March 3, 1931. R. HABERMEHL 1,795,168

CASING IN TWO-PARTS FOR PACKING PARACHUTES

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Fig.4.

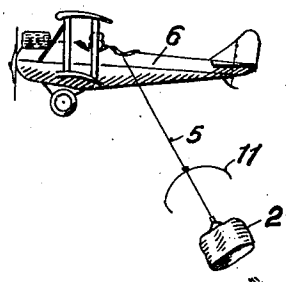


Fig.1.

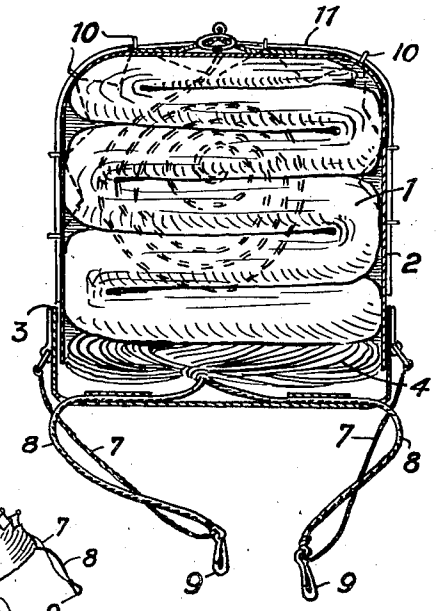


Fig.3.

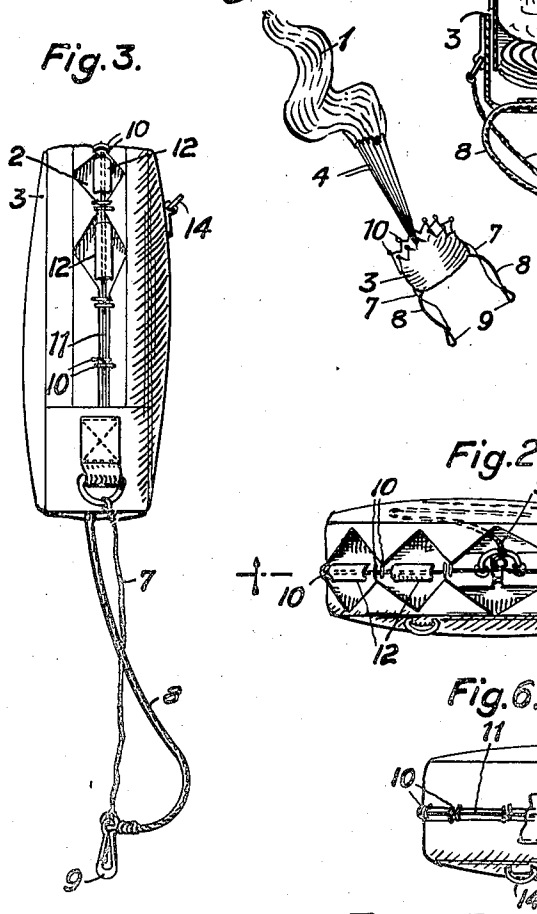
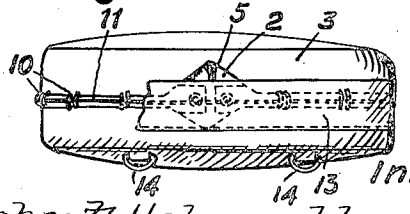


Fig.2.

Fig.6.



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CASING IN TWO-PARTS FOR PACKING PARACHUTES

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Fig.7.

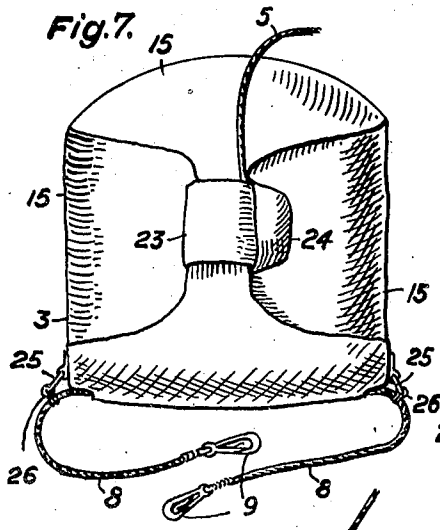


Fig.8.

