

March 1, 1949.

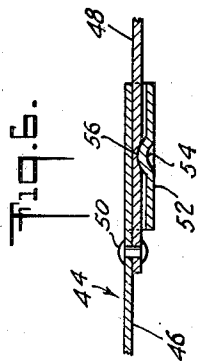
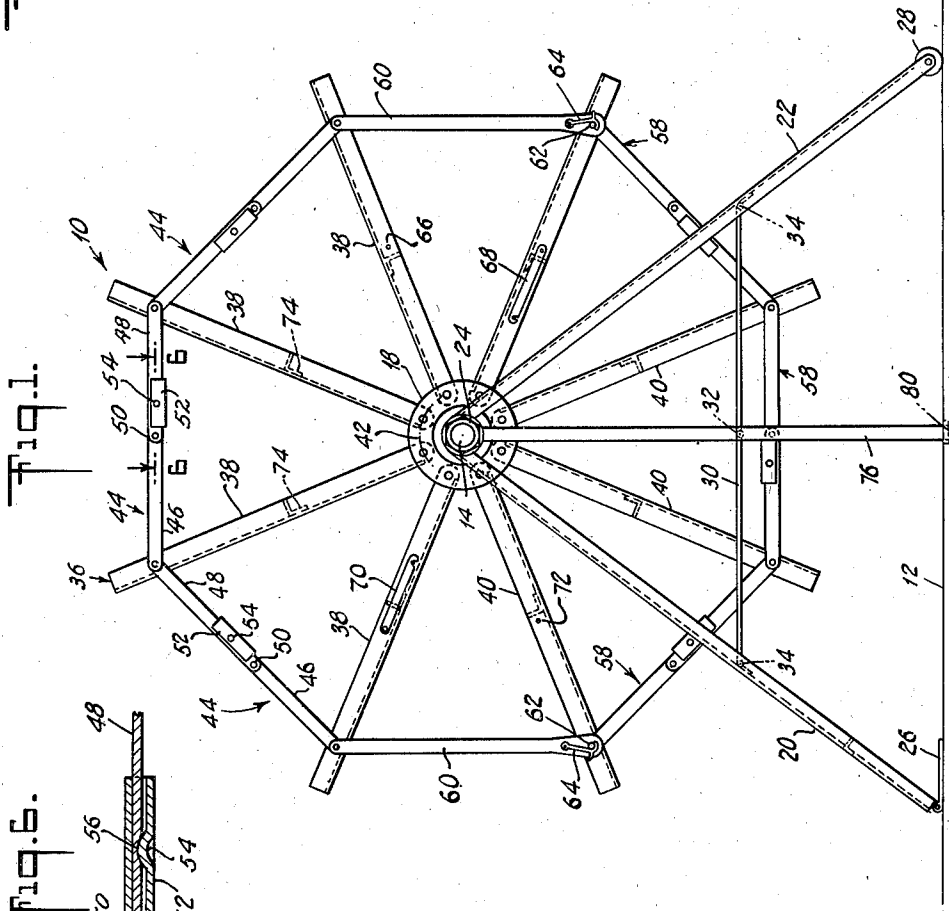
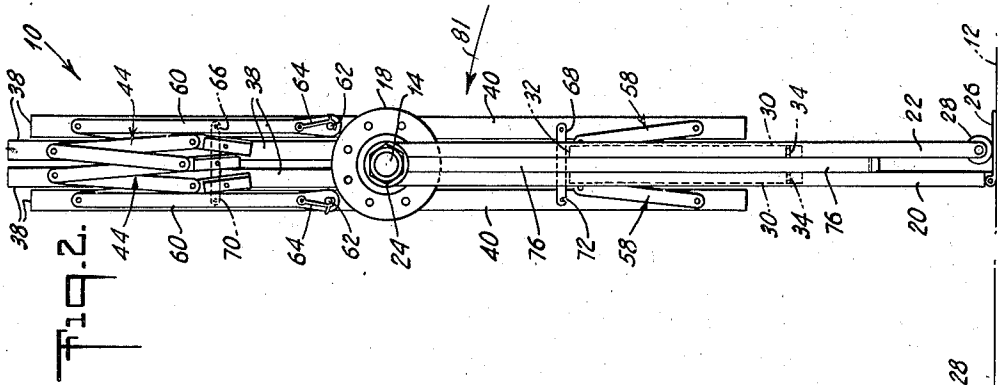
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2,463,192

