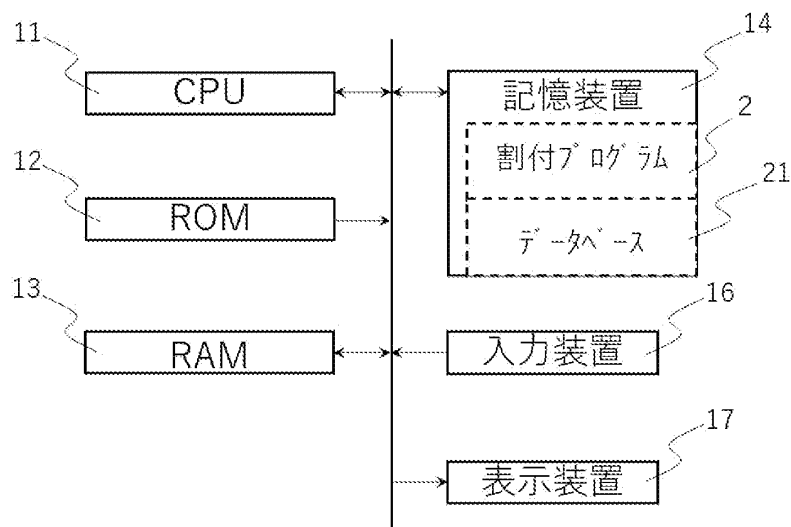
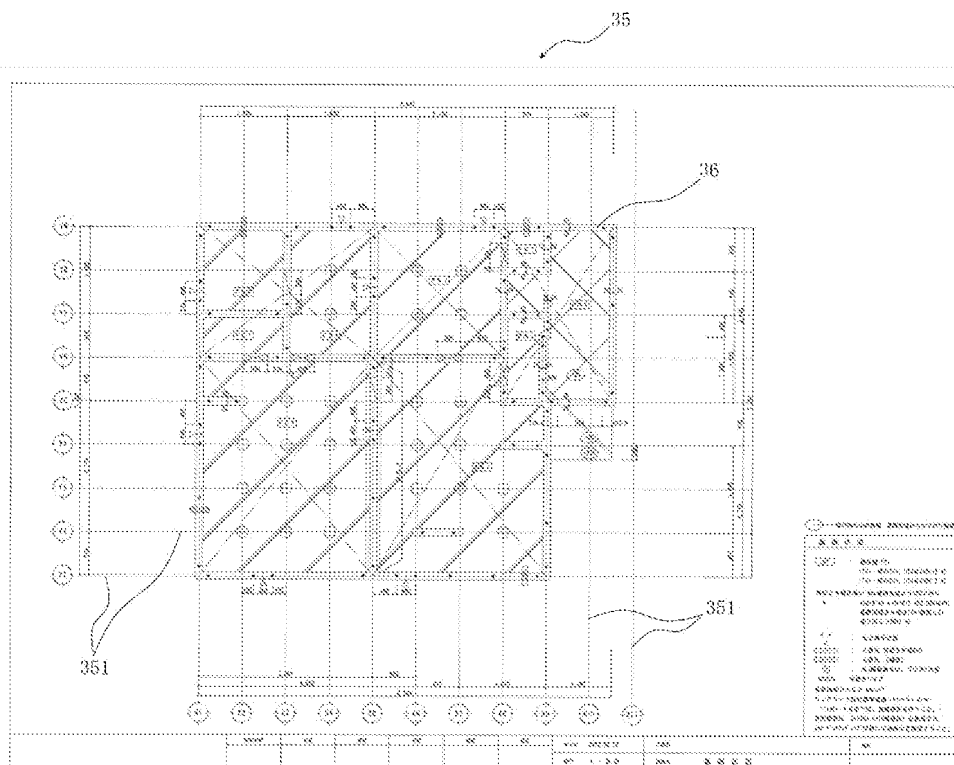


[図1]

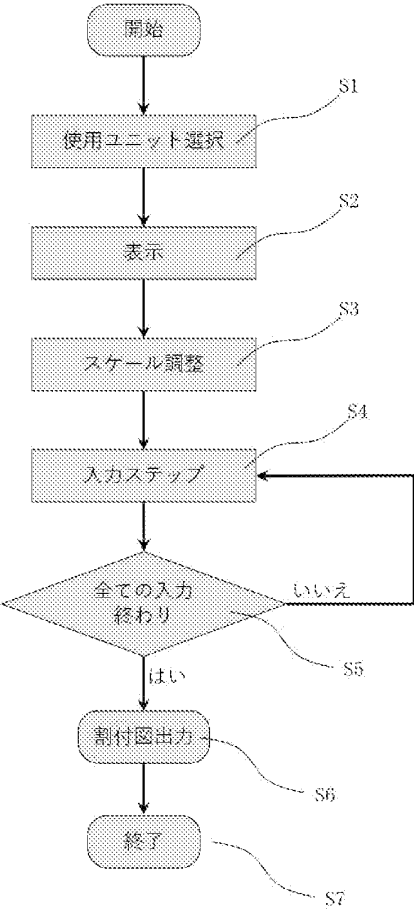
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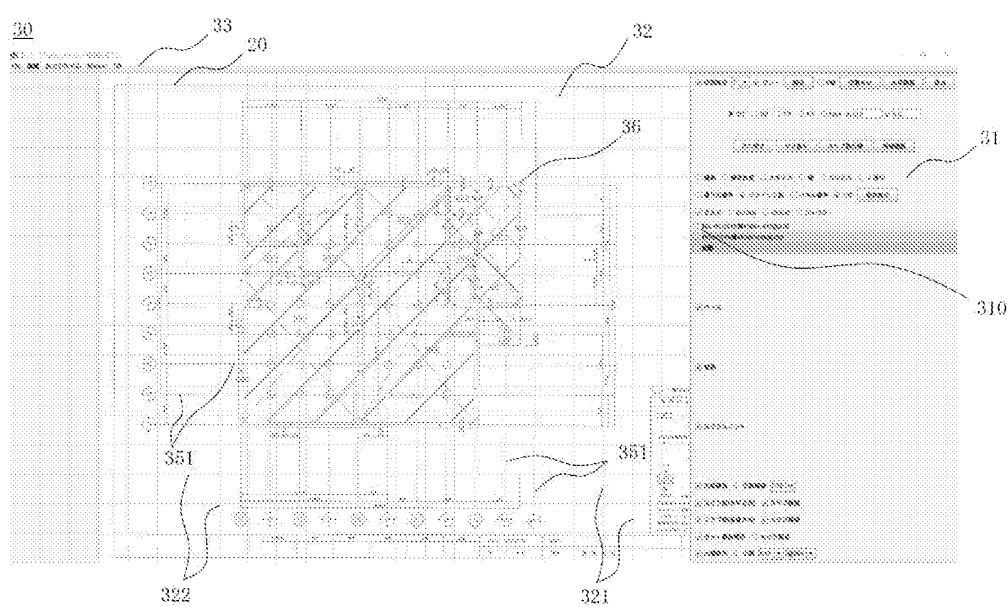
[図2]



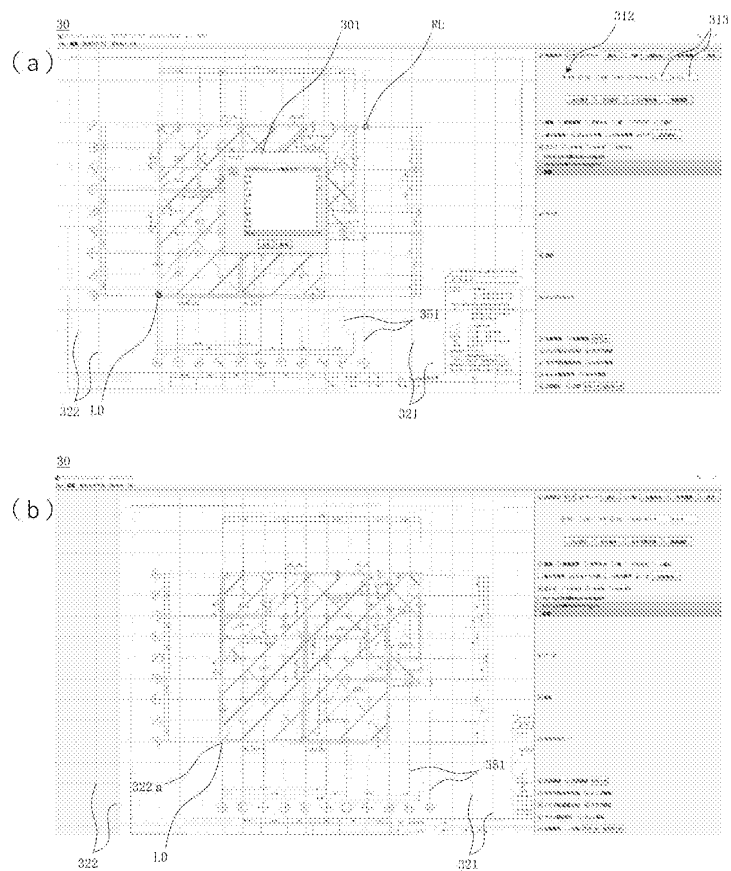
【図3】



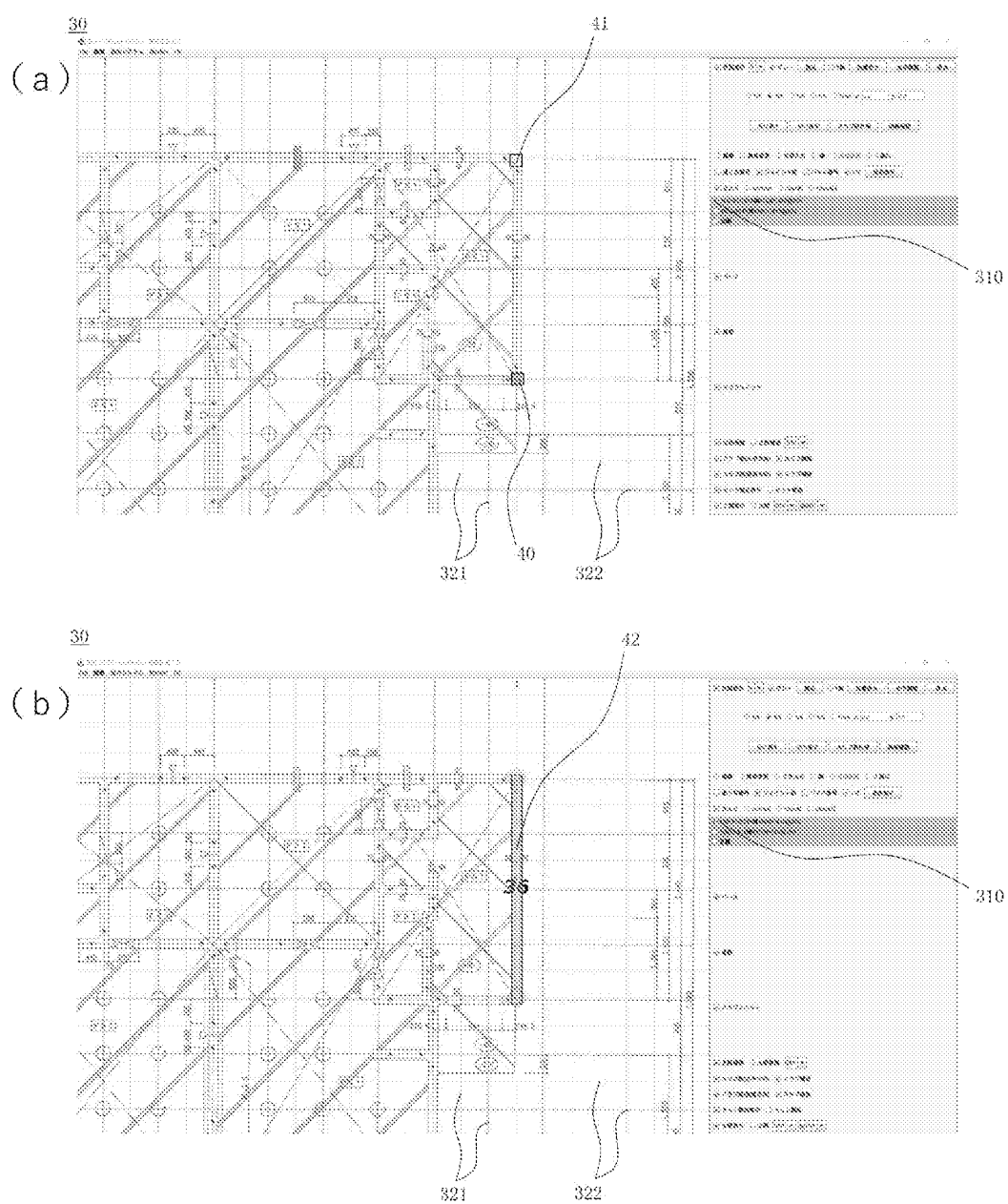
【図4】



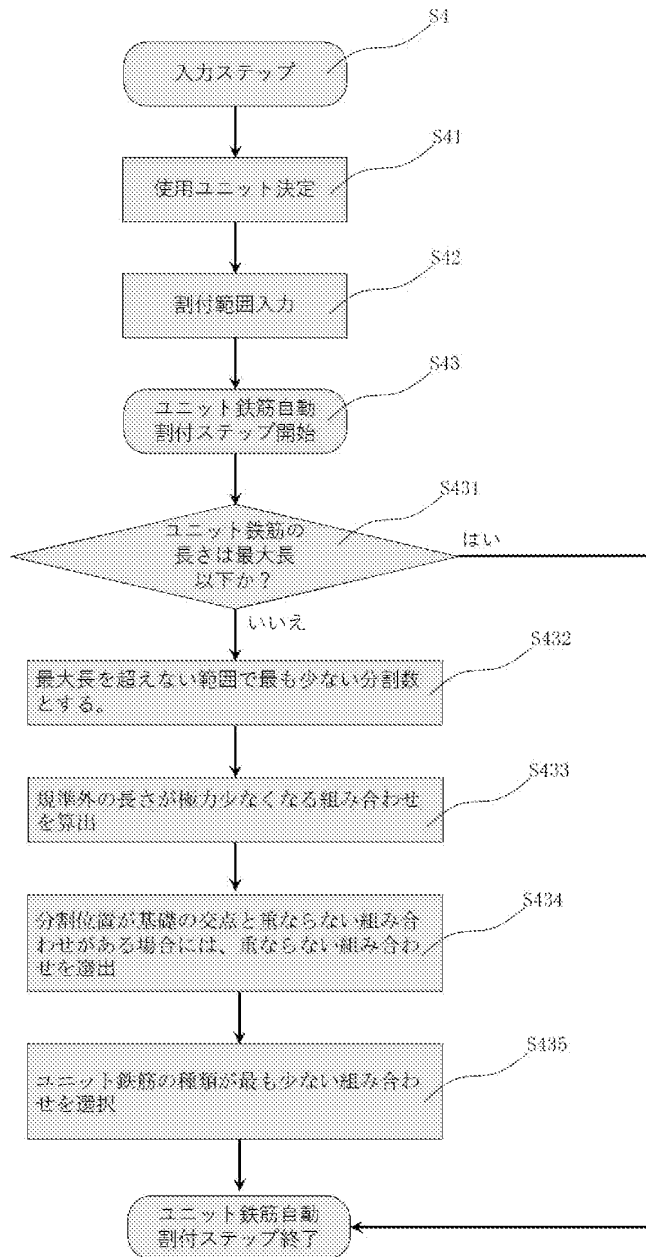
[図5]



[図6]



[図7]



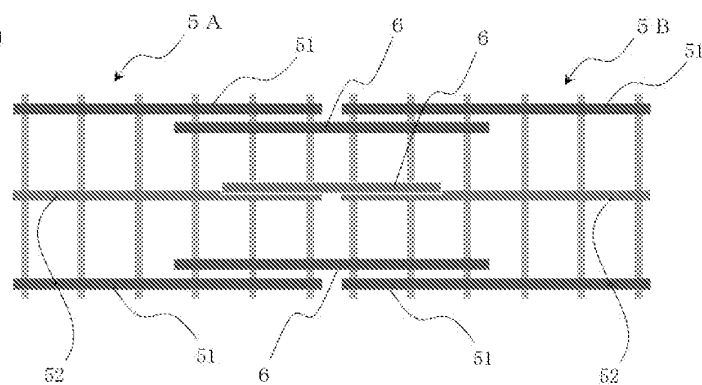
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graph TD; S44[S44: ジョイント鉄筋自動割付ステップ開始] --> S441[S441: 接続するユニット鉄筋同士の配置と高さからジョイント筋の中央部形状と種類を決定]; S441 --> S442[S442: 