27 is replaced to lock the semi-circle 19, and therefore the mold board 10, in position. One such diagonal position of the mold board is shown in Fig. 2 in construction lines, the edge at the left of the drawings being the trailing edge of the mold board and the edge incompletely shown at the right of the drawings being the leading edge.

The above description has been given to show the general construction and operation of one well known form of snow plow so that the relationship of the parts constituting my improvement thereon, and their mode of operation, may be more readily understood. As pointed out above, when the mold board 10, diagonally disposed to the direction of travel of the power vehicle, is driven progressively into the snow, the snow flows along the mold board to and over its trailing edge, from which point it is piled in a bank extending parallel to the path of travel of the power vehicle. If there be any intersecting road-beds, driveways, cross-walks, etc., along this path of travel, and if they have been previously cleared, as the mold board passes these road-beds, etc., the snow passing over the trailing edge of the mold board forms a bank or dam which chokes up the area previously cleared.

In order to prevent this damming and choking, I propose to modify the mold board and incorporate certain apparatus therewith by which the flow of snow to and over the trailing edge of the mold board may, at intervals, be prevented.

Referring now to Fig. 3 in particular, the mold board 10 is provided with a plurality of vertical slots 28, herein shown as eight in number, extending from a point beneath the top of the mold board to a point substantially at the level of the top of the scraper plate 11. Two of the slots 28 are placed near the ends of the mold board 10, respectively, and the remaining slots 28 are spaced apart at convenient distances between the ends of the mold board. Each of the slots 28 located near the ends of the mold board has associated therewith a vertical angle iron brace 140 and also a vertical angle iron brace 140A, as shown best in Fig. 6, and these two braces are so positioned that the end faces of their mold board abutting wings are oppositely disposed and are flush with the opposite sides, respectively, of the associated slot 28 so as to form a rearward continuation thereof. Functioning to form a further rearward continuation of the slot construction just described are a pair of angle iron braces 29 (Fig. 6) which are smaller than and abut the braces 140 and 140A and have their outstanding wings flush with the end faces, respectively, of the mold board abutting wings of the braces 140 and 140A. In a manner (Figs. 2 and 3) corresponding to that of the braces 140 and 140A, the vertical angle iron braces 14 are associated in pairs with the opposite sides of the second and third slots 28 in from each of the end slots 28, and the braces 14 have wider mold board abutting wings than do the braces 140 and 140A. The braces 14 are provided with angle iron braces 29A, corresponding to the braces 29, in the same manner and for the same purpose that the braces 140 and 140A are provided with braces 29. So far as the innermost two slots 28 are concerned, reference to Figs. 2 and 3 will show that each of these slots is associated with only one brace 29A and with only brace 14A, the latter being identical with the braces 14 in structure but being so located that its outwardly extending wing, and not the end face of its mold board abutting wing, is flush with the inner side of its associated slot 28. The associated brace 29A engages the mold board and has an outstanding wing flush with the outer side of the slot 28. The function of the several brace and slot constructions just described is to provide guideways for auxiliary snow catching blades 30 adapted to extend through the slots 28 so that the front edges of the blades are forwardly of the front face of the mold board 10 or be retracted to a position in which the front edges of the blades do not extend forwardly of the front face of the mold board.

Referring to Figs. 1 and 2, the tops of the braces 14, 14A 140, and 140A are provided with aligned apertures in which is mounted for rotation a rod 31 the ends of which extend slightly beyond the ends of the mold board and are locked against removal by pins 32. Referring particularly to Figs. 2, 4, 5, and 7, opposite each slot 28, except the innermost two slots 28, and the guide-way formed by the associated braces 29, 140 and 140A or 29A and 14, the rod 31 is provided with two spaced collars 33 secured thereon by means of pins 34 and provided with rearwardly depending arms 35. Suitably secured to the arms 35, as by bolts 36, are the auxiliary blades 30 for the slots 28 referred to. Opposite each of the innermost two slots 28 and the guide-way formed by the associated angle iron braces 29A and 14A the rod 31 is provided with only one collar 33, this construction being used because the inner face of each associated blade 30 is juxtaposed to the outstanding wing of the adjacent vertical brace 14A, as shown in Fig. 2.