HOSE REEL

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2 Sheets-Sheet 1



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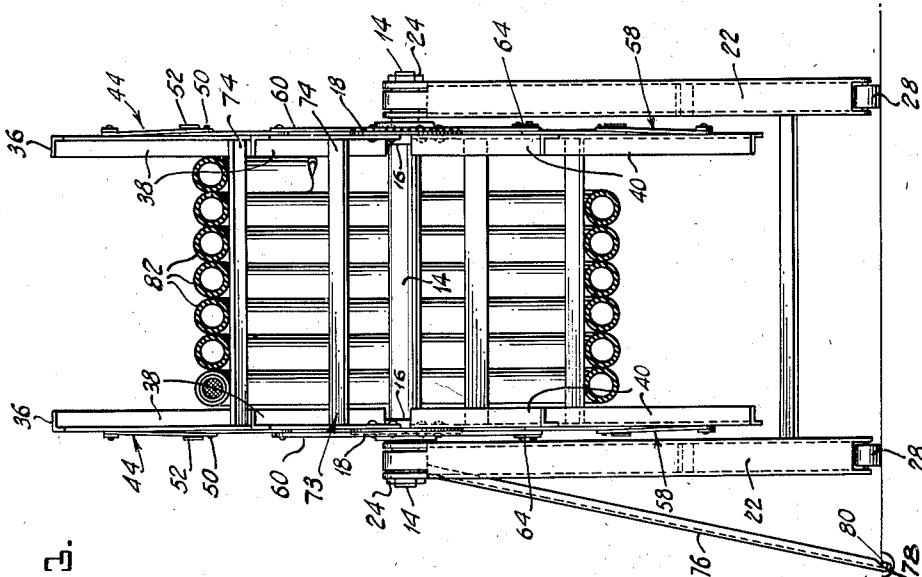
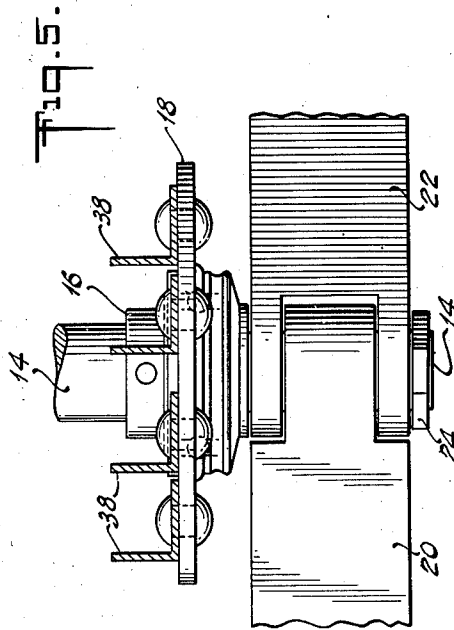
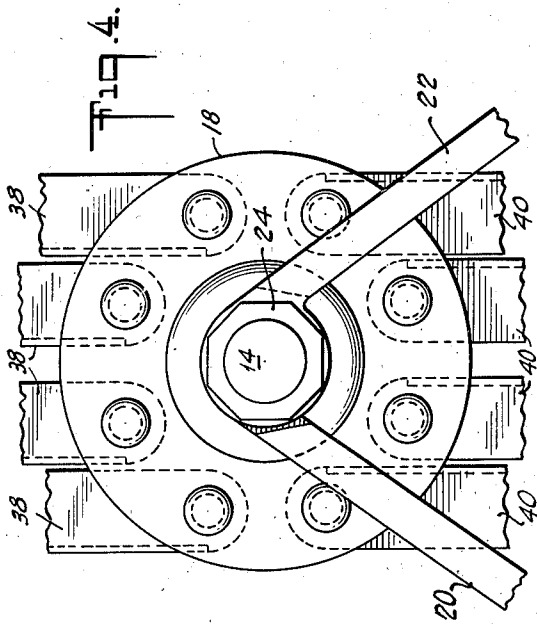
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HOSE REEL