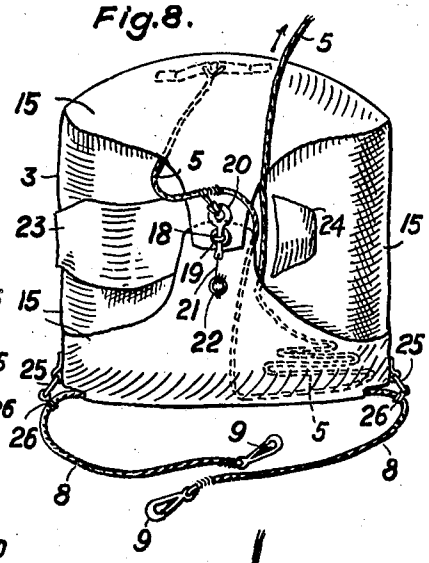


Fig.9.

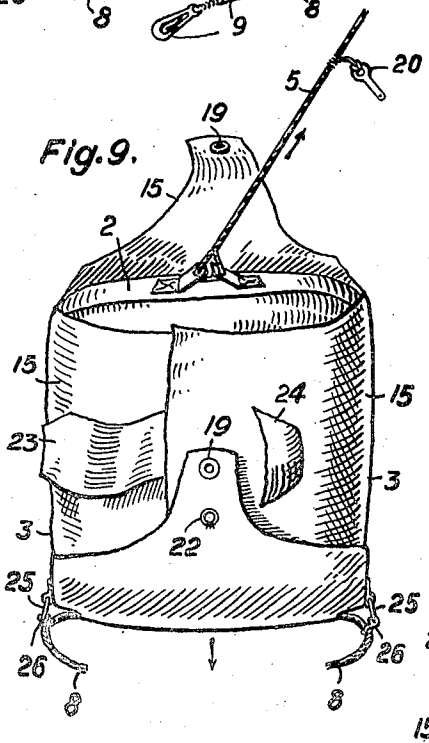
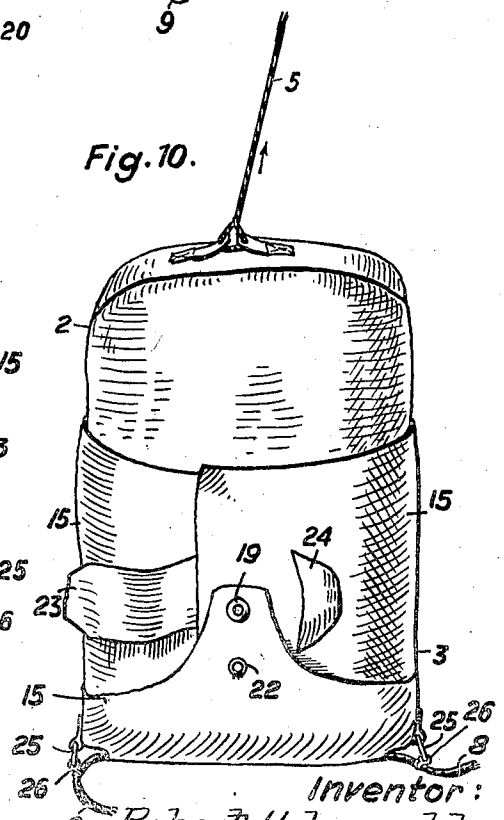


Fig.10.



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CASING IN TWO-PARTS FOR PACKING PARACHUTES

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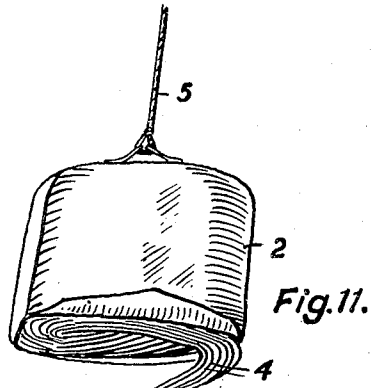


Fig.11.

