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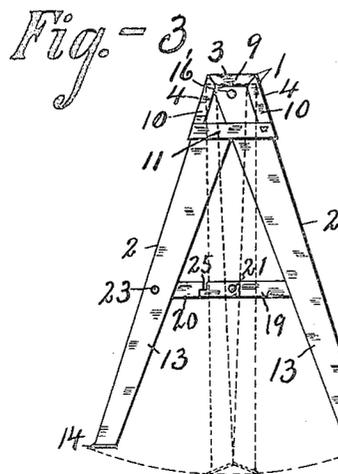
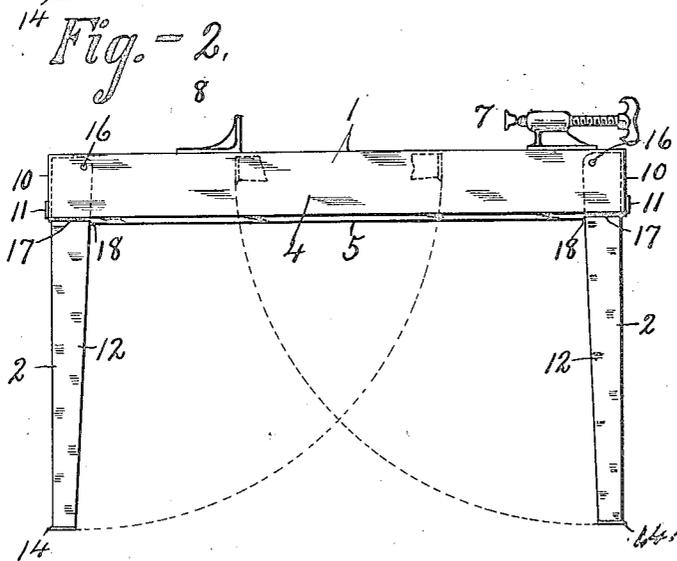
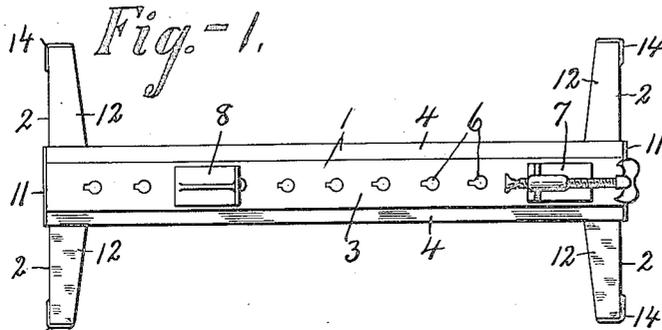
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M. J. TOPP

COLLAPSIBLE SAWHORSE

Filed March 14, 1922

2 Sheets-Sheet 1



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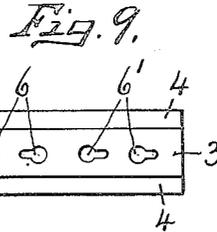
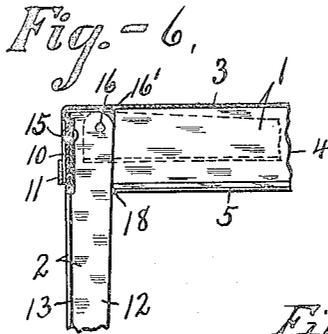
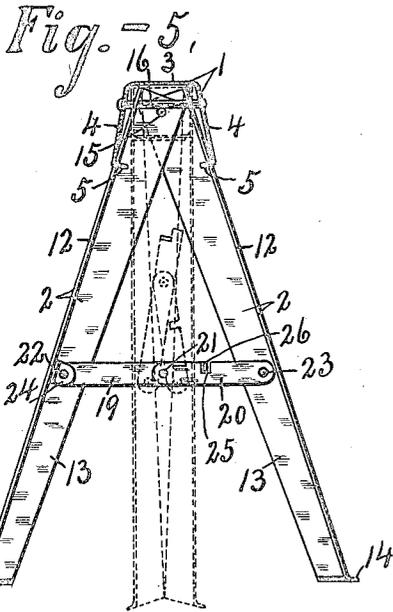
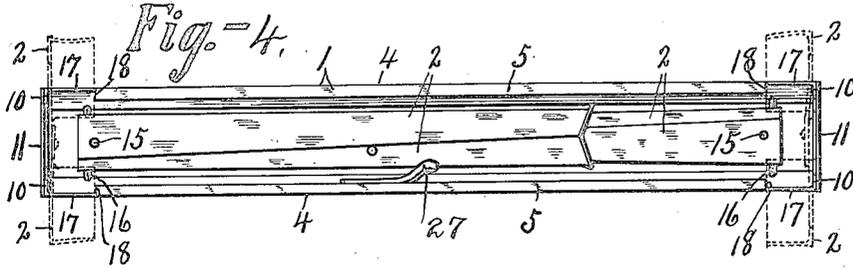