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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HOSE REEL

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The instant invention relates to collapsible reels and, more particularly, to hose reels of the type employed for conveying insulation and the like in the conventional "blowing" method of insulating wall spaces in homes and other buildings and will be described in this connection. It will be appreciated, however, that the reel may have many other uses and the invention is not to be considered as limited to any particular application.

For the insulation of wall spaces as referred to above, portable equipment is employed. Usually the equipment, comprising a blower together with a hose of sufficient length, to take care of all normal situations, is mounted on a truck or other conveyance which also carries a supply of the insulating material. The instant invention is directed to, and has for its principal object, the provision of a hose reel to be mounted on the truck and which, when in normal operative condition, may be used to hold the hose during its transport to and from the job but when the hose has been removed, may be collapsed to provide greater space in the truck for operation of the blowing machine and handling of the insulating material.

Another object of the invention is the provision of a hose reel of relatively simple construction and of a character to permit it to be easily collapsed or knocked down and set up as occasion demands.

Another object of the invention is the provision of a collapsible hose reel of the type described in which no loose or separate parts are required which may become lost or misplaced.

A further object of the invention is the provision of a hose reel including collapsible heads and a skeletal drum connecting said heads.

Our invention will be more fully understood and further objects and advantages thereof become apparent when reference is made to the more detailed description of a preferred embodiment of the invention which is to follow and to the accompanying drawings in which:

Fig. 1 is a side elevational view of the hose reel of the instant invention in set up condition;

Fig. 2 is a side elevational view of the hose reel in collapsed condition;

Fig. 3 is an end elevational view of the reel;

Fig. 4 is a detail view on an enlarged scale of the hub construction;

Fig. 5 is a plan view of the construction shown in Fig. 4; and

Fig. 6 is a sectional view taken on the line 6-6 of Fig. 1 and on an enlarged scale.

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Referring particularly to Figs. 1, 2 and 3, the reel indicated generally at 10 is illustrated as relatively permanently mounted on a suitable base or floor 12 which may preferably constitute the floor of a truck or the like. Reel 10 includes a shaft 14 to which are keyed bearing members 16 (see Fig. 5) rotatably supporting opposed hubs 18. Pair of legs 20 and 22 at opposite sides of the reel support the shaft from the floor or other foundation, the legs of each pair being hingedly connected to an end portion of the shaft projecting beyond the hub, as illustrated in Figs. 3 and 5, and retained in position by nuts 24. In the preferred embodiment of the invention, a corresponding leg 20 of each pair of legs is secured to the floor or the like 12 by hinge 26. The other of each pair of legs preferably carries a roller or caster 28. When the reel is in operative position the legs are retained against spreading beyond the desired inverted V-relationship shown in Fig. 1 by means of a spreader 30 comprising two sections hingedly connected at 32, the sections in turn being hinged to the legs, as shown at 34.

The reel proper comprises similar heads 36, each formed by two sets of similar arms 38 and 40 preferably comprising angle bars as shown. The arms 38 and 40 are pivotally mounted on their respective hubs, the pivoted connections being equally spaced and defining a circle concentric to the axis of the shaft as illustrated at 42.

Adjacent arms 38 of each set are connected near their outer ends by foldable braces 44 comprising segments 46 and 48 pivoted on the arms and also pivotally connected together as indicated at 50. One of the segments extends beyond the other and includes a retroverted portion 52 (see Fig. 6) embracing the other segment and provided with a detent 54 received within recess 56 of said other segment whereby the braces will be maintained in the position shown in Fig. 1 by the frictional engagement of the detent within the recess. The braces may be quickly and easily collapsed to the folded condition shown in Fig. 2 when desired by applying sufficient force in an inward radial direction to overcome such frictional engagement. Adjacent arms 40 are connected by braces 58, similar in all respects to braces 44.