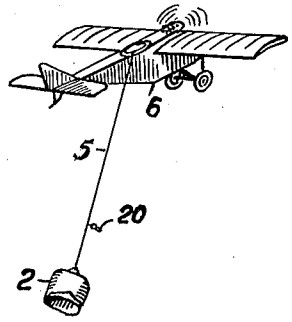
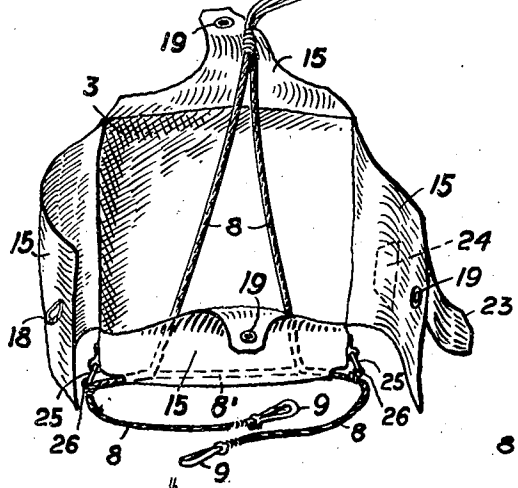


Fig.12.



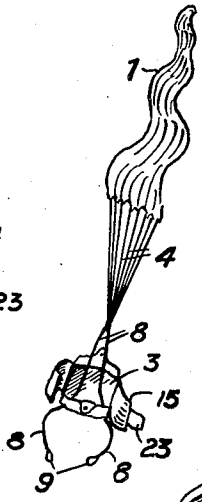
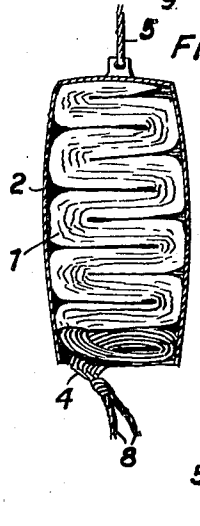


Fig.13.



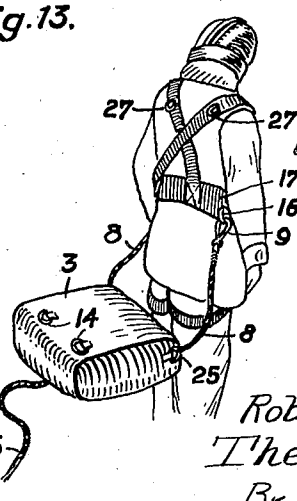


Fig.14.

Fig.15.



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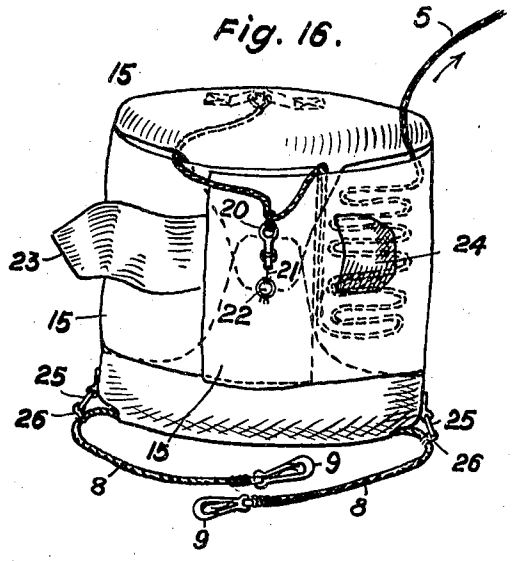
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CASING IN TWO-PARTS FOR PACKING PARACHUTES

Filed April 27, 1929 4 Sheets-Sheet 4

Fig. 16.