接続するユニット鉄筋同士の径からジョイント筋の径を決定]; S442 --> S443[S443: ジョイント筋の径と中央部形状から定着長を決定]; S443 --> S444{S444: ジョイント筋の定着長を確保できるか?}; S444 -- はい --> S447[S447: 垂直に曲げる]; S444 -- いいえ --> S445{S445: 接続するユニット鉄筋に更に接続されるユニット鉄筋があるか?}; S445 -- はい --> S446[S446: 水平に曲げる]; S445 -- いいえ --> S447; S446 --> S444; S447 --> S448[S448: ジョイント鉄筋自動割付ステップ終了];
```

Flowchart illustrating the automatic joint reinforcement cutting process:

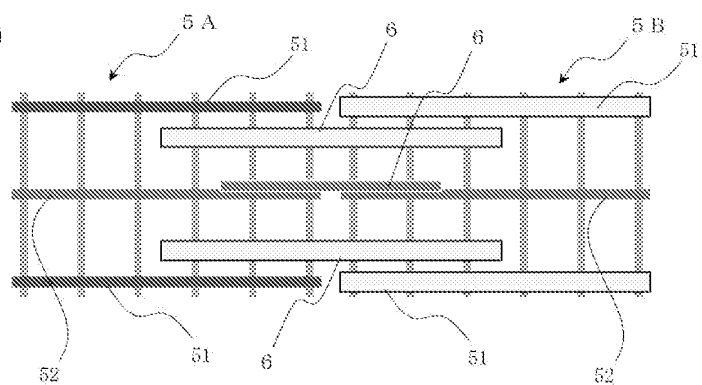
- S44: ジョイント鉄筋自動割付ステップ開始 (Start of automatic joint reinforcement cutting step)
- S441: 接続するユニット鉄筋同士の配置と高さからジョイント筋の中央部形状と種類を決定 (Determine the central part shape and type of joint reinforcement from the arrangement and height of the connected unit reinforcement)
- S442: 接続するユニット鉄筋同士の径からジョイント筋の径を決定 (Determine the diameter of joint reinforcement from the diameter of the connected unit reinforcement)
- S443: ジョイント筋の径と中央部形状から定着長を決定 (Determine the anchoring length from the diameter and central part shape of joint reinforcement)
- S444: ジョイント筋の定着長を確保できるか? (Can the anchoring length of joint reinforcement be ensured?)
 - はい (Yes) → S447
 - いいえ (No) → S445
- S445: 接続するユニット鉄筋に更に接続されるユニット鉄筋があるか? (Are there any unit reinforcement to be connected to the connected unit reinforcement?)