The outside or adjacent arms of the two sets are adapted to be connected together to hold the reel in assembled condition by brackets 60. In the construction shown the brackets are pivotally connected to the two outside arms 38, the opposite ends of the brackets including perforations

for receiving preferably headed pins 62 carried by the two outside arms 40. Keepers 64 are adapted to be swung behind the heads of the pins to prevent accidental disengagement of the brackets from the pins. It will be appreciated that the invention is not limited to the particular brace and bracket constructions shown and described, and that other equivalent devices may be employed.

One of the outside arms 38 carries a pin 66 for cooperation with a latch 70 carried by the other outside arm 38. Similarly one of the outside arms 40 carries a latch 68 for cooperation with pin 72 on the other outside arm 40. The latches cooperate with their respective pins to hold the reel in collapsed condition as shown in Fig. 2.

A drum 73 on which the hose is wound connects the heads 36. The drum is suitably of skeletal construction and comprises angle bars 74 welded or otherwise secured at their opposite ends to corresponding arms of the two heads of the reel. The angle bars are equally spaced from the hub a suitable distance to provide a drum of the desired circumference.

To prevent side sway of the reel during rough handling and usage, a brace 76 may be employed. This brace comprises a U bar or the like provided at its upper end with an eye for fitting over shaft 14 beneath the nut 24 at one end of the shaft. The opposite end of the brace may be provided with a hook 78 for cooperation with a keeper 80 mounted in a suitable recess in the floor structure.

The reel set up in operative condition is illustrated in Fig. 1, arms 38 and 40 constituting the opposed heads being maintained in their proper spaced relationship by braces 44 and 58, and brackets 60. Legs 20 and 22 at each end of the reel are spread to provide an inverted V-support, further spreading being prevented by members 30. Brace 76 has its lower end hooked into the keeper 80. The reel set up in this manner is in condition to receive a plurality of convolutions of a hose or other elongated element 82 (see Fig. 3) for storage and transportation purposes.

When the hose has been removed and the reel is temporarily not in use, keepers 64 are unlatched and braces 60 slipped off pins 62. Each of the braces 44 and 58 is then collapsed, or partially collapsed, by applying sufficient pressure adjacent the pivot between the two segments and in an inward radial direction to release the frictional engagement between detent 54 and its recess, adjacent arms of each set moving toward each other and the reel collapsing in the direction indicated by the arrow 81 in Fig. 2. This movement is continued until the arms of each set lie in substantially parallel relationship as illustrated in Fig. 2, with braces 44 and 58 in folded condition. The arms are maintained in their adjacent relationship by latches 68 and 70 cooperating with their respective pins 72 and 66. Brace 76 is unhooked from keeper 80 and legs 22 forced into adjacent relationship with legs 20. The reel is then in a completely collapsed or knocked down state in which it takes up little room as clearly illustrated in Fig. 2. The steps required to open or expand the reel so that it can again receive the hose are the reverse of those described above, as will be readily appreciated.

A reel in accordance with the invention successfully attains the several objects of the invention in that it is relatively inexpensive and of lightweight but sturdy construction. All parts

are connected together at all times, no loose elements being employed which could easily become lost or mislaid.

Having thus described our invention in rather full detail it will be understood that these details need not be strictly adhered to but that various changes and modifications may suggest themselves to one skilled in the art all falling within the scope of the invention as defined by the subjoined claims.

What we claim is:

1. A collapsible reel comprising opposed hubs, means rotatably supporting said hubs, a plurality of arms carried by each of said hubs to define heads for the reel, said arms being rotatably attached to said hubs by pivotal connections in fixed relative relationship on said hubs and being swingable on said connections from a folded, adjacent relationship to a spaced, head-defining relationship, and means for securing said arms in said last-named relationship.