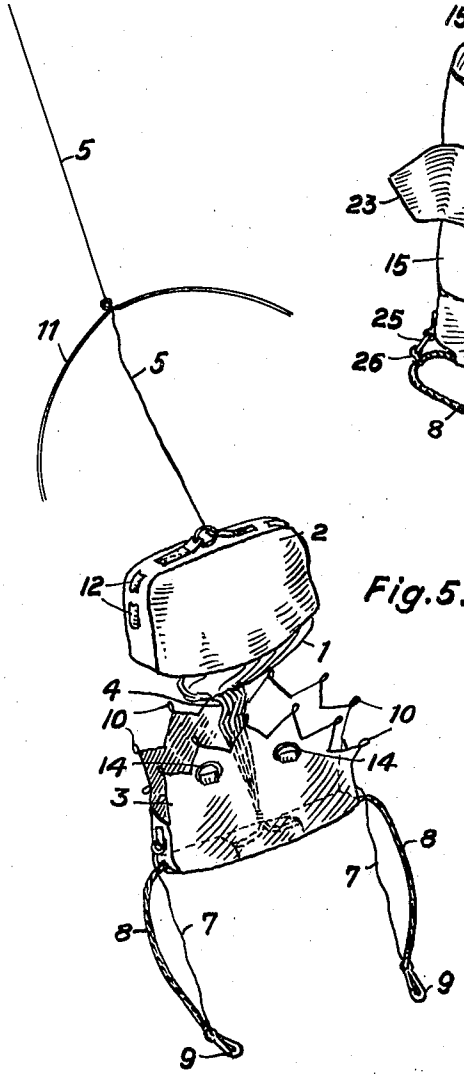


Fig. 5.

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UNITED STATES PATENT OFFICE

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CASING IN TWO PARTS FOR PACKING PARACHUTES

Application filed April 27, 1929, Serial No. 358,743, and in Germany December 13, 1927.

The invention relates to a casing in two parts for packing parachutes, of which one part is attached to the aeronaut and the other part to the flying-machine.

While in the known divided packing-casings the outer part of the casing is connected with the flying-machine and retained by the latter during descent, the arrangement has, according to the present invention, been made so, that the outer part of the casing is attached to the aeronaut and surrounding the inner part of the casing connected with the flying-machine. Hereby it is possible to attach the two part packing-casing, including parachute, knapsack-like to the back of the aeronaut and to utilize the same as a seat-cushion. Further advantages will be disclosed by the following description and claims.

Four embodiments of the invention are illustrated in the accompanying drawings by way of example, wherein:

Figure 1 illustrates a construction of the parachute with divided packing-casing in longitudinal section,

Figure 2 is a plan-view of the packing-casing,

Figure 3 is a side-view.

Figure 4 shows the unfolding of the parachute, after leaping off of the aeronaut.

Figure 5 shows the separated parts of the casing shortly before unfolding of the parachute,

Figure 6 illustrates a second, modified construction of the parachute-casing in plan,

Figure 7 shows a third, modified construction of the parachute-casing in a general arrangement.

Figures 8–12 show the successive stages of unfolding of the casing and of the parachute during descent,

Figure 13 shows the inner casing, receiving the parachute, in longitudinal section,

Figures 14 and 15 the modes of utilizing the parachute-bag as seat- and back-cushion by the aeronaut and

Figure 16 illustrates a somewhat modified construction.

In Figures 1–6 the packing-casing, receiving the parachute 1, consists of an inner casing 2 and an outer casing 3, both consisting of bag-like container-parts, being open only at one end and are perfectly telescoped in such a manner, that the open ends are located on opposite sides. The inner casing 2 receives the parachute 1 with cords 4, connected thereto, and is attached to the flying-machine 6 (Fig. 4) by means of a draw-cord 5 or the like. Cords 7 are attached to the outer casing 3 and connected with supporting girths 8, which are on the one hand engaging with the parachute-cords and on the other hand attached to the aeronaut, by means of hooks 9 or other suitable fastening devices.

The cords 7 are shorter, than the supporting girth 8, in order to relieve the same from any tensile strains.

As the outer part of the casing 3 is attached to the aeronaut, the parachute-bag can be utilized by the aeronaut as back-cushion, or as a seat-cushion, the outer part of the casing being for this purpose provided at its upper part with eyes 14, or the like, in engagement with corresponding hooks arranged at suitable points on the aeronaut's strap, that is about the height of the shoulder.

The open end of the outer part of the casing 3 is provided with eyes 10, through which a lock-wire 11, attached to the connecting-cord 5 is passed in known manner (Figs. 1–3 and 6). The loose portion of the relatively long connecting-cord 5 can, as shown in Fig. 2, be inserted between the two parts of the casing 2, 3, while its end remains connected with the flying-machine.