 - はい (Yes) → S446
 - いいえ (No) → S447
- S446: 水平に曲げる (Bend horizontally) → S444
- S447: 垂直に曲げる (Bend vertically) → S448
- S448: ジョイント鉄筋自動割付ステップ終了 (End of automatic joint reinforcement cutting step)

[図9]

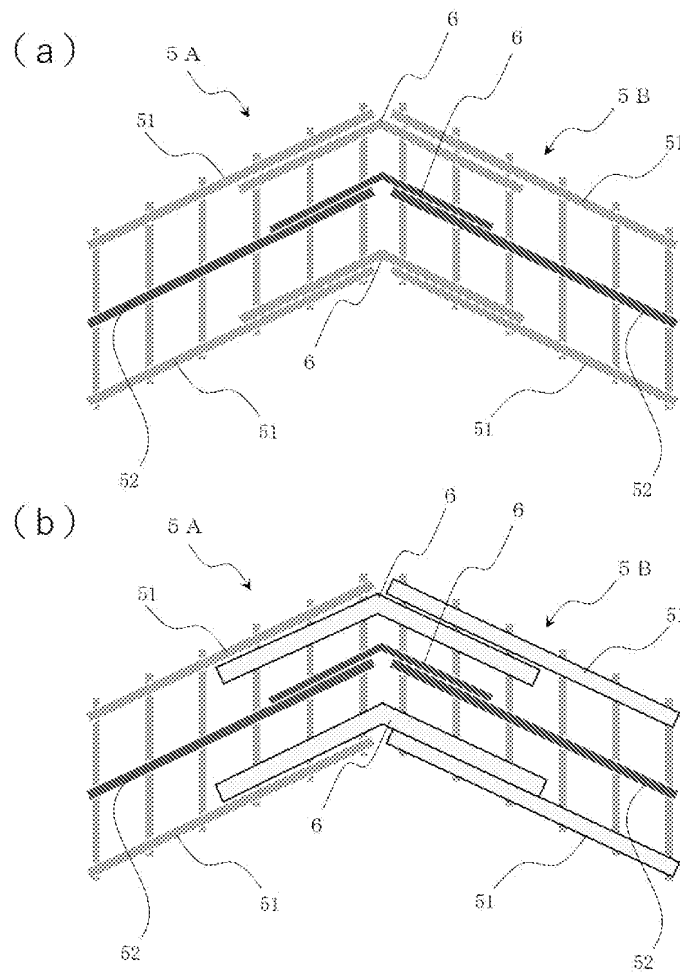
(a)



(b)

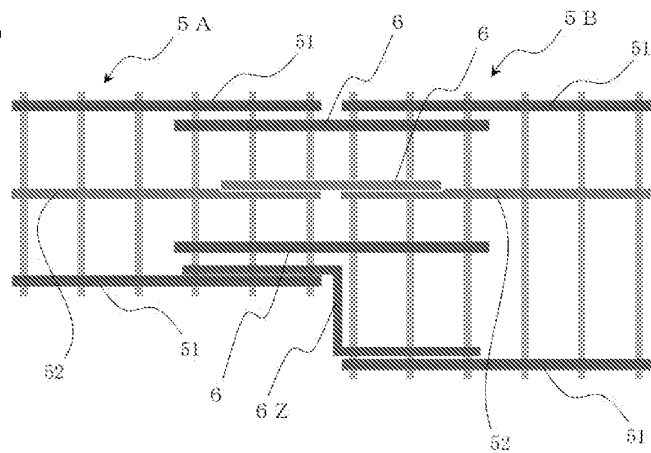


[図10]

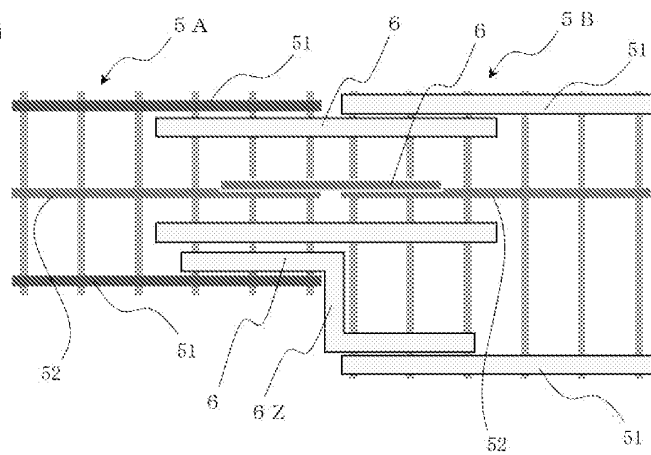


[図11]

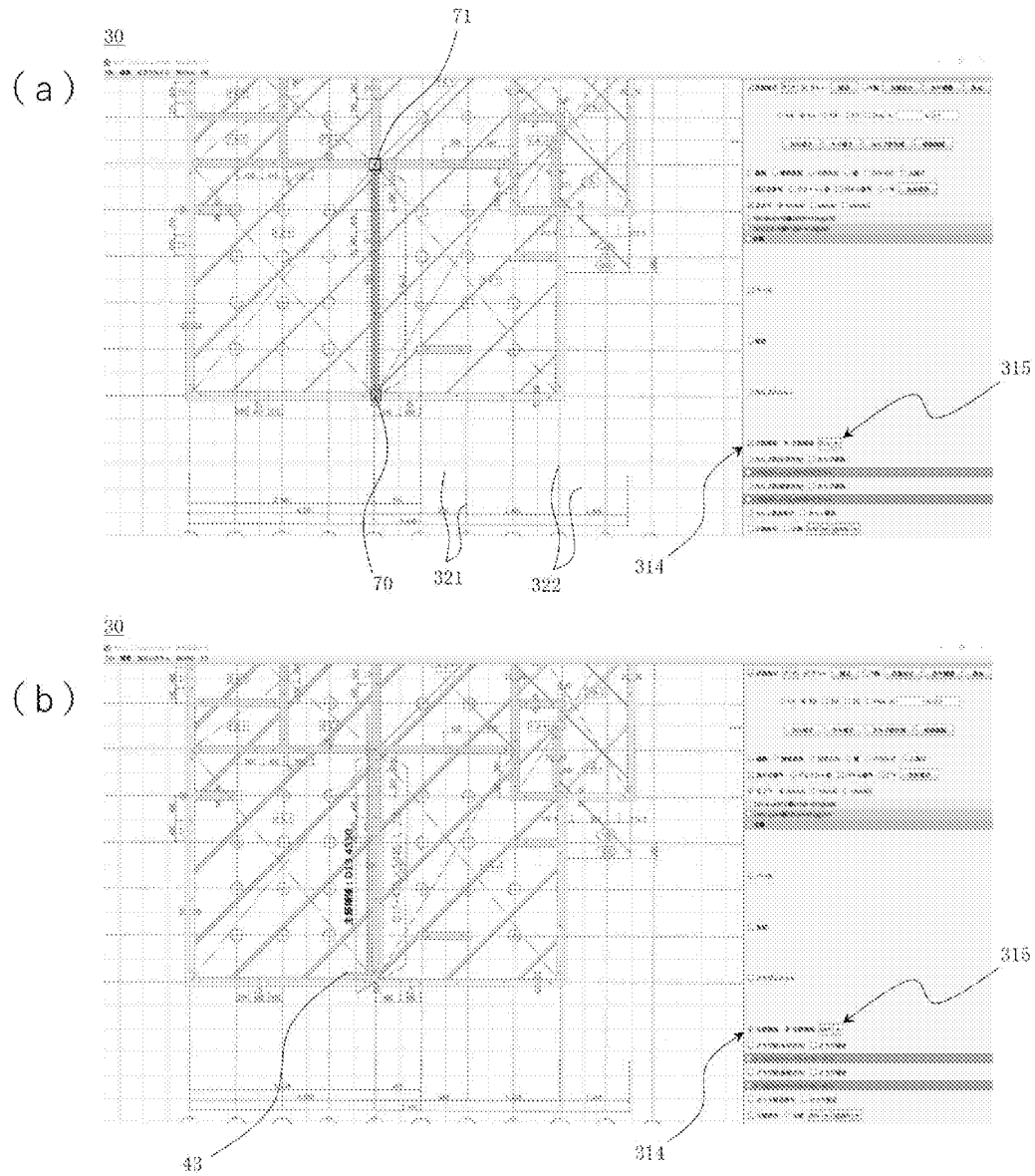
(a)



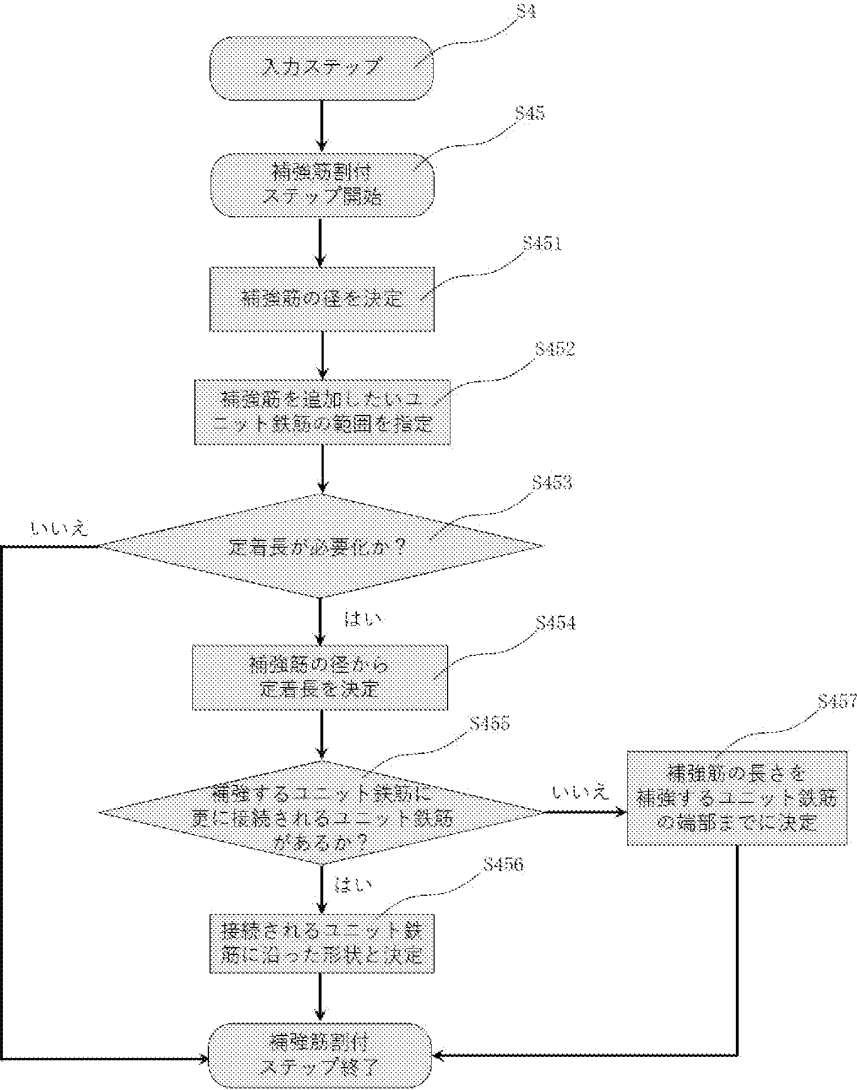