The single collar just referred to is, however, in each case secured to the rod 31 and has a depending arm 35 as have the other collars 33, and the arm 35 is likewise bolted to the associated blade 30.

With reference to Figs. 4 and 5, the auxiliary blades 30 depend vertically from the arms 35. The front edge of each of the blades 30 is concave, corresponding to the concavity of the front face of the mold board 10, and the bottom of each blade 30 is curved rearwardly and upwardly. With this construction, the blades 30 and the rod 31 may be swung together from a retracted position (Fig. 4) in which the curved front edges of the blade 30 do not project ahead of the front face of the mold board 10 to a forward position (Fig. 5) in which the curved front edges of the blades do project ahead of the front face of the mold board 10. With this mode of operation it will be seen that the dislodging surface of the mold board 10 may be either substantially smooth and continuous, or that the continuity of the dislodging surface may be interrupted by the forwardly projecting blades.

The blades 30, by reason of the pins 34 and the bolts 36, are adapted to swing together with the rod 31. In order to effect this swinging of the blades 30 in unison, the blades at each end of the mold board 10 are each provided with rearwardly extending portion 360 (Figs. 4 and 5) to the opposite sides of each of which (Fig. 6) pairs of parallel links 37 are pivoted at one of their ends. The opposite ends of the pairs of links 37 are pivoted to the short arms 38, respectively, of L-shaped levers 39, the long arms 40 of which are pivoted intermediate their ends to blocks 41, respectively, mounted one each on arms 410 extending laterally from the semi-circle 19, as shown best in Fig. 2. With this construction, viewing Fig. 4, it will be seen that power applied rearwardly to either lever arm 40 above the block 41 will cause the associated lever arm 38 to swing forward, pushing the associated links 37 ahead of it and thereby causing the connected blades 30 to swing outwardly to the position shown in Fig. 5. Conversely, viewing Fig. 5, it will be seen that power applied rearwardly to either lever arm 40 below its block 41 will cause the associated links 37 to be pulled rearwardly, thereby retracting the blades 30 to the position shown in Fig. 4. In order to limit the extent to which the blades 30 project ahead of the front face of the mold board 10, the braces 29, as shown in Fig. 6, are arranged in the path of the links 37 and form an abutment for them.

In order to apply power to the lever arms 40 as aforesaid, these arms are each provided with apertures 42 and 43 located, respectively, above and below the pivot afforded by the associated block 41. One end of a wire or cord 44 is secured to each arm 40 at its aperture 42 and extends rearwardly towards the cab 45 of the vehicle 15 at which point it terminates in a snap 46. Clipped to the snap 46 is a ring 47 fastened to one end of a wire or cord 48 extending into the cab 45 and terminating in a hand pull 49. The lever arm 40 is also provided at its aperture 43 with a cord or wire 50 like the cord or wire 44, which is connected to a snap 51, in turn connected to a ring 52, cord or wire 53, and hand pull 54.

In order to guide the cords or wires 44 and 50, the free end of each arm 410 is provided rearwardly with a flat extension 55 (Figs. 1 and 2) which (Fig. 1) extends upwardly and then rearwardly at an angle of about 45 degrees to form a support 56 for a pulley 57 which receives the cord or wire 50. Referring again to Fig. 1, resting on each extension 55 is the base of a flat vertical arm 58 the upper end of which extends rearwardly at about 45 degrees to form a support 59 for a pulley 60 which receives the wire 44.

From the foregoing it will be seen that the blades 30 may be swung in unison by the hand pulls 49 and 54 associated with either of the L-shaped levers 39 and associated parts, and that for a mere swinging of the blades, only one of these levers and paired hand pull constructions is necessary. However, for reasons relating to the construction of snow plows in general and to their mode of operation in dislodging material, it is highly desirable that the lever 39 arrangement be duplicated, as shown, and that there be two sets of hand pulls.