During descent, the aeronaut first drops with the part of the parachute-bag attached to him, for several meters unobstructed, until he has passed beyond the range of the flying-machine. The cord 5, connected with the flying-machine 6, is then tensioned, after having been pulled out of the parachute-bag, if the same had been pushed between the two parachute-casings 2, 3.

As soon as the cord 5 is under tension, the lock-wire 11 connected thereto, is first removed from the eyes 10 of the outer part of the casing 3, so that both parts of the casing 2, 3 are now only loosely telescoped. During further descent, the two parts of the casing 2, 3 are then separated (Fig. 5),

whereupon the parachute 1 in the inner casing is withdrawn together with the cords 4, and can unfold itself (Figs. 4, 5). The outer part of the casing 3 remains attached to the aeronaut, while the inner part of the casing remains attached to the flying-machine.

To facilitate the telescoping of the two parts of the casing 2, 3 the open end of the casing-part 3 can, as shown in Figs. 2, 3 and 5, be indented or slotted on the edge.

To cover the lock-wire 11, when the parachute-bag is closed, covering-flaps 12, 13 can be provided. In the construction according to Figs. 1–4 of the drawings, several such covering-flaps 12 are provided on the inner casing-part 2, while according to Fig. 6 of the drawing, a common covering-flap 13 has been arranged on the outer casing 3. The flaps 12, 13 can be attached to one side of the parachute-bag by sewing and placed loose over the locking-wire 11, but they may be detachably connected to the opposite sides of the casing, as for instance, by means of snaps or the like.

According to Figs. 7–15 the packing-casing for the parachute consists of an inner casing-part 2, receiving the parachute in folded condition and an outer casing-part 3 surrounding the latter and provided with foldable locking-flaps 15.

The inner casing-part 2 is connected with the flying-machine 6 (Fig. 12) by a draw-cord 5, while the outer casing-part is attached to the aeronaut. The parachute-cords 4 are for this purpose connected with the retaining-ropes 8, passing through lower openings in the outer casing 3, ending in hooks 9, by means of which the parachute-bag is suspended in the eyes 16 of the aeronaut strap 17 (Figs. 14 and 15).

In order to hold the locking-flaps 15 of the outer casing 3 together, a pin or a cord-loop 18 is preferably fastened on one lateral flap 15 (Fig. 11), which can during overlapping of the other flaps 15, be pushed into metal eyes 19, pressed into the same. Into the loop 18, inserted into the metal eyes 19, that is into the part projecting from the metal eyes 19, when the casing 3 is closed, a splint-like safety-element 20 can be inserted (Fig. 8), attached to the draw-cord 5. For securing the splint 20, a thin breakable cord 21 can be attached to a hole in the splint and connected with a ring 22, attached to one of the locking-flaps 15 (Fig. 8).

If a pin with an opening for receiving the split 20, is used instead of the cord-loop 18, the said pin is preferably arranged to move, in order to be like the cord 18, flexible or adjustable in all directions.

To cover the lock, one of the locking-flaps 15 may be provided with a flap 23, which is placed over the locks 18, 19, 20, when the bag is closed, and inserted with its free end into a pocket 24, provided on the same locking-flap, as flap 23 (Figs. 7–11).

For relieving the retaining-ropes 8, rings 25 have been provided on the outer casing 3, on which the retaining-ropes are fastened by means of a short cord-loop 26 or the like (Figs. 7–10). A supporting-strap can also be used and drawn through the casing, as indicated in dotted lines at 8^1 in Fig. 11, to which the ropes are connected.

The parachute 1 is during packing folded with its ropes 4 into the inner casing 2 (Fig. 13), whereupon the inner casing is inserted into the outer casing 3 and the locking-flaps 15 of the latter folded over one another and held together by the locks 18, 19, 20 (Fig. 8). The lock is then covered by the safety-flap 23, the end of which is pushed into the pocket 24 (Fig. 7). The draw-cord 5, which is about 6–15 m. long, to enable opening of the packing-casing and unfolding the parachute, only after the aeronaut has dropped beyond the range of the flying-machine, can partly be placed between the locking-flaps, that is between the inner and outer casing (Fig. 8).