(b)



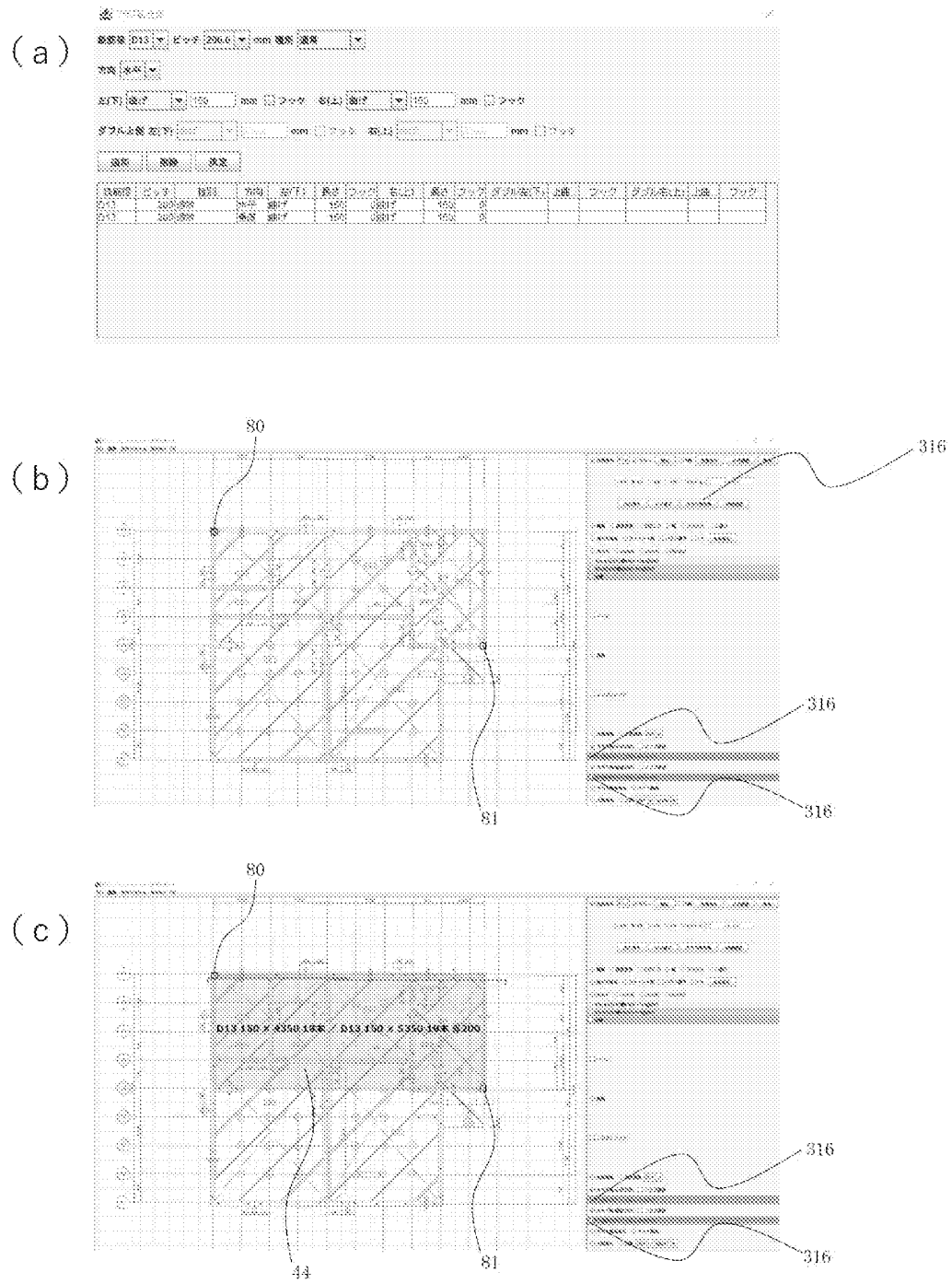
[図13]



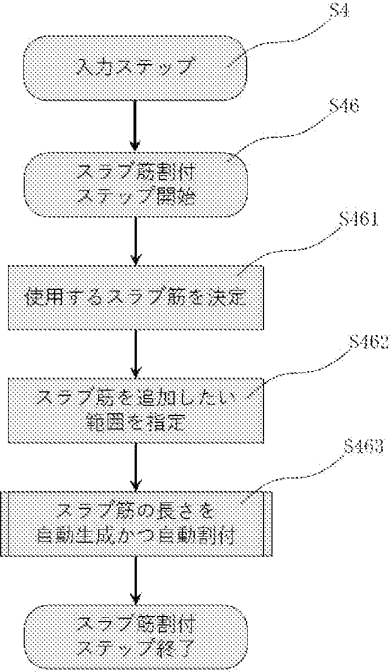
[図14]



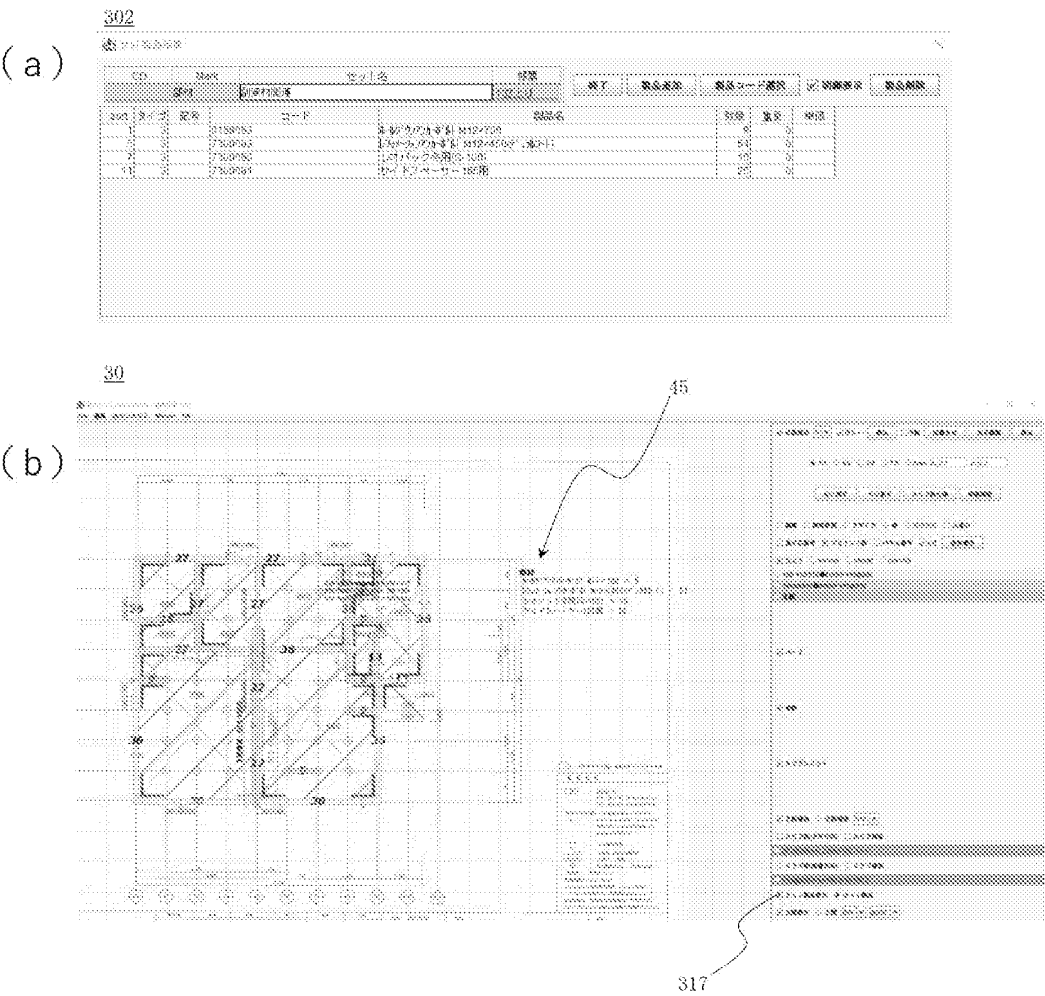
[図15]



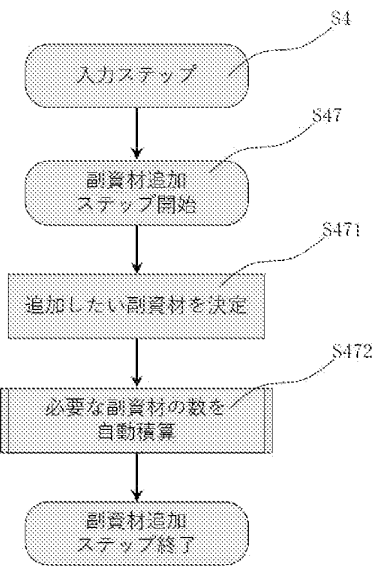
[図16]