Fig. 7.

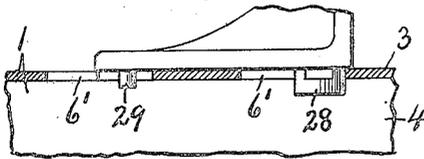
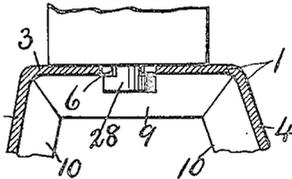


Fig. 8.



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UNITED STATES PATENT OFFICE.

MAURICE J. TOPP, OF MANLIUS, NEW YORK, ASSIGNOR OF ONE-THIRD TO WILLIAM C. CLARK AND ONE-THIRD TO ALEXANDER R. HAMMERLE, BOTH OF SYRACUSE, NEW YORK.

COLLAPSIBLE SAWHORSE.

Application filed March 14, 1922. Serial No. 543,720.

To all whom it may concern:

Be it known that I, MAURICE J. TOPP, of Manlius, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Collapsible Saw-horses, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to a collapsible horse of the class set forth in my pending application Serial #467,424, filed May 6, 1921, in that it comprises a channel beam and legs hinged to each other and to the beam to fold into the channel.

In my pending application referred to, the legs are pivoted to swinging yokes which in turn are pivoted to the channel beam but I have found in the manufacture that these yokes may be dispensed with and the legs pivoted directly to the side walls of the channels with provision for relatively slight transverse movement of the legs upon their pivots to allow them to be folded and unfolded transversely of the channel without in any way interfering with the free folding of the legs into the channels, and the main object of my invention is to provide greater sturdiness and durability and at the same time to greatly increase the output at a given expense of time and labor.

Another object is to provide means whereby the horse may be used for clamping objects of different widths thereto.

Other objects and uses will be brought out in the following description:

In the drawings:

Figures 1, 2 and 3 are, respectively, a top plan, a side elevation and an end view of a collapsible horse embodying the various features of my invention.

Figure 4 is an enlarged inverted plan of the collapsed horse, the dotted lines indicating portions of the legs as unfolded into their respective recesses.

Figure 5 is an enlarged transverse vertical sectional view taken on line 5-5, Figure 1.

Figure 6 is an enlarged detail longitudinal sectional view through one end of the horse showing a portion of one of the legs as unfolded.

Figures 7 and 8 are, respectively, a side elevation and an end view of one of the

clamping devices in operative engagement with the top rail portions of which are shown in section.

Figure 9 is a top plan of a portion of one end of the top rail showing the reverse order of the adjacent slots.

With the exception of the clamping devices, the various parts of the horse are preferably made of sheet steel of suitable gauge according to the work to which it is to be applied and comprises a channel beam or top rail —1— and opposite pairs of legs —2—, one pair for each end of the channel beam for supporting the latter in a substantially horizontal plane when unfolded.