The cord 5 connected with the flying-machine is, during the descent, first drawn from the packing-casing and the locking-flap 23 opened thereby (Fig. 8). As soon as the cord has completely been withdrawn and tensioned, the splint 20, connected with the cord 5, is by this tension drawn from the cord-loop 18 or the drilled pin, and the lock of the outer casing 3 opened. In withdrawing the splint 20, the thin safety-cord 21 is torn, if one has been used. The tensioned draw-cord 5 pulls now at the inner casing 2, and opens the upper locking-flap 15 (Fig. 9), whereby said inner casing is pulled out of the outer casing 3 together with the parachute (Fig. 10). The other locking-flaps 15 of the outer casing 3 open simultaneously (Fig. 11). The parachute 1 is drawn from the casing 2 by the retaining-ropes 8 connected by cords 4 with the parachute-material contained in the casing 2, so that it can now unfold itself (Fig. 12). The outer casing 3 is carried down, by the aeronaut suspended on the unfolded parachute 1, while the inner casing 2 remains with the cord 5 and locking-splint 20, hanging on the flying-machine (Fig. 12).

The parachute-bag can in its construction according to Figs. 7–15, be used by the aeronaut as a seat- or back-cushion. The outer casing 3 is for this purpose also provided with rings 14, or the like (Fig. 14), which are placed into hooks 27, or the like, fastened in corresponding height, about the height of the shoulder, on the strap 17 of the aeronaut (Figs. 14–15).

The locking-flaps 15 can be folded over one another, as shown in Fig. 16, in which case the superfluous length of draw-cord is, during carrying of the parachute-bag, pushed

between the two lateral locking-flaps 15. The cord-loop 18 and the metal rings 19 have of course to be fitted to the corresponding locking-flaps 15.

The parachute-casings 2, 3 can, like the coverings 12, 13 of Figs. 1–6, be made of linen or canvas etc.

What is claimed is:

1. A device of the character described comprising an inner casing, a parachute entirely received within said inner casing, a connecting line having one end secured to the inner casing and its other end adapted to be fastened to parts of an aircraft, an outer covering provided with overlapping flaps and adapted to surround the inner casing with the parachute therein and to be attached to the aeronaut, and means for normally holding said flaps in overlapping relation and carried by said connecting line.

2. A device of the character described comprising an inner casing, a parachute entirely received within said inner casing, a connecting line having one end secured to the inner casing and its other end adapted to be fastened to parts of an aircraft, an outer covering provided with overlapping flaps and adapted to surround the inner casing with the parachute therein and to be attached to the aeronaut, means for normally holding said flaps in overlapping relation and carried by said connecting line, and one of said flaps of the covering having an extension covering said holding means.

3. A device of the character described comprising an inner casing, a parachute entirely received within said inner casing, a connecting line having one end secured to the inner casing and its other end adapted to be fastened to parts of an aircraft, an outer covering provided with overlapping flaps and adapted to surround the inner casing with the parachute therein and to be attached to the aeronaut, means for normally holding said flaps in overlapping relation and carried by said connecting line, one of said flaps of the outer covering having an extension for covering said holding means, and a pocket formed on the outer side of the covering and freely receiving the free end of the covering extension.

4. A device of the character described comprising an inner casing, a parachute entirely received within said inner casing, a connecting line having one end secured to the inner casing and its other end adapted to be fastened to parts of an aircraft, an outer covering provided with overlapping flaps and adapted to surround the inner casing with the parachute therein and to be attached to the aeronaut, means for normally holding said flaps in overlapping relation and carried by said connecting line, and a breakable connection between said outer covering and flap holding means to normally prevent the latter from accidental disengagement with the flaps.

5. A device of the character described comprising an inner casing, a parachute received within said inner casing, a connecting line having one end secured to the inner casing and its other end adapted to be fastened to parts of an aircraft, an outer covering surrounding the inner casing with the parachute therein and adapted to be attached to the aeronaut, and means for normally holding said outer covering in closed relation upon said inner casing and carried by said connecting line.

In witness whereof I have hereunto set my hand.

THERESE HABERMEHL, née GOEDERT,
Executrix of Robert Habermehl, Deceased.