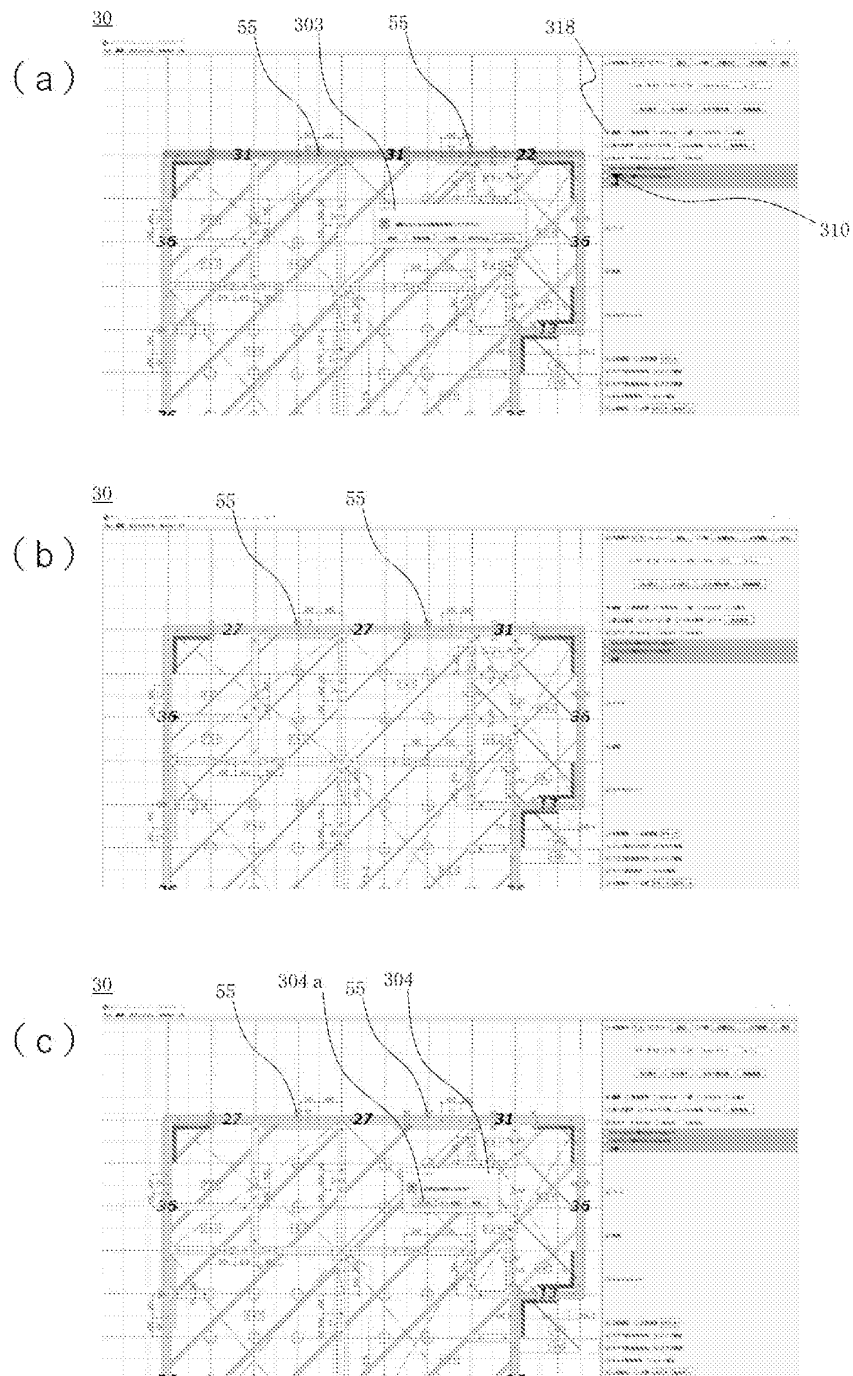
[図17]



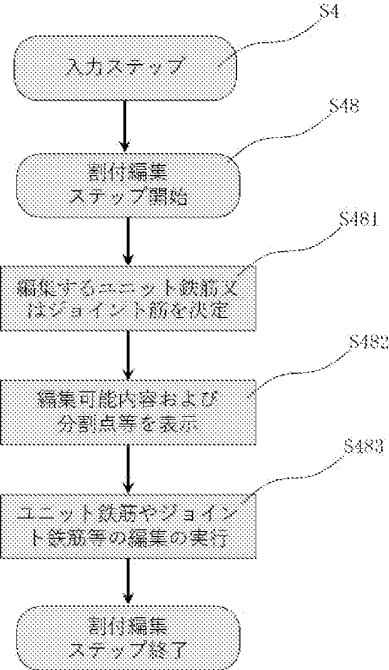
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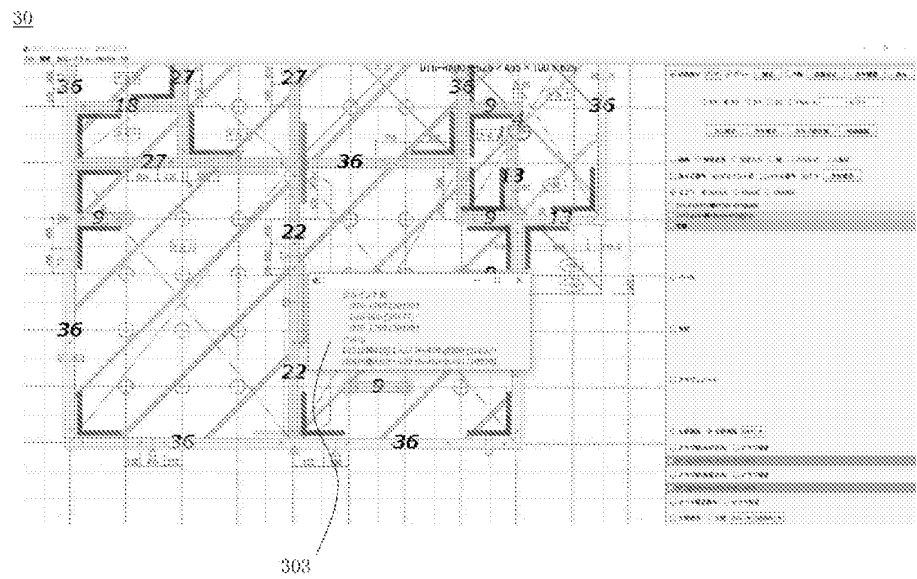
[図19]



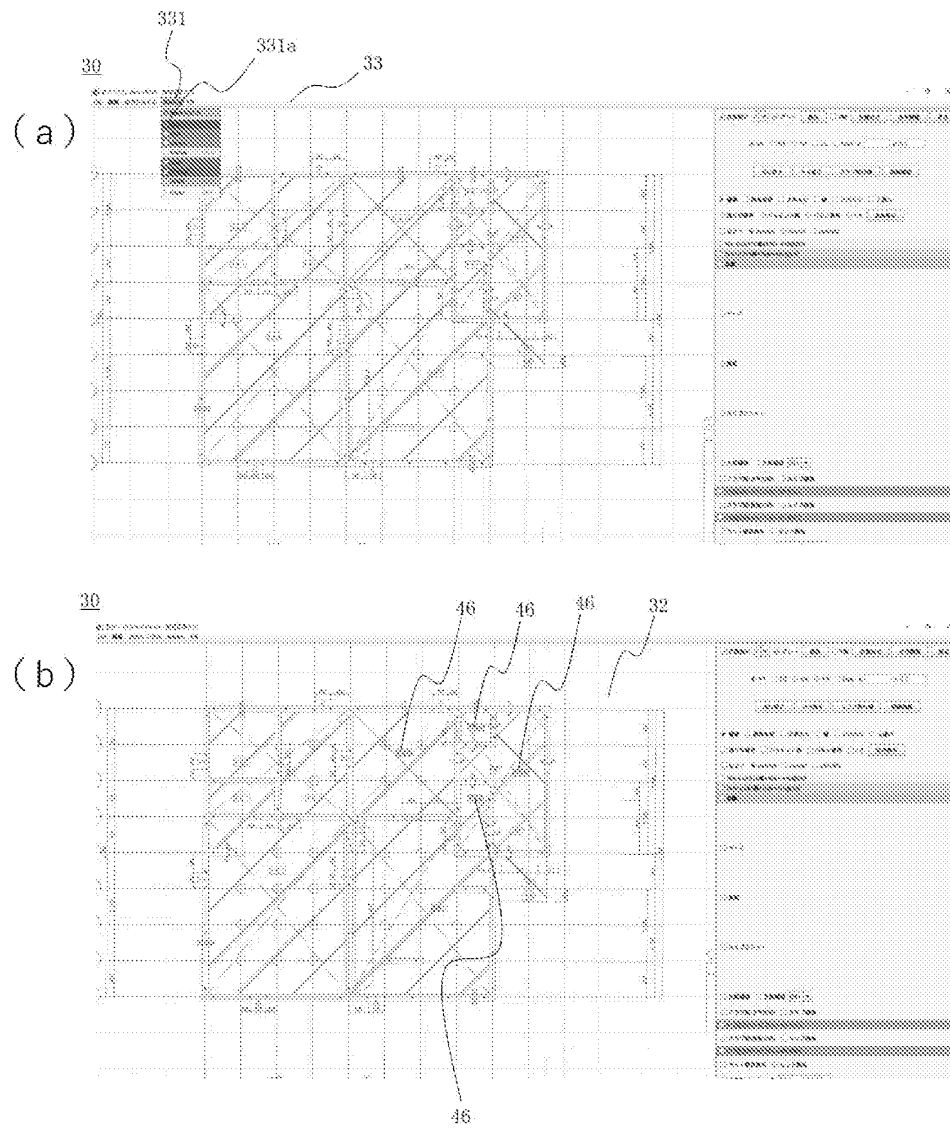
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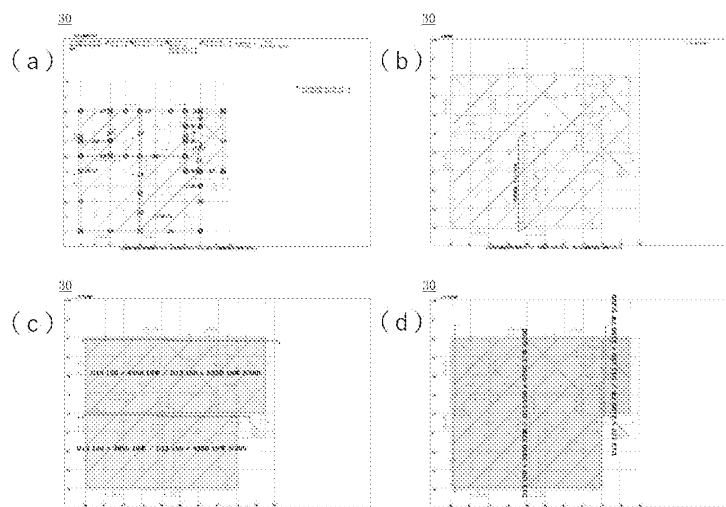
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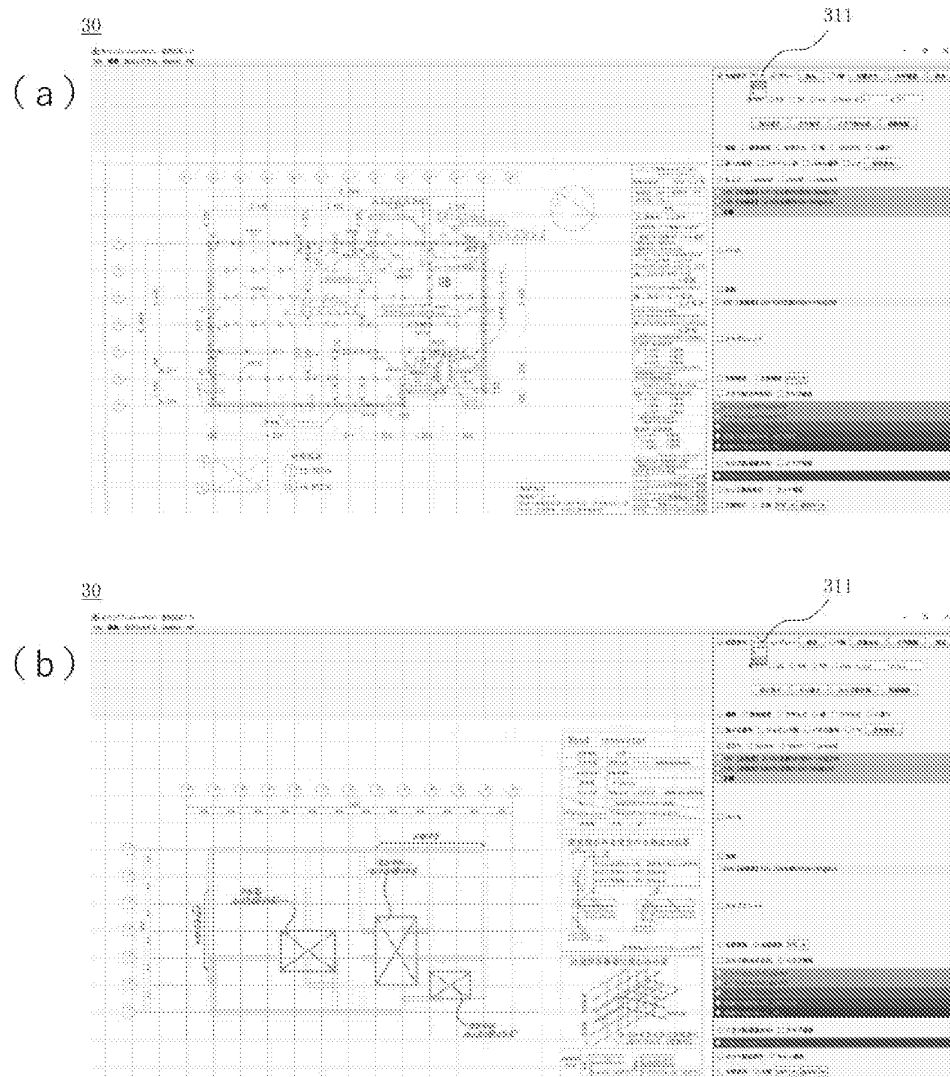
[図22]



[図23]



[図24]



[図25]