Because of the elevating, shock resisting, etc., mechanism common in snow plows being located somewhat centrally of the mold board, it is not convenient to locate the levers 39 there also. For this reason they are associated with the blades 30 at the ends of the mold board 10. On the other hand, when the mold board is in use, not only is one end thereof in advance of the other, but, depending upon the location of the apparatus and the material to be dislodged, sometimes the right hand end of the mold board is the end in advance and sometimes the left hand end is in advance. Stated in another way, either end of the mold board may, as occasion warrants, be in advance of the other.

The duplication of the hand pulls, are levers 39, and associated parts, is designed to accommodate the operation of the blades 30 to the changeability of position of the mold board 10. If the apparatus is to be used with the mold board positioned as shown in construction lines in Fig. 2, for example, it will be seen that the leading edge thereof (right hand, viewing Fig. 2) is so far in advance of the trailing edge that the cords or wires 48 and 53 (Fig. 1) associated therewith would be pulled from the cab of the vehicle, while the cords or wires associated with the trailing edge would extend further into the vehicle than shown in Fig. 1. This last is of no moment, but to prevent the pulling from the cab of the cords or wires 48 and 53 associated with the leading edge of the mold board 10, the associated snaps 46 and 51 may be released from the rings 47 and 52, respectively, and snapped conveniently on the chain 23, so that the ends of the cords or wire 44 and 50 will not drag on the ground. The cords or wires 48 and 53 may be conveniently kept in the cab until needed. With this construction, the remaining cords or wires 44—48 and 50—53 associated with the trailing edge of the mold board 10 may be operated alternately to swing the blades 30. If the mold board is turned so that the trailing edge thereof shown in Fig. 2 in construction lines becomes the leading edge, the left hand cords or wires 44—48 and 50—53 are disconnected and the right hand cords or wires are connected again.

Viewing Figs. 2, 6, and 7, it will be seen that the axis of rotation of the rod 31 is normal to the direction in which the blades 30 swing. On the other hand, since the blades 30 and the levers 39 move with the mold board 10 when it is turned on its pivot 22, the direction of pull from the cab 45 of the cords or wires 44—48 and 50—53 shifts accordingly. As this direction of pull is generally at an angle to the direction of forward and rearward swinging of the blades 30 with re-

spect to the mold board, the pulleys 57 and 60 are provided so that the pull of the portions of the cords or wires 44 and 50 extending between the pulleys and the levers 39 will always be in a direction normal to the axis of the rod 31 and in the plane of the associated blades 30, regardless of the direction of pull of the portions of the cord or wires 44 and 50 extending between the pulleys and the connections with the cords or wires 48 and 53. In this manner the blades 30 at all times swing easily through the slots 28 and the guideways formed by the braces 14 and 29.

It is believed that the construction and mode of operation of the present invention will be fully understood from the foregoing description. In order to show the apparatus in use on road-beds and at intersections thereof, Fig. 8 presents a diagrammatic view of the mold board 10 and the blades 30 as so used. Let it be supposed that a snow plow provided with an embodiment of the present invention is traveling along the road-bed R in the path represented by the arrows. The apparatus being on the right hand side of the road-bed R, the left hand edge of the mold board 10 leads and the right hand edge trails, thereby causing the mold board to extend diagonally of the path of movement. With the mold board at station A, the blades 30 are in a retracted position and snow engaged by the mold board flows along its substantially smooth and continuous front face to and over its trailing edge where it is banked at the side of the road-bed. With the mold board and blades 30 in this position, the left hand cords or wires 44 and 50 are disconnected from their associated cords or wires 48 and 53, and the right hand cords or wires are connected. When the vehicle approaches station B, at which point there is a previously cleared intersection I, the operator pulls rearwardly on the hand pull 49, thereby swinging the long lever arm 40 rearwardly and causing the blades 30 to project forwardly of the mold board 10, as indicated at station B without disturbing the condition of the snow that has flowed over the trailing edge. The blades 30 in station B position each acts as a barrier and form, with the mold board 10, a plurality of snow-retaining pockets in which the snow collects and which interrupt and prevent the flow of snow along the mold board 10 to and over its trailing edge. The vehicle crosses the cleared intersection I, retaining and not discharging the snow as it crosses thereby creating a gap in the previously formed bank or ridge, and then, the intersection having been crossed as at station C, the hand pull 54 is pulled rearwardly, thereby retracting the blades 30 and producing again the substantially smooth and continuous front surface for the mold board 10 along which the collected snow flows as the mold board 10 further progresses along the road-bed. With this mode of operation the previously cleared intersection I remains cleared.