2. A collapsible reel comprising opposed hubs, means rotatably supporting said hubs in spaced relationship, a plurality of arms carried by each of said hubs to define heads for the reel, said arms being rotatably attached to said hubs by pivotal connections in fixed relative relationship on said hubs and being swingable on said connections from an adjacent, substantially parallel relationship to a spaced, head-defining relationship, means for securing said arms in said last-named relationship, and members connecting the opposed arms on said spaced hubs to define a skeletal drum when said arms are in head-defining relationship.

3. A collapsible reel comprising opposed hubs, a shaft rotatably supporting said hubs in spaced relationship, a plurality of arms carried by each of said hubs to define heads for the reel, said arms being rotatably attached to said hubs by pivotal connections in fixed relative relationship on said hubs and being swingable on said connections from an adjacent, substantially parallel relationship to a spaced, head-defining relationship, means carried by said arms at points spaced from said connections for securing said arms in said last-named relationship, and members connecting the opposed arms on said spaced hubs to define a skeletal drum when said arms are in head-defining relationship.

4. A collapsible reel comprising opposed hubs, a plurality of arms pivotally mounted on each of said hubs to define heads for the reel, the arms carried by each of said hubs being divided into sets and the arms of each set being swingable on said pivotal connections from an adjacent, substantially parallel relationship to a spaced, head-defining relationship, and means for securing said arms in said last-named relationship, said last-named means comprising foldable braces connecting the arms of each of said sets at points spaced from said pivotal connections, and brackets detachably connecting adjacent arms of the sets.

5. A collapsible reel comprising opposed hubs, a plurality of arms pivotally mounted on each of said hubs to define heads for the reel, the arms carried by each of said hubs being divided into sets and the arms of each set being swingable on said pivotal connections from an adjacent, substantially parallel relationship to a spaced, head-defining relationship, means for securing said arms in said last-named relationship, said last-named means comprising collapsible braces connecting the arms of each of said sets at points

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spaced from said pivotal connections, and brackets detachably connecting adjacent arms of the sets, and members connecting the opposed arms on said hubs to define a skeletal drum when said arms are in head-defining relationship.

6. A collapsible reel comprising opposed hubs, a shaft rotatably supporting said hubs in spaced relationship, a plurality of arms carried by each of said hubs to define heads for the reel, said arms being swingable on said hubs from an adjacent, substantially parallel relationship to a spaced, head-defining position, means for securing said arms in said position, and supporting means for said shaft comprising pairs of legs hingedly connected to said shaft, the legs of each pair being adapted to be swung on said shaft from closed, substantially parallel relationship to an open, spread position.

7. A collapsible reel comprising opposed hubs, a shaft rotatably supporting said hubs in spaced relationship, a plurality of arms carried by each of said hubs to define heads for the reel, said arms being swingable on said hubs from an adjacent, substantially parallel relationship to a spaced, head-defining position, means for securing said arms in said position, supporting means for said shaft comprising pairs of legs hingedly connected to said shaft, the legs of each pair being adapted to be swung on said shaft from closed, substantially parallel relationship to an open, spread position, and means for securing said legs in said position.

8. A collapsible reel comprising opposed hubs, a shaft rotatably supporting said hubs in spaced relationship, the ends of said shaft extending

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beyond said hubs, arms carried by each of said hubs through pivotal connections spaced around said hubs, the arms carried by each of said hubs being divided into sets with the arms of each set swingable on said pivotal connections from an adjacent, substantially parallel relationship to a spaced, head-defining relationship, means for securing said arms in said last-named relationship, said last-named means comprising collapsible brackets connecting the arms of each set, and brackets detachably connecting adjacent arms of the sets, a pair of legs pivotally connected to said shaft at the opposite, extending ends thereof, the legs of each pair being adapted to be swung from a closed, adjacent relationship, to an open, spread relationship, and collapsible brackets for maintaining said legs in their spaced relationship.

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