This channel beam preferably consists of a substantially flat top portion —3— and downwardly flaring lengthwise side portions or flanges —4—, the lower edges of which are bent inwardly toward each other at —5— for reinforcing and other purposes presently described.

The top portion —3— is provided with a series of keyhole slots —6— arranged in spaced relation along the longitudinal center thereof for receiving clamping members —7— and —8—, one or more of the slots near one end being arranged in a reverse order to that of the remaining slots.

The end edges of the top portion —3— and side portions —4— are bent downwardly and inwardly to form stop flanges —9— and —10— against which the legs —2— rest when unfolded or adjusted for use, the lower edges of the side walls being held against spreading by cross-bars —11—, which are spot welded or otherwise secured to the outer faces of the lower ends of the stop flanges —10—, Figure 3.

The legs —2— of each pair preferably consist of angle bars arranged with their angles facing inwardly, thus forming lengthwise flanges —12— and —13— which are tapered from top to bottom, the lower ends being turned outwardly to form foot flanges —14— at such angles to their main bodies as to rest flat upon the floor when the horse is unfolded or adjusted for use.

The upper ends of the outer flanges —13— are of less transverse width than the distance between the opposite sides —4—

of the top rail —1— and are arranged within the channel, those of each pair being overlapped and pivoted to each other at —15— to enable them to swing one upon the other transversely of the top rail —1—.

The upper ends of the other flanges —12— of each pair are pivotally and slidably mounted upon a pivotal bolt —16— which is secured to and between the opposite sides —4— of the top rail across the intervening channel a short distance below the top portion —3— and also a short distance from the ends of the top rail so that when the legs are unfolded the outer faces of the flanges —13— will rest against the stop flanges —10— on the ends of the top rail to limit the outward swinging movement of the legs.

That is, the holes in the upper ends of the leg flanges —12— through which the pivotal pins —16— are passed are a distance from the outer faces of the flanges —13— substantially equal to the distance between the pivotal pin and inner faces of the end stops —10— to permit the legs to rest against said stops when unfolded, while the distance between the same pivotal holes and the upper edges of the legs is substantially equal to the distance between the pivotal pin —15— and lower portion of the top portion —3— of the top rail to allow the upper edges of the leg flanges —12— to rest against the under side of the top portion —3— when the legs are unfolded, thereby causing the top rail to be supported directly upon the upper ends of the legs irrespective of the pivotal pin —16— to relieve said pivotal pin from excessive strains.

The upper inner corners of the leg flanges —12— are rounded at —17— concentric with the pivot —16— to enable the legs to be folded and unfolded without straining any of the adjacent parts.

The outer ends of the flanges —5— are cut away or recessed at —17— a distance from the adjacent stop flanges —10— corresponding to the width of the adjacent portions of the leg flanges —12— to form stops —18— for engaging the inner edges of said flanges and holding the legs against inward swinging movement when unfolded or adjusted for use.

The legs of each pair are connected by toggle levers —19— and —20— of substantially equal lengths having adjacent overlapping ends pivoted to each other at —21— and their outer ends pivoted, respectively, at —22— and —23— to the legs Figure 5, the levers —20— being pivoted directly to the flanges —13— of the legs at one side, while the levers —19— are pivoted to lugs —24— on the leg flanges —12— on the opposite side in slightly spaced relation to the adjacent flanges —13— so as to allow the toggle levers to fold alongside each other when the

legs of each pair are folded together in which case, the flanges —13— will overlap as shown by dotted lines in Figure 5 and by full lines in Figure 4.

The levers —19— and —20— of each pair are adapted to break upwardly from a straight locking position, the levers —20— being provided in their upper edges with notches —25— intermediate their ends to receive offset shoulders —26— on the extended ends of the levers —19— for limiting the downward swinging movement of said levers from a straight line, while permitting their upward swinging movement about their respective pivots.

A spring catch —27— Figure 4, is secured by spot welding or otherwise to the inner face of one side —4— of the top rail —1— to hold the legs in their folded positions within the channel of the top rail —1— and may be released by the fingers when it is desired to unfold the legs.

The reversely arranged key-hole slot as —6'— near one end Figure 9 serve to receive the clamping member —7—, while the clamping member —8— may be interlocked with any of the other slots and thereby adjusted toward and from the member —7— for different widths of work to be clamped between them.

Each clamping member —7— and —8— is provided with studs —28— and —29— Figures 7 and 8, the stud —28— being relatively larger than the stud —29— to enter the larger portion of either of the slots —6— or —6'— and is preferably T-shaped to interlock with the under side of the top portion —3— of the rail —1— when inserted through the larger portion of said slot and moved endwise into the smaller portion while the stud —29— is adapted to enter the smaller portion of the next adjacent slot by the same lengthwise sliding movement of the clamping heads along and upon the top portion —3—, thus permitting said clamping heads to be adjusted to different positions along the top rail and effectively interlocked therewith with the assurance that both members will be interlocked with the smaller portions of the respective slots when clamping the work between them.

It will be observed that the flanges —12— of the legs are of less transverse width than that of the sides —4— of the channel bar —1— and also less than the distance between the flanges —5— and pivotal pins —16— to enable the legs to be folded wholly within the channel between the flanges —5— and top portion —3— of the top rail and that when thus folded, the entire horse will occupy a space not greater than the external dimensions of the top rail.

When adjusting the folded horse for use, it is simply necessary to hold the top rail in

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one hand with the top portion —3— uppermost and then to release the catch —27— with the other hand whereupon the legs will swing about the pivots —16— downwardly and outwardly under their own weight to substantially vertical planes, thereby registering with the notches or recesses —17— whereupon the toggle levers —19— and —20— may be flexed downwardly to a straightened position to rock the corresponding legs about their respective pivots —15— and against the inner faces of the sides —4— of the top rail, the horse being then ready for use, it being understood that during this operation, the legs will be braced against inward rocking movement by the shoulders —18— on the ends of the flanges —5—.

What I claim is:—

1. A collapsible horse comprising a channel bar and pivotal pins extending across the channel and secured to the opposite sides thereof, and separate pairs of legs pivotally hung upon said pins and slidable lengthwise thereof to swing into and out of the channel, the legs of each pair being pivoted to each other to swing transversely of the channel.

2. In a collapsible horse, a channel bar having opposite lengthwise side flanges and opposite end flanges projecting from the side flanges toward each other, pivotal pins secured to the flanges and extending across the intervening channel near the ends thereof, and separate pairs of legs pivotally hung upon the pivotal pins to swing into and out of the channel and against the end flanges, those of each pair being separately pivoted to each other to swing transversely into and

out of engagement with the lengthwise side flanges.

3. In a collapsible horse, a channel bar having opposite lengthwise side flanges and opposite end flanges projecting from the side flanges toward each other, pivotal pins secured to the side flanges and extending across the intervening channel near the ends thereof, and separate pairs of legs pivotally hung upon the pivotal pins to swing into and out of the channel and against the end flanges, those of each pair being separately pivoted to each other to swing transversely into and out of engagement with the lengthwise side flanges, said side flanges being provided with recesses for receiving the adjacent portions of the legs when unfolded for use.

4. A collapsible horse comprising a channel bar having pivotal pins across the channel near the ends thereof, stop flanges on the ends of the bar projecting toward each other, and separate pairs of legs pivotally hung upon the pins to swing into and out of the channel into and out of engagement with the end stop flanges, the legs of each pair being separately pivoted to each other to swing transversely of the bar into and out of engagement with the opposite sides thereof and having their upper ends resting against the under side of the top of the bar when unfolded.

In witness whereof I have hereunto set my hand this 9th day of March, 1922.

MAURICE J. TOPP.

Witnesses:

M. C. RILL,
E. M. FRADENBURGH.