In view of the foregoing, it will be seen that I have provided an improvement in material dislodging apparatus by which the flow of material along its dislodging surface may be interrupted at intervals, as desired. The present invention has been embodied with the particular snow plow shown merely for purposes of disclosure. The present invention is not limited to use in connection with such a snow plow, nor to use in connection with dislodging snow, nor is it limited to the details of construction shown. These last may be modified within the skill of the artisan without departing from the true scope of the actual invention, the characteristic features of which are set forth in the following claims.

For the purpose of rebutting any presumption of implied disclaimer or dedication on my part, the attention of the public is hereby called to my copending application Serial No. 246,415, filed December 17, 1938, in which copending application there is disclosed and claimed both method and apparatus subject matter disclosed but not claimed herein.

What is claimed as new is:

1. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, and an auxiliary blade mounted to move into and out of the path of flow of the dislodged material, of means for so moving the auxiliary blade including: a lever mounted on a fixed pivot rearwardly of the dislodging blade, means connecting the lever to the auxiliary blade, and means secured to the lever and extending rearwardly therefrom for moving it.

2. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, and an auxiliary blade mounted to move substantially in a plane into and out of the path of flow of the dislodged material, of means for so moving the auxiliary blade including: a lever located rearwardly of the dislodging blade and mounted on a fixed pivot for swinging movement substantially in said plane, means connecting the lever to the auxiliary blade, and means secured to the lever and extending rearwardly therefrom for moving it.

3. In a material dislodger, the combination with a power vehicle provided with a driver's cab, a dislodging blade operatively connected to the power vehicle and located in a position ahead of the cab and diagonally disposed to the line of progress, and an auxiliary blade mounted to move into and out of the path of flow of the dislodged material, of means for so moving the auxiliary blade including: a lever located rearwardly of the dislodging blade and outside the cab, means connecting the lever to the auxiliary blade, and means secured to the lever and extending rearwardly therefrom into the cab for moving the lever.

4. In a material dislodger, the combination with a power vehicle provided with a driver's cab, a dislodging blade operatively connected to the power vehicle and located in a position ahead of the cab and diagonally disposed to the line of progress, and an auxiliary blade mounted to move substantially in a plane into and out of the path of flow of the dislodged material, of means for so moving the auxiliary blade including: a lever located outside the cab and mounted on a fixed pivot for swinging movement substantially in said plane, means connecting the lever to the auxiliary blade, and means extending rearwardly from the lever into the cab for swinging the lever.

5. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, at least one auxiliary blade supported from the dislodging blade and located in a retracted position with respect to the front face of the dislodging blade, and a lever mounted independently of the dislodging blade and being operatively connected to the auxiliary blade to move it, of means for exerting a rearward pull on the lever to advance the auxiliary blade from said retracted position so that at least a portion of the auxiliary blade is forward of said front face.

6. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, at least one auxiliary blade supported from the dislodging blade and located in a retracted position with respect to the front face of the dislodging blade, a lever mounted independently of the dislodging blade and being operatively connected to the auxiliary blade to move it, and means for exerting a rearward pull on the lever to advance the auxiliary blade from said retracted position so that at least a portion of the auxiliary blade is forward of said front face, of means for exerting a rearward pull on the lever to return the advanced auxiliary blade to said retracted position.

7. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, an auxiliary blade mounted to move into and out of the path of flow of the dislodged material, and movable means for so moving the auxiliary blade, said last named means being adapted to receive blade-moving power in a direction angularly disposed to the path of movement of the auxiliary blade, of means for constraining the movement of a portion of the blade moving means to the path of movement of the auxiliary blade during the application of said power.

8. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, said blade having at least one slot therethrough, an auxiliary blade mounted to move through the slot from a retracted position to and from a forward position in which at least a portion of the auxiliary blade is forward of the front face of the dislodging blade, and a lever mounted independently of the dislodging blade and being operatively connected to the auxiliary blade to move it, of means for exerting power on the lever in the same direction both to advance the auxiliary blade and to retract it.

9. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, said blade having a plurality of slots therethrough, and a plurality of auxiliary blades adapted to move through the slots, respectively, into and out of the path of flow of the dislodged material, of means for mounting the auxiliary blades to move through the slots simultaneously, said last named means including a rod mounted for movement about its longitudinal axis and means fixedly connecting each of the alxiliary blades to the rod.

10. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, said blade having a plurality of slots therethrough, and a plurality of auxiliary blades adapted to move through the slots, respectively, into and out of the path of flow of the dislodged material, of means for mounting the auxiliary blades to move through the slots simultaneously, said last named means including a rod rotatably mounted on the dislodging blade and means fixedly connecting each of the auxiliary blades to the rod.

11. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, said blade having a plurality of slots therethrough, a plurality of auxiliary blades adapted to move through the slots, respectively, from a retracted position to and from a forward position in which at least a portion of each of the auxiliary blades is forward of the front face of the dislodging blade, and means for mounting the auxiliary blades to move through the slots simultaneously, said last named means including a rod mounted for movement about its longitudinal axis and means fixedly connecting each of the auxiliary blades to the rod, of abutment means for limiting the extent of forward movement of the auxiliary blades through the slots.

12. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, said blade having a plurality of slots therethrough, a plurality of auxiliary blades adapted to move through the slots, respectively, into and out of the path of flow of the dislodged material, means operatively connected to one of the auxiliary blades for moving it through its slot, and a blade-supporting rod mounted for movement about its longitudinal axis, of means fixedly connecting each of the auxiliary blades to the rod so that movement of said one of the auxiliary blades effects movement through the respective slots of all of the auxiliary blades simultaneously.

13. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, said blade having a plurality of slots therethrough, a plurality of auxiliary blades mounted to move through the slots, respectively, from a retracted position to and from a forward position in which at least a portion of each of the auxiliary blades is forward of the front face of the dislodging blade, a lever, means operatively connecting the auxiliary blades together and to the lever for movement simultaneously upon actuation of the lever, and means for exerting a rearward pull on the lever to move the auxiliary blades from said retracted position to said forward position, of means for exerting a rearward pull on the lever to move the auxiliary blades from said forward position to said retracted position.

14. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, at least one auxiliary blade mounted for movement from a retracted position to and from a forward position in which at least a portion of the auxiliary blade is forward of the front face of the dislodging blade, and a lever mounted independently of the dislodging blade and being operatively connected to the auxiliary blade to move it, of means controlled from a point behind the dislodging blade for exerting a rearward pull on the lever to advance the auxiliary blade from said retracted position to said forward position.

15. In a material dislodger, the combination with a dislodging blade located diagonally of the line of progress, at least one auxiliary blade mounted for movement from a retracted position to and from a forward position in which at least a portion of the auxiliary blade is forward of the front face of the dislodging blade, a lever mounted independently of the dislodging blade and being operatively connected to the auxiliary blade to move it, and means controlled from a point behind the dislodging blade for exerting a rearward pull on the lever to advance the auxiliary blade from said retracted position to said forward position, of means also controlled from a point behind the dislodging blade for exerting a rearward pull on the lever to return the advanced auxiliary blade from said forward position to said retracted position